SOUTHWEST Ecodistrict

Strengths, Weaknesses, Opportunities, and Constraints

Summary Findings and Notes

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A: Land Use, Historic Resources, and Civic Spaces

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Findings:

Land Use

- Maryland Avenue and 10th Street, SW are the major corridors in the SW Ecodistrict along which higher intensity mixed use developments and cultural facilities can be located.
- The area does not have enough variety of dining options for daytime workers.
- Existing retail and dining establishments along C Street between 4th and 6th streets, SW is a good example of how to activate the streets with pedestrian-friendly amenities.
- There is adequate parkland and open spaces in the SW Ecodistrict for future population growth but these parks are not conducive for community uses currently.
- The Southwest Ecodistrict will never become a Chinatown/Gallery Place type of neighborhood; however, it can be enhanced to become a real neighborhood by introducing residential and neighborhood retail uses.
- Schools, social services and public safety facilities are not necessary for the SW Ecodistrict study area because they are adequately provided in other parts of Southwest DC.

Historic Resources

- The viewsheds along 10th Street, SW and Maryland Ave., SW are the most important ones to protect and enhance.
- The Robert Weaver Federal Building (Department of Housing and Urban Development Headquarters) is an excellent example of midcentury modern architecture that contributes to the historic character of the SW Ecodistrict.

Cultural and Civic Spaces

- 10th Street, SW, with the Smithsonian Castle at its northern terminus and Banneker Park at the southern end, is the appropriate location for nationally-significant cultural destinations.
- Reservation 113, adjacent to the multimodal L'Enfant Plaza Metro station, is an untapped park resource that can become a central gathering space in the SW Ecodistrict.

Other

- Currently, the lack of population density, cultural attractions, variety of retail uses, and pedestrian amenities in the study area discourage an active street life in the SW Ecodistrict, despite its proximity to some of the most visited Smithsonian museums and national memorials in the nation.
- The L'Enfant Plaza Metro station, serving as a transfer point for four Metrorail train lines, AMTRAK and the Virginia Railway Express, and located in the heart of the SW Ecodistrict, has one of the highest transit weekday riderships in the region.

Strengths (things to keep and/or leverage)

- HUD building – strong presence, contributes to (Midcentury Modern) historic character of the area
- Proximity to the National Mall and Smithsonian Museums to the north, and the waterfront to the south
- Large workforce population has a high and stable demand for dining and convenience retail
- Current Smithsonian programs provide cultural and educational experiences
- L'Enfant Metro Station is an intermodal transit hub that connects the SW Ecodistrict to all parts of the District and even some parts of Northern Virginia and Southern Maryland (via METRO trains, VRE and AMTRAK)
- Availability of multiple transit services, including bikesharing
- Pedestrian-friendly amenities along 9th Street, between Independence Avenue and Maryland Avenue
- Adequate parkland and open spaces for future population growth
- New cultural destinations planned for the SW Ecodistrict, including the Eisenhower Memorial and National Women's History Museum, will increase visibility and foot traffic to the area

Weaknesses and Threats (things that don't work but can be changed)

- No cultural attractions, retail uses, and visitor amenities in the study area
- Excessive impervious areas
- Public parks and open spaces are not conducive for civic or social activities
- Lacks the population density to support active street life
- Railroad along Maryland Avenue axis and Southwest Freeway interrupts the L'Enfant street grid and limits multiple access to developments
- Street level uses along the north and south sides of Independence Avenue do not relate to each other
- Sidewalks between parking lots of buildings and roadways are not conducive for walking
- No real neighborhood exists since no residents live in the study area

Constraints (things that can't be changed and must be accommodated by the alternatives)

- Height Act - will prescribe maximum building height
- Protected viewsheds – Maryland Avenue, 10th Street/L'Enfant Promenade, Virginia Avenue
- Perimeter security requirements for federally-owned and leased buildings
- Railroad and Southwest Freeway rights-of-way (but not air rights)
- Double-decked roadways limit opportunities for on-site stormwater management

