COURTHOUSE SECTOR PLAN ADDENDUM: COURTHOUSE SQUARE

Adopted September 21, 2015
This Sector Plan Addendum articulates the fundamental elements and recommendations for Courthouse Square. The conceptual ideas, described through text, maps and illustrations provide a framework of ideas and policy guidance that will serve as the foundation for the future development of open spaces, buildings, circulation, cultural resources and sustainability elements in Courthouse Square. This plan will serve to supplant the guidance of the 1993 Courthouse Sector Plan Addendum for the Courthouse Square area, as depicted in the study area illustrated in Section 1 of this document.
# COURTHOUSE SECTOR PLAN ADDENDUM: COURTHOUSE SQUARE

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Arlington County Board

Mary Hughes Hynes, Chair
J. Walter Tejada, Vice Chair
Jay Fisette
Libby Garvey
John E. Vihstadt

Courthouse Square Working Group

Nancy Iacomini   Planning Commission, Working Group Chairman
Jaime Areizaga-Soto  Transportation Commission
Janel Brattland  Colonial Village Civic Association
Patricia Darneille  Radnor / Ft. Myer Heights Civic Association
Kenneth Fulton  Clarendon-Courthouse Civic Association
Evelyn Gee  Citizen's Advisory Commission on Housing
Jon Kinney  At-large Business Community
Anne O’Connor  Clarendon-Courthouse Civic Association
Peter Owen  At-large Community Member
Loria Porcaro  Lyon Village Civic Association
William Ross  Parks and Recreation Commission
Leonardo Sarli  Commission for the Arts
Chris Slatt  Transportation Commission
Gabriel Thoumi  Environment and Energy Conservation Commission

Arlington County Management Team

Barbara Donnellan*, County Manager
Mark Schwartz, Acting County Manager
Gabriela Acurio, Deputy County Manager
Robert E. Brosnan*, Assistant County Manager
Steven Cover, Director, DCPHD
Victor Hoskins, Director, AED
Greg Emmanuel, Director, DES
Jane Rudolph, Director, DPR
Robert J. Duffy, AICP, Planning Director, DCPHD, Planning Division
Dennis Leach, Deputy Director, DES, Transportation and Development
George May, Deputy Director, DES, Facilities and Engineering
Claude Williamson, Supervisor, DCPHD, Planning Division, Comprehensive Planning

Arlington County Core Project Team

Jason Beske*, Project Coordinator, DCPHD, Planning Division, Urban Design & Research
Kris Krider, DCPHD, Planning Division, Urban Design & Research Supervisor
Andrew D’huyvetter, DCPHD, Planning Division, Urban Design & Research
Helen Duong, DCPHD, Communications, Business Operations Division
Justin Falango, DCPHD, Planning Division, Urban Design & Research
Jill Griffin, AED, Real Estate and Development
Richard Hartman, DES, Transportation Planning
Jessica Margarit, DCPHD Communications, Business Operations Division
Diane Probus, DPR, Park Development Division
Pranjali Rai*, DCPHD, Planning Division, Urban Design & Research
Margaret Tulloch Rhodes, DCPHD, Planning Division, Comprehensive Planning
Dennis Sellin, DES, Development Services
Chris Somers, DES, Arlington Initiative to Rethink Energy
Ritch Viola, DES, Transportation Supervisor
Brett Wallace, DCPHD, Planning Division, Urban Design & Research
*former staff member at the time of adoption

The County Core Project Team worked in close collaboration with lead consultant Cooper Robertson and team, the National Capital Planning Commission and Federal agencies on key analysis and design components of the Courthouse Square Plan.
SECTION 1: Purpose, Process and History
Purpose

Courthouse is a lively urban and transit-oriented village that serves as the County’s seat of government and hosts the Judicial Center, Detention Center, and primary government offices. At the center of Courthouse, Courthouse Square will be the premier place for Arlingtonians to gather for conversation, recreation, relaxation, and to celebrate important events.

Transforming Courthouse into a public square and planning for future redevelopment will provide a centralized civic center and public open space that will engage Arlington’s residents, workers, and visitors, and better represent the goals, values, and ideals of the County.

This document represents an update to the 1993 Courthouse Sector Plan Addendum for the Courthouse Square study area. This addendum serves as a guide for the development of Courthouse Square over the next 25 years. As such, it provides prioritized recommendations and will guide future public investment and private contributions in this area related to streets, open space, buildings, cultural resources and sustainability.

This plan sets forth a vision, conceptual plan, design guidelines and implementation guidance that will create a cohesive public space and surrounding area for all Arlingtonians.

County Board Charge

The County Board established the Courthouse Square Working Group on October 22, 2013, and charged its members to collaborate with staff, serve as a forum for discussion and provide advice throughout the staff-led study.

The Charge outlines the County Board’s intention to enhance the Courthouse Metro Station Area as the County’s government center, including County government offices and a significant public open space. Elements within the study’s scope include circulation and parking, open space, building location, use and design, cultural resources and sustainability.
Study Area

The Courthouse Square study area encompasses approximately 10 acres, centrally located within the Courthouse Metro Station Area. The existing properties are a mixture of privately-owned and County-owned buildings; office, retail, and residential uses; public streets; and public and private open spaces. (Fig. 1.1 and 1.2)
The planning process for the Sector Plan Addendum was centered around extensive civic engagement and a robust dialogue with the Arlington community. Successful outreach efforts constructively and creatively engaged more than 1,000 community members in the process to re-imagine the future of Courthouse Square. (Fig. 1.3) Three hands-on community workshops, two interactive surveys and ongoing feedback channels allowed for an open dialogue with the community about ideas, challenges and the sector plan addendum process. Updates on project documents, reports and outcomes of public meetings were continuously shared with the community on the project website, social media, news releases and e-newsletters. Local media coverage in newspapers, magazines, blogs and television programs further raised awareness on the progress of the plan.

In addition to engaging the general public, the planning team met with key subject matter experts and stakeholders to seek feedback during the process. A series of meetings with the following commissions, committees and civic associations provided focused conversations on specific topics:

- Arts Commission for the Arts Economic
- Bicycle Advisory Committee
- Clarendon-Courthouse Civic Association
- Colonial Village Civic Association
- Development Commission
- Environment and Energy Conservation Commission
- Historical Affairs and Landmark Review Board
- Housing Commission
- Long Range Planning Committee
- Lyon Village Civic Association
- Parks and Recreation Commission
- Pedestrian Advisory Committee
- Planning Commission
- Radnor / Ft. Myer Heights Civic Assoc.
- Transit Advisory Committee
- Transportation Commission
- Urban Forestry Commission

**Project Team**

Arlington County’s Department of Community Planning, Housing & Development led the Addendum update process. The staff members were supported by a consultant team led by Cooper, Robertson & Partners. Collaborating departments include Environmental Services, Parks & Recreation and Arlington Economic Development.

**Working Group**

The Working Group met 18 times between December 2013 and August 2015. The Working Group was charged with providing guidance and working with County staff to establish the basis of recommendations for this sector plan addendum. The members were selected by the County Board and represented various stakeholder and community groups.
Arlington County was once considered an unsettled frontier, a small rural crossroads community with only scattered development and agricultural interests. On September 7, 1767, the present-day Courthouse neighborhood was part of a 705 acre land grant from Lord Fairfax to George Mason. By 1860, this area consisted of unimproved farm land and woods of oak and poplar trees. The Civil War caused dramatic changes to the landscape as the Union Army clear-cut the woods and constructed fortifications to protect Washington, D.C. “The Arlington Line” of fortifications included Fort Woodbury, formerly located directly adjacent to and partially within the Courthouse study area. (Fig. 1.4) The earthwork had a 161 yard perimeter, emplacements for 5 guns necessitating a crew of 75 men, and a total garrison of 300 men.

George P. Robinson and Lawrence A. Lodge platted the Fort Myer Heights subdivision in 1891. The investment in the property stemmed from its proximity to Fort Myer and its high elevation overlooking the Potomac River, but more importantly, its location along the forthcoming Washington and Arlington Electric Railway connecting the development to Washington, D.C. Five years later, County voters selected the subdivision as the site of the County courthouse to be relocated from the City of Alexandria. On June 5, 1896, Robinson and Daniel K. Simmons (a new investor in the subdivision) donated Block No. 8 of the Fort Myer Heights subdivision to the Alexandria County Board of Commissioners with the stipulation that a court house be constructed within five years at the cost of at least $18,000. Dedicated on November 16, 1898, the Richardsonian Romanesque-styled courthouse was designed by noted local architect Albert Goenner. Numerous additions on the original courthouse building (demolished in 1960) were necessitated by the expansion of the local government due to the expanding populace. (Fig. 1.7)

The construction of Arlington’s “Lawyers’ Row,” a series of one- and two-story office buildings for lawyers’ and real estate firms located across from the courthouse, were built primarily between 1920 and 1940. These buildings represented a cultural and architectural heritage common to the planning of courthouses and functioned as the cultural and political hub where legal, business, and commercial interests converged. Lawyers’ Row was demolished to construct the current County Judicial Center and Jail in 1990. The Simmonds Building (currently occupied by Jerry’s Subs) at the northwest corner of North Courthouse Road and 15th Street North is Arlington’s last remaining vestige of this architecturally and culturally significant collection of historic buildings. (Fig 1.10)

Early beautification efforts to improve the surrounding landscape included the planting of two memorial trees. The Women’s Civic Club of Clarendon planted a willow oak named the Mothers Tree on May 19, 1924. Two hundred individuals dedicated the tree to the mothers of Arlington County. The original tree and marble marker both remain at the site. Fourteen years later, in 1938, Arlington County moved the Memorial Tree, dedicated in 1923 to the Arlington servicemen who gave their lives during World War I, from Clarendon to Courthouse. The American White Elm tree, however, died during the drought in 1957. The tree was replaced with the extant willow oak sometime thereafter.

The influx of Federal employees during the New Deal Era and WWII spurred development of the Courthouse study area in the second quarter of the twentieth century. In 1935, the present-day Landmark Block (within the study...
area), Strayer Building site (within the study area), and the commercial strip at 2039-2057 Wilson Boulevard (in proximity to the study area) consisted primarily of single-family dwellings. Twenty-five year later, the majority of the dwellings surrounding the courthouse were demolished in favor of commercial and office developments to serve the workers and nearby residents.

The Landmark Block contains the only remaining examples of buildings representing this area’s history as an important commercial corridor bordering the civic seat. Both the Investment Building and the First Federal Savings and Loan Building are listed on the Historic Resources Inventory (HRI) and represent a shift towards Modern-styled architecture in the mid-twentieth century. In addition, two buildings constructed in 1950: the Conklyn Building and 2042-2044 Clarendon Boulevard are of the same era.

Arlington County moved forward with plans for a modern courthouse building to service the County’s increasing population. On December 13, 1956, the Arlington County Board named Albert Lueders and John M. Walton Associates as the architects for the redevelopment of the courthouse complex. Connie Feeley of the Washington Post noted the architects’ proposed sketches as a “futuristic county government center located in an impressive, park-like setting.” The plan called for the demolition and replacement of the original Richardsonian-Romanesque building (but the retention of its later additions) and the construction of a new seven-story office tower. Completed in 1961, the construction of the Court House Tower further altered the existing circulation network. (Fig. 1.8) The building severed North Uhle Street which had previously continued uninterrupted through the Courthouse study area.

The construction of Metro prompted the next period of changes to the study area. In the late 1970s, two small office buildings and a number of dwellings (converted to office space) at the present-day site of the Strayer Building were demolished as part of Metro construction efforts. (Fig. 1.9) The land served as the primary entrance to the Court House Metro Station and contained a small parking structure when Metro opened on December 1, 1979. The present-day Strayer Building was constructed on the site in 2002.

In the 1980s, the success of Metro spurred further development in the Courthouse area, resulting in the construction of numerous multi-story buildings consisting of residential, office, and retail space. In 1988, the construction of Courthouse Plaza (2100, 2150, and 2300 Clarendon Boulevard) replaced a large surface parking lot immediately west of the Court House (Figure 1.9). Coupled with the demolition of buildings for Metro, the development of Courthouse Plaza altered the existing circulation network with the closure of North Veitch and North Wayne Streets and the construction of Clarendon Boulevard in proximity to the study area.

The current Detention Center was completed in 1990 and the current Judicial Center was completed in 1994. Both were built across North Courthouse Road adjacent to the study area. In 1997, the Old County Courthouse was demolished. With the demolition of this remaining County owned building on the site, the area was converted into the surface parking lot that remains in use today.
SECTION 2: Concept Plan Recommendations
The Courthouse Sector Plan Addendum serves as the guiding long range planning document over the next two to three decades for the Courthouse Square Study Area, which is comprised of approximately 10 acres at the center of the Courthouse Metro Station Area. As such, it guides future public and private investment in the Study Area, including the design, organization and functional relationships of the open space and transportation systems within and adjoining the Study Area. The Plan sets forth a vision statement, guiding principles, recommendations and design guidelines that have emerged from the planning process.

The Courthouse Square Concept Plan unites ten top priorities or “big ideas” listed below. These concepts are the foundation for transformative placemaking and the realization of the community vision for Courthouse Square to benefit the entire Arlington community and visitors. These elements culminate in an implementation matrix of specific actions that underpin the “big ideas” and are necessary to realize the Vision.

### 1. 21st Century Civic Square

The future Courthouse Square will be a network of interconnected open spaces that can support a wide variety of existing and future programmed and unstructured events. The Square will be the social and cultural heart of Arlington and serve as a primary gathering space and activity center for the community. A new parking garage below the new Square will accommodate parking needs for existing and future uses in Courthouse Square which may include a joint public-private garage with adjoining developments. Community serving open space will replace the current surface parking lot with an underground garage below.

### 2. Central Metro Access

Multi-modal transit accessibility is a major theme for the concept plan. A new, centrally-located Metro access point will provide a welcoming entrance and serve as a highly visible landmark for residents, workers and visitors.

### 3. Shared Streets

The Square will be surrounded by diverse, walkable streetscapes that are the fundamental elements of lively place making. Shared streets within Courthouse Square will help connect open spaces to the buildings and pedestrian activities in the immediate area. 15th Street North and 14th Street North are envisioned as curbless shared streets that are uniquely designed to extend the usefulness of the Square, accommodate vehicles and transit, while providing priority to pedestrians and promoting safety.

### 4. Courthouse Square Promenade

The extension of a key pedestrian connection between Wilson Boulevard and 14th Street North in the North Uhle Street right of way will create a vibrant centralized promenade and link the Square both physically and visually to activities on Wilson and Clarendon Boulevards, Metro, adjoining open spaces, County facilities, and local businesses and surrounding neighborhoods. The promenade, which will be predominantly hardscape and tree-lined, will serve as an extension of the open spaces and is an ideal location for strolling, browsing farmers’ market stalls and participating in community events.
5. Symbolic Civic Building - South Square
The South Square is in a prominent location that will both visually and physically defines the south edge of Courthouse Square and contributes to overall place making through both architectural design and the introduction of County, civic, cultural and/or market uses. The potential for a future prominent County government facility in this location should serve as a focal point, either as a facility that is solely devoted to highly-accessible community functions or integrated with other compatible civic and cultural activities.

6. Verizon Plaza Redevelopment
The existing Verizon Plaza has seen little use in the last several years due to its design, shadows and location. This plan realizes the plaza site as a new development that will contribute to and further the goals of Courthouse Square and help activate 14th Street North and the Square with potential cultural, residential or office uses.

7. County Administration Building
The location of the County administration building adjacent to the promenade and 14th Street North, and on axis with the Judicial Center, provides a prominent location with entrances located on the Square. This administration building will support the symbolic civic building located on the South Square and may be considered for joint redevelopment with the Theater site to the north.

8. Enhanced Pedestrian Connection at North Veitch Street and 14th Street North
An improved connection to Courthouse Plaza from the south at North Veitch Street and 14th Street North will ease and enrich the pedestrian experience in an area with topographical and visual design barriers, along with pedestrian conflicts with access points for parking and loading. This connection will be accessible to all and include elevator access, stairs and/or escalators. The arrival point will access the Veitch Street Terrace, a proposed element in the open space network.

9. Cultural and Civic Facilities
Cultural and civic facilities have the ability enliven and enrich the Courthouse Square experience and create a multi-purpose regional destination. A number of locations within Courthouse Square could accommodate cultural uses ranging from a museum to a performing arts venue. Through the civic engagement process, the community has shared a number of potential uses that can be found in the appendix. These suggestions will inform studies as proposed in Section 4: Implementation Guidance.

10. Sustainability
Sustainable elements are critical to Courthouse Square and the future 21st century civic space. Creative and responsible sustainability solutions should be embraced in every aspect of design and planning for the area and serve as a model for development throughout Arlington.
FIGURE 2.1: COURTHOUSE SQUARE CONCEPT PLAN
Vision

The shared community vision for Courthouse Square balances the viewpoints, priorities and ambitions of a wide spectrum of participants. Input from the entire Arlington community was critical to create a vision suited for the County’s new civic center and premier public space. (Fig. 2.1, 2.2, 2.3, 2.4)

These unified aspirations, which emerged from the community during the civic engagement process, are the foundation for Courthouse Square’s future.

Courthouse Square will be:

- The civic and cultural heart of Arlington.
- A gathering place for Arlingtonians and visitors.
- An opportunity for entertainment and activities.
- A premier address for new development.
- A place that offers a variety of experiences for the visitor, resident, and workers.
- A flexible design that is adaptable to future needs and aspirations.
- Sustainable and environmentally friendly.
- Innovative and technologically savvy.
- Timeless and simple.
- Where the revolution begins.

Figure 2.2: Conceptual birds-eye view looking northwest into Courthouse Square
Figure 2.3: Conceptual view looking east on 15th Street North as a shared street

Figure 2.4: Conceptual view looking southwest into Courthouse Square from the Memorial Grove
Guiding Principles

Guiding principles emerged through a collaborative discussion between the Working Group and County staff. These principles were further refined by the community through the civic engagement process and are intended to provide overarching guidance for the conceptual development of future open space, buildings, circulation, cultural resources, and sustainability elements in the concept plan for Courthouse Square.

The principles listed below served as the basis to guide the design of Courthouse Square in this addendum. Additional reference will be made to the principles during future design work and implementation guidance for Courthouse Square.

1. Establish an identity for the Square: Courthouse Square is for everyone.
2. Create an attractive, accessible, and inclusive public space that accommodates and encourages civic discourse, and County identity.
3. Connect the pedestrian circulation of Courthouse Square to improve public transit access.
4. Encourage the optimal use of streets to achieve an active public realm with safe pedestrian passage.
5. Incorporate sustainability best practices throughout all aspects of the development, with particular attention paid to energy and stormwater management in line with Arlington County’s policies. Identify opportunities for efficiencies from district level energy production.
6. Accommodate public and County parking needs through means that add value to the Courthouse Square area.
7. Preserve significant views both into and out of Courthouse Square.
8. Use existing topography to celebrate the plateau, ease pedestrian movements, and create a cohesive experience of the three-dimensional opportunities of the site.
9. Maximize the opportunity to create active frontages on Courthouse Square and the surrounding area.
10. Build on the existing activities of Courthouse Square to foster 18-hour-a-day use throughout the week.
11. Create opportunities and infrastructure for public entertainment, public discourse, performance, and community gathering.
12. Celebrate Courthouse Square’s rich history by integrating relevant existing historic and historical elements into new design concepts.
FIGURE 2.5: SUSTAINABILITY PLAN

- Recommend Bioinfiltration/Tree Pits
- Integrate Stormwater Management
- Reduce Impervious Surfaces

Integrated Energy Master Plan (IEMP):

- Public Buildings Analyzed in IEMP
- Private Buildings Analyzed in IEMP
1. SUSTAINABILITY

Sustainability Recommendations

Arlington County is nationally recognized for its leadership in advancing sustainability throughout the adopted Community Energy Plan. Courthouse Square is envisioned as a showcase for Arlington’s sustainability practices, from high performing green buildings to innovative energy solutions to transportation infrastructure that promotes biking and walking. Arlington’s sustainability vision is embedded within plans and initiatives across the County, listed in Appendices B and C. Eight elements of sustainability are identified below, and sustainability strategies relating to these elements are called out throughout this document using the corresponding icons. This reinforces the philosophy that sustainability must be embraced in every aspect of design and planning. (Fig. 2.5)

Social Equity - ensure Courthouse Square is a place that can be enjoyed by everyone.

Health and Wellness - support health and wellness with healthy, high-performance buildings and abundant green open space.

Community - designing the Square, open spaces and buildings for people.

Economy - evaluate up-front costs, ongoing maintenance, and any potential long term cost savings to optimize the environmental and social benefits and economics of sustainable projects.

Landscape and Ecology - restore ecological health with native plantings, tree canopy, reduced light pollution, and heat island reduction strategies.

Energy - reduce energy usage and associated emissions using energy efficiency, district energy, and renewables, and by offering alternatives to driving.

Water - reducing energy usage in buildings and managing stormwater in the area.

Materials - select durable materials and salvage and reuse materials where possible.

1.1 Integrated Energy Master Plan (IEMP)

- Use the IEMP to implement the Community Energy Plan’s goals of reducing energy costs, improving energy security and minimizing greenhouse gas emissions (See Appendix B for the full IEMP report). (Fig. 2.6)
- Several district energy scenarios are predicted to reduce costs and greenhouse gas emissions; they will be evaluated in subsequent efforts.
- Identify a potential location in the G-1 level of the parking garage or in a new building mechanical room for central district energy plant.

1.2 Stormwater Management

- Support the goals of the Stormwater Master Plan and showcase innovative stormwater management strategies.
- Increase vegetated areas to reduce impervious cover.
- Feature a central stormwater management feature in the Square. (Fig. 2.7)
- Integrate tree pits and bio-infiltration, except for the open-grown trees in the open space.
- More detailed recommendations are included in the Stormwater Analysis (See Appendix C).
FIGURE 2.8: CIRCULATION PLAN

*Refer to Figure 3.4 for street design details
2. CIRCULATION

Circulation Recommendations

Courthouse Square will serve as a central transportation node with connectivity for pedestrians, bicyclists, Metro and bus riders and drivers. The following recommendations provide guidance for future circulation conditions related to Courthouse Square. Refer to Section 3: Urban Design Guidelines, for additional circulation recommendations. (Fig. 2.8)

2.1 Metro Entrance

Visibility and access to and from the Metro system should be improved. A more prominent and central access into the Court House Metro station should be constructed adjacent to the existing elevator on the Square. An attractive new canopy should be built to prominently identify the location of the station entrance and provide shelter for passengers. The new entrance should consolidate some of the Metro station entry points and enhance the bus boarding and waiting area on the south side of 15th Street North. Access to the station and rail platform should be improved via the replacement of the Clarendon Boulevard elevator with new high-speed elevators.

2.2 15th Street North

The character of 15th Street North should be changed to prioritize transit riders, bicyclists and pedestrians. 15th Street North should be reconstructed between North Veitch Street and North Courthouse Road to be a low-speed street that prioritizes pedestrians and allows for safe sharing of the space amongst the many users. Distinct paving materials (including in the travel lanes), widened sidewalks, ample street trees and curbless paving transitions, except at transit boarding areas, should be used. A prominent pedestrian crossing for the Uhle Promenade should be provided. (Fig. 2.9, 2.10, 2.11)

2.3 North Courthouse Road

North Courthouse Road should be reconfigured to provide bicycle lanes that connect Wilson and Clarendon Boulevard bicycle facilities to the Arlington Boulevard Trail. Pedestrian crossings of Courthouse Road at 15th Street North, 14th Street North, and at a mid-block location between the Square and the Arlington Judicial Center, should be enhanced with prominent markings, signage and curb extensions. On-street parking should be added on the west side of North Courthouse Road.

2.4 14th Street North

The character of 14th Street North should be reconstructed between North Veitch Street and North Courthouse Road to be a low-speed street that prioritizes pedestrians and allows for safe sharing of the space amongst the users of the street. From the Promenade to North Courthouse Road section, 14th Street North should be reconstructed to include a prominent pedestrian crossing for the Promenade with distinctive paving materials (including in the travel lanes), widened sidewalks, ample street trees and curbless paving transitions. (Fig. 2.10, 2.11)
FIGURE 2.8: CIRCULATION PLAN

*Refer to Figure 3.4 for street design details
2.5 Clarendon & Wilson Boulevards

The boulevards should be reconstructed to expand sidewalks and outdoor dining areas, improve bicycle lanes and maintain adequate travel and parking lanes for vehicles. The pedestrian crossing for the Promenade should be enhanced to allow for easier pedestrian crossing. Bus stops should be enhanced by providing longer bus bays that can accommodate additional buses, new shelters, improved information displays and passenger amenities.

2.6 The North Promenade

North Uhle Street should be reconstructed to be a curbless pedestrian promenade with distinctive paving materials, lighting and landscaping. Vehicular access on the Promenade should be restricted to emergency vehicles, official access for events and selected times for servicing of adjacent retail and restaurants. Movable street furniture to help enliven retail elements should be provided. The current taxicab stand should be relocated to Clarendon Boulevard north of the Strayer Block and adjacent to the existing bus stop. (Fig. 2.12)

2.7 The South Promenade

A curbless pedestrian promenade with distinctive paving materials, lighting and landscaping should be constructed. Vehicular access on the promenade should be restricted to emergency vehicles, official access for events and selected times for servicing of adjacent public spaces, retail or restaurants. Prominent pedestrian crossings where the Promenade intersects 15th Street North should be incorporated. (Fig. 2.13, 2.14)

2.8 Transit

Transit stops and bus layover areas on Wilson and Clarendon Boulevards and 15th Street North should be expanded and raised to enable easier bus boarding and alighting. A retail space or transit kiosk should be incorporated into Metro Plaza. The transit kiosk, or other adjacent retail frontage should include transit fare, media and information distribution. These and other strategies will support the County-wide goal set forth in the Community Energy Plan to reduce the amount of carbon produced from transportation. (Fig. 2.15)

2.9 Bicycle Parking

Short and long-term bicycle parking facilities should be included in future plans for the open space, County buildings, and parking garage.

2.10 Pedestrian

Conditions for pedestrian connectivity, safety and accessibility should be improved as part of all street and building projects. All street crossings near the Metro station and Square should be made highly visible and easy to cross by providing improvements such as raised crosswalks, pavement markings and/or distinctive paving materials. All public sidewalks and pedestrian pathways should be made ADA compliant and accessible.

2.11 Courthouse Square Streets

Courthouse Square will be a showcase for Green Streets, featuring rain gardens, vegetated areas to reduce the volume of stormwater and stormwater pollutants that enter local streams and the Chesapeake Bay, and street trees to augment Courthouse Square’s tree canopy. Where appropriate, pervious sidewalks allowing for infiltration and educational signage will be incorporated. These stormwater elements support the Stormwater Master Plan and will be used to meet local and state stormwater and Chesapeake Bay protection requirements.
FIGURE 2.16: UNDERGROUND (GARAGE LEVEL) CIRCULATION PLAN

- Strayer Block
- Optional Exit on to Square
- Exit to Colonial Place
- Exit to Wilson/Clarendon
-Service Program/Entertainment space/Parking

2100 Clarendon Blvd.
Existing Parking

- Theater Site
  Service Program/Entertainment space/Parking

- G-1 Level Parking

- Court Square West
  Service Program/Retail/Parking

Pedestrian Routes
Vehicular Routes
Parking Entry
Alternate Parking Entry
Underground Circulation Recommendations

The following recommendations provide guidance for future circulation conditions as they related to underground conditions in Courthouse Square. In addition to these recommendations, opportunities for stormwater infiltration should be considered in determining the area’s subterranean footprint. See Figure 3.15, for additional parking access recommendations. (Fig. 2.16)

2.12 Parking

A new below-grade parking garage should be designed and built in close coordination with the future open space, access to the nearby County buildings, a potential district energy system, and historic trees. The primary parking garage access points should be located on the east side of the Landmark Block off of North Courthouse Road (primary north entrance) and on the west side of Court Square West off of North Veitch Street (primary south entrance). Pending a follow-up parking study, alternate garage access points should be considered and coordinated with plans for a structure that may be built along 14th Street North and/or the Central Square on North Courthouse Road.

2.13 Metro Entrance

A new entrance to the Metro station at the northwest corner of the Square adjacent to the existing Plaza elevator should be constructed. Below-grade, accessible, pedestrian passage to directly connect the Metro station to the new County parking garage below the Square should be included.

2.14 Underground Vehicular Connections

Below-grade, vehicular connections under 15th Street North that link the Landmark Block parking garage to the County’s parking garage below the Square should be constructed. This connection will provide the primary entrance to the central parking garage to vehicles arriving in the northern portion of the Square. An optional vehicular connection under 14th Street North should be considered as a connection to the County’s parking garage to the Verizon building parking structure to the south. In addition, an optional connection to the parking garage located under 2100 Clarendon Boulevard from the County’s parking garage should be considered during the design phase of the garage.

2.15 Pedestrian Connections

The existing Metrorail station entrance under the Strayer Block should be maintained and enhanced. New passenger information displays for the station entrance and bus waiting area should be incorporated. The existing Metro station pedestrian connections under Wilson Boulevard at Colonial Place should be enhanced. Signage and other features should be added to achieve greater visibility and accessibility.

2.16 North/South Connection

Vehicular and pedestrian circulation through the new County parking garage that parallels the Promenade above and connects to Metro access and the Square should be provided as part of the garage design.

2.17 Theater Site and Court Square West Underground

The underground levels of the theater and Court Square West sites should be considered for future phased parking (or concurrent parking if constructed at the same time as the primary parking garage) and/or additional gross floor area.
FIGURE 2.17: OPEN SPACE PLAN

- Memorial Grove
- Metro Plaza
- Lawn
- South Square
- Veitch Terrace
- Promenade
3. OPEN SPACE

Courthouse Square Open Space Recommendations

Courthouse Square will become the central gathering place and heart of the community for Arlington. The open space strategy for Courthouse Square is to complement existing open spaces in the surrounding area by creating a series of four new public open spaces that will provide a range of opportunities for public gatherings, community events and recreation. Each of these open spaces should be generally at grade with the surrounding public realm without precluding park features which are above or below grade within the 5 open spaces. (Fig. 2.17)

3.1 The Central Square

The central open space of the Courthouse Square study area, or the Central Square, is currently comprised of over 70% asphalt and has one of the lowest percentages of tree canopy coverages along the Rosslyn-Ballston Corridor. The elimination of the current parking lot, by the relocation of the parking to an underground structure, will allow for full redevelopment of the parking lot into Arlington’s central gathering space. (Fig. 2.18)

The Central Square, approximately two acres in size, should be designed to accommodate a variety of programmed and unstructured activities, public events, east/west pedestrian circulation, and gatherings and should be comprised of the following two areas:

3.1a The Memorial Grove

The character of the Memorial Grove should provide for a diverse landscape and pedestrian experience and include garden paths with sitting areas, and a grove of new trees planted around the existing Memorial Trees. Trees planted in this grove should be native species in Arlington and able to thrive in urban areas. (Fig. 2.19)

3.1b The Lawn

This area is envisioned as the “central park” of Courthouse Square and the community. A central open lawn area that extends between the Memorial Grove and the South Square civic building will allow for a central gathering place that can accommodate a range of active and passive uses. The landscape in this area should be designed to provide respite for people from the built urban environment and be resilient enough to accommodate higher intensity uses such as special events and outdoor markets on the adjacent promenade. The plant species used throughout the lawn should be primarily native, and include a biodiversity of trees, shrubs and groundcovers. (Fig. 2.20)

3.2 The South Square

The South Square is in a prominent location that will both visually and physically define the south edge of the civic square and contribute to Courthouse Square’s overall placemaking through both architectural design and the incorporation of appropriate open space solutions. Open space at the front (north side) of the building should be integrated with the North Square so that events and activities can overflow into both spaces. The topography and drainage of Courthouse Square slopes south towards 14th Street North, creating a unique opportunity to incorporate sustainable design and stormwater management into the South Square. A water feature(s) or design element(s) should be incorporated into this area to serve aesthetic and functional uses, while demonstrating innovative stormwater management practices. (Fig. 2.21)
FIGURE 2.17: OPEN SPACE PLAN

Memorial Grove
Lawn
South Square
Promenade
Metro Plaza
Veitch Terrace
3.3 The Promenade

The Promenade is a linear open space that extends from Wilson and Clarendon Boulevards to 14th Street North and connects the streets, buildings and open spaces within Courthouse Square. The promenade is primarily a pedestrian space that excludes vehicular access with an exception for special events, loading or emergencies. It is envisioned to serve as an extension of the open space and provide flexibility for both programmed and unprogrammed activities. (Fig. 2.22, 2.23)

Predominately surfaced with distinctive paving materials, the Promenade should include canopy trees to provide shade and to create a more pedestrian-friendly environment. Adequate space should be provided between trees to accommodate vendor tents for the farmers’ market or other events. Flexible street furnishings will help to encourage more social activity and offer places to sit, people watch, read, or hold meetings. (Fig. 2.24)

3.4 Metro Plaza

Metro Plaza will be an active open space that serves a variety of functions. Located at the terminal vista for Clarendon Boulevard, North Veitch Street and 15th Street North, the Plaza is envisioned to have a focal element or design feature that is a landmark for identifying and attracting people to Courthouse Square. The Plaza design should provide the infrastructure to support a café, information kiosk, and/or public art that will anchor the space and create a visual identity for Courthouse.

The location of the Plaza adjacent to Clarendon Boulevard and 15th Street North creates a central connection point for Metro, buses, bike sharing and access to underground parking. A new Metro station entrance, to be located in the Plaza, should be sited to create a strong sense of arrival in Courthouse Square. The Plaza space, while mostly hardscape (paved), should include flexible seating, trees, landscaping, and consider creative ways to bring natural light to the Metro tunnels.

3.5 Veitch Terrace

The Veitch Terrace is planned as an elevated public terrace above North Veitch Street immediately north of 14th Street North. The Terrace will act as an extension of the Courthouse Plaza and Courthouse Square open spaces and accommodate pedestrian circulation into the Square from the south. The design should take advantage of the topography and incorporate a series of stairs, an elevator, and/or escalators to create a strong physical and visual connection to the Terrace. Landscaping, public art and/or water features should be integrated with the stairs and terraces to encourage more use by daily Metro commuters, and to improve the overall pedestrian experience. (Fig. 2.25)

3.6 Courthouse Square Lighting

Public spaces in Courthouse Square, including streets, sidewalks, and the Square itself, should be attractively and safely lit in such a way as to reduce light pollution and to highlight access and wayfinding. Solar photovoltaic-powered systems should also be installed in visible places, offering an opportunity for public education and engagement.
FIGURE 2.26: BUILDING AND OPEN SPACE CONCEPT DIAGRAM
4. BUILDINGS

Building Use, Height, and Location Recommendations

Building location, use and design recommendations were determined by several factors that include the availability of land, adjacent land uses, land ownership, environmental factors and the relationship of buildings to existing and future open space.

The building arrangement is guided by a principle north-south axis complemented by a secondary east-west axis across the Square. This formal relationship with the central square reinforces the civic nature of Courthouse Square. Major building entrances should reinforce this axial relationship. Building massing and prominent architectural features and facades should also respond to the overall formal dialogue between open space, the street network, and the prominent axes. (Fig. 2.26)

Maximum building height recommendations are based on an analysis of existing building heights, shadow studies, impacts on open space, and minimizing visual impacts as viewed from the National Mall. Overall massing and composition should increase the sense of enclosure within the Courthouse Square open space.

General Courthouse Square Building Guidance

Additional evaluation during the Site Plan Review Process will determine final recommended building use, height, and massing. Minimal height exceptions may be made to accommodate exceptional architectural features. As defined in the Zoning Ordinance, maximum height is measured from average site elevation to the main roof. As permitted by zoning, penthouse structures may rise an additional 23 feet.

Photographs in this section are for illustrative purposes only and do not specify architectural standards for the development sites. Additional architectural and design standards can be found in Section 3: Urban Design Guidelines.

The Arlington County Affordable Housing Master Plan recognizes that Housing Affordability is vital to the social and economic sustainability of our community. The County has sustained a strong commitment to affordable housing and has adopted a set of ambitious housing policy principles and policy goals, including integrating affordable housing into other planning and land use activities.

The County employs various tools to promote the development of affordable housing. It established an Affordable Housing Ordinance in 2005, requiring commercial and residential site plan projects to provide on-site or off-site affordable units or to provide a cash contribution to the Affordable Housing Investment Fund. It would be consistent with the Affordable Housing Master Plan to: 1) Integrate affordable housing goals and policies into County sector plans, economic development strategies, Master Transportation Plan and other County planning efforts; (Objective 3.5.1). 2) Consider affordable housing needs and goals when planning for major capital investment in new or redeveloping existing major community facilities. (Objective 3.5.2). 3) Encourage and incentivize the distribution of affordable housing throughout the County (Objective 1.1.4).

Courthouse Square presents an opportunity to incorporate affordable housing into a mixed-use, mixed-income, premier location in a way that contributes to the vitality and vibrancy of the neighborhood. In particular, given the expectation for a major new county facility in this location, future facility planning should consider, thru the CIP or PFRC process, whether and/or how best to include affordable housing units within the sector. Including affordable housing in residential buildings would ensure that such committed affordable rental units would have a high level of access to transportation options consistent with the Arlington County Affordable Housing Master Plan, the Master Transportation Plan, and transit-oriented development.
FIGURE 2.27: BUILDING USE, HEIGHT, AND LOCATION PLAN

- Proposed Mixed Use
- Proposed Civic Use
- Primary Building Entrances
Courthouse Square Building Descriptions

The following buildings and blocks represent future development sites in Courthouse Square. This section contains building elements and recommendations related to building use, height and special considerations for each of the development sites. Ground floor uses are anticipated to be consistent with the Arlington County Retail Plan. The specific uses listed within this plan are the preferred uses. See Section 3: Urban Design Guidelines for additional recommendations. (Fig. 2.27)

4.1 South Square  4.4 Landmark Block
4.2 Court Square West  4.5 Verizon Plaza
4.3 Theater Site  4.6 Strayer Block

4.1 South Square

4.1.1 Primary Building Use – The primary land use on the block should be a civic use that reinforces the activity on the Square. County, civic, cultural and/or market uses that can be accommodated in a building or structure should be considered for the site.

4.1.2 Height – The principal mass of the building should not exceed a maximum height of 50 feet. Special exceptions may be made for civic architectural features that may exceed this height.

4.1.3 Parking and Loading – Access should be coordinated with development of the parking garage and County administration building.

4.1.4 Massing – Development should be consistent with the massing provisions set forth in the Urban Design Guidelines section of the Plan.

4.1.5 Special Considerations – The building should maintain transparency on the north and south façades adjacent to the Square, and adjacent to 14th Street North respectively. The north façade should allow for connectivity to the Square and link activities in the open space to the activities within the building. The north side of the building should also serve as the main entrance with a location directly on the Square. The west façade of the building should consider a direct connection to the Court Square West site. More precise building placement within the area south of the Judicial Plaza entrance should be determined during building concept design. A green rooftop terrace should be incorporated on the building and serve as a publicly accessible extension of the open space, allowing for additional activation of the Square. (Fig. 2.28, 2.29, 2.30)
**4.2 Court Square West**

4.2.1 Ground Floor Use – (14th Street N. and Promenade levels) Civic and/or cultural uses preferred.

4.2.2 Primary Building Use – The primary land use on the block should be civic or cultural. (Fig. 2.31)

4.2.3 Height – Buildings should not exceed a maximum height of 180 feet.

4.2.4 Parking and Loading – Access should be located on the west side of the block adjacent to North Veitch Street (and underneath Veitch Terrace).

4.2.5 Massing – Development should be consistent with the massing provisions set forth in the Design Guidelines section of this addendum. (Fig. 2.32)

4.2.6 Special Considerations – The main entrance of a County building facing the Square should align with Judicial Plaza. Additional entrances should be provided at North Veitch Street and 14th Street North and the Metro Plaza. The Court Square West (4.2) and Theater Sites (4.3) may be developed either independently or as a unified development. (Fig. 2.33)

**4.3 Theater Site**

4.3.1 Ground Floor Use – Civic and/or all retail uses are preferred within the first floor of development on the north and east façades.

4.3.2 Primary Building Use – The primary land use on the block should be either office, civic, entertainment and/or cultural uses. Underground levels may accommodate additional entertainment uses.

4.3.3 Height – Height on the western portion adjacent to Courthouse Plaza and Veitch Terrace should not exceed a maximum height of 100 feet.

4.3.4 Parking and Loading – Parking for the block should be provided by existing parking located at 2100 Clarendon Boulevard.

4.3.5 Massing – Development should be consistent with the massing provisions set forth in the Design Guidelines section of this addendum.

4.3.6 Special Considerations – The Court Square West and Theater sites may be developed either independently or as a unified development. To reinforce the Courthouse area’s axial relationship to the National Mall, while maintaining a proximate distance to the immediate open space, a green rooftop terrace at approximately 30 feet above the Promenade and Metro Plaza should be incorporated on the east and north sides of the building. This will allow for publicly accessible views to the Square and National Mall. Temporary cultural or retail uses around the existing theater facade should be considered. If the theater site is developed as a unified site with the Court Square West site, the northern entrance should be designed with a prominent civic entrance.
4.4 Landmark Block

4.4.1 Ground Floor Use – Retail sales, food establishments and entertainment establishments are preferred within up to the first two floors of development on the Clarendon Boulevard and Promenade frontages, excluding building access areas. All retail uses and equivalents should be included within up to the first two floors of development on the North Courthouse Road and 15th Street North frontages, excluding loading and building access areas.

4.4.2 Primary Building Use – The primary land use on the block should be residential, including affordable housing, office and/or hotel development.

4.4.3 Height – Buildings shall not exceed a maximum height of 210 feet.

4.4.4 Parking and Loading – Access should be located on the east side of the block adjacent to North Courthouse Road. Additional underground access to the County garage and Strayer Block should be considered.

4.4.5 Massing – Building stepbacks should be provided on the north, south and west sides of the block. Development should be consistent with the massing provisions set forth in Section 3: Urban Design Guidelines. (Fig. 2.34)

4.4.6 Site Considerations – Refer to Section 2.5, Cultural Resources, for building preservation recommendations. Facade preservation for the historic structures on the block should be considered at the time of any site plan application and review.

4.5 Verizon Plaza

4.5.1 Ground Floor Use – (14th Street North and Plaza level) Civic or retail uses and equivalents should be included within up to the first two floors of development on façades facing North Courthouse Road, 14th Street North and the remaining Verizon Plaza.

4.5.2 Primary Building Use – The primary land use on the block should be either residential, including affordable housing, and/or office development. Alternatively a civic or cultural use may be considered for the site.

4.5.3 Height – The building should not exceed a maximum height of 120 feet.

4.5.4 Parking and Loading – Parking and loading locations should be located along North Courthouse Road or on the southern side of the building. Parking should be considered for incorporation into the existing Verizon Building to the south.

4.5.5 Massing – Development should be consistent with the massing provisions set forth in Section 3: Urban Design Guidelines.
FIGURE 2.27: BUILDING USE, HEIGHT, AND LOCATION PLAN
4.5.6 Site Considerations – No density exists on this site (at the time of plan adoption). Ground level frontage should reinforce street edge along 14th Street North across the entire building envelope area as shown. See Section 4: Implementation Guidance, for General Land Use Plan (GLUP) recommended amendments to be considered. (Fig. 2.35)

4.6 Strayer Block

4.6.1 Ground Floor Use – Retail sales, food establishments and entertainment establishments are preferred within up to the first two floors of development on the Clarendon Boulevard and Promenade frontages. All retail uses and equivalents should be included within up to the first two floors of development on the 15th Street North frontage, excluding loading and building access areas.

4.6.2 Primary Building Use – The primary land use on the block should be either residential, including affordable housing, office and/or hotel development.

4.6.3 Height – The building shall not exceed an maximum height of 190 feet.

4.6.4 Parking and Loading – Required parking should be located and supported off site.

4.6.5 Massing – A building stepback should be provided on the east side of the block adjacent to the promenade. Development should be consistent with the massing provisions set forth in Section 3: Urban Design Guidelines.

4.6.6 Site Considerations – Off-site parking will be required to accommodate parking for the site. Underground loading should be considered via the Landmark Block or the County garage. Requirements should be determined either at the time of the development of the central parking structure, or final site plan. (Fig. 2.36)

4.7 High-Performance Buildings

The County encourages developers to build high-performance green buildings to reduce environmental impacts. Buildings in Courthouse Square should be designed and built using sustainable practices, including indoor air quality and thermal comfort, reused or otherwise sustainable materials, minimizing light pollution, energy, and water usage, and green roofs to reduce stormwater impacts and the urban heat island effect. Several green building rating systems offer guidance for creating sustainable buildings.
Figure 2.37: Cultural Resources Plan

Legend:
- Public Art Opportunity
- Significant Views
- Historic Facade
- Historic Tree
- Antique Market Stand
- Farmers’ Market Stand

Map showing locations such as View to Washington Monument, Cultural Resources Plan, and various streets and landmarks.
5. CULTURAL RESOURCES

Cultural Resources Recommendations

Arlington has a rich cultural history. Cultural resources in Courthouse Square contribute to that history and include memorials and memorial trees, historic markers, historic buildings, the farmers’ market and public art. In addition, the 1993 Courthouse Sector Plan recommended the incorporation of a cultural facility, providing an opportunity to foster the arts and accommodate a new cultural center to house public and private events. The following recommendations provide guidance for existing and future cultural resources, cultural facilities, and structures located on the Historic Resources Inventory (HRI) in Courthouse Square. See Section 4, Implementation Guidance, for additional recommendations. (Fig. 2.37)

5.1 Public Art

The integration of public art in Courthouse Square should be considered during the planning phase for the open spaces and during the consideration for the development of public and private buildings. This plan identifies seven major areas for the integration of public art, both permanent and temporary, including performances and educational and sustainable works. (Fig. 2.38, 2.39, 2.40)

5.1.1. The Metro Plaza offers significant terminating views from several surrounding vistas, including Clarendon Boulevard. Public art can enhance these areas as gateways, particularly a new Metro canopy, and help orient visitors.

5.1.2. The pathways and seating nooks along the Memorial Grove should be inspired by the ravelins and bastions of Fort Woodbury and are intended to create new vantages and sense of enclosure within the Square. The pathways along this new edge should be designed to accommodate a variety of public art.

5.1.3. The Lawn will be a great place to relax, play, or wander, and a place to gather for performances, public speaking, or other types of gatherings.

5.1.4. As a major axis for pedestrian circulation, the Promenade should serve as a place for large public art installations, runway type events, an extension for the markets and interactive performances.

5.1.5. The South Square will serve as a key civic space and possible market location. Adjacent areas should serve as outdoor gallery space for temporary installations. The north edge of the civic building may also serve as a stage for events, concerts or plays.

5.1.6. Once the axis of the existing Courthouse Plaza is connected with the Square, it should serve as a corridor for public art.