Opportunities

- Define a hierarchy of streets to determine which ones are most appropriate for higher intensity uses versus those that are more appropriate as quiet residential streets: 10th Street and Maryland Avenue should be the most prominent and active streets, with 7th Street, SW as a secondary commercial corridor.
- Decking the Maryland Avenue railroad right-of-way can accommodate an intermodal transportation corridor, add new greenspaces, and re-establish the integrity of the historic viewshed
- Establish 10th Street as the cultural corridor. The theme of the corridor will depend on how Banneker Park is developed.
- Banneker Park could be transformed into a multi-use civic space with a hotel, museum and retail, similar to Rockefeller Center
- 10th Street, SW and Maryland Avenue, SW should be developed as a major activity node
- If the Department of Energy Forrestal Building is to be redeveloped, consider retail uses on the ground floor along Independence Avenue and 10th Street, SW.
- Consider developing a hotel along Independence Avenue overlooking the National Mall
- The plaza at the Robert Weaver Federal Building (Department of Housing and Urban Development), as well as several of the buildings along 10th Street with deep setbacks, can be further animated by providing new pedestrian amenities such as retail and outdoor seating, and replacing security barriers with more subtle and decorative elements that serve the same protective purpose
- To extend street life along 10th Street into the evening, hold a night market during the warmer months of the year
- Plant street trees along Maryland Avenue to define the cartway and historic vista
- Add a wider range of retail in strategic locations, including converting ground floor spaces of existing buildings for retail where feasible
- Due to parcel configuration, residential development may be appropriate for infill parcels along Maryland Avenue or for redevelopment of sites within this corridor.
- Provide housing opportunities for federal employees who already work in the SW Ecodistrict as a way to increase density and create a 16-hour street life
- To the extent possible, re-establish Virginia Avenue's function and/or vista as an important diagonal L'Enfant street
- Design and program Reservation 113 as the symbolic central gathering space for the SW Ecodistrict

- New memorials can be accommodated at Reservation 113 but these should share the park space with other community types of uses
- Some of the federal buildings and public spaces of the mid-century modern era may be eligible for historic designation – further evaluation is required to determine this.
- A section of the SW Ecodistrict may be eligible for designation as a historic district
- Re-use or redevelopment of the GSA Regional Office building
- Capitalize on the natural draw of the waterfront. New residential, commercial and retail uses along the waterfront should be considered in determining the amount of retail and residential to accommodate in the SW Ecodistrict.
- See if St. Dominic's Church may be interested in offering cultural programs for the community
- Create a Southwest Business Improvement District

Urban Design and Transportation

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Meeting Materials: GIS Maps of geographic based data related to Urban Design and Transportation.

The Urban Design and Transportation Group discussed elements of city building that affect the users' experience, focusing on the form and functions of the space and how the user feels using the space. These elements include: physical connectivity; use relationships; scale of streets, blocks, and buildings; views and vistas; and the quality of public space, including available services/ amenities, and the design of urban landscape and buildings.

Findings:

Strengths: The strongest assets in the study area are its:

- Location near the National Mall, SW Waterfront, 3 branches of government, and job centers in downtown and emerging SE/SW
- Multi-modal transit accessibility and connections to neighborhoods via 7th and Maine Avenue/ M Street, SW
- Designation of HUD as a good example of mid-century modern architecture
- Dense daytime population

Weakness and threats include:

- the disconnected street grid and level changes caused by rail and highway restricts mobility;
- obstructed views to cultural and natural resources
- cost of reconnecting street grid (decking rail and freeway and making street connections);
- jurisdictional complexity (federal, local, and private) and phasing of improvements and development
- the scale of the blocks/buildings and absence of street level uses and activity
- Extremely low density population after 5:00 PM and during the weekend.