5.1.7. The new, elevated Veitch Terrace will become a gateway to the Square from the south and west. Public art should be incorporated as a way of enhancing the sense of arrival, while enriching the civic and pedestrian-oriented nature of the Terrace.
5.2 Memorial Trees

It is recommended that these significant trees, which help to tell the history of this area and provide shade, habitat and a canopy, be preserved by limiting above and below grade soil disturbance and by incorporating them into a memorial grove. This area of the Square is the best suited for such a grove, as it is one of the sunniest corners of the Square and a grove in this location will screen views of and from the detention center. In the event of tree loss, the location of replacement memorial trees and their associated historic markers should be considered in the future design of the Square. (Fig. 2.41)

5.3 The Farmers’ Market

The existing farmers’ market should be strengthened and enhanced. The plan allows the option for the market to set up at its current location on 14th Street North, The Promenade or within the open space network of Courthouse Square. The option to construct a multi-use, open air market structure along the southern end of the Square should be considered as a phased option or as a more permanent facility if a civic building is ultimately not sited on the South Square. (Fig. 2.42)

5.4 Historic Preservation

While considering the balance of historic preservation with other valuable County initiatives, economic feasibility analyses, and redevelopment goals, the plan recommends that the two buildings listed on the Historic Resources Inventory be considered for preservation at the time of a final site plan application as described below. However, preservation of these two structures should be subject to follow up engineering studies and historic analysis to determine the feasibility and benefits of preservation.

Should the following buildings not be preserved, prior to redevelopment the developer will be responsible for measured drawings and photographic documentation of historic buildings located on the Landmark Block (including the First Federal Savings & Loan Building, Investment Building, Simmonds Building, Conklyn Building, and 2042-2044 Clarendon Boulevard). Documentation shall be consistent with Historic American Buildings Survey (HABS) standards. All materials will be submitted to the Arlington County Historic Preservation Program.

5.4a The Investment Building and The First Federal Savings and Loan Building

Both the Investment Building and the First Federal Savings and Loan Building are listed on the Historic Resources Inventory (HRI) and represent a shift towards Modern-styled architecture in the mid-twentieth century. The plan recommends façade preservation. Additions and alterations to these buildings should be possible so long as any new infill development above and behind these historic buildings is completed in a sensitive manner. (Fig. 2.43, 2.44)
The plan also recommends the preservation of the original interior terrazzo floor, seal and wall clock from the former bank building.

5.4b Historic Markers

Arlington also has a significant military history. During the Civil War, the Union Army built numerous fortifications called the Arlington Line as part of the greater Defenses of Washington. One such fortification was Fort Woodbury, partially located within the boundaries of Courthouse Square. Two commemorative historic markers memorializing Fort Woodbury and the Arlington Line are located within the study area. The plan recommends the continued recognition of these sites with either new and more informative interpretive signage or the retention of the existing markers. (Fig. 2.45)

The County should seek ways to recognize and celebrate the civic, social, commercial, and military history of Courthouse Square as this area develops. In addition, an archaeological study should be conducted for the area that is now the surface parking lot, as records indicate it has experienced the least amount of land disturbance over the years.

5.5 Views

Views from Courthouse Square east to the National Mall should be preserved and enhanced. This can be achieved by integrating a rooftop terrace on the theater site (see recommendation 4.3.6), which provides a direct axial view to the Washington Monument and Capitol. In addition, the view from existing plazas and streets should remain unobstructed from landscaping and buildings within the Central Square. (Fig. 2.46)

5.6 Cultural Facility

Staff has identified four likely locations, including the Verizon Plaza site, Court Square West, the Theater Site and the South Square, should a cultural facility ultimately be pursued in this area.

In terms of the design, small- and medium-sized facilities should be considered. The facility could be either a freestanding facility or one incorporated into another building. The ground floor of a cultural facility should be open, flexible, multi-purpose and transparent. Whether or not such a facility is constructed in Courthouse and what form it may take will be determined based on future analysis and County Board guidance.
SECTION 3:
Urban Design Guidelines
These urban design guidelines create a framework for creating a consistent character within Courthouse Square. They communicate general objectives relating to the preferred form of the streets, open spaces, buildings and streetscapes. The purpose of the guidelines is to give direction and to inform the response to specific development proposals. They set parameters as a means of creating an active civic hub with opportunities for social and cultural interaction.

This document is separated into the following four sections below; together creating the urban design framework and general guidance for public and private development in Courthouse Square.

Circulation

Building Frontage & Streetscape

Public Spaces

Building Massing & Architecture

Figure 3.1: Urban Design Framework
The circulation of Courthouse Square is composed of five streets, each with its own distinct character and function. Every street varies in nature and detail as they are split by intersections. The diagram below illustrates each section to be addressed:

**FIGURE 3.2: STREETS DIAGRAM**

1A Wilson/Clarendon Blvds. - West
1B Wilson/Clarendon Blvds. - East
2A 15th Street N. - West
2B 15th Street N. - East
3A 14th Street N. - West
3B 14th Street N. - East
4A The Promenade - North
4B The Promenade - South
5A N. Courthouse Rd. - North
5B N. Courthouse Rd. - South
Transit and bike access will work together to create strong accessibility by providing a variety of interconnected circulation modes to and from the new Courthouse Square. The diagram below maps out the locations of each mode:

**FIGURE 3.3: TRANSIT & BIKE LANES DIAGRAM**

Figure 3.4 includes a recommended range of dimensions for streetscape and roadway design elements. The table should be used as a guide to help shape the future development of streets and sidewalks in the Courthouse study area at the time of future design and development decisions.

![Courthouse Square Streetscape and Roadway Element Dimensions](image)

**FIGURE 3.4: STREETSCAPE & ROADWAY ELEMENT DIMENSIONS**
STREET SECTIONS

1A Wilson & Clarendon Boulevards

These one-way streets are the main transit, vehicular and bike arteries through Arlington’s Rosslyn-Ballston Corridor and provide the largest volume of non-pedestrian traffic into the area. While having this vehicular access and maintaining the thoroughfare function of these two streets is critical, their current configuration between N. Veitch Street and N. Courthouse Road is not conducive to safe pedestrian activity and a vibrant public realm. In order for the Courthouse Square area to fully realize its own identity, it must create a pedestrian presence along this main arterial that allows for an engaging, active, multi-modal street that lends itself to both vehicular/bike circulation, as well as pedestrian activity by providing sidewalks that accommodate commercial, retail and social gathering opportunities.

FIGURE 3.5: SECTION LOOKING EAST AND PLAN

Notes:
1. Refer to Figure 3.4 for dimensions and notes.
2. Refer to Arlington County Streetscape Standards.
**Wilson & Clarendon Boulevards**

**FIGURE 3.6: SECTION LOOKING EAST AND PLAN**

Notes:
1. Refer to Figure 3.4 for dimensions and notes.
2. Refer to Arlington County Streetscape Standards.
15th Street North currently serves as a minor thru-traffic street, and acts as an access point to the County parking lot (the future site of the largest section of the new Courthouse Square). This section of 15th Street North is serviced by two transit routes that use the street as a loop-around and for bus parking during shift changes. Presently, 15th Street North acts as a barrier to the lively activity on Wilson and Clarendon Boulevards and the future open space in Courthouse Square. The new 15th Street North will be a curbless (aside from transit boarding areas), shared street with continuous sidewalks that will allow the existing transit to connect with a new transit station, while having a built-in ability to allow occasional closing to private and commercial vehicular traffic as needed. The street will link the northern Strayer and Landmark blocks to the Square with pedestrian use as a priority.

**FIGURE 3.7 SECTION LOOKING EAST AND PLAN**

Note:
Refer to Figure 3.4 for dimensions and notes.
FIGURE 3.8: SECTION LOOKING EAST AND PLAN

Note:
Refer to Figure 3.4 for dimensions and notes.
14th Street North currently serves as a minor thru-traffic street, connecting N. Courthouse Road to N. Barton Road and residential neighborhoods. The angled surface parking will be removed from the street and the sidewalks widened to favor pedestrians. This section will receive a textured pavement similar to the adjacent Square and will become a curbless, shared street. The western section of the street will also have widened sidewalks and receive the same pavement material as that which runs along the new Square. The street itself will remain asphalt.

**FIGURE 3.9: SECTION LOOKING WEST AND PLAN**

*Note: Refer to Figure 3.4 for dimensions and notes.*
Note:
Refer to Figure 3.4 for dimensions and notes.

FIGURE 3.10: SECTION LOOKING WEST AND PLAN
The Promenade - North

North Uhle Street is currently a one-way service route connecting Wilson and Clarendon Boulevards to 15th Street North. The street currently hosts a taxi stand outside the Metro entry/exit and provides angular, public parking and several car sharing spaces. The new pedestrian-only promenade will serve as a major gateway into Courthouse Square from Wilson and Clarendon Boulevards, particularly with the redevelopment of the Landmark and Strayer blocks. The entirety of the pedestrian-only promenade is to be defined by a patterned paver material, distinct from the remainder of the Square.

Note:
Refer to Figure 3.4 for dimensions and notes.
FIGURE 3.12: SECTION LOOKING NORTH AND PLAN

Note:
Refer to Figure 3.4 for dimensions and notes.
North Courthouse Road

Serving as the main link to Arlington Boulevard (US 50) into Courthouse Square from the south, North Courthouse Road runs between the east side of the Square and Judicial Center. The street configuration will be adjusted to better serve bicycle traffic, while maintaining through traffic connectivity. Improvements to this street include larger, easily identifiable crosswalks with a material connection to the Square, as well as material and dimensional adjustments to the parking, bike lanes, and the sidewalk along the edge of the Square. The parking and bike lanes are to receive a pervious paver material with a texture and color distinction that allows for ease of identification and to capture and prevent excessive stormwater runoff.

Note:
Refer to Figure 3.4 for dimensions and notes.

FIGURE 3.13: SECTION LOOKING NORTH AND PLAN
FIGURE 3.14: SECTION LOOKING NORTH AND PLAN

Note:
Refer to Figure 3.4 for dimensions and notes.
New building street frontage design in Courthouse Square will work with the adjacent streetscape to create a safe, vibrant, and active environment. These guidelines are to be applied to the faces of the building that frame the Square, create prominent, active entries, and play a large role in the creation of its character. The diagram below identifies the location of the four facade types per each planned lot of development, as well as identifying the general location of the parking and loading access points. Deviations from these guidelines are anticipated, where necessary, to accommodate the preservation of historic resources. Where there is not specific design guidance about the interior or exterior of the space for various frontages, refer to the Arlington County Retail Plan.

FIGURE 3.15: FRONTAGE TYPE LOCATOR MAP
Frontage Type 1

Frontage Type 1 will support an active streetscape in and around Courthouse Square by creating visual connection between the adjacent outdoor sidewalk, street and commercial activity inside the building. The streetscape relates to the frontage by encouraging the indoor activity to spill out onto the frontage zone of the sidewalk. This gives pedestrians a zone in which to gather while still allowing a clear zone of safe passage for pedestrians en route, buffered from the traffic on the adjacent street by a tree and furniture zone.

FIGURE 3.16: FRONTAGE TYPE 1 DIAGRAM

1. Minimum Clear Sidewalk Width Along Face of Building = 8'
2. Minimum Overall Sidewalk Width to Outside Edge of Curb = 17'
3. Ground Floor Fenestration:
   Minimum of 60% Unobstructed Fenestration Between 2' and 10' Above Sidewalk
4. Second Floor Fenestration:
   Minimum of 50% Unobstructed Fenestration Between Finished Floor and Finished Ceiling
5. Minimum Interior Clear Height of Ground Floor = 15'
6. Maximum Distance Between Entrances = 50'
7. Street Tree Spacing = 25’-30’ on center
8. Minimum Tree Planter Width = 5'
9. Minimum Tree Planter Depth = 4'
10. Minimum Depth of Required Awning or Marquee Above Shopfronts = 4’ Maximum = 7’
11. N/A
12. N/A
Frontage Type 2

Frontage Type 2 will support a variety of uses such as smaller retail, or any other use that encourages ground floor activity along the sidewalk. The streetscape relates to the frontage by allowing for the indoor activity to spill out onto the frontage zone of the sidewalk, while still allowing a clear zone of safe passage for pedestrians, buffered from the traffic on the adjacent street by a tree and furniture zone.

3.17: FRONTAGE TYPE 2 DIAGRAM

1. Minimum Clear Sidewalk Width Along Face of Building = 8′
2. Minimum Overall Sidewalk Width to Outside Edge of Curb = 14′
   Ground Floor Fenestration:
3. Minimum of 60% Unobstructed Fenestration Between 2′ and 10′ Above Sidewalk
4. Minimum Fenestration Between Finished Floor and Finished Ceiling
5. Minimum Interior Clear Height of Ground Floor = 15′
6. Maximum Distance Between Entrances = 70′
7. Street Tree Spacing = 20′-30′ on center
   Minimum Tree Planter Width = 6′
   Minimum Tree Planter Depth = 4′
8. Minimum Depth of Optional Awning or Marquee Above Shopfronts = 4′ Maximum = 7′
9. N/A
10. N/A
11. N/A
12. N/A
Frontage Type 3

The north section of the promenade serves as the main gateway from Wilson and Clarendon Boulevard into Courthouse Square. The frontages reinforce a sense of arrival, utilizing visibility and transparency, while the promenade streetscape should allow for ample outdoor seating as well as outdoor vendor stands, performers, etc. with clear passage for pedestrians enroute.

3.18: FRONTAGE TYPE 3 DIAGRAM

1. Minimum Clear Sidewalk Width Along Face of Building = 6’
2. N/A
3. Ground Floor Fenestration:
   Minimum of 70% Unobstructed Fenestration Between 2’ and 10’ Above Sidewalk
4. Second Floor Fenestration:
   Minimum of 50% Unobstructed Fenestration Between Finished Floor and Finished Ceiling
5. Minimum Interior Clear Height of Ground Floor = 15’
6. Maximum Distance Between Entrances = 50’
7. Street Tree Spacing = 20’-25’ on center
8. Use a suspended pavement system (or structural cells) below the pavement to provide more soil volume for trees
9. N/A
10. Outdoor Dining Zone
11. Minimum Clear Zone for Service and Emergency Vehicles = 20’
12. N/A
Frontage Type 4

Frontage Type 4 is intended for areas of the building that house service functions such as parking and loading entry. This frontage also serves to mitigate steep grade changes that do not allow for level entry, particularly in the case of the Verizon Plaza block. These frontages will be primarily opaque, requiring clearance along the streetscape for vehicle circulation, loading carts, or other service functions.

### 3.19: FRONTAGE TYPE 4 DIAGRAM

1. Minimum Clear Sidewalk Width Along Face of Building = 8'
2. N/A
3. Ground Floor Fenestration: Minimum of 20% Unobstructed Fenestration Between 2' and 12' Above Sidewalk
4. Second Floor Fenestration: Minimum of 50% Unobstructed Fenestration Between Finished Floor and Finished Ceiling
5. N/A
6. N/A
7. N/A
8. Minimum Tree Planter Width = 6' Minimum Tree Planter Depth = 4'
9. N/A
10. N/A
11. N/A
12. Maximum Width of Parking/Service Entrance Openings = 11'
Courthouse Square is bounded by five existing buildings; the current County facilities at 2100 Clarendon, Court Square East, The Judicial Center, The Detention Center, and 1515 N. Courthouse Road. New Development at Courthouse Square will occur on the parcels shown below, and should adhere to the indicated heights and stepbacks.

Where a maximum height is indicated, it is not intended to include penthouses, elevator overruns, and other rooftop appurtenances. Where heights are shown at stepbacks, this is intended to be approximate.
Public space design in Courthouse Square is envisioned to create a welcoming and integrated network of areas that connect residents, workers, and visitors to a unique experience and series of amenities for the community. The public space section provides general guidance and precedents for the future development of the open space network. Future open space design initiatives, as recommended in Section 4: Implementation Guidance, will draw upon the information in this section, as well as the appendix, to inform the design of the public space in Courthouse Square.

**FIGURE 3.21: PUBLIC SPACES DIAGRAM**

1. The Promenade
2. The Square
3. Metro Plaza
4. Veitch Terrace
Public Space 1: The Promenade- North

Figure 3.22: Example of a tree-lined promenade with retail and restaurants

Figure 3.23: Example of a promenade along a square
Public Space 1: The Promenade - South

Figure 3.24: Example of a multi-purpose civic park spanning a freeway with promenade flanking one side (see below)

Figure 3.25: Groundlevel example of a multi-purpose civic park promenade with temporary structures
Public Space 2: The Square

Figure 3.26: Example of activity on a lawn and adjoining square

Figure 3.27: Example of flexible gathering space, including hardscape and green elements
Public Space 3: Metro Plaza

Figure 3.28: Example of a central kiosk and transit access

Figure 3.29: Example of a promenade and seating and with a tree canopy
Public Space 4: Veitch Terrace

Figure 3.30: Example of flexible seating and urban plaza design

Figure 3.31: Example of an elevated plaza, integrated planters and seating, ceremonial stairs and service entry below
SECTION 4: Implementation Guidance
The intent of this section is to identify actions that will need to be undertaken to implement the plan. The implementation matrix also identifies recommendations that may have an impact on current and future County budgets.

For actions involving physical improvements or other projects requiring funds or other resources to achieve, an indication has been provided as to whether such action is better advanced through the mechanism of a special exception site plan, the County’s Capital Improvement Plan (CIP), or both. While the Sector Plan Addendum sets forth a long range vision and associated recommendations for the future of Courthouse Square, the CIP is a more near-term planning guide for how County resources may best be directed at achieving capital projects over the next decade. The identification of the CIP mechanism as a means of advancing a certain action in this matrix does not imply special priority status for this project, and the timing of potential funding of such project would need to be considered in the full context of County projects and priorities for any given CIP cycle. In all cases, opportunities to implement action items with site plan projects or related CIP projects will be explored and utilized as appropriate. It is important to note that while the County Manager is not recommending these requests at this time, the requests may be part of future budget cycles for County Board consideration. Future consideration of the recommendations in this section will be further refined and reviewed pending approval of the plan.

The implementation recommendations in this section address the action, timing, mechanism by which the action may be implemented, and possible funding sources. Implementation actions are organized into the following areas:

1. General
2. Sustainability
3. Circulation
4. Open Space
5. Buildings
6. Cultural Resources

Timing:
Short Term, 1 – 3 years (ST)
Medium Term, 4 – 9 years (MT)
Long Term, 10 years or longer (LT)

Implementing Agencies:
AED – Arlington Economic Development
CPHD – Community Planning, Housing and Development
DES – Department of Environmental Services
DPR - Department of Parks and Recreation
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Implementation Actions</th>
<th>Timing</th>
<th>Implementing Agency</th>
<th>Mechanism</th>
<th>Funding Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adopt the 2015 Courthouse Sector Plan Addendum.</td>
<td>ST</td>
<td>CPHD</td>
<td>County Board Action</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>Develop land use tools to implement the plan.</td>
<td>ST</td>
<td>CPHD</td>
<td>County Board Action</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td><strong>Sustainability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Consider the recommendations of the Addendum stormwater analysis and ensure that any</td>
<td>With</td>
<td>DES</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>redevelopment in the Courthouse Square area meets or exceeds the stormwater management</td>
<td>Redevelopment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>requirements in place at the time of future development.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>Continue to investigate the feasibility of district energy, determine the appropriate</td>
<td>ST/MT</td>
<td>DES, CPHD</td>
<td>CIP</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td>system design, identify locations for a district energy central plant, and implement as</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>appropriate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Amend the Master Transportation Plan (MTP) to define a shared street.</td>
<td>ST</td>
<td>DES</td>
<td>County Board Action</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Change the character of 15th Street North to prioritize pedestrians, bicycles and transit</td>
<td>With</td>
<td>DES</td>
<td>Special Exception</td>
<td>Local, Site Plan</td>
</tr>
<tr>
<td></td>
<td>users.</td>
<td>Redevelopment</td>
<td></td>
<td></td>
<td>Contributions</td>
</tr>
<tr>
<td>7</td>
<td>Reconfigure North Courthouse Road to accommodate the recommendations of the plan.</td>
<td>With</td>
<td>DES</td>
<td>Special Exception</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Redevelopment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Change the character of 14th Street North as a low-speed street that prioritizes</td>
<td>With</td>
<td>DES</td>
<td>Special Exception</td>
<td>Local, Site Plan</td>
</tr>
<tr>
<td></td>
<td>pedestrians.</td>
<td>Redevelopment</td>
<td></td>
<td></td>
<td>Contributions</td>
</tr>
<tr>
<td>9</td>
<td>Reconfigure Clarendon and Wilson Boulevards to expand sidewalks and improve bicycle</td>
<td>With</td>
<td>DES</td>
<td>Special Exception</td>
<td>Local, Site Plan</td>
</tr>
<tr>
<td></td>
<td>lanes and parking, Enhance the pedestrian crossing at North Uhle Street.</td>
<td>Redevelopment</td>
<td></td>
<td></td>
<td>Contributions</td>
</tr>
<tr>
<td>10</td>
<td>Reconfigure North Uhle Street between Clarendon Boulevard and 15th Street North as a</td>
<td>ST/MT</td>
<td>DES, CPHD, DPR</td>
<td>Special Exception</td>
<td>Local, Developer</td>
</tr>
<tr>
<td></td>
<td>curbless pedestrian promenade with restricted vehicle access.</td>
<td></td>
<td></td>
<td></td>
<td>Contributions</td>
</tr>
<tr>
<td>11</td>
<td>Construct a new escalator access and canopy near the existing elevator from the</td>
<td>LT</td>
<td>DES</td>
<td>CIP</td>
<td>Local, State, Site</td>
</tr>
<tr>
<td></td>
<td>underground Metro tunnel to the Square.</td>
<td></td>
<td></td>
<td></td>
<td>Plan Contributions</td>
</tr>
</tbody>
</table>

Figure 4.1: implementation Matrix
<table>
<thead>
<tr>
<th>Item</th>
<th>Implementation Actions</th>
<th>Timing</th>
<th>Implementing Agency</th>
<th>Mechanism</th>
<th>Funding Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Undertake a parking analysis to determine future public and private parking demand, entrance locations and phasing for a parking garage under the Square. Include a geotechnical survey.</td>
<td>ST/MT</td>
<td>DES, CPHD, AED</td>
<td>CIP</td>
<td>Local</td>
</tr>
<tr>
<td>13</td>
<td>Design and construct North Uhle Street as a curbless pedestrian promenade with restricted vehicle access between 15th and 14th Streets North. Consider with the open space planning for Courthouse Square.</td>
<td>LT</td>
<td>DES, DPR, CPHD</td>
<td>CIP</td>
<td>Local, Site Plan Contributions</td>
</tr>
<tr>
<td>14</td>
<td>The open space recommendations in this addendum should serve as the basis for a comprehensive conceptual open space design process to guide the urban design of Courthouse Square. A follow-up master plan should include the key open spaces within Courthouse Square (the Square, Promenade, Metro Plaza, and Veitch Terrace) and further refine the recommendations reflected in addendum and serve as the basis for the final design and construction documentation for all open spaces, including those adjacent to private development.</td>
<td>ST/MT</td>
<td>DPR, CPHD</td>
<td>CIP</td>
<td>Local</td>
</tr>
<tr>
<td>15</td>
<td>Ensure development is consistent with the goals, objectives and policies in the Arlington County Affordable Housing Master plan (Adopted XX, 2015).</td>
<td>With</td>
<td>CPHD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Develop a comprehensive phasing plan for the redevelopment of Courthouse Square, including County facilities, other buildings, open spaces and streets.</td>
<td>ST/MT</td>
<td>CPHD, DPR, AED, DES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Consider a study of certain context area sites, including the Four Courts and Colonial Place blocks, Courthouse Plaza and the Judicial Center Plaza.</td>
<td>ST/MT</td>
<td>CPHD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Conduct a real estate analysis to determine future County building requirements, considering the potential need to accommodate cultural resources.</td>
<td>ST/MT</td>
<td>DES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Conduct a cultural resources needs analysis to determine the appropriateness of whether there is a need and desire to locate a cultural facility in Courthouse Square and, if so, the type of facility that it should be.</td>
<td>ST/MT</td>
<td>AED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.2: Implementation Matrix
Appendices:
APPENDIX A

PUBLIC OUTREACH FOR COURTHOUSE SQUARE

The following documents provide the background for the Courthouse Square charge from the County Board, as well as community outreach activities conducted throughout the Envision Courthouse Square process. They serve as the basis for the recommendations in this document and will carry forward input gathered from the community as future development and planning activities occur within Courthouse Square.

Courthouse Square Planning and Urban Design Study
Working Group Charge
Revised: October 22, 2013

A new Working Group is established and charged with collaborating with County staff to provide advice to the County Manager and County Board on the proposed Courthouse Square Planning and Urban Design Study, which will lead to the development of a Conceptual Plan and other policy recommendations that will provide a refined vision for the future of Arlington’s government center, and serve as the basis for an addendum to the Courthouse Sector Plan.

Study Area Description

The study area contains a mixture of office and retail buildings, County government buildings, public streets, and public and private open spaces. The built environment of the study area is located adjacent to and frames a central surface parking lot. The area within the lines on the accompanying map defines the study area. Main components of the study area include the “Landmark Block,” the County-owned Court Square West building, the AMC Theatre property, and the plazas in front of Courthouse Plaza and the Verizon building, as well as the roads directly surrounding the surface parking lot and the Landmark Block. The study area is generally bordered by North Courthouse Road to the east, Wilson Boulevard to the north, the eastern portion of Courthouse Plaza to the west, and 14th Street North to the south. The study may consider the built environment characteristics of adjacent properties as they relate to the study area, but it is not charged to make recommendations for these properties.

Scope of Policy Mission:
It is the County Board’s intention that the Courthouse Sector will remain the County’s “government center” (to include County government offices) and that the study area will be designed to contain significant public/open space. The recommendations of the Study should accommodate and promote these goals. The Working Group is not expected to make specific recommendations on capital costs or operational or financial decisions of the County Government.

The Working Group will take into consideration the Courthouse Sector Plan, including its 1993 addendum, as well as information prepared by County staff including the Courthouse Square Briefing Book and the plans, policies and analyses the Briefing Book makes reference to. Where appropriate, the Working Group may recommend changes and/or updates to any of these plans or policies. The working group may also consider the findings and conclusions of supporting studies that may be produced by County staff that will address County employment and space needs, parking demand, and the feasibility and demand for potential cultural facilities.
The Working Group will address the following elements as part of this study:

- **Open Space** - the location and use of a public open space that that will be an integral component of the County’s government center.

- **Building use** – the uses of public and private buildings in the study area, including the types of public resources (if any) in addition to government offices that would be best fit to the site.

- **Building Location and Design** - the location, height, and density of buildings in the study area. The study will incorporate the consideration of a future County office building that includes 300-400,000 sq. ft. and an appropriate floor plate.

- **Circulation and Parking** - the overall pedestrian, bicycle and vehicular circulation network, as well as connections to the surrounding neighborhood. Objectives to guide the future development of a detailed parking program will be defined taking into consideration existing parking supply and demand.

- **Cultural Resources** - the treatment of cultural resources, including historic buildings, the “Memorial” and “Mother’s” trees, public art, and a potential cultural facility.

- **Sustainability** – the incorporation of sustainability including building and landscape technologies, district energy, and an integrated energy master plan.

**Charge:** The Courthouse Square Planning and Urban Design Study Working Group is a working group established by the County Board to serve as a forum for discussion and a source of advice regarding the staff-led Study. The Working Group will actively seek out the perspectives of various appointed advisory boards and commissions, nearby civic and homeowner associations, Courthouse area business and landowners and other organizations and individuals with relevant knowledge, expertise or experience.

The Working Group is charged with commenting on a draft Conceptual Plan, providing additional policy recommendations and ensuring the proposal is consistent with County policies. The Working Group’s comments and recommendations are not intended to substitute for the advice provided by the organizations from which Working Group members are drawn, but rather to identify and explore the cross-cutting questions and priorities (including areas of consensus or disagreement) that will best inform the County staff and frame a larger community discussion. The Working Group will be responsible for:

- Working collaboratively with staff as they develop a draft conceptual County plan;
- Providing guidance and input on broad and localized perspectives of the proposed study, vision, recommendations, and implementation tools;
- Identifying areas of consensus and disagreement among constituency groups.
- Providing strategic guidance on ways for County staff to obtain broad community input and resolve matters of community concern during the study;
- Reviewing draft and final planning documents and plans developed by staff/consultant team;
• Acting as liaisons to assist the County staff in keeping the public and affected groups informed of ongoing discussions and to seek their feedback to share with the full working group.

**Time Commitment:** The work of this group will commence in November 2013 and is expected to end in the summer of 2014, when the County Manager’s recommendations will be considered by the County Board. It is anticipated that the Working Group will typically meet once a month, but it is possible that other meeting times may occur to meet the targeted deadlines (to be determined by the staff Project Manager in consultation with the Working Group Chair).

**Composition:** The Working Group shall consist of one representative from each of the following groups:

- At-large member of the community;
- Clarendon-Courthouse Civic Association;
- Radnor/Ft. Myer Heights Civic Association;
- Lyon Village Civic Association;
- Colonial Village Civic Association;
- Planning Commission;
- Transportation Commission;
- Park and Recreation Commission;
- Housing Commission;
- Arlington Commission for the Arts;
- Environment and Energy Conservation Commission; and
- At-large member of the business community;

The County Board will select the Chair of the Working Group. The Chair of the Working Group will be responsible for convening and facilitating meetings, including proposing to the Working Group an agenda for each meeting, which will be prepared in consultation with staff. The Chair will also work closely with the staff project manager to ensure that the planning process is completed within the timeline that has been specified.

**Staff Coordination and County Board Liaison:** The Working Group will work with the County staff that is assigned by the County Manager. The County Board will appoint one of its members to serve as a liaison to this effort. Staff will regularly update the CB liaison on progress, discuss process issues, and keep the liaison informed on direction and policy issues. Periodically, meetings will be scheduled between the Working Group Chair, the Working Group Liaison and lead staff to discuss any issues pertaining to this effort.

**Resources:** In addition to preparing materials for review and discussion with the Working Group, staff will use email and the County’s website to disseminate information to the Working Group and the broader community. Additional communication methods may be used.

**Meetings:** Staff will work with the Working Group Chair and the Working Group membership to establish a meeting schedule. All meetings of the Working Group will comply with open meeting requirements.
Survey Results - Highlights

April 2014

**About the Survey**

Envision Courthouse Square is a 10-month community planning effort to reimagine Arlington County’s civic center and create a great public destination. To learn more about the project’s background, process and opportunities for involvement, visit sites.arlingtonva.us/courthouse.

**Participants shared their ideas:**

- **What is your favorite Courthouse story, memory or experience?**
  - My ex-boyfriend breaking up with me. Then years later getting married to my husband at the courthouse and lawyer’s office across the street.

- **What do you feel is worth preserving in Courthouse Square?**
  - Nothing. It’s a parking lot!

- **Incorporating farmers market into design; outdoors w/retail. A destination and a neighborhood.**

- **What is your favorite Courthouse Square?**
  - Relaxing outdoors getting away from Clarendon.

- **Everyone, it should feel like the town square!**

- **Courthouse Square is for _______?**
  - Social interaction and community engagement
  - Civic engagement: Voting, public meetings, demonstrations, entrepreneurs
  - A neighborhood: Meeting up with friends, having a picnic

- **Should public gatherings, such as political events and/or celebrations, be encouraged in Courthouse Square?**
  - First Amendment and ‘the Arlington way’

- **Arlington needs a town center. An identity. A place people can say ‘I’ll meet you on the town square.’ Arlington lacks that now — and I think that harms our identity and cohesiveness.**

- **I think if it’s truly a striking beacon for Arlington, its physical location will make it a beacon for the region as well. Clarendon shouldn’t have all the fun!**

- **It would provide a “center” or “front door” for our community, which currently feels scattered.**

- **Courthouse Square should be a beacon for?**
  - Arlington 79%
  - the neighborhood 43%
  - the DC Metro Area 25%
  - the region 17%
  - the DC Metro Area 15%
  - the neighborhood 15%
  - none of the above 7%

- **Top ranked visual preferences:**
  - Courthouse Square should be a beacon for:
    - Courthouse Square is the heart of public and civic discourse in Arlington. (Highest Priority)
    - Improved pedestrian and bicycle infrastructure is essential. (Second highest Priority)
    - Courthouse Square is a leader in environmental and green building sustainability. (Third Highest Priority)

- **Where do survey participants live?**
  - Courthouse 22%
  - Clarendon 11%
  - Rosslyn 10%
  - Colonial Village 8%
  - Penrose 3%
  - Columbia Pike 1%
  - Crystal City 1%
  - Westover 1%
  - Ashton Heights 1%
  - Va Sq. 1%
  - Bluemont 1%
  - Ballston 4%
  - Lyon Park 4%
  - Lyon Village 2%
  - Colonial Village 2%

- **How do survey participants travel to Courthouse Square?**
  - participants who work in Courthouse 25%
Civic Engagement Summary – June 3, 2014

This document summarizes input and feedback received during the civic engagement and outreach phase of the Envision Courthouse Square planning process (currently through Workshop #2 and Working Group Meeting #4). Envision Courthouse Square is a community planning effort to reimagine Arlington’s civic center and create a great public destination. This summary outlines civic engagement events to-date, including key stakeholder input received for each of the five key areas of the study (open space, circulation, buildings, energy and environment, and cultural resources). This summary also provides the Working Group charge and guiding principles for each key area of the study. Conceptual urban design plans for Courthouse Square, based on the input received through civic engagement activities, will be shared and evaluated with the community at the final community workshop in July.

Civic Engagement Opportunities

Working Group Meetings

The Courthouse Square Working Group represents various community and civic stakeholder groups. As community representatives, the Working Group was organized and tasked by the County Board to collaborate with County staff and provide valuable feedback and insights for the key study areas of Courthouse Square. To date, there have been six meetings of the Working Group.

- Working Group Meeting #1: December 18, 2013
- Working Group Meeting #2: January 22, 2014
- Working Group Meeting #3: February 8, 2014
- Working Group Meeting #4: March 19, 2014
- Working Group Meeting #5: April 16, 2014
- Working Group Meeting #6: May 21, 2014

Community Workshops

The Courthouse Square civic engagement process also includes three community workshops intended to directly engage the Arlington Community and gather important feedback. County staff and consultants have led two community workshops at Key Elementary School and gathered input from hundreds of residents. A third and final workshop is scheduled to review final concepts for Courthouse Square with community members.

- Community Workshop #1: March 26, 2014
- Community Workshop #2: April 23, 2014
- Community Workshop #3: July 2014 (TBD)

Online Outreach

An ongoing online engagement effort has been used to complement and parallel in-person Working Group meetings and community workshop events. An up-to-date project website and email initiative is used to convey background information, meeting schedules, meeting material and notes, and elicit citizen comments. A parallel survey to the first community workshop was developed and deployed to gather additional community input.

- Survey #1: April 2, 2014 to April 14, 2014 (240 respondents)
- Survey #2: Summer 2014 (TBD)
<table>
<thead>
<tr>
<th>MEETING</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OE1</strong>: OUTREACH EVENT 1</td>
<td></td>
</tr>
<tr>
<td>OE1</td>
<td>Consider dedicating 15th Street to pedestrian, bus, bicycle/pedestrian, improved open space extension</td>
</tr>
<tr>
<td>OE1</td>
<td>Keep 15th Street open/road diet</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve visibility and safety on 15th Street, maintain pedestrian safety</td>
</tr>
<tr>
<td>OE1</td>
<td>Bury Uhle Street</td>
</tr>
<tr>
<td>OE1</td>
<td>Easy accessible underground parking</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve ground-level entry exceeding, open entry to square, daylighting</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve wayfinding for parking, meeting and event</td>
</tr>
<tr>
<td>OE2</td>
<td>Improve wayfinding for transit</td>
</tr>
<tr>
<td>OE1</td>
<td>Extend Uhle and create a promenade with active frontage, possibly partially covered</td>
</tr>
<tr>
<td>OE1</td>
<td>Preserve Courthouse usage as multi-modal hub</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve pedestrian wayfinding</td>
</tr>
<tr>
<td>OE2</td>
<td>Improve bike priority on Wilson/Clarendon</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve underground parking access, open entry to square, daylighting</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve pedestrian connections</td>
</tr>
<tr>
<td>OE1</td>
<td>Maintain/ improve number of available public parking spaces and access</td>
</tr>
<tr>
<td>OE1</td>
<td>Improve general connectivity, not more traffic</td>
</tr>
<tr>
<td>OE1</td>
<td>Pedestrian priority square</td>
</tr>
<tr>
<td>OE1</td>
<td>Pedestrian priority square</td>
</tr>
<tr>
<td>OE1</td>
<td>Physical/Visual connection to square from Wilson/Clarendon</td>
</tr>
<tr>
<td>OE1</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
</tr>
<tr>
<td>OE1</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
</tr>
<tr>
<td>OE2</td>
<td>Add bike and commuter stations</td>
</tr>
<tr>
<td>OE1</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
</tr>
<tr>
<td>OE1</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
</tr>
<tr>
<td>OE2</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
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<tr>
<td>OE2</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
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<tr>
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<td>OE2</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
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<tr>
<td>OE2</td>
<td>Pedestrian/ped bike lane/footpath, pedestrian bridge</td>
</tr>
<tr>
<td>ID</td>
<td>Interdepartmental Interviews</td>
</tr>
<tr>
<td>OS</td>
<td>Online Survey Summary</td>
</tr>
</tbody>
</table>

* NO RELEVANT COMMENTS
### BUILDINGS AND DESIGN

<table>
<thead>
<tr>
<th>COMMENT</th>
<th>MEETINGS</th>
<th>COMMENT FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activation of square through development very important</td>
<td>OE1</td>
<td>123456789</td>
</tr>
<tr>
<td>Cultural center on Verizon Plaza</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Buildings to have architectural quality</td>
<td>OE1, OE2, OE3, OE4</td>
<td>123456789</td>
</tr>
<tr>
<td>Park to dialogue to enhance open space on all sides</td>
<td>OE1, OE2, OE3, OE4</td>
<td>123456789</td>
</tr>
<tr>
<td>Drop off end of Theatre</td>
<td>OE2, OE5</td>
<td>123456789</td>
</tr>
<tr>
<td>Iconic tower on Strayer</td>
<td>OE1, OE2, OE3</td>
<td>123456789</td>
</tr>
<tr>
<td>Natural center to be focal point or directly to open space, transparency, something to pull towards west</td>
<td>OE2, WG3</td>
<td>123456789</td>
</tr>
<tr>
<td>Verizon Dead space: consider tall residential or other on Verizon Plaza</td>
<td>OE2, WG2, WG3, WG5</td>
<td>123456789</td>
</tr>
<tr>
<td>Place buildings to maximize open space</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>New buildings to mark/maintain views</td>
<td>OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>New buildings open up to open space on as many sides as possible</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Consider Solar Orientation of buildings</td>
<td>OE2, OE1, OE2, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Building interacts with Metro station and opens to square</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Many buildings surrounding square (typically lower)</td>
<td>OE1, OE2, OE4, WG2, WG3, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Farmers market structure that opens up to plaza</td>
<td>OE1, OE2, OE3, WG5</td>
<td>123456789</td>
</tr>
<tr>
<td>Public parkway with restaurants, parks, music</td>
<td>OE1, OE2, WG2, WG5, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Presence of government and civic development</td>
<td>OE2, OS</td>
<td>123456789</td>
</tr>
<tr>
<td>Build over top of theatre</td>
<td>OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>No hotel blocks</td>
<td>OE1</td>
<td>123456789</td>
</tr>
<tr>
<td>Use existing underutilized office space to accommodate new development</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>New buildings must restrict shadows on square</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Large new development: not spread out</td>
<td>OE1, WG2, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>New development in open/transparent</td>
<td>OE1, OE2, OE3, WG2, WG3</td>
<td>123456789</td>
</tr>
<tr>
<td>Tall iconic building</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Park building on landmark block</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Landmark Block Open Space</td>
<td>OE1</td>
<td>123456789</td>
</tr>
<tr>
<td>New Iconic Landmark Block</td>
<td>OE1, OE2, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Extending on Court Square Mall (mixed use)</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Taller and physical access from Wilson/Clarendon</td>
<td>OE1, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>Continue colonnade fabric</td>
<td>OE1, WG2, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Use Wendy’s site as gateway</td>
<td>WG2</td>
<td>123456789</td>
</tr>
<tr>
<td>Reserve and extend lower scale developments along Wilson, where possible</td>
<td>WG2, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Monumental connection to Judicial Center</td>
<td>WG2, WG3</td>
<td>123456789</td>
</tr>
<tr>
<td>Farmers market structure on north of square</td>
<td>ID</td>
<td>123456789</td>
</tr>
<tr>
<td>More affordable housing options</td>
<td>WG1, ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Add public school in new development</td>
<td>ID</td>
<td>123456789</td>
</tr>
<tr>
<td>Pedestrian corridor leading out of location</td>
<td>ID</td>
<td>123456789</td>
</tr>
<tr>
<td>New street building on South End of Square</td>
<td>WG3, OE2</td>
<td>123456789</td>
</tr>
<tr>
<td>No Tall Buildings, Lower</td>
<td>OE2, OS</td>
<td>123456789</td>
</tr>
</tbody>
</table>

### MEETING KEY:
- **OE1**: OUTREACH EVENT 1
- **OE2**: OUTREACH EVENT 2
- **WG1**: WORKING GROUP MEETING 1
- **WG3**: WORKING GROUP MEETING 3
- **WG4**: WORKING GROUP MEETING 4
- **WG5**: WORKING GROUP MEETING 5
- **WG6**: WORKING GROUP MEETING 6

**ID**: INTERDEPARTMENTAL INTERVIEW

**OS**: ONLINE SURVEY SUMMARY

* NO RELEVANT COMMENTS
<table>
<thead>
<tr>
<th>COMMENT</th>
<th>MEETINGS</th>
<th>COMMENT FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water feature, possibly an ice rink, and kid play, possibly sculptural type of fountain</td>
<td>OE2, ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Public space to accommodate different types of events, gatherings, concerts</td>
<td>OE1, OE2, ID, OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Form of grocery store/market shed</td>
<td>WO2, WO3, WO5, O1, OE2, ID, OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>No more memorials</td>
<td>OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Combination of sun and shade</td>
<td>OE1, OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Labyrinth like pattern</td>
<td>OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Activation of square through development very important</td>
<td>OE1, OE2, ID, OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Outdoor movies, night activities</td>
<td>OE1, OE2, WG4, OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Rotating art installations</td>
<td>OE1, OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Lots of cobblestone</td>
<td>OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>More Trees</td>
<td>WO2, WO3, OE1, OE2, ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Public Beach</td>
<td>OE1</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Monumental Gateway</td>
<td>OE1, OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Connect to Rocky Run</td>
<td>OE1</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>More Greenspace/Open lawn</td>
<td>OE1, OE2, ID, OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Connect the Plaza</td>
<td>OE1, OE2, WG3</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Interactive Museum</td>
<td>OE1</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Visible Artworks</td>
<td>OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Mixed use government/worker/ modern county seat/community business</td>
<td>OE1, OE2, ID, OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Social Space</td>
<td>OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>No large gatherings/respect neighborhood peacefulness</td>
<td>OS</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Monarchical gatesway</td>
<td>OE1</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Transit Center for bus, metro, bicycle</td>
<td>WO2, ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Keep connection to Judicial Center from new square</td>
<td>WG3</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Open Space to be shaped by the activities within</td>
<td>WG5</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>Social Space at the Landmark Block</td>
<td>WG5, OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
</tbody>
</table>

**MEETING KEY:**
- OE1: OUTREACH EVENT 1
- OE2: OUTREACH EVENT 2
- WG1: WORKING GROUP MEETING 1
- WG3: WORKING GROUP MEETING 3
- WG4: WORKING GROUP MEETING 4
- WG5: WORKING GROUP MEETING 5
- ID: INTERDEPARTMENTAL INTERVIEWS
- OS: ONLINE SURVEY SUMMARY
- * NO RELEVANT COMMENTS
<table>
<thead>
<tr>
<th>COMMENT</th>
<th>MEETINGS</th>
<th>COMMENT FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CULTURAL RESOURCES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural/Visitor/Performance/Living Heritage Center Library on square</td>
<td>OE1, OE2, WG2, ID</td>
<td></td>
</tr>
<tr>
<td>Interactive public sculpture that becomes lighting/wayfinding, and is engaging for all ages</td>
<td>OE1, OE2</td>
<td></td>
</tr>
<tr>
<td>Provide Book/Paperback/semi-permanent art on Square, possibly in front of AMC theatre</td>
<td>WG5, OE2, OS</td>
<td></td>
</tr>
<tr>
<td>Cultural Center on square, either at ground level (transparency), or top level of building with public roof access, return</td>
<td>OE1, OE2, ID, OS</td>
<td></td>
</tr>
<tr>
<td>Trees to plan and space out so there is more of a visual connection</td>
<td>OE1, OE2, WG3, ID</td>
<td></td>
</tr>
<tr>
<td>Upland programming to activate square: events, concerts, festivals, etc. not just lawn</td>
<td>OE1, OE2, WG2, WG4, OS</td>
<td></td>
</tr>
<tr>
<td>Outdoor movies and performances, night programming</td>
<td>OE1, OE2, ID</td>
<td></td>
</tr>
<tr>
<td>Rotating art installations</td>
<td>WG2, OE1, OE2, ID</td>
<td></td>
</tr>
<tr>
<td>New development should have unique architectural/sensory quality</td>
<td>WG1, OE1, OE2, OS</td>
<td></td>
</tr>
<tr>
<td>Some scale of historic buildings maintained</td>
<td>OE2, WG4</td>
<td></td>
</tr>
<tr>
<td>Museum/Children's Museum</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Public rooftop - accessible roof gardens/performance spaces</td>
<td>OE1, WG2, WG5, ID</td>
<td></td>
</tr>
<tr>
<td>Build something like the Champs-Elysses</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Sustain view to and from Washington Monument and Memorial/Arlington corridors</td>
<td>OE1, WG2</td>
<td></td>
</tr>
<tr>
<td>Keep, expand, create partial enclosure/shed for Farmer's Market</td>
<td>WG2, WG3, WG4, OE1, OE2, ID</td>
<td></td>
</tr>
<tr>
<td>Square lighting, light that can be seen from a distance, light as art</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Outdoor sculptures/sculpture garden</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Creation of educational and historical component: plaques</td>
<td>OE1, OE2, WG2, WG4, ID</td>
<td></td>
</tr>
<tr>
<td>Parking at art school</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Keep a place for the bag pipe player and tai chi man</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Take down the Landmark block</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Accommodate Food Trucks</td>
<td>OE2, OE1, ID, OS</td>
<td></td>
</tr>
<tr>
<td>Keep square closer to Deli and Bakery</td>
<td>OE1, OS</td>
<td></td>
</tr>
<tr>
<td>No large gathering</td>
<td>OE1, OS</td>
<td></td>
</tr>
<tr>
<td>Fabric Sculpture/Markets/State Awnings</td>
<td>OE1, WG2</td>
<td></td>
</tr>
<tr>
<td>Verizon Plaza for Concert/Tent</td>
<td>OE1</td>
<td></td>
</tr>
<tr>
<td>Incorporate digital civic engagement tools (i.e., my mixer)</td>
<td>OE1</td>
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</tr>
<tr>
<td>Create educational/artistic experiences</td>
<td>OE1</td>
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<tr>
<td>Cultural center on Verizon Plaza</td>
<td>OE2, WG5</td>
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<td>Keep the Urban Village Market</td>
<td>OE2, OS</td>
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<td>Bowling Alley</td>
<td>OE2, WG2</td>
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<td>Bocce Courts</td>
<td>OE2, WG2</td>
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<tr>
<td>Create point of culture</td>
<td>WG3</td>
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<tr>
<td>Beer garden for all ages</td>
<td>OE1</td>
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<tr>
<td>More civic discourse</td>
<td>WG4, ID, OS</td>
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<tr>
<td>Urban Farming</td>
<td>ID</td>
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<tr>
<td>Merry-go-round</td>
<td>ID</td>
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<tr>
<td>Park should be in Memo</td>
<td>NO5</td>
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</tr>
<tr>
<td>Historic Buildings not worth saving, new start</td>
<td>OS</td>
<td></td>
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</table>