Opportunities: The greatest opportunities include:

- build upon unique modern character
- capitalize upon the potential for the SW Waterfront and other emerging SE and SW Neighborhoods to create a broader market and increase use of the area
- improve connections between the Mall and Waterfront along 7th Street, SW
- strengthen 10th Street as a primary connection between Mall and Waterfront
- 10th Street width offers opportunities for unique 'green' pedestrian-friendly corridor
- establish strong symbolic, visual, and physical connections between the National Mall and waterfront along 10th St. and Maryland Ave.
- Develop under used parcels along Maryland Ave and 12th Street
- deck the freeway for new development and the rail line to establish Maryland Avenue as a new street/pedestrian connection
- increase development and open space quality by redeveloping underused parcels more efficiently
- increase the mix of uses to meet future city and federal development needs
- improve connectivity and walkability by reconnecting the street grid
- using the proposed DC Streetcar to connect the Mall to the SW and SE Waterfronts
- Increase rail capacity through the corridor

Strengths (elements to preserve, enhance, and leverage)

Access and Location

1. The study area is the best transit accessible location in D.C. (multi-modal access throughout the entire Ecodistrict: 3 Metro entrances with a fourth nearby that serve 4 different lines connecting to most of the city, Maryland + Virginia + commuter rail between DC and Virginia + dozens of commuter buses, MetroBus, and DC Connector lines + access ramps to interstate highways)
2. M and 7th Streets excellent connection, providing good access to nearby neighborhoods (Penn Quarter, the SW Waterfront + Capital Riverfront).
3. Waterfront Mall + the Capital Riverfront provide some existing activity and community destinations for the residents of Southwest Washington.
4. Ideal proximity to National Mall, 3 branches of government, and waterfront.

Views and Vistas

5. Some views and vistas that should be preserved: currently, there is good visibility to the waterfront from Banneker Park; good views to Jefferson from Portal's turn around; and good views to the Washington Monument from Maine Ave. and 6th St.; good views to the US Capital from Maryland Ave (if you're a train conductor).

Architecture and Anchors

6. The greater Southwest neighborhood includes excellent examples of mid-century modernism; the HUD building is on the National Register of Historic Places.

7. The architecture + details of the HOTA plant are a good example of the Art Deco period. While the Cotton Annex was built in a similar style, views varied on the architectural significance of the building.
8. The FAA building is aesthetically pleasing and is a source of visitors to C Street and an anchor on the north side of Reservation 113 (L'Enfant Square).
9. 12th Street has strong anchors to the north (USDA, National Mall, Metro) and south (Fish Market, Waterfront).

Parking

10. Parking is easy to find in this area – it's also one of the closest spots to the National Mall.

Other

11. There is a high density of population in the study area during the weekdays, 9 a.m. – 5 p.m

Weaknesses/Constraints: (elements that don't work & need to change/ pose threats if unchanged)

Access

1. The multiple levels of streets and the intrusion of the rail line and highway makes it difficult to traverse by car, bike or by foot. While improvements can be made to improve these conditions, changes in street elevations adjacent to existing facilities may continue to be challenging.
2. Independence Avenue is a high-speed thoroughfare + feels dangerous for bikers and is uncomfortable for pedestrians.
3. D Street gives too much of the ROW to the car, increasing speeds + raising conflicts with bikes + pedestrians.
4. The intersection at 7th St. and Maryland Ave + underpass is a poor pedestrian experiences. It is also near one of the busiest pedestrian locations in the study area.
5. Temporary security barriers block much of the sidewalk spaces around federal facilities.
6. 9th Street functions as on/off ramps to the highway; will be hard to change

Views and Vista

7. Blocks and building patterns orient views inward not outward.
8. The Department of Energy blocks monumental views down 10th Street and Virginia Avenue.
9. The views from Banneker Park (Reservation 719) can only be seen if standing at the wall at the southern-most end of the park. Views will be significantly impacted by the proposed SW Waterfront development.

Scale

10. The building scale in SW is similar to other areas in the monumental core but lacks the architectural detailing and the relationship of street to building that provide some sense of pedestrian scale.
11. The scale of the blocks in this area is massive; some blocks are oddly-shaped and most are occupied by only one gigantic building.