**MEETING KEY:**

OE1: OUTREACH EVENT 1

OE2: OUTREACH EVENT 2

WG1: WORKING GROUP MEETING 1

WG2: WORKING GROUP MEETING 2

WG3: WORKING GROUP MEETING 3

WG4: WORKING GROUP MEETING 4

WG5: WORKING GROUP MEETING 5

WG6 WORKING GROUP MEETING 6*  

ID: INTERDEPARTMENTAL INTERVIEWS

OS: ONLINE SURVEY SUMMARY

* NO RELEVANT COMMENTS
<table>
<thead>
<tr>
<th>ENERGY AND ENVIRONMENT</th>
<th>MEETINGS</th>
<th>COMMENT FREQUENCY</th>
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<tr>
<td>GREEN ROOFS ON ALL NEW BUILDINGS</td>
<td>OE1, OE2, ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<tr>
<td>REDUCE HEAT ISLAND EFFECT WITH NEW SQUARE AND Plantings</td>
<td>OE2, ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<tr>
<td>SUSTAINABLE GREEN SPACE IS AN AMENITY TO THE NEIGHBORHOOD</td>
<td>OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<tr>
<td>PROVIDE ELEMENTS THAT MITIGATE NOISE POLLUTION ON THE SQUARE</td>
<td>OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<tr>
<td>EDUCATION-REALTIME DISPLAYS OF ENERGY SAVED AND STORMWATER MANAGED</td>
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<tr>
<td>ALL NEW BUILDINGS TO CONSIDER SOLAR ORIENTATION/GENERATE SOLAR ENERGY</td>
<td>W2, OE1, OE2, ID</td>
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<tr>
<td>MORE TREES ON SQUARE/STORMWATER MANAGEMENT</td>
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<td>PROVIDE BIKE RACKS</td>
<td>OE1, OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<td>PROVIDE CARE PROGRAMS FOR NEIGHBORHOOD AND WORKFORCE ASSOCIATED WITH SQUARE</td>
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<td>10% RISE IN EFFICIENCY GAIN</td>
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<td>COMBINED HEAT AND COOL AND POWER</td>
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<td>IMPLEMENT DISTRICT ENERGY/PROVIDE INCENTIVES TO AMP START</td>
<td>OE1, ID, W2</td>
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<td>ROOFS TO COLLECT AND REUSE WATER</td>
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<td>EFFICIENT (SUSTAINABLE) USE OF PUBLIC SPACE/REFLECTIVE OF ENERGY PLAN</td>
<td>W2, OE1</td>
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<tr>
<td>SELF SUSTAINING OPEN SPACE</td>
<td>OE1, OE2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<tr>
<td>OPEN SPACE TO TREAT STORMWATER/FEEL THE RIVER</td>
<td>W2, OE2, ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<td>NATIONAL MODEL FOR ENERGY PLAN</td>
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<td>MINIMIZE CARBON FOOTPRINT</td>
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<tr>
<td>REUSE BUILDING GREY WATER</td>
<td>ID</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<tr>
<td>URBAN FARM ON TOP OF FARMERS MARKET STRUCTURE</td>
<td>ID</td>
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<tr>
<td>AIR CONDITIONING/TEMPERATURE MANAGEMENT THROUGHOUT SQUARE</td>
<td>W2</td>
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<td>A LEADER IN ENVIRONMENTAL AND GREEN BUILDING SUSTAINABILITY</td>
<td>W2, OS</td>
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</table>

MEETING KEY:
OE1: OUTREACH EVENT 1
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WG5: WORKING GROUP MEETING 5
WG6 WORKING GROUP MEETING 6*
ID: INTERDEPARTMENTAL INTERVIEWS
OS: ONLINE SURVEY SUMMARY

* NO RELEVANT COMMENTS
ENVISION COURTHOUSE SQUARE

Design Concepts Survey Results

What we heard about CIRCULATION + OPEN SPACE:

1. Open Space Type
   - Green space with outdoor rooms that accommodate pedestrian movement across the area
   - Formal and informal gathering areas
   - Large tree canopy and shade
   - Design for a variety of multi-seasonal programmed and impromptu uses
   - Maintain the current market and relocate to the future N Uhle Street promenade
   - Allow flexibility for an expanded, permanent market structure on the square to accommodate future needs
   - Relocate the main Metro entrance to Courthouse Plaza near N 15th Street to provide for a landmark presence, a multi-modal connection and direct access and arrival onto the square
   - Use existing Metro tunnel system
   - Reconfigure as a managed, shared street that accommodates multi-modal traffic and creates a comfortable pedestrian environment
   - Use alternative design and paving materials to signify the Courthouse Square district and nature of the street
   - Active, walkable, engaging space
   - Lighting and design elements animate the space and make it feel welcoming and safe
   - Consider phasing, short distance of buildings, access and loading
   - Pedestrian promenade with occasional emergency vehicular access and loading/unloading for special events
   - Flexible and open spaces for markets and events
   - On axis with existing north section of N Uhle Street, helps define rectilinear open space
   - Accommodate loading and access for buildings
   - Improved and re-graded gateway treatment
   - Accessibility and access for all users

2. Farmer’s Market
   - Maintain the current market and relocate to the future N Uhle Street promenade
   - Allow flexibility for an expanded, permanent market structure on the square to accommodate future needs

3. Main Metro Entrance
   - Relocate the main Metro entrance to Courthouse Plaza near N 15th Street to provide for a landmark presence, a multi-modal connection and direct access and arrival onto the square
   - Use existing Metro tunnel system
   - Reconfigure as a managed, shared street that accommodates multi-modal traffic and creates a comfortable pedestrian environment
   - Use alternative design and paving materials to signify the Courthouse Square district and nature of the street
   - Active, walkable, engaging space
   - Lighting and design elements animate the space and make it feel welcoming and safe
   - Consider phasing, short distance of buildings, access and loading

4. 15th Street North
   - Reconfigure as a managed, shared street that accommodates multi-modal traffic and creates a comfortable pedestrian environment
   - Use alternative design and paving materials to signify the Courthouse Square district and nature of the street
   - Active, walkable, engaging space
   - Lighting and design elements animate the space and make it feel welcoming and safe
   - Consider phasing, short distance of buildings, access and loading

5. N Uhle Street - North Segment
   - Active, walkable, engaging space
   - Lighting and design elements animate the space and make it feel welcoming and safe
   - Consider phasing, short distance of buildings, access and loading
   - Pedestrian promenade with occasional emergency vehicular access and loading/unloading for special events
   - Flexible and open spaces for markets and events
   - On axis with existing north section of N Uhle Street, helps define rectilinear open space
   - Accommodate loading and access for buildings
   - Improved and re-graded gateway treatment
   - Accessibility and access for all users

6. N Uhle Street - South Segment
   - Active, walkable, engaging space
   - Lighting and design elements animate the space and make it feel welcoming and safe
   - Consider phasing, short distance of buildings, access and loading
   - Pedestrian promenade with occasional emergency vehicular access and loading/unloading for special events
   - Flexible and open spaces for markets and events
   - On axis with existing north section of N Uhle Street, helps define rectilinear open space
   - Accommodate loading and access for buildings
   - Improved and re-graded gateway treatment
   - Accessibility and access for all users

7. N Vietch Street / 14th Street N
   - Accommodate loading and access for buildings
   - Improved and re-graded gateway treatment
   - Accessibility and access for all users

8. 14th Street North
   - Reconfigure as a curbed, shared street
   - Accommodate all modes
   - Maintains street network and slows traffic
   - Paving design can complement hardscapes within the square
1. Establish an identity for the square:
   ▪ Courthouse Square is for___________________.

2. Create an attractive accessible inclusive PUBLIC SPACE that accommodates and encourages civic discourse, and County identity.

3. Connect pedestrian circulation of Courthouse Square to improve public transit access.

4. Encourage optimal use of streets to achieve, an active public realm with safe pedestrian passage.

5. Incorporate sustainability best practices throughout all aspects of the development, with particular attention paid to energy and stormwater management in line with Arlington County’s policies Identify opportunities for efficiencies from district level energy production.

6. Accommodate public and County parking needs through means that add value to the Courthouse Square area.

7. Preserve significant views both into and out of Courthouse Square.

8. Use existing topography to celebrate the plateau, ease pedestrian movements, and create a cohesive experience of the three-dimensional opportunities of the site.

9. Maximize the opportunity to create active frontage on Courthouse Square and the surrounding area.

10. Build on the existing activities of Courthouse Square to foster an 18 hour a day use throughout the week.

11. Create opportunities and infrastructure for public entertainment, public discourse, performance, and community gathering.

12. Celebrate Courthouse Square’s rich history by integrating relevant existing historic and historical elements into new design concepts.
DRAFT QUESTIONS to evaluate successful application of Courthouse Square Design Principles
October 1, 2014

1. Does the framework plan establish an identity for the square? How is that identity established?
   - Courthouse Square is for _________________.

2. Is the PUBLIC SPACE attractive, accessible, and inclusive? Does it accommodate and encourage civic discourse, and reinforce County identity?

3. Does the concept plan demonstrate better pedestrian circulation of Courthouse Square and improve public transit access?

4. Have the streets been transformed in a manner to achieve an active public realm with safe pedestrian passage?

5. Does the framework plan incorporate sustainability best practices throughout all aspects of the development? Has there been a particular attention paid to energy and stormwater management in line with Arlington County's policies Identify opportunities for efficiencies from district level energy production?

6. Does the concept plan accommodate public and County parking needs through means that add value to the Courthouse Square area?

7. Are significant views both into and out of Courthouse Square preserved?

8. Has topography been utilized to celebrate the plateau, ease pedestrian movements, and create a cohesive experience of the three-dimensional opportunities of the site?

9. Does the concept plan maximize the opportunity to create active frontage on Courthouse Square and the surrounding area?

10. Does the framework plan build on the existing activities of Courthouse Square to foster an 18 hour a day use throughout the week?

11. Has the concept plan created opportunities and infrastructure for public entertainment, public discourse, performance, and community gathering?
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<td>AIRE</td>
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![Diagram with icons for Social Equity, Health and Wellness, Community, Economy, Energy, Water, Materials, and Landscape and Ecology]
2 Executive Summary

Figure 2—1 Courthouse Square Illustrative Site Plan (Future Build Out)
2.1 Background

Arlington County’s Community Energy Plan (CEP) seeks to rethink the way that Arlington uses, generates, and distributes energy. Recognizing that energy is fundamental to lives and livelihoods, the CEP also acknowledges that a business-as-usual approach to energy leaves the community vulnerable to multiple risks associated with climate change, electric grid reliability, fossil fuel price fluctuations, and long-term energy price increases. The CEP seeks “to mitigate those risks by (a) improving grid reliability of energy sources by localizing energy generation, (b) reducing price volatility and the long-term cost of energy through efficiency and diversification, and (c) reducing the environmental impact of energy use through efficiency and cleaner sources of energy.”

The CEP defines the Arlington’s energy goals and describes the policies that will help the community remain economically competitive, environmentally committed, and have secure energy sources. The plan sets a carbon emissions target of 3.0 metric tons of carbon dioxide equivalent (mt CO₂e) emissions per capita per year by 2050, which represents a reduction of over 70% from 2007 levels. Additionally, the following goals have been set in each of six primary areas around which the County will implement the Community Energy Plan:

1. Buildings – Increase the energy and operational efficiency of all buildings
2. District Energy – Increase local energy supply and distribution efficiency in Arlington using district energy¹
3. Renewable Energy – Increase locally generated energy supply through the use of renewable energy options
4. Transportation – Refine and expand transportation infrastructure and operations enhancements
5. County Government Activities – Integrate CEP goals into all County Government activities
6. Education and Human Behavior – Advocate and support personal action through behavior changes and effective education

Each of the six goals is supported by policies, strategies, and tools that together comprise the implementation framework for the CEP. The framework spans across the private, public, and non-profit sectors and will require coordination among stakeholders in order to successfully implement the plan. The framework also spans across different physical scales, from individual actions to County-wide policies, which work together to fulfill three major benefits: economic competitiveness, environmental commitment, and energy security. Economic competitiveness is fulfilled through lower utility costs and the creation of jobs through energy efficiency improvements, which benefit citizens and businesses. Environmental commitment is demonstrated through reduced greenhouse gas emissions and energy usage, as well as improved air quality. Energy security is enabled by energy efficiency, district energy, and renewable energy measures that lower peak demand and increase fuel flexibility, which in turn contribute to the reliability of the local electric system. Additionally, district energy and renewable energy measures may be able to provide some degree of continuous electric service in the event of a blackout by operating in “island” mode, independent of the electric grid.

The Courthouse Square Integrated Energy Master Plan (IEMP) considers the options for energy efficiency, district energy, renewable energy, and county government activities which can reduce energy usage, costs, and emissions within the Courthouse Square district. The IEMP considers the range of strategies and tools which can be combined to achieve a transformative effect on the energy consumption, supporting the goals set forth in Arlington’s Community Energy Plan.

Additional information on the Community Energy Plan is available online at: http://freshaireva.us/2012/04/energyplan/

¹ District energy systems produce steam, hot water, chilled water, and/or electricity at a central energy plant. The steam, hot water, or chilled water is distributed in pipes to individual buildings for space heating, domestic hot water and air conditioning.
2.2 Integration with the Envision Courthouse Square Urban Design Study

Arlington County commissioned a consultant team led by Cooper, Robertson and Partners to advise on a community planning effort to reimagine Courthouse Square. The Envision Courthouse Square Urban Design Study set out to “provide a distinct public place for Arlingtonians to gather and exercise their freedoms as well as celebrate important events.” As a growing urban area, Courthouse Square hosts governmental functions for the entire county, but lacks suitable public space and infrastructure to accommodate gatherings and celebrations. The study created a vision plan, providing conceptual details on building massing and design, circulation, open space, cultural resources, and sustainable design and operations.

BuroHappold Engineering was commissioned by Arlington County to provide consulting services for the Courthouse Square Integrated Energy Master Plan, which was developed as part of the Urban Design Study. This report focuses on the options for energy efficiency, renewable, and district energy projects that are designed to support the build out of the vision plan set forth in the Urban Design Study. BuroHappold also advised the County on energy matters throughout the community planning process, providing input on the implications of different massing and programming options for the energy performance of proposed buildings, as well as the spatial needs of a potential district energy plant (or multiple plants).

Arlington County promotes holistic energy efficient design and construction of both publicly and privately owned new buildings. The Envision Courthouse Square Urban Design Study set forth a vision for new buildings as exemplars of sustainable development; industry best practices are promoted through policy tools such as the green building density incentive policy. This study takes into account the goals set forth in the Community Energy Plan as well as the vision set forth in the Urban Design Study.

Additional information about the Urban Design Study can be found online at: http://sites.arlingtonva.us/courthouse/

2.3 Summary of Findings

Energy conservation measures considered included lighting improvements and the replacement of major heating, ventilation, and air conditioning (HVAC) equipment with more efficient systems. It is recommended that the County continue to pursue low and no-cost energy efficiency measures within the facilities it owns and operates, including upgrading and/or retro-commissioning the aforementioned systems.

A major element of this study was the assessment of district energy systems. District energy systems produce steam, hot water, chilled water, and/or electricity at a central energy plant. The steam, hot water, or chilled water is distributed in pipes to individual buildings for space heating, domestic hot water and air conditioning; as a result, those individual buildings do not need their own boilers and chillers, providing many benefits. District energy systems enhance environmental commitment by improving energy efficiency and reducing emissions. They contribute to economic competitiveness by decreasing life-cycle costs. They also improve energy security by providing greater reliability and fuel flexibility; when generating electricity locally, they also tax the electric grid less.
Both new and existing buildings were evaluated for integration into thermal-only district energy systems, which provide heating and/or cooling, as well as combined heat and power (CHP) systems that also generate electricity. Systems that include power generation are often able to achieve higher efficiencies, provide a more stable source of on-site energy generation, and generate greater emissions savings. Locally-generated district heating (with the possible integration of combined heat and power) appears to be technically and economically feasible in Courthouse Square, demonstrating lower lifecycle costs and lower greenhouse gas emissions as compared with a business-as-usual approach of decentralized heating systems (see Figure 2—1 and Figure 2—2). It is recommended that the County commission a feasibility study to more closely assess the potential of these systems, which for the purposes of this report were assessed at a conceptual level.

Although the low cost of energy in Arlington County prevents solar photovoltaic and solar thermal systems from having a strong business case for implementation at this time, they generate electricity with no greenhouse gas emissions, bolster energy security by mitigating peak load demands, and play an important role in demonstrating environmental commitment. It is recommended that building-scale renewable projects are studied as new buildings are being designed, particularly as renewable energy generation can be counted towards LEED credits and demonstrate environmental commitment to potential tenants and prospective employees. It is anticipated that solar generation will become increasingly economically viable with changes in technology and the regulatory environment.

<table>
<thead>
<tr>
<th>Life Cycle Cost Savings Relative to Baseline (Net Present Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$(8,464,715)</td>
</tr>
<tr>
<td>$(1,187,076)</td>
</tr>
<tr>
<td>$6,776</td>
</tr>
<tr>
<td>$5,428,635</td>
</tr>
<tr>
<td>$6,004,134</td>
</tr>
<tr>
<td>$8,992,198</td>
</tr>
<tr>
<td>$9,399,172</td>
</tr>
</tbody>
</table>

Figure 2—1 Net Present Value Summary
Figure 2—2 Greenhouse Gas Emissions Summary
3 Introduction

3.1 Methodology and Process

The Integrated Energy Master Plan was created through a multistep process that incorporated both quantitative and qualitative data to inform the concept recommendation. An important element in this process was the use of integrated dynamic computerized modeling. One of the most significant benefits was the ability to examine the incremental impact of alternative assumptions and options in decentralized and centralized systems. Another benefit was the ability to incorporate a substantial level of detail, including hourly variations in the energy requirements of each building.

Figure 3—1 illustrates the buildings that were evaluated in IEMP. Greater detail is included in the blue buildings, which include existing buildings (Detention Center, Courts/Police, and Court Square East) as well as proposed buildings (Civic Building, Verizon Plaza, and AMC Site), which were modeled using simple massing and predicted program and use. The adjacent magenta buildings were even more simplified, as they only influenced the model in terms of dynamic shading.

The IEMP process involved the following steps:
Existing Conditions Analysis (Section 3)

1. Baseline energy data was collected for the existing buildings in Courthouse Square. Walkthrough energy assessments provided information on existing building systems, equipment details, and future plans for the buildings including capital projects and expected changes in program/use. Together, these data points provided information that would be incorporated into building energy models.

2. Building energy models were constructed in Integrated Environmental Solutions Virtual Environment software (IES VE) for Court Square East, Detention Center, and Courts/Police. IES VE produced hourly building energy simulations, which calculated the amount of energy and utility costs that a building is expected to use over an entire year. Inputs included building geometry and orientation, wall and roof details, window area and type, heating and cooling system types, lighting type, local weather information, and schedules regarding lighting usage, internal equipment usage, and occupancy. This simulation provided expected energy consumption, but actual energy consumption depends strongly on the exact way a building is constructed, operated, and maintained over its life.

Energy Conservation Measures (ECMs) (Section 4)

3. Building-scale energy conservation measures were identified to demonstrate potential reductions in energy consumption. These ECMs were informed by the walkthrough energy assessments, discussions with building personnel, Community Energy Plan goals, and energy management best practices. The ECMs were modeled in IES VE in order to generate a range of estimated energy savings.

Note: The ECMs are not included in the district energy analysis, as the County may choose to invest in district energy projects independent of building-scale ECMs.

Proposed Future Development Modeling (Section 5)

4. The Urban Design Study resulted in a recommendation for the development of three (3) new buildings, which were modeled in IES VE. The models were calibrated to reflect an energy savings of approximately 30% below ASHRAE Standard 90.1-2007 performance. This figure represents an assumption for the purposes of the study, but does not reflect a recommended performance target; the County strives for high performance design that maximizes the energy efficiency of new buildings.

District Energy Scenario Selection (Section 6)

5. A large set of potential district energy scenarios was developed by BuroHappold and evaluated through a rigorous set of infrastructure planning filters. These included the primary filters of Net Present Value (NPV), Greenhouse Gas Emissions, and Energy Security, as well as secondary filters of water consumption, capital cost, O&M cost, equipment space requirements, ease of implementation, and architectural impact.

District Energy Analysis (Section 7)

6. The calibrated building models for both existing and proposed buildings were integrated into a single model in order to evaluate district energy scenarios. The computer model generated the energy consumption, expected utility costs, and greenhouse gas emissions for each of the potential scenarios.
7. The estimated utility costs and the additional costs of implementing all ECMs were evaluated in a life cycle cost analysis, which provided a Net Present Value (NPV).

**Renewables Evaluation (Section 8)**

8. Solar photovoltaic and solar thermal systems were evaluated at a concept level in order to be measured and weighed against potential ECMs and district energy scenarios.

**Concept Recommendation (Refer to Executive Summary)**

9. The Integrated Energy Master Plan (IEMP) concluded by evaluating the technical and economic feasibility of adopting an integrated approach to increase energy efficiency and optimize energy supply from a centralized energy supply. The potential projects were assessed on economics (net present value), environmental impact in terms of avoided greenhouse gas emissions (GHG), and improved energy reliability for buildings served.

The above steps are summarized in the flow chart below:

![Figure 3—2 Process Flow Chart](image-url)
4 Existing Conditions

4.1 Climate Characteristics

Climate data was used to inform the planning and urban design study, particularly with relation to massing options and potential passive design strategies. Arlington is heating dominant; it experiences a moist mid-latitude climate with hot muggy summers and mild winters. A wind analysis showed that passive design measures do not have to be oriented in such a way as to accommodate prevailing winds.

Figure 4—1 Existing Buildings Evaluated
4.2 Electricity Characteristics, Cost, Consumption and Emissions

Electrical energy consumption for the five public buildings in the study area are summarized as follows:

<table>
<thead>
<tr>
<th>Building</th>
<th>Square Footage</th>
<th>2013 Consumption (kWh)</th>
<th>Estimated Cost (2015)</th>
<th>Emissions (mt CO2e/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courthouse Plaza</td>
<td>234,937</td>
<td>confidential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courts/Police</td>
<td>397,214</td>
<td>5,336,625</td>
<td>$320,197</td>
<td>2,613</td>
</tr>
<tr>
<td>Detention Center</td>
<td>410,174</td>
<td>5,021,280</td>
<td>$301,277</td>
<td>2,459</td>
</tr>
<tr>
<td>Court Square East*</td>
<td>76,645</td>
<td>1,490,880</td>
<td>$89,453</td>
<td>730</td>
</tr>
<tr>
<td>Court Square West</td>
<td>89,973</td>
<td>1,201,600</td>
<td>$72,096</td>
<td>588</td>
</tr>
<tr>
<td>Total</td>
<td>1,135,620</td>
<td>20,532,200</td>
<td>$1,290,415</td>
<td>9,970</td>
</tr>
</tbody>
</table>

At the time this report was issued, all electric energy came from Dominion Virginia Power. Commercial customers, including Courthouse Plaza, paid a blended rate of $0.068/kWh to Dominion. The County participated in the Virginia Energy Purchasing Governmental Association (VEPGA) which allowed local governments to negotiate their energy rates. As such, the County paid lower rates than commercial customers, with a blended rate estimated at $0.06/kWh. The County was the anchor tenant in the Courthouse Plaza building but did not lease the entire building (the above chart refers to square footage of County offices only). The Court Square East building had recently been acquired by the County; only one year of data are available and they represented energy use of previous tenants remaining after the County’s acquisition of the building. Note that emissions are calculated based on factors using consumption data.
4.3 Fuel Sources, Cost, Consumption and Emissions

Natural gas consumption for the five public buildings in the study area are summarized as follows:

<table>
<thead>
<tr>
<th>Building</th>
<th>Square Footage</th>
<th>2013 Consumption (therms)</th>
<th>Estimated Cost</th>
<th>Emissions (mt CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courthouse Plaza (County offices)</td>
<td>234,937</td>
<td>N/A – All Electric Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courts/Police</td>
<td>397,214</td>
<td>65,555</td>
<td>$58,413</td>
<td>2,961</td>
</tr>
<tr>
<td>Detention Center</td>
<td>410,174</td>
<td>194,642</td>
<td>$173,436</td>
<td>3,492</td>
</tr>
<tr>
<td>Court Square East*</td>
<td>76,645</td>
<td>42,173</td>
<td>$37,578</td>
<td>954</td>
</tr>
<tr>
<td>Court Square West</td>
<td>89,973</td>
<td>17,065</td>
<td>$15,206</td>
<td>679</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,135,620</strong></td>
<td><strong>319,435</strong></td>
<td><strong>$284,633</strong></td>
<td><strong>8,086</strong></td>
</tr>
</tbody>
</table>

At the time this report was issued, all natural gas for public and private buildings in Courthouse Square came from Washington Gas Light Company. Distribution rates were broken down as follows:

- First 125 therms: 31.53¢/therm
- Next 875 therms: 25.76¢/therm
- Over 1,000 therms: 19.64¢/therm

Supply charges from WGES were 58.2 cents per therm. Natural gas is primarily used in these buildings to produce steam or hot water for space heating and domestic hot water; the Detention Center has significant natural gas consumption associated with providing hot water for its showers. Some natural gas is also used for cooking in the kitchens in Detention Center and Court Square East, as well as the laundry in the Detention Center. Courthouse Plaza was an all-electric building with no gas account. The Court Square East building was recently acquired by the County; only one year of data were available and they represented the energy use of tenants remaining after the County’s acquisition of the building. Note that emissions are calculated based on factors using consumption data.
4.4 Existing Buildings: Demand-Side Analysis

An essential component to generating the IEMP was to establish a thorough understanding of the conditions of the existing buildings. This was conducted through energy benchmarking and walkthrough energy audits, which included interviews with County staff. These observations were used to calibrate and confirm assumptions about the requirements for electrical and thermal energy in the assessment of energy efficiency and district energy projects.

The total energy usage, described in sections 4.2 and 4.3, was used to benchmark the energy performance of the existing public buildings. Energy use intensities (EUIs) were calculated for each building by summing all energy consumption using a common unit of kBtu/yr. These values were then divided by square foot to generate the EUI in kBtu/sf-yr as depicted in and Figure 4—1 and Figure 4—2. Note that the Detention Center showed a significant drop in energy consumption following the completion of a comprehensive energy audit in 2008, which was followed by the implementation of energy conservation measures including heating system improvements. Courts/Police also achieved significant savings following the implementation of energy conservation measures in 2008, although the savings were offset by the opening of a 24/7 data center within the building.

Site energy describes the amount of energy consumed by a building as reflected in utility bills, while source energy traces the energy requirements of the building back to the raw fuel input, thereby accounting for any losses. By accounting for the energy lost in the processes of generation, transmission, and distribution, source energy benchmarking allows for a more complete assessment of the energy required to meet the operational needs of the building.

![Figure 4—2 Site Energy Use Intensities](chart.png)
Figure 4—3 Source Energy Use Intensities
4.5 Benchmarking

As a point of comparison, the public buildings in Courthouse Square were benchmarked against commercial office buildings in nearby Washington, D.C., where the disclosure of building energy consumption is mandatory. The Washington, D.C. data points were from the 2012 disclosure. The Detention Center, which has a significantly different use profile, was not included in this benchmarking exercise. Court Square East was shown to have a relatively high EUI, but the use profile of the building was expected to change; it was also expected to undergo significant capital improvements. All three of the buildings were shown to have better performance when measured by source EUI, as opposed to site EUI. This may be explained by the prevalence of all-electric buildings in Washington, D.C., which have relatively high source energy requirements when compared with buildings that use natural gas boilers for space heating and domestic hot water.

Figure 4—4 Site EUI Benchmarking
Figure 4—5 Source EUI Benchmarking
5 Energy Efficiency Opportunities in Existing Buildings

The single largest improvement that can be made to ensure the County meets its greenhouse gas emission reduction goals, according to the Community Energy Plan, is to improve the overall energy efficiency of buildings. Energy efficiency also offers the best “bang for the buck” both in terms of emissions reductions and return on investment. Reducing energy use also enhances economic competitiveness by reducing energy costs for residents, businesses, governments, and non-profit organizations.

The computerized energy models were used to generate an estimated energy end use breakdown, which provided a deeper understanding of how each building was predicted to use energy, as well as which systems were best to target for energy conservation measures (ECMs). A wide range of ECMs was considered for each building; the following pages detail the most effective improvements that could reduce energy consumption, including ECMs related to the building envelope, lighting, heating, ventilation, and cooling systems. Each ECM was assessed utilizing the computerized energy model to appraise the estimated impacts on energy consumption and cost.

These ECMs were considered independently of the District Energy Scenarios detailed in Section 6, so as to measure and weigh the potential impacts of each approach.
5.1 Court Square East

Court Square East, an 8-story precast concrete structure, is across the street from Courts/Police on the corner of Courthouse Road and 14th Street North. The County purchased the building in November 2012 with plans to renovate two floors to serve as a year round homeless shelter and service center (the remaining space will remain as county office space and storage). The building was constructed in 1966 and is approximately 76,645 gross square feet. The first floor, as of the time this report was issued, included an on-deck visitor parking and retail area.

The projected savings for Court Square East were based upon estimates of the individual measures. Implementation of ECMs in various orders could affect the individual and overall energy savings. Determining where and in what quantities energy is used throughout the building can help to prioritize energy improvement efforts to maximum effectiveness. Figure 5—1 shows a breakdown of the building’s predicted energy use by equipment type as estimated from the dynamic thermal model. This breakdown gives an indication of possible areas for improvement.

![Figure 5—1 – Court Square East Energy Model Render and Energy End Use Breakdown](image)

The following were identified as energy conservation measures to consider (in no particular order) and highlight the potential for whole-building energy savings:

<table>
<thead>
<tr>
<th>Energy Conservation Measure</th>
<th>Potential Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace existing fluorescent fixtures with LED</td>
<td>Up to 5%</td>
</tr>
<tr>
<td>Replace existing chillers and boilers with building VRF</td>
<td>30 to 40%</td>
</tr>
<tr>
<td>Turn off equipment, purchase ENERGY STAR-labeled equipment, install power management software</td>
<td>5 to 10%</td>
</tr>
<tr>
<td>Retro-commissioning and optimization</td>
<td>5 to 15%</td>
</tr>
<tr>
<td>Solar hot water panels (renewable energy)</td>
<td>Up to 1%</td>
</tr>
<tr>
<td>Photovoltaic solar panels (renewable energy)</td>
<td>Up to 5%</td>
</tr>
</tbody>
</table>
5.2 Detention Center

The Detention Center is an 11-story concrete structure on 1435 N. Courthouse Road. As of the time this report was issued, the Detention Center served as the jail for Arlington County. It was the first urban high-rise jail in Virginia. The building operated on a 24-7 schedule with visiting hours limited to Tue. and Thu., 3 – 6 p.m.; Sat. and Sun., 9 a.m. – 6 p.m. and 7:30 – 8:30 p.m., and office occupancy limited to Mon.-Sun, 9 a.m. – 6 p.m. and 7:30 – 8:30 p.m. The building was constructed in 1994 and is approximately 410,174 gross square feet. Several energy conservation measures were completed at the building in 2009.

The projected savings for the Detention Center were based upon estimates of the individual measures. Implementation of ECMs in various orders could affect the individual and overall energy savings. Determining where and in what quantities energy is used throughout the building can help to prioritize energy improvement efforts to maximum effectiveness. Figure 5—2 shows a breakdown of the building’s predicted energy use by equipment type as estimated from the dynamic thermal model. This breakdown gives an indication of possible areas for improvement.

The following were identified as energy conservation measure opportunities to consider (in no particular order) and highlight the potential for whole-building energy savings:

<table>
<thead>
<tr>
<th>Energy Conservation Measure</th>
<th>Potential Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace existing fluorescent fixtures with LED</td>
<td>5% to 10%</td>
</tr>
<tr>
<td>Replace existing chillers and boilers with modern high-efficiency equipment</td>
<td>10% to 20%</td>
</tr>
<tr>
<td>Turn off equipment, purchase ENERGY STAR-labeled equipment, install power management software</td>
<td>Up to 1%</td>
</tr>
<tr>
<td>Retro-commissioning and optimization</td>
<td>5 to 10%</td>
</tr>
<tr>
<td>Solar hot water panels (renewable energy)</td>
<td>10% to 15%</td>
</tr>
<tr>
<td>Photovoltaic solar panels (renewable energy)</td>
<td>Up to 2%</td>
</tr>
</tbody>
</table>
5.3 Courts/Police

The Courts/Police building is a 13 story concrete structure that resides in the Courthouse District on 1425 N. Courthouse Road. The Courts/Police building is used 24-7 on several floors occupied by the Police Department. The majority of the building is occupied by courts, judicial services, and administrative offices. Several energy conservation measures were completed at the building in 2009. The building was constructed in 1994 and is approximately 397,214 gross square feet.

The projected savings for the Courts/Police building were based upon estimates of the individual measures. Implementation of ECMs in various orders could affect the individual and overall energy savings. Determining where and in what quantities energy is used throughout the building can help to prioritize energy improvement efforts to maximum effectiveness. Figure 5—3 shows a breakdown of the building’s predicted energy use by equipment type as estimated from the dynamic thermal model. This breakdown gives an indication of possible areas for improvement.

The following were identified as energy conservation measure opportunities to consider (in no particular order) and highlight the potential for whole-building energy savings:

<table>
<thead>
<tr>
<th>Energy Conservation Measure</th>
<th>Potential Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace existing fluorescent fixtures with LED</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Retro-commissioning and optimization</td>
<td>5 to 10%</td>
</tr>
<tr>
<td>Solar hot water panels (renewable energy)</td>
<td>Up to 2%</td>
</tr>
<tr>
<td>Photovoltaic solar panels (renewable energy)</td>
<td>Up to 1%</td>
</tr>
</tbody>
</table>
6 Proposed Building Energy Modeling

To appraise the impact of proposed buildings, predictive building simulation models were utilized to generate the expected electrical and thermal demands for each building. The building design incorporated into the predictive building simulation outperformed the minimum energy requirements of ASHRAE Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential Building, by approximately 30% in terms of energy cost savings relative to the ASHRAE baseline building design.

ASHRAE Standard 90.1 includes the detailed energy efficient requirements for the design and construction of new buildings and new portions of buildings and their respective systems as well as new systems and equipment in existing buildings. The requirements of the ASHRAE Standard apply to the envelope of the building, the heating, ventilating, and air conditioning systems, service water heating, electric power distribution and metering provisions, electric motors and belt drives, and lighting.

The Performance Rating Method (PRM) was employed in this analysis and is a widely-accepted method for simulating the expected electrical and thermal demands of a building, although it cannot perfectly predict a building's energy consumption after construction due to a variety of factors including but not limited to exact use patterns.

Figure 6—1 - Courthouse Square Proposed Buildings
6.1 Civic Building

The primary civic building structure, as detailed in the Urban Design Study, will include various cultural and community uses. The building will maintain transparency on the north and west façades adjacent to the public square. The north façade will allow for connectivity to the square and link activities in the open space to activities within the building. The north side of the building will also serve as the front door or main entrance on the Square. A rooftop terrace is also being considered to be incorporated into the building and serve as an extension of the open space. The Civic Building will not exceed a height of 3 stories at 26,000 gross square feet.

![Figure 6—2 - Estimated Civic Building Energy Use Breakdown](image)

The key performance metric that was targeted for the Civic Building is the predicted Energy Use Intensity (EUI). The predicted Energy Use Intensity, expressed in kBtu/sf-yr, is targeted at \textbf{PEUI-60}. Based on the 30% reduction energy cost savings relative to the ASHRAE baseline building, the predicted operational cost (utility costs only) is $23,660. The energy intensity and operational cost provided were estimated from the energy model and should only be referenced in the context of the IEMP.

**Predicted Energy Use Intensity:** \(60 \text{ kBtu/sf-yr}\)

**Predicted Energy Cost:** \$23,660
6.2 Verizon Plaza

The Verizon Plaza building, as detailed in the Urban Design Study, will be a mixed-use building, dominated by either residential or office uses. The ground floor will likely provide for retail and restaurant tenants facing North Courthouse Road and 14th Street North. The Verizon Plaza development will be approximately 260,000 gross square feet with a building height not exceeding 120 feet.

The key performance metric that was targeted for the Verizon Plaza building is the predicted Energy Use Intensity (EUI). The predicted Energy Use Intensity, expressed in kBtu/sf-yr, is targeted at **EUI-68**. Based on the 30% reduction energy cost savings relative to the ASHRAE baseline building, the predicted operational cost (utility costs only) is **$354,900**. The energy intensity and operational cost provided were estimated from the energy model and should only be referenced in the context of the IEMP.

**Predicted Energy Use Intensity:** 68 kBtu/sf-yr

**Predicted Energy Cost:** $354,900
6.3 AMC Site

The AMC Site development, as detailed in the Urban Design Study, will include civic, office, and retail/restaurant uses. The building will not exceed a height of 180 feet. The height will be 2-3 stories on the eastern portion of the site and up to seven stories on the western portion of the site. The AMC site development will be approximately 126,000 gross square feet.

The key performance metric that was targeted for the AMC Site development is the predicted Energy Use Intensity (EUI). The predicted Energy Use Intensity, expressed in kBtu/sf-yr, is targeted at \textbf{EUI-70}. Based on the 30% reduction energy cost savings relative to the ASHRAE baseline building, the predicted operational cost (utility costs only) is \textbf{$155,610}. The energy intensity and operational cost provided were estimated from the energy model and should only be referenced in the context of the IEMP.

\textbf{Predicted Energy Use Intensity:} \textbf{70 kBtu/sf-yr}
\textbf{Predicted Energy Cost:} \textbf{$155,610}
7 District Energy Scenarios

7.1 Selection Process

After considering the potential for energy efficiency at the building scale, the IEMP considered a broad range of district energy options for Courthouse Square, in alignment with the goal set forth in the Community Energy Plan to use district energy to increase local energy supply and distribution efficiency. District energy systems produce steam, hot water, chilled water, and/or electricity at a central energy plant. The steam, hot water, or chilled water is distributed in pipes to individual buildings for space heating, domestic hot water and air conditioning.

The first step was to screen buildings for compatibility with district energy systems. Information on public buildings had been collected during walkthrough energy assessments; information on the private buildings was collected to assess the potential for their HVAC systems to connect to district energy systems; buildings with incompatible systems such as PTAC units were eliminated from consideration due to the substantial financial and operational challenges involved with converting to new building systems. Additional buildings were eliminated from consideration due to uncertainty with regards to phasing and ownership. The final buildings included within the boundaries included three existing County buildings (the Detention Center, Courts/Police, and Court Square East) as well as the two new County buildings (the Civic Building and AMC Site) and a new privately-owned building on the existing Verizon Plaza.2

After the potential buildings had been identified, dozens of scenarios were developed to include a broad set of potential systems. Using a series of Infrastructure Planning Filters, these scenarios were then narrowed down to the scenarios deemed most likely to meet the goals of the County. The Infrastructure Planning Filters not only included the primary filters of net present value, greenhouse gas emissions, and energy security, but also broader filters including operational costs and architectural impacts. These filters are summarized in the below table, along with weighted scores that indicate prioritization:

2 Although this study concentrated on County owned buildings in Courthouse Square, it is recommended that private buildings be considered in detailed feasibility studies should any of the district energy scenarios move towards implementation.
Table 7—1 Infrastructure Planning Filters

<table>
<thead>
<tr>
<th>Primary Filters</th>
<th>Weighting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Present Value</td>
<td>10</td>
<td>Maximize the net present value, incorporating capital, financing, depreciation, operating, and replacement costs</td>
</tr>
<tr>
<td>GHG Emissions</td>
<td>8</td>
<td>Minimize CO2 and other greenhouse gas emissions (via reduction and avoidance)</td>
</tr>
<tr>
<td>Energy Security</td>
<td>8</td>
<td>Improve the reliability of local electric systems by minimizing peak loads; diversifying utility resource portfolios and hedging against uncertainty associated with fluctuating fuel prices and other risk factors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Filters</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Consumption</td>
<td>4</td>
<td>Minimize water consumption (via reduction and avoidance)</td>
</tr>
<tr>
<td>Capital Cost</td>
<td>8</td>
<td>Minimize initial capital outlay.</td>
</tr>
<tr>
<td>O&amp;M Cost</td>
<td>7</td>
<td>Minimize operational and maintenance costs. Consider staff resources or maintenance contracts required after retrofit.</td>
</tr>
<tr>
<td>MEP Space Requirements</td>
<td>6</td>
<td>Does this infrastructure require significant build out? Does it utilize existing mechanical space?</td>
</tr>
<tr>
<td>Ease of Implementation/Phasing</td>
<td>5</td>
<td>How quickly can this technology be implemented? Consider issues of phasing, ownership, permitting, physical access, etc.</td>
</tr>
<tr>
<td>Architectural Impact on County Buildings</td>
<td>5</td>
<td>Architectural impact of scheme. Consider implications of central plan locations, heat rejection areas, etc.</td>
</tr>
</tbody>
</table>

Each option was then assigned a technical score for each of the primary and secondary criteria. The technical score for each filter was multiplied by the corresponding weighting to produce a composite score; the composite scores for all filters relating to each scenario were summed to create a total score. The highest scoring scenarios were identified for detailed modeling, as depicted in the following sections.
Technical Ratings (quantitative outputs represent 'best guess' until modeled in EES)

<table>
<thead>
<tr>
<th>All Decentralized</th>
<th>H₁ East</th>
<th>H₂ West</th>
<th>H₃ East/West</th>
<th>C₁ East</th>
<th>C₂ West</th>
<th>C₃ East/West</th>
<th>P₁ East</th>
<th>P₂ West</th>
<th>P₃ East/West</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>7</td>
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<td>6</td>
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<td>10</td>
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<td>6</td>
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<td>2</td>
<td>2</td>
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<td>4</td>
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<td>1</td>
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<tr>
<td>365</td>
<td>347</td>
<td>391</td>
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<td>330</td>
<td>359</td>
<td>339</td>
<td>373</td>
<td>373</td>
<td>373</td>
</tr>
</tbody>
</table>

| MODEL             |         |         |             |         |         |             |         |         |             |

Figure 7—1 Screenshot of Selection Tool
7.2 Scenarios

For the selected scenarios, a concept-level assessment was conducted in order to understand the technical feasibility of the interconnected centralized system(s), load densities, potential locations for the central plant, and acceptable corridors for distribution systems. A dynamic energy model was adjusted to reflect the implementation of the selected scenarios, which included both centralized (district energy) and decentralized (building-scale) systems. The energy conservation measures for the existing County buildings (previously identified) were not included/modeled in the district energy scenarios with the exception of replacing Court Square East’s existing chillers and boilers with building VRF, which was assumed to be moving forward. This is reflected in the Baseline scenario (decentralized). The computer simulation model generated the resultant energy consumption, expected utility costs, and greenhouse gas emissions to inform decision-making. The Courthouse Square IEMP Scenario Component Key provided in Figure 7—2 outlines the schematic variations (components and infrastructure) between the District Energy Scenarios considered in the analysis. Each proceeding section provides an illustration and description of a District Energy Scenario that was considered.

![Figure 7—2 - Courthouse Square IEMP Scenario Component Key](image)
7.2.1 Baseline (Decentralized)

The Baseline energy scenario considers decentralized systems, where each building would be provided with independent heating and cooling plants. For comparative purposes it is assumed that each building (existing and the proposed development) will utilize new equipment meeting the minimum efficiency as required by local prescriptive energy code. Some deviations from existing operating equipment size is noted. Systems in existing buildings were re-sized according to the calibration procedures completed in the energy models and predicted peak dynamic loads. The level of accuracy of the calibrated existing building models are contingent on the availability of detailed metered data to fine tune all the key input parameters in the energy model.

The sizing provided below should only be used for comparative purposes to the centralized district energy scenarios as part of the IEMP.

- The Baseline Detention Center heating plant consists of five (5) 3,000 MBH Hot-water Condensing Boilers. The cooling plant consists of one (1) 200 Ton Electric Water-cooled Screw Chiller and two (2) 500 Ton Electric Water-cooled Centrifugal Chillers.\(^3\)
- The Baseline Courts/Police heating plant consists of four (4) 3,000 MBH Hot-water Condensing Boilers. The cooling plant consists of three (3) 500 Ton Electric Water-cooled Centrifugal Chillers.
- The Baseline Civic Building heating plant consists of two (2) 2,000 MBH Hot-water Condensing Boilers. The cooling plant consists of two (2) 200 Ton Electric Water-cooled Screw Chillers.

\(^3\) County staff indicated that this is oversized for current needs; to reiterate, the sizes reflected here anticipate future needs and should only be used for comparative purposes in this concept-level assessment.
- The Baseline AMC Site heating plant consists of three (3) 2,000 MBH Hot-water Condensing Boilers. The cooling plant consists of one (1) 200 Ton Electric Water-cooled Screw Chiller and two (2) 500 Ton Electric Water-cooled Centrifugal Chillers.

- The Baseline Verizon Plaza heating plant consists of three (3) 2,000 MBH Hot-water Condensing Boilers. The cooling plant consists of three (3) 200 Ton Electric Water-cooled Screw Chillers.

Court Square East was included in the Baseline scenario but remains separate from the centralized scenarios; it does not influence the sizing of heating and cooling infrastructure. Court Square East was calibrated within certain tolerances of the provided utility bills in order to generate an expected energy use intensity and energy cost per square foot of converting the building to accommodate variable refrigerant flow (VRF) heating and cooling. Therefore, the impact of the building system conversion (energy consumption, energy cost, and greenhouse gas emissions) is captured in the analysis (LCCA does not include capital cost of converting to VRF).
7.2.2 District Heating (Hot Water + Steam)

The District Heating (Hot Water + Steam) scenario considers utilizing the existing steam boilers in the Detention Center and Courts/Police while providing new condensing hot-water for the new proposed Courthouse Square buildings (provides shared energy source for space heating and domestic hot-water). To increase the heating diversity within the Courthouse Square, the steam boilers are proposed to be connected to the new thermal distribution network to share the load. An additional heat exchanger will be necessary to accommodate the connection. The existing steam plant and the new hot-water plant would be representative of a “cluster” district heating system with three nodes of shared heating input (one at the Detention Center, one at the Courts/Police, and one within the proposed new buildings, presumed to be within the County building). The resultant sizing of the new heating hot-water plant was estimated at two (2) 5,000 MBH condensing boilers. The excess heating capacity in the Detention Center and Courts/Police, while limited, would be shared across the Courthouse Square district heating network.