12. The 10th ROW is a large space but not organized in a way that encourages bike + pedestrian uses; built for the car.
13. There are a lot of people who do not like mid-century modernist development (scale, lack of ground floor uses at street, etc.)

Public Space

14. The only street level uses occur along the periphery of the study area; retail is underground at L'Enfant Plaza or deep within federal buildings.
15. There are no successfully programmed, active or usable passive public spaces in the study area nor an entity focused on maintenance and programming (BID).
16. Reservation 719 as a whole is not a well functioning plaza or destination, current design limits how the overlook can accommodate a significant museum or memorial.
17. Complexity and expense of reconfiguring CSX underpasses/overpasses and street grid to improve pedestrian connectivity and amenities (lighting, maintenance, safety, etc.).
18. Competing needs to retain passenger and freight rail and freeway access and the need to improve walkability + connectivity within and between the study area and surrounding neighborhoods.

Parking

19. There is limited bus parking (Maine Avenue currently provides this function)
20. Parking access is often limited to certain times of the day and to federal employees + is also based on whether or not you have a parking space in one of the office buildings during weekdays.

Jurisdiction and Ownership

21. There is confusion over land ownership along Maryland Avenue.
22. Ownership mix and pattern is complex (federal, local, and private)

Construction

23. Elevated streets and structures limit building development, public space improvements, and ability to change street or sidewalk elevations at or near existing facilities.
24. Seismic changes need to be considered for construction, especially when being built above true grade.
25. The freeway is a huge obstacle; decking it will require money and political discourse.
26. Improving public space with trees, low-impact water management areas, or other amenities on elevated structures will be difficult and expensive.

Other

27. There is a low population density in the study area during weeknights + weekends.
28. The Cotton Annex is expensive to maintain.
29. Potential stormwater runoff toward the neighborhood to the south during storm events.

Opportunities

Location

1. Job growth to the south and east of the study area (M Street, the Capitol Waterfront, the SE Federal Center) strengthens the Ecodistrict potential to serve as the hub/connection between this new growth and the core downtown business center (Federal Triangle, K Street, Capitol Hill, etc.).

Potential Themes

2. Modernism could provide an overarching theme /defining element for the Ecodistrict + connect it to the rest of the existing Southwest neighborhood. Look to San Francisco, Portland, + Philadelphia for successful examples.
3. Another theme is to extend the programmatic ideals of the National Mall down 10th Street, but focus more on sustainability + technology.

Uses

4. Commemorative destinations or other tourist attractions located throughout the study area could help draw visitors from the National Mall south to the Southwest Waterfront. (consider main routes from the National Mall: 14th, 12th, 10th and 7th Streets, and Independence Avenue)

Connectivity: physical and views/vistas

5. Opportunities to improve visual access to the Southwest Waterfront, to the US Capitol, Washington Monument, Jefferson Memorial, + Smithsonian Castle. (Retain significant vista from Banneker Park to waterfront; establish Maryland Avenue from 7th Street to the Portals at or near 14th Street; remove the portion of the Forrestal Building that spans 10th Street)
6. The potential east-west views and connections between 12th + C Streets and Reservation 113 (L'Enfant Square) could provide a strong connection from the Holocaust Museum / Bureau of Engraving and Printing to the study area. (establish new pedestrian friendly C St.)
7. Lidding Maryland Avenue will create a boulevard that incorporates open space and improves pedestrian access/connectivity.
8. Decking the highway could improve the connections to the Mall, the SW Waterfront, and to the residential neighborhood to the southeast; consider decking with housing + park spaces (they're less expensive to build on deck).
9. Establishing Virginia Ave. has the potential to improve connections.
10. Add a fourth railroad track along Maryland to increase capacity.
11. Improve public space/bike amenities (facilities + marked routes along 10th Street + D Street) to increase the pedestrian/bike modal split. to improve bike lane connectivity.