Figure 7—4 — Centralized District Heating System (Hot-water and Steam Sources)
7.2.3 District Heating (Hot Water)

The District Heating (Hot Water) scenario considers utilizing a centralized modular bank of hot-water condensing boilers to satisfy the heating demand across all buildings within the Courthouse Square with the exception of Court Square East (provides shared energy source for space heating and domestic hot-water). The existing steam boilers within the Detention Center and Courts/Police would be decommissioned (conversion of the two buildings from steam to hot-water in terms of cost is beyond the performance scope for this study). The size of the heating hot-water plant was estimated at five (5) 5,000 MBH condensing boilers located within one of the proposed new buildings in Courthouse Square, presumed to be within the County building. The hot-water system offers the advantage of simple reset of temperature as a means of load modulation (an advantage over the steam systems currently utilized where adjustments in pressure are used for regulating equipment and terminal devices). Flow is also modulated with variable-speed drives at the central heating plant to maintain a minimum pressure differential at the most hydraulically distant energy transfer station (building heat exchanger).

![Figure 7—5 – Centralized District Heating System (Hot-water Source)](image-url)
### 7.2.4 District Cooling

The District Cooling scenario considers utilizing a centralized cooling plant to satisfy the cooling demand across all buildings within the Courthouse Square (with the exception of Court Square East as previously stated). The existing chillers within the Detention Center and Courts/Police would be decommissioned. For electric-driven district cooling plants, higher efficiency becomes the central environmental benefit when compared to in-building (decentralized) cooling plants (smaller units). The partial load performance (part-load) of centralized cooling plants are typically more efficient than that of many isolated electric-driven cooling plants at the building level because the larger plant can modulate output and operate one or more cooling modules as the combined load requires at a higher efficiencies. The size of the electric-driven chilled-water cooling plant was estimated at one (1) 750 Ton Electric Water-cooled Centrifugal Chiller and three (3) 1,000 Ton Electric Water-cooled Centrifugal Chillers.

![Centralized District Cooling System (Chilled Water)](image-url)
7.2.5 District Heating (Hot Water + Steam) and Cooling

The District Heating and Cooling (HW+Steam) scenario combines the centralized system components of the aforementioned District Heating (HW+Steam) and District Cooling scenarios.

Figure 7—7 – Centralized District Heating and Cooling System (Hot-water and Steam Sources, Chilled Water)
7.2.6 District Heating (Hot Water) and Cooling

The District Heating and Cooling (HW) scenario combines the centralized system components of the aforementioned District Heating (HW) and District Cooling scenarios.

![Centralized District Heating and Cooling System (Hot-water and Chilled Water)]

*Figure 7–8 – Centralized District Heating and Cooling System (Hot-water and Chilled Water)*
7.2.7 Combined Heat and Power (Base Load)

The centralized district heating and power system considered in the CHP Base Load scenario consists of coupling a central hot-water heating plant with a base-loaded combined heat and power system. The electricity production efficiency is improved when waste heat is reclaimed in the CHP system and transferred to a usable heat source. The simplest operating mode with combined heat and power technology is a base-loaded system where the operation of the on-site capacity at its prime power rating to the full extent of its availability (all power generation and heat recovery is fully utilized on-site). A base-loaded reciprocating engine can be scheduled for 7,800 to 8,400 hours of operation a year when full base-loaded. For the CHP Base Load scenario a single 50 kW natural gas reciprocating engine was selected to match the domestic hot water base load within the district system boundary.

The CHP technology would be coupled with a new heating hot-water plant supplied by five (5) 5,000 MBH Condensing Boilers, as described in the District Heating (HW) scenario. Hot-water distribution would be provided to all buildings within the district system boundary with the exception of Court Square East (converting to VRF), while electrical power distribution (parallel switch gear) would be provided for the Detention Center only.

Figure 7—9 – Centralized District Heating and Power System (Hot-water and 50 kW CHP)
7.2.8 Combined Heat and Power (Thermal Load Following)

The thermal load following (TLF) operating mode consists of reducing or increasing the prime mover’s output according to the site’s thermal requirements. In the thermal load following mode the prime mover is operated so that no heat is rejected (absolute heat recovery possible). Two (2) 400 kW natural gas reciprocating engines were selected so that no power was to be exported from the site while utilizing all the rejected heat possible. This was considered to maximize the value of combined on-site power generation and heat recovery. The CHP TLF scenario includes many of the benefits of the base-loaded single 50 kW natural gas reciprocating engine. Reciprocating engines in general have high mechanical efficiencies and are able to maintain that efficiency over a wide range of operating loads. The startup capabilities of reciprocating engines make them ideal for thermal load following operating modes. They do require a more intensive preventive maintenance program, which does increase operational costs. A 15,000 Gallon thermal storage tank is provided to decouple the CHP system load from the loop/building load. A thermal storage tank makes it possible to create a time delay between heat production and heat consumption which may not be balanced at times.

The CHP technology would be coupled with a new heating hot-water plant supplied by four (4) 5,000 MBH Condensing Boilers. Hot-water distribution would be provided to all buildings within the district system boundary with the exception of Court Square East (converting to VRF), while electrical power distribution (parallel switch gear) would be provided for the Detention Center, Courts/Police, and Court Square East only.

Figure 7—10 – Centralized District Heating and Power System (Hot-water and 450 kW CHP)
8 District Energy Analysis

The district energy scenarios were compared against each other based on their predicted performance, in order to weigh the relative technical and economic feasibility of each option. The primary quantitative metrics used in this analysis were greenhouse gas emissions and life cycle costs (net present value), which were used as proxies for environmental commitment and economic competitiveness. Qualitative properties were considered for energy security as previously discussed in this report.

Greenhouse gas emissions were calculated using factors from the U.S. EPA’s ENERGY STAR Portfolio Manager Technical Reference on Greenhouse Gas Emissions. Emissions are calculated by multiplying the site energy values by emissions factors, which incorporate the emissions of carbon dioxide, methane, and nitrous oxide, to provide a single carbon emissions equivalent number.

<table>
<thead>
<tr>
<th>Direct/Indirect Energy Source</th>
<th>Total GHG Emissions Factors (Metric Tons CO2e/kBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid Electricity</td>
<td>0.00014261</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0.00005312</td>
</tr>
</tbody>
</table>

The life cycle cost assumptions used to inform the analysis of the district energy scenarios included a discount rate of 10%, a life cycle evaluation period of 50 years, an inflation rate of 3% and electrical and natural gas energy escalation rates of 5% and 3%, respectively. Life cycle cost analysis is an economic evaluation technique that determines the total cost of owning and operating a facility over a period of time which considers the time value of money.

Each district energy scenarios was compared to the decentralized baseline scheme to demonstrate the alternative with the lowest life cycle cost or net present value. The life cycle cost included capital costs (provided by third-party consultants), energy costs, and operations and maintenance costs. The replacement and residual or salvage value of equipment was excluded from this analysis.

8.1 Predicted Loads Analysis

The design heating and cooling loads of the centralized plant were determined by considering individual and simultaneous loads from the energy model. The simultaneous peak or instantaneous load of the centralized system is typically less than the sum of the individual decentralized peaks (this provides the benefit of a centralized plant needing less equipment and/or overall capacity). For this reason, a dynamic simulation model is used to facilitate the analysis of the centralized plant sizing options. Some deviations from existing operating equipment size were noted by County staff, particularly with regards to cooling equipment. Systems in existing buildings were re-sized according to the calibration procedures completed in the energy models and predicted peak dynamic loads. The level of accuracy of the calibrated existing building models was contingent on the availability of detailed metered data to fine tune all the key input parameters in the energy model.
Figure 8—1 – Calibrated and Predicted Monthly Peak Heating Loads

Table 8—2 Predicted Peak Heating Loads

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Detention Center</th>
<th>Courts/Police</th>
<th>Civic Building</th>
<th>AMC Site</th>
<th>Verizon Plaza</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEAK</td>
<td>7,787</td>
<td>5,904</td>
<td>985</td>
<td>3,187</td>
<td>2,345</td>
<td></td>
</tr>
</tbody>
</table>
Figure 8—2 – Calibrated and Predicted Monthly Peak Cooling Loads

Table 8—3 Predicted Peak Cooling Loads

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Detention Center</th>
<th>Courts/Police</th>
<th>Civic Building</th>
<th>AMC Site</th>
<th>Verizon Plaza</th>
</tr>
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<tbody>
<tr>
<td>PEAK</td>
<td>677</td>
<td>750</td>
<td>182</td>
<td>665</td>
<td>313</td>
<td></td>
</tr>
</tbody>
</table>
8.1.1 Source Energy Use Intensity

Nearly all district energy scenarios would lead to a reduction in source energy use relative to the baseline; a District Heating and Cooling (HW) system was shown to reduce source energy use by nearly 20%. District Cooling was shown to have a significant impact, as a larger cooling plant (in comparison to individual building cooling plants) can effectively modulate output and operate at higher efficiencies. This results in a decrease in electrical consumption, which has a relatively high site-to-source ratio due to losses as described in Section 4.4. District Heating was also shown to significantly reduce source energy use, as centralized hot-water boilers take advantage of greater turn-down ratios and temperature resets as a means of load modulation. The CHP scenarios show a decrease in source energy use that is attributable to the efficient use of heat from on-site electricity production. Although natural gas consumption increases, this is offset by the reduction of electric consumption from the grid.

District Heating (HW+STEAM) indicated an increase in source energy use, driven by an increase in the run-time of the existing steam boilers.
Figure 8-4 – Estimated Source EUI
8.1.2 Energy Cost

Estimated Energy Cost Reduction

-2.4% 8.4% 7.7% 8.9% 6.4% 17.3%

Figure 8—5 – Energy Cost Reduction Relative to Baseline

Nearly all district energy scenarios would lead to a reduction in energy costs relative to the baseline; a District Heating and Cooling (HW) system was shown to have the lowest estimated energy cost of any district energy scenario. The cost spread between natural gas and electricity (electricity is more expensive per unit of energy) was shown to be especially conducive to coupling a central hot-water heating plant with a base-loaded combined heat and power system.

The energy cost analysis did not include considerations of electrical demand charge reductions. These reductions could be significant for district cooling and CHP scenarios, which provide greater stability in electrical demand as compared to decentralized systems.

District Heating (HW+STEAM) indicated an increase in estimated energy costs, driven by an increase in the run-time of the existing steam boilers.
Figure 8–6 – Estimated Energy Cost
8.1.3 Greenhouse Gas Emissions

The total predicted emissions (both direct emissions associated with natural gas and indirect emissions associated with purchases of electricity) for each district energy scenario was calculated based on consumption data generated through the use of a dynamic energy model. The predicted Greenhouse Gas Emissions impact (reduction compared to the Baseline) has been provided in Figure 8—7. The regional eGRID-specific carbon emission factors was applied to the consumption data to generate a single carbon emissions equivalent number. The total GHG emissions units have been provided in metric tons of CO₂e (carbon dioxide equivalent) as illustrated in Figure 8—8.

The majority of district energy scenarios resulted in an improvement or reduction in GHG emissions in comparison to the Baseline with the exception of District Heating (HW+STEAM). The greatest GHG emission reduction was associated with the District Heating and Cooling (HW) district scenario given its combined part-load and full-load performance with modulating system output more efficiently than the baseline. The associated centralized heating and cooling system energy consumption relative to GHG Emissions were shown to be reduced upwards of 20% to 30% respectively (for heating and cooling end use). There was also a small incremental benefit with the CHP Base Load option when compared to District Heating (HW). The increase in natural gas consumption associated with the base-loaded reciprocating engine relative to the amount of electricity generated did not substantially reduce the overall total GHG emissions reduction. The influence of District Heating for GHG emission reductions was shown to be significant overall.
The increase in GHG emissions that was associated with the District Heating (HW+STEAM) scenario was contingent on how the existing steam boilers within the Detention Center and Courts/Police buildings are operated and interconnected with the new heating hot-water thermal loop for the proposed Courthouse Square development (new buildings). The steam process loads that existed in the Detention Center and Courts/Police buildings (domestic hot-water heating, kitchen, laundry, and humidifiers) would continue to be served by the existing steam boilers with any additional shared load on the new heating hot-water thermal loop. It was assumed that the steam boilers would have longer run-times annually to address the existing and new loads to utilize any excess heating capacity.
8.1.4 Life Cycle Cost Analysis

A life cycle cost analysis (LCCA) calculates the cost of a system over its entire life span considering all facets of the project for their value. The overall best economic choices were identified using this method, which included Capital Cost, Operations and Maintenance (O&M) Cost, and Energy Cost. The resultant life cycle cost analysis of the district energy scenarios considered is illustrated in Figure 8—9 where the options are sorted from lowest to highest associated net present value (NPV) relative to the Baseline scenario, illustrating the advantage of centralized energy systems in comparison to decentralized energy systems. This suggests that based on Net Present Value, the CHP Base Load district energy scenario should be further considered/evaluated, as well as the CHP TLF scenario and both District Heating scenarios.
When the top three district energy scenarios (lowest life cycle cost) were isolated, a common key parameter between them emerged: district heating. The use of a centralized district heating system (only) within the Courthouse Square proved to provide an economic advantage over other scenarios considered for the County in terms of future planning and investment. As illustrated in Figure 8—10, the most economically influential parameter in the NPV calculation was the predicted energy cost of the district energy scenario. The heating efficiency gained with a centralized heating system in Courthouse Square was evident in the life time costs of generating heating energy. Even with applying a sensitivity test on the escalation rates for Natural Gas, centralized heating system strategies economically outperformed other district energy system scenarios considered in the IEMP.
9 Renewables

Renewable energy can reduce operating costs for building owners while contributing zero greenhouse gas emissions. Furthermore, solar photovoltaics generate electricity coincident with summer cooling demands, thereby enhancing energy security by reducing the peak demand for grid electricity. Renewables also play an important role in raising awareness about the generation, distribution, and consumption of energy, and the opportunity to shift to cleaner sources. Arlington County has set a target of becoming a solar leader with the installation and use of 160 MW of solar electricity by 2050.

The feasibility and economics of solar photovoltaic (PV) and solar thermal systems were assessed at a district level for Courthouse Square. The generation potential of photovoltaics installed throughout the study area, including building rooftops and 20,000 square feet worth of shading elements in the public realm, was estimated to be approximately 311 kW; such a system would generate approximately 2 percent of the total energy consumed by the buildings in the study area, and would have a simple payback period of 49 years in today’s dollars. Solar photovoltaics can play an important role in public education and demonstrating commitment to the development of clean technologies, but the assessment showed that, in today’s economy, there is not a business case for installing PV systems in Courthouse Square. That could change very quickly with changes in the regulatory environment, particularly if Power Purchase Agreements (PPAs) are allowed, which will enable the County to partner with private companies that will be able to take advantage of tax credits.

Even without the tax credit advantages afforded by PPAs, the installed cost of photovoltaic systems has been decreasing at a rapid pace and the price of electricity has been increasing. If these trends continue and the installed cost of photovoltaics drops to $2/W and the blended rate for electricity escalates to $0.10/kW, photovoltaics will have a simple payback of just 20 years. If PPAs and other financing instruments become available in the future, the business case for photovoltaics will be even stronger. It is also acknowledged that this analysis uses a simple blended rate, although photovoltaic systems would have some impact on reducing demand charges as their peak production is coincident with peak demand.

Table 9—1 Photovoltaic Analysis Summary

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<tr>
<td>Maximum Capacity</td>
<td>311 kW</td>
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<tr>
<td>Est. Annual Output</td>
<td>318,117 kWh</td>
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<td>% of Total Energy Consumption</td>
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<tr>
<td>Installed Cost</td>
<td>$931,983</td>
</tr>
<tr>
<td>Est. Annual Cost Savings</td>
<td>$19,087</td>
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<tr>
<td>Simple Payback</td>
<td>49 years</td>
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</table>
Assumptions

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<th>Value</th>
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</thead>
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<tr>
<td>PV Efficiency</td>
<td>1,024 kWh / kW</td>
</tr>
<tr>
<td>PV Installed</td>
<td>11 W / sf</td>
</tr>
<tr>
<td>Installed Costs</td>
<td>$3.00 / W</td>
</tr>
<tr>
<td>Blended Electric Rate</td>
<td>$0.06 / kWh</td>
</tr>
</tbody>
</table>

Figure 9—1 Existing Building Rooftop Assessments

Solar thermal systems can provide domestic hot water for sinks and showers, and generally have a much shorter financial payback period than solar photovoltaic systems. Residential buildings and detention facilities are generally good candidates for such systems as they have a significant demand for domestic hot water. Solar thermal systems were assessed using the System Advisor Model (SAM) from the National Renewable Energy Laboratory. The assessment showed that solar thermal has a negative return on investment; this was driven by low energy prices in Arlington and the inability to leverage third-party financing instruments.

The current technology for small-scale wind power generation was acknowledged to be generally ineffective in Arlington, which lacks consistent prevailing winds. Geothermal systems were also discussed but not studied in detail for the IEMP.
APPENDIX C

STORMWATER ANALYSIS APPENDIX

Introduction

“a transformational time for stormwater management”
Arlington County Stormwater Master Plan (adopted Sept. 2014)

Courthouse Square sits atop the ridge line that divides the Rocky Run and Colonial Village Branch watersheds in Arlington County. As a high profile public project that will define the “Heart of Arlington” the Square is a significant opportunity to showcase water sensitive urban design and the issues at the heart of County’s aspirations for sustainable water management.

The Stormwater Management Plan for Arlington County lays out the challenges that are faced in the coming years, including, but not limited to pressure on existing infrastructure and the need for additional capacity, the ongoing erosion of County streams, new and evolving stormwater regulations, and the need to prepare for climate change impacts. It also lays out the achievements thus far and the opportunities for the future. Key opportunities include the significant potential of public land for treating stormwater and the success of watershed retrofit projects (both completed and planned) in significantly reducing the impact on nutrients/sediment.

The significant scale and profile of Courthouse Square means it has the potential to demonstrate and influence best practice in water management for the County and beyond. This Appendix supports the main planning document and provides further guidance on the opportunities to meet, and in some cases exceed, regulatory requirements while showcasing innovative, inspiring and educational stormwater features.

Key documents and information sources that have been referred to in the development of this work are as follows:

- Arlington County DES Stormwater Management Ordinance Manual (July 2014)
- Arlington County Stormwater Master Plan (Sept 2014)
- Chesapeake Bay Preservation Ordinance
- Virginia Stormwater Management BMP Clearinghouse
- Virginia Runoff Reduction Method (VRRM) - Version 2.7 (April 2013)

These references should be the starting point for further development of the stormwater strategy for subsequent phases of development. It should be noted that current regulations and guidance is likely to evolve over the course of the Courthouse area’s redevelopment and requirements at the time of redevelopment should subsequently be applied.
Courthouse Square sits atop the ridge line at the center of Arlington and represents a significant opportunity to demonstrate the County's intent and aspirations towards sustainable water management.

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- INTRODUCTION
- STORMWATER OBJECTIVES
- KEY OPPORTUNITIES AND STRATEGIES
- STORMWATER GOALS
- STORMWATER EXISTING CONDITIONS
- STORMWATER BMPS
- OPTIMIZING INFILTRATION AT COURTHOUSE SQUARE
- CONCEPTUAL STORMWATER PLAN
- DRAINAGE AREAS
- STREET SECTIONS
- STORMWATER MODELLING
- KEY WSUD PRECEDENTS
## Key Opportunities and Strategies

<table>
<thead>
<tr>
<th>Context</th>
<th>Opportunities</th>
<th>Strategies</th>
</tr>
</thead>
</table>
| **Building** | • Minimal rooftop treatment or disconnection strategies in place | • Introduce watershed retrofits at building-scale, linked to site systems, particularly for new buildings  
• Recycle water where feasible with focus on rainwater harvesting (RWH) | • Integrate rooftop disconnection into design of new buildings  
• Consider integrating RWH into new buildings  
• Consider integrating heat rejection for building/site energy systems into the water recycling system.  
• Target efficient water use in new buildings in line with LEED NC targets |
| **Site** | • Significant catchment and location on watershed ridge line  
• High level of impervious surface  
• Subsequent high rate of runoff (37,300 cf)*  
• Subsequent high level of sediments/nutrients runoffs (23.45 lbs(TP)/yr)*  
• Incoming state regulations requiring 10% net reduction for re-development sites (20% for sites > 1 acre) | • Significant reduction in impervious surface through green spaces and pervious hardscape  
• Integrate water as a defining feature of the public realm  
• Prioritize creation and preservation of green space to reduce runoff  
• Integrate public education and outreach on water and environment into the project  
• Define runoff reduction goal based on public realm concept  
• Demonstrate how to meet new state detention and on-site control standards in a sustainable and cost-effective manner  
• Meet and exceed (where feasible and aligned with County priorities) 10%-20% net reduction in pollutant loads | • Full integration of public realm, landscape and drainage design via suite of landscape-driven solutions (inlet control (roof/RWH), source control (pervious materials/infiltration trenches), conveyance (filter strips/swales/filter drains), site control (bio-retention))  
• Prioritize pervious surfaces  
• Create educational/interactive features into the public realm  
• Integrate RWH into the Integrated Energy Master Plan via heat rejection systems |
| **Region** | • Existing infrastructure under pressure (additional capacity required for 30% of system)  
• Ongoing erosion of County streams  
• New and evolving SW regulations and onerous pollution targets (nutrient and sediment reduction)  
• Preparing for climate change impacts  
• Watershed retrofit projects (completed and planned) have significant impact on nutrients/sediments, in line with next round of targets  
• Public land has significant potential for treating SW | • Comply with county ordinances and state and federal regulations on quality and quantity  
• Reduce the potential for SW threats to public health, safety, and property from site  
• Contribute (even if in a small way) to reducing downstream erosion and improving stream and river ecology | • Use Courthouse Sq. as a working example of the value of integrating public space and drainage strategies at a local, state and national scale  
• Use Courthouse Sq. as a case project in demonstrating how to meet the goals of the SWMP  
• Consider potential to link Courthouse Sq. retrofits and systems to other green streets/retrofit projects in future plans |

*calculation based on Virginia Runoff Reduction Method (VRRM) - Version 2.7 April 2013 - spreadsheets for 10.81 acre boundary.*
Stormwater Objectives

The aims and objectives of the stormwater strategy have been developed in collaboration with the various parties involved in the scheme development.

Over-arching goals of the Courthouse Square project as relates to stormwater, developed through discussion with the Department of Environmental Services, are as follows:

1) To meet regulatory stormwater requirements in a sustainable and cost-effective manner while demonstrating the principles of water sensitive urban design.
2) To maximize opportunities to connect stormwater with other strategic priorities that include art, education, energy, streets and tree canopy.
3) To meet, support and complement site and building sustainability targets.

The key opportunities and strategies related to these overarching goals are identified in the adjacent table. Regional considerations establish the potential of the project to support and inspire wider stormwater and sustainability initiatives, though these remain outside of the direct remit or influence of the project. The stormwater management train below is used to conceptualize and structure sustainable stormwater interventions within the project boundary.
As highlighted earlier the regulatory context is evolving and driving sustainability in managing stormwater. The first of the overarching goals is to meet the Virginia Stormwater Management requirements, which is in and of itself a challenging objective. Key regulatory requirements on stormwater performance for re-development projects in VA relevant to the Courthouse are as follows:

- State Channel Protection, Flood Control and Sheetflow requires the discharge rate post development (Q post) to be less than the discharge rate pre-development (Qpre) for the target rainfall event.
- Incoming state requirements for a reduction of phosphorus by 10-20% based on the pre-development condition.

Exceeding the mandatory targets is desirable but is also understood in the overall context of the sites broader sustainability aspirations. As such the following represent some of the strategic stormwater objectives that the project will aspire to achieve:

- The promotion of visible, decentralized stormwater treatment over underground storage and treatment.
- At a minimum, the Courthouse development would comply with the state requirements: a reduction of phosphorus by 10-20% based on the pre-development condition.

A higher level of pollutant reduction may be achievable if the urban design concept and other County priorities align to support further reductions. A 30% phosphorous reduction goal may be achievable (against the pre-development condition), with a more ambitious goal of 45% to be considered.