Scale and Development Potential

12. There are unusable open spaces that would be appropriate for building area. There are significant infill opportunities that would help reduce the block size and overwhelming scale of the study area. (infill development along 12th Street, at the Cotton Annex; a new C Street between 12th and 10th ; Maryland Ave., the Southwest Freeway, and within large building setbacks.)
13. There are a number of opportunities for infill development for a range of uses; oddly-shaped blocks along Maryland Avenue may provide an opportunity for residential uses.
14. Consider GSA Regional Headquarters building for redevelopment?
15. The Cotton Annex parcel (at 12th and C Streets) provides opportunity for new development that could be a destination and visual connection between the Mall and waterfront.
16. 10th Street is 180', more than 2x the width in the L'Enfant Plan. There is significant room for infill development, green space, stormwater management, complete street design elements, mixed land uses + better programming. Opportunity to improve pedestrian experience – trees, seating, activity centers, etc.
17. Establish a hierarchy for public realm activity + programming: more active streets should contain retail, office; and quieter streets for residential.

Public Space Improvements

18. Opportunities to capture stormwater with green low-impact design on existing ground plane (10th Street Overlook, properties along Independence Ave and Reservation 113).
19. There is plenty of space for tree planting along the streets as well as in parks + open space.
20. Reservations 113 + 719 (Banneker Park) can provide space for civic focus/ life in the community.
21. Opportunity to incorporate Banneker's name and association into the redesign of Reservation 719 (Banneker Park/ 10th Street Overlook).

Parking

22. There is an opportunity for tour bus parking under 10th Street.
23. Make L'Enfant Metro (+ the entire Ecodistrict) more ADA compliant.
24. Because there is so much underground parking for office space in the area, there may be an opportunity to utilize it better through shared parking in the evenings + weekends.

Group C: Sustainability (Energy, Water, Waste)

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Meeting Handout: a matrix that summarized the existing conditions for each of the federal buildings and associated opportunities and constraints for energy, water, and waste.

Findings:

Strengths - The greatest strengths of the area include:

- existing infrastructure for a district energy system,
- long-term property ownership (federal government) that justifies initial investment in sustainable technologies, and
- a useable amount of organic waste from office cafeterias and nearby museums.

Weaknesses - The greatest weaknesses of the area include

- significantly underperforming buildings,
- no mix of uses to capture heat from office buildings,
- a high percentage of imperious area,
- limited soil to capture runoff, and
- no organic waste composting.

Opportunities - The area has several opportunities to improve its overall sustainability. These include:

- improving the cogeneration plant operations;
- creating renewable energy within the district
- introducing residential/mixed-use development to take advantage of shared energy opportunities;
- using captured stormwater for the operations that use potable water (i.e. the Botanical Gardens, the National Mall, irrigation within the district, the Cogeneration Plant); and
- using the district's organic waste for composting or energy.

Summary of Discussion:

I. What will it take to make this a zero net energy district (defined as a district that produces all of its energy from renewable resources within or nearby the district)?

This goal cannot be achieved by a single action. Even NREL's zero net energy building in Golden, CO has purchased credits. The following four actions will get us as close as possible to achieving our goal:

1. Make the existing buildings more energy efficient. Currently the existing buildings have energy efficiencies between 70 and 105 kbtu/gsf. The older buildings (built in the 1930s are performing better than those built in the 1960s). These numbers need to come down to approximately 35 kbtu/gsf to achieve our goal. *Note: In some cases it may be better to rebuild than to retrofit because of cost and inability to bring the energy use numbers down by retrofitting alone.
2. Introduce residential uses into the area to take advantage of shared energy technology between buildings. Currently all of the existing buildings in the district have the same needs at the same time (typical workday) so they all have to spend money on heating/cooling. Residential use typically counterbalances the needs of office so it could benefit from the heat generated from the office buildings.
3. Make the cogeneration plant that provides heating and cooling to the federal buildings more efficient. Research using renewable resources (i.e. organic matter, sewage, etc.) to run the plant's operations. In Seattle, one plant is using captured stormwater in lieu of potable water. More review is necessary but this could be an important part of the overall solution. *Note: the more buildings that the cogeneration plant services (the greater the density), the higher the District's energy efficiency rate.
4. Create a microgrid for the district. This would increase energy efficiency, increase security, provide high quality energy, and reduce greenhouse gas emissions.
5. Generate electricity/energy from renewable resources.

II. How can we retain a 95% rain event within the district (~1.7 inches of rain in 24 hours)

This will be challenging in such a highly urbanized area. The solution will be layered - incorporating green and/or blue roofs, trees and gardens, water reuse in buildings and landscaping and techniques for capturing runoff in the streets. The following opportunities should be analyzed:

1. Capturing stormwater along Independence Avenue. This is one of the few areas within the district that is on true soil and has the ability to infiltrate runoff (confounding issues include underground utilities and lack of data regarding infiltrative capacity). Another benefit is that

a good portion of the district slopes gradually toward Independence Avenue. *Note: Collecting off roads can be difficult and expensive. The water is the dirtiest and therefore the hardest to reuse.

2. Storing water under 10th Street.
3. Sending stormwater to the cogeneration plant to replace potable water use. This provides a single solution to two problems.
4. Sending stormwater to the National Mall and/or the Botanical Gardens.
5. Capturing rainwater and using it for nonpotable building use, e.g. toilet flushing or for landscape irrigation. New buildings will have plumbing to use rainwater in the toilets but the existing buildings will only be able to use it for irrigation. It is too expensive to redo the plumbing in older buildings.
6. All future landscaping within the district will use harvested rainwater from either the streets or building roofs.
7. Green Roofs/Blue Roofs. Green roofs are vegetated and capture rainwater. Blue roofs hold water for a period of time to reduce the flow into the Combined Sewer Overflow system.

III. What opportunities do we have with the District's waste?

1. Biomass. We may have a workable amount of biomass to make methane if you capture organic waste from the museums and office buildings. Rule of thumb - you need a town of about 10,000 people to make biomass work. The limitations are that it is difficult to deal with several contributors and the product is not very consistent. Is there space to accommodate a processing facility?

2. Sewage. Because it is more consistent than biomass in terms of composition and volume, it is easier to use for energy generation. More research is needed on examples like the sewage powered heat plant at False Creek in Vancouver.

3. Composting**.** Existing vegetation should use compost from the district.

Other Specific Comments

Building Comparisons

- Today's code requires 70.7 kbtu/gsf, if it operates for 10 hours per day (standard commercial)
- 90 kbtu/gsf/year is considered high (the Wright buildings are over 100)
- One of the newest energy efficient buildings on the NRL campus has 33 kbtu/gsf/year
- EISA: 80% reduction in energy usage by 2020 (compared to 2003 levels)
- Energy Policy Act: by 2013, buildings can't be less than 20% renewable

- Downtown Seattle - 25 commercial building owners have shared data about their energy consumption, best buildings are the newest or pre-war construction (around 45 kbtus); worst buildings are of this same 1960s era – those we have improved to about 85 kbtus (used to be over 100)
- 40^{o}F outside temperature is basically the break event point where the heat generated for the building can be balanced with the heat lost through inefficiencies (in windows, doors opening, etc.)

Cogeneration Plant

- Co-gen plant provides heating and cooling for Smithsonian and a couple of District-owned buildings, most of which is used for the chillers), but it runs primarily on natural gas; GSA looking at different alternatives for this plant. Only renewable sources are PV at DoE and that's producing 1%.

Other

- DCOP/DDOE are starting a carbon reduction credit program. Rather than buying credits from somewhere remote, you could get credits within the District.
- Seattle Project is storing energy through a phase change – at night, the chillers will run and pull in cool air so it'll be available in the morning so it postpones the time when you have to start the air conditioning.
- Information about the Bloom Box: it is a fuel cell, small generator for an individual building (100kw); takes up a parking space in size (height of a person); can be reconfigured to co-generate to produce hydrogen at the same time for vehicles; runs on natural gas. They aren't net zero. You would need a large number of units to fuel a whole building; you get electricity out of it as well.