The inclusion of sustainability strategies related to stormwater including public art, greener streetscapes and increased canopy is also a major objective of the overall project and is addressed through the broader urban and landscape planning concept. Opportunities for integration of art, play, green streetscapes and canopy are introduced in this document in the form of case studies and precedent images.
Though County, state and regional targets vary in their application of metrics and time frames they can be understood as a continuum of improvement along the axes of runoff and pollution reduction (quantity reduction and quality improvement). The above diagram incorporates some of the key regulatory requirements, and some aspirational sustainability targets that are proposed by frameworks such as Sustainable Sites and LEED ND.
Stormwater Existing Conditions

The project area sits atop the ridge line for the Colonial Village and Rocky Run watershed, with the area around the Landmark Block draining north and the existing parking lot draining south and east. The high level of impervious surface between the existing parking lot and roof areas leads to a high rate of runoff and correspondingly a high level of sediment/nutrient runoff.

Baseline calculations using the Virginia Runoff Reduction Method (VRRM) - Version 2.7 April 2013 - calculation spreadsheets and methodology (Rational Method) show a pre-development treatment volume for the whole project area (471,100 sf) of approximately 37,300 cubic feet (for the target rainfall of 1 inch), and a pollutant load of 23.45 lbs/yr (TP). These are split between the Colonial Village Branch and Rocky Run Watershed as shown on the adjacent diagram.
SW drainage around site (simplified from County DES utility plans)
Stormwater BMPs

In order to achieve the interlinked goals a number of Best Management Practices can be integrated into the urban design concept. Some of the key BMPs along with their applicability to different components of the Courthouse are described in the below table. Four major categories of land use are used to denote applicability to the different areas of the site.
<table>
<thead>
<tr>
<th>Treatment Process</th>
<th>Type</th>
<th>Management/DEQ Spec</th>
<th>Potential at ACH</th>
<th>Land Use at ACH</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infiltration</strong></td>
<td>Infiltration Basin/ Trench</td>
<td>Source/Site Control No. 8</td>
<td>High</td>
<td>Y Y</td>
<td>Infiltration practices have the greatest run-off reduction capability of any stormwater practice. High potential for water feature and infiltration basin outside of underground parking area to maximize runoff and pollutant reduction.</td>
</tr>
<tr>
<td>Permeable Pavement</td>
<td>Source Control No. 7</td>
<td>High</td>
<td>Y Y Y</td>
<td>Pedestrian and paved areas. Limited in areas above parking. Maximise in sidewalks and new street paving.</td>
<td></td>
</tr>
<tr>
<td><strong>Retention</strong></td>
<td>RWH</td>
<td>Inlet Control No. 1</td>
<td>High</td>
<td>Y</td>
<td>Significant potential on existing and new buildings. Potential for synergy with water use reduction goals if integrated with recycling at building level.</td>
</tr>
<tr>
<td>Vegetated Roof</td>
<td>Inlet Control No. 5</td>
<td>High</td>
<td>Y</td>
<td>Significant potential on existing and new buildings. Visible statement of sustainable stormwater practice.</td>
<td></td>
</tr>
<tr>
<td><strong>Detention</strong></td>
<td>Constructed Wetland Site Control No. 13</td>
<td>Medium/Low</td>
<td>Y Y</td>
<td>High visibility, bio-diversity and educational value. Likely too large scale for ACH if no ‘downstream’ catchment is available due to parking extent in south of site. Requires careful controls and maintenance.</td>
<td></td>
</tr>
<tr>
<td>Detention Pond</td>
<td>Site Control No. 15</td>
<td>Medium/Low</td>
<td>Y</td>
<td>Surface detention pond could be integrated as an urban design feature. Likely too large scale for ACH if no ‘downstream’ catchment is available due to parking area.</td>
<td></td>
</tr>
<tr>
<td>Detention Vault</td>
<td>Site Control -</td>
<td>Low</td>
<td>Y</td>
<td>High capital cost. Last resort.</td>
<td></td>
</tr>
<tr>
<td>Wet Pond</td>
<td>Site Control No. 14</td>
<td>Medium</td>
<td>Y</td>
<td>Last in chain option to provide gravitational settling, biological uptake and microbial activity. Water features in southern Plaza can be considered to provide wet pond benefits.</td>
<td></td>
</tr>
<tr>
<td><strong>Bio-retention</strong></td>
<td>Rain Garden (small i.e. resi rooftops) Site Control No. 9</td>
<td>Medium</td>
<td>Y Y Y</td>
<td>Rooftop disconnect to rain gardens bordering sidewalks/local public realm.</td>
<td></td>
</tr>
<tr>
<td>Bio-retention basins (i.e. parking lots) Source Control No. 9</td>
<td>Medium/Low</td>
<td>Y Y</td>
<td>Larger infiltration areas in public realm could be designed as bio-retention areas e.g. area in porkchop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Urban Bio-retention</strong></td>
<td>Stormwater Planters Site Control No. 9A</td>
<td>High</td>
<td>Y Y</td>
<td>High potential for use as rooftop disconnect and as street and sidewalk treatment. Should be considered for all areas, in particular off of parking edge.</td>
<td></td>
</tr>
<tr>
<td>Expanded Tree Pits</td>
<td>Site Control No. 9A</td>
<td>High</td>
<td>Y Y</td>
<td>High potential for use as street and sidewalk treatment. Prioritized throughout site.</td>
<td></td>
</tr>
<tr>
<td>Stormwater Curb Extensions</td>
<td>Site Control No. 9A</td>
<td>Low</td>
<td>Y Y</td>
<td>Street/sidewalk practices will be built into design of streetscape.</td>
<td></td>
</tr>
<tr>
<td><strong>Bio-infiltration</strong></td>
<td>Grass Channel /Dry Swale Conveyance No. 3/ No. 10</td>
<td>Medium</td>
<td>Y Y</td>
<td>To buffer larger public realm and roadways. Potential for use at border of sq. and N. Courthouse Rd as ‘stream’ feature.</td>
<td></td>
</tr>
<tr>
<td>Wet Swale</td>
<td>Conveyance No. 11</td>
<td>Medium</td>
<td>Y Y</td>
<td>To buffer larger public realm and roadways. Potential for use at border of sq. and N. Courthouse Rd as ‘stream’ feature.</td>
<td></td>
</tr>
<tr>
<td>Filters (Media/Sand/ Vegetated) Conveyance/Source Control No. 2/ No. 12</td>
<td>High</td>
<td>Y Y</td>
<td>Can be used adjacent to site open channel conveyance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manufactured</strong></td>
<td>Swirl Separator Inlet Control -</td>
<td>High</td>
<td>Y</td>
<td>Consider for application at new and refurbished street drainage</td>
<td></td>
</tr>
<tr>
<td>Water Quality Inlet</td>
<td>Inlet Control -</td>
<td>High</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain Insert</td>
<td>Inlet Control -</td>
<td>High</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Infiltration practices use temporary surface or underground storage to allow incoming stormwater runoff to exfiltrate into underlying soils. Percolation infiltration hence requires direct drainage to ground. Infiltration practices have the greatest runoff reduction capability of any stormwater practice. Measured soil permeability rates will ideally exceed 1/2 inch per hour.

In the context of the Courthouse Square opportunities for larger-scale percolation infiltration practices are subsequently limited to areas outside of the underground parking structure edge. Though the metro and parking limit these larger scale practices there may be some opportunity for the use of permeable paving and planting above the parking to provide some level of infiltration in these areas before water is drained away to more permeable sites and to overflow points. This supports an overall principle of limiting impervious surfaces throughout the site, exemplified by the large coverage of green spaces that automatically reduce runoff rates significantly compared to the pre-development condition.

The constraints to large scale infiltration are outlined in the adjacent diagrams and areas where infiltration techniques might be applied are highlighted. The types of infiltration practices that should be considered in each area are also highlighted.

Considerations for the siting and co-location of infiltration practices and buildings must take into account multiple factors. All design of infiltration features must refer to the requirements at the time of development. As of March 2015 these included the Arlington County DES Stormwater Management Ordinance and the VA DEQ Stormwater Design Specification No. 8 - Infiltration. According to the current guidance infiltration must be set back from building and property lines in line with County and State requirements. DES Stormwater Management Ordinance Guidance Manual states that infiltration facilities shall be set back a minimum of 2 feet from property lines. Measured soil permeability rates should exceed 1/2 inch per hour. Soils of type A and B are the most applicable for infiltration, most soils in Arlington are B or C soils. Sites that have been previously graded or disturbed do not retain their original soil permeability due to compaction. Soil permeability in the proposed infiltration areas should be checked prior to commencing next level of design of infiltration systems.

It should be noted that current stormwater BMP specifications are likely to evolve over time. These specifications may change over the course of the Courthouse area’s redevelopment and requirements at the time of redevelopment should subsequently be applied.
Examples of how underground parking design and stormwater interplay. The above diagram shows conflict between a conceptual parking level with ideal percolation infiltration areas.

1. Optimizing space on the eastern side of the garage is the major opportunity for creating infiltration to ground
2. Opportunity for larger scale infiltration in form of a water feature and infiltration basin and/or opportunity for conveyance such as a vegetated swale and filter media.
3. Sidewalks outside the parking edge provide opportunities for pervious paving to allow for infiltration, as well as urban bio-retention practices (expanded tree pits and stormwater planters) that can still allow for the free movement of pedestrians and road users.
4. Stormwater can be infiltrated through the soil layers in the lawn area and will be subsequently underdrained away from the underground
5. Permeable paving can be considered in the hardscaped areas but value of infiltration is ultimately limited by the available soil depths above the parking and metro. Underdrainage and waterproofing would be required take the water off the underground parking edge.
The adjacent conceptual plan and keynotes highlight potential opportunities for water sensitive urban design within the plan. The sustainable stormwater interventions introduced here represent proposals that will be tested and developed further in subsequent stages of planning.

1. Visually significant stormwater feature, to be developed during open space planning
2. Any water feature using potable water must drain to sanitary
3. Infiltration prioritized for areas outside parking edge (i.e. not around or on top of potential judicial parking connection)
4. Visual demonstration of the movement of water following topography
5. Expanded tree pits in west N. Courthouse Road with linked under-drainage
6. Any residual flows are drained to infiltration feature in SE corner
7. Additional overflow to storm sewer in road
8. Opportunity for larger scale infiltration to capture and treat water from the lawn, ramble and N. Courthouse Road
9. Soil infiltration rates and seasonal high water table to be verified to inform level of infiltration design
10. Potential for an on-line system with underground reservoir to take peak events may be feasible dependant on infiltration rates
11. Potential for overflow to water features in plaza
12. Pre-treatment and high-flow bypass to N. Courthouse Rd storm sewer required
13. Detailed feasibility and design to refer to VA DEQ BMP Spec. No. 8 (infiltration) and/or relevant specifications at time of re-development
14. Surface pond and landscaping an opportunity for educational feature
15. Lawn area drains to infiltration basin
16. Some infiltration and attenuation provided by lawn area
17. Filter drain and drainage layer above parking slab
18. Water features on plaza above parking are sealed and waterproofed
19. Provide a visible descriptor of the water story as well as a stormwater purpose (attenuating flow, allowing for settling)
20. Educational components could be linked to these features as well as the infiltration basin in the SE.
21. Potential for green roofs on existing and new buildings provide multiple benefits including SW attenuation, reduction in UHI, dust and noise.
22. Location/extent dependant on existing equipment/potential for retrofit
23. Pervious pavers can be utilized over the parking if an under-drainage and waterproofing is put in place.
24. Cost/benefit of pavers/underdrainage vs. infiltration provided should be considered at detailed design
25. Potential for bioretention (rain garden or bioretention basin) or infiltration basin in this area
26. To be verified based on infiltration rates and proximity to metro
27. Expanded tree pits with urban bioretention proposed for Clarendon and most planted sidewalk areas outside of parking edge (see street sections)
28. Gradient in this area is ~7%. Expanded tree pits could be terraced with under-drainage that follows the topography. Gradient precludes pervious paving in steep areas.
Stormwater Modelling

In order to test various schemes a model based on the Storm Water Management Model (SWMM) and Virginia Runoff Reduction Method (VRRM) methodology was built and tested with the following rationale:

• To build a flexible model to estimate re-development runoff reduction and pollutant load reduction
• To enable testing of various schemes (urban plans) and scenarios (levels of emphasis on stormwater management) for their performance from quantity and quality perspective
• To gain confidence on performance targets

The model uses the following key references and assumptions:

• Virginia Runoff Reduction Method (VRRM) - Version 2.7 April 2013 - calculation spreadsheets and methodology (Rational Method)
• DEQ specifications and credits for BMP runoff/pollutant reduction
• Target Rainfall = 1 inch (90th percentile annual rainfall depth)
• Percentage reduction below pre-development load = 10%-20% (incoming VA requirement)
• Pre-development land coverage = impervious

The model was used on a number of different scenarios to test performance through the development of the plan. **The model shows that the final scheme has the potential to meet and exceed state requirements for a 10-20% reduction in phosphorous post re-development.** It also indicates that a 30% phosphorous reduction goal may be achievable (against the pre-development condition), with a more ambitious goal of 45% to be considered. This is dependant on the evolution of the urban design concept in subsequent stages and other County priorities aligning to support further reductions.
Provisional drainage areas and general directions of flow are established in the diagram above to describe the basic principles of the stormwater plan. Existing major stormwater infrastructure is included here to indicate ultimate outfall points for each of the drainage areas. Detailed analysis of existing capacity will be required to establish requirements for upgrading if any, though it is expected that residual discharges will be considerably lower than in the pre-development condition.
Potential opportunities for sustainable stormwater management and water sensitive urban design are highlighted in the adjacent street sections in line with the conceptual stormwater plan. In general, opportunities for infiltration via pervious paving and bioretention are maximized in areas where the ground conditions and street access requirements will allow. Expanded tree pits as a method of urban bio-retention are widely promoted. Tree pits can be linked under the sidewalk to provide increased treatment area while allowing for access for pedestrians and street users at grade. Subsequent stages of design development and planning should to the County Stormwater Ordinance Guidance Manual and in particular to VA DEQ BMP Specs No. 7 (Permeable Pavements) and No. 9A (Urban Bioretention) as well as best practice documents and guidance such as the Portland BES (2004) and the San Francisco Stormwater Design...
Consider using bio-retention practices such as rain gardens around larger planted areas.

Maximize pervious paving in sidewalk areas not above parking. Coordination with existing/future utility lines required to ensure 5 ft down-gradient from dry or wet utility lines. Setback to buildings/structures will depend on level of design of considered for paving and may be reduced if underdrains and/or liners are used. Expanded tree pits linked under the sidewalk to provide increased treatment area while allowing for access for pedestrians and street users at grade. Overflow to street storm sewer required.

Waterproofing for underground parking wall.

Consider rooftop disconnect to stormwater planters where roofs under project control. Overflow to street storm sewer required.

Consider rooftop disconnect to stormwater planters where roofs under project control and where street furniture allows.

Maximize pervious paving in sidewalk areas not above basement in coordination with existing/new utility lines.

Consider expanded tree pits on north side.

Infiltration in ramble area directly to ground. Clear overland flow paths to street and overflow drainage to be included in drainage design.

Consider directing overland flow towards ‘stream’ area to increase opportunities for infiltration and to convey water towards larger scale infiltration opportunity.
Key Precedents

The following precedents are a few of the key case studies that were considered and referenced when developing the sustainable stormwater and water sensitive urban design components of the plan.

Linnenbaur Plaza, Herford, Germany

A 0.8 acre site completed in 2008 for the City of Herford that carefully incorporates elements of water play, sculpture and infiltration through soft and hardscape.

Assinbone Park Green Roof, Winnipeg

The Qualico Family Centre is topped with a green roof planted with local grasses that offers an elevated extension of the surrounding trees. Green roofs at Courthouse Square could be designed to pick up elements of the landscape design in the main square.

Yale Campus, Urban Meadows

Designated areas around campus are mowed two to three times a year to encourage the development of an urban meadow. The urban meadows promote natural regeneration, leading to increased biodiversity, improved water quality, and a reduction in stormwater runoff and soil erosion. They also integrate educational information about the value of the meadows, an approach that could be used for the water features at Courthouse Square.
Jubilee Park, Canary Wharf, London

This 2.5 acre park over the Jubilee Line Underground Station is unusual in its extent (and inclusion of significant water features) over a roof structure and demonstrates the potential for integrating significant softscape over the metro structure. Specific measures included the off site fabrication of the waterproof formwork for the pools that make their way through the site.

SQ. 80 Plaza, GWU, DC

This Plaza is a Sustainable Sites Certified project with a 90% runoff reduction against pre-development levels. Biofiltration planters, native plant material, pervious pavers, cisterns, rain barrel, and sculptural fountain designed to reuse captured water are included.

Brisbane City Hall, CA

This retrofit to the Brisbane City Hall demonstrates the use of sustainable stormwater management in the place of a parking lot. The site design allowed a rain garden, a small plaza space, safer pedestrian circulation, and bike parking the without any loss of parking. Interpretative signage is also placed at the rain garden to let visitors know that it is a functional landscape space.

Jubilee Park, Canary Wharf, London

This 2.5 acre park over the Jubilee Line Underground Station is unusual in its extent (and inclusion of significant water features) over a roof structure and demonstrates the potential for integrating significant softscape over the metro structure. Specific measures included the off site fabrication of the waterproof formwork for the pools that make their way through the site.

Potzdamer Platz, Berlin

A 3 acre public realm project in the heart of Berlin completed in 1998 that integrates large-scale retention, filtration and building level water recycling.
This memo provides a summary of existing site plan approvals that fall within areas shown for redevelopment under the Courthouse Square Sector Plan Addendum. Each section describes existing, eligible, and proposed densities and lists relevant site plan conditions. This memorandum is intended to serve as a resource for implementation of the Sector Plan Addendum.

*Courthouse Square Study Area: Map of Approved Site Plans as of August 2015.*
1) Landmark Block

There is currently no existing site plan approval for the Landmark Block.

Summary of Existing, Eligible, and Proposed Development Densities.

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Eligible by Site Plan</th>
<th>Proposed Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLUP</td>
<td>High O-A-H</td>
<td>High O-A-H</td>
<td>Changes to GLUP and Zoning will be determined in follow up</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>implementation actions taken by the County Board.</td>
</tr>
<tr>
<td>Zoning</td>
<td>C-3</td>
<td>C-O</td>
<td></td>
</tr>
<tr>
<td>Site Area</td>
<td>39,608 sf</td>
<td>39,608 sf*</td>
<td>39,608 sf*</td>
</tr>
<tr>
<td>Development</td>
<td>54,936 GFA of</td>
<td>150,510 GFA (Office)</td>
<td>A mixed-use building with approximately 300,000-350,000 GFA</td>
</tr>
<tr>
<td></td>
<td>retail/office.</td>
<td>263,692 GFA (Res)</td>
<td>(office, residential, or hotel use).</td>
</tr>
</tbody>
</table>

*Site area may change pending a development proposal and future site plan application.

- Eligible Site Plan density assumes the approval of new site plan application by the County Board. Eligible Site Plan development statistics are derived from C-O Zoning: 3.8 F.A.R. for office uses and 4.8 F.A.R. for residential or hotel uses. These statistics do not assume bonus density.
- Proposed development densities are approximate and subject to change.

2) Strayer Block (SP #345)

This block is subject to Site Plan #345, Courthouse Metro Plaza, which was originally approved in 2000.

Summary of Existing, Eligible, and Proposed Development Densities.

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Eligible by Site Plan</th>
<th>Proposed Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLUP</td>
<td>High O-A-H</td>
<td>High O-A-H</td>
<td>Changes to GLUP and Zoning will be determined in follow up</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>implementation actions taken by the County Board.</td>
</tr>
<tr>
<td>Zoning</td>
<td>C-O</td>
<td>C-O</td>
<td></td>
</tr>
<tr>
<td>Site Area</td>
<td>24,137 sf</td>
<td>24,137 sf*</td>
<td>24,137 sf*</td>
</tr>
<tr>
<td>Development</td>
<td>11,393 sf Retail</td>
<td>91,720 sf (office)</td>
<td>A mixed-use building with approximately 300,000-350,000 GFA</td>
</tr>
<tr>
<td></td>
<td>41,814 sf Office</td>
<td>115,857 sf (res)</td>
<td>(office, residential, or hotel use).</td>
</tr>
<tr>
<td></td>
<td>53,207 sf Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Site area may change pending a development proposal and future site plan application.

- Eligible Site Plan density assumes the approval of new major site plan amendment application by the County Board. Eligible Site Plan development statistics are derived from C-O Zoning: 3.8 F.A.R. for office uses and 4.8 F.A.R. for residential or hotel uses. These statistics do not assume bonus density.
- Due to the Metrorail tunnel below the site, the Existing Site Plan Approval includes a modification of use that results in zero onsite parking spaces.
- Proposed development densities are approximate and subject to change.

Relevant Site Plan Conditions:

- **45.A.**: If offered by the County, the developer agrees to lease from the County Board, at fair market value, upon commercially reasonable terms, at least 11 parking spaces in the Courthouse Square parking structure, to be located on tax parcel 18002001, upon the completion of the parking structure.
- **45.B**: If, at any time, Strayer University does not occupy at least 30,000 square feet of the premises then, if offered by the County, the developer agrees to lease from the County at fair market value, upon commercially reasonable terms at least 64 parking spaces (in addition to the retail parking referenced in
45.A. above) in the Courthouse Square parking structure, to be located on tax parcel 18002001, upon the completion of the parking structure.

- **45.C:** Nothing in this condition shall require that the County either offer to the developer for lease any parking spaces or offer a specified number of parking spaces in the Courthouse Square parking structure to the developer.

- **45.F:** The developer agrees to require that Strayer University agree, and any other school, college or other public or private educational institution occupying space in the Courthouse Metro Plaza Office Building (SP #345) that 60% or more of its classes at the Courthouse campus be offered after 6:00 p.m. on weekends.

- **49:** Prior to the certificate of occupancy, the developer agrees to make available or obtain 8 parking spaces, including tandem spaces in the Xando Café building (2050 Clarendon Boulevard) for use by non-Strayer University office tenants in the proposed Courthouse Metro Plaza Office Building (SP #345).

- **52:** The developer agrees to construct a minimum 4,000 square foot deck on the roof of the building to which deck all tenants of the building shall have access. A plan showing how this element will be designed and used shall be shown on the final landscape plan and approved before the issuance of any permits.

3) **Bell Atlantic Plaza (SP #153)**

This portion of the study area is subject to approved Site Plan #153, Bell Atlantic Plaza, which was approved in 1989. This table entry represents the entire site plan. The Courthouse Sector Plan Addendum provides for additional development guidance on only a portion of the site plan area.

### Summary of Existing, Eligible, and Proposed Development Densities.

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Eligible by Site Plan</th>
<th>Proposed Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLUP</td>
<td>High O-A-H and</td>
<td>High O-A-H and</td>
<td>Changes to GLUP and Zoning will be determined in follow up implementation</td>
</tr>
<tr>
<td></td>
<td>Public</td>
<td>Public</td>
<td>actions taken by the County Board.</td>
</tr>
<tr>
<td>Zoning</td>
<td>C-O</td>
<td>C-O</td>
<td></td>
</tr>
<tr>
<td>Site Area</td>
<td>182,172 sf</td>
<td>182,172 sf *</td>
<td>182,172 sf *</td>
</tr>
<tr>
<td>Development</td>
<td>725,170 sf office</td>
<td>0 sf</td>
<td>725,170 sf of existing office space and a new mixed-use building of approximately</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>200,000-225,000 sf of additional GFA (office, residential, hotel, or civic uses).</td>
</tr>
</tbody>
</table>

*Site area may change pending a development proposal and future site plan application.

- An additional 32,916 sf of bonus office density was approved in the original site plan. This bonus density was justified by the following:
  - Consolidation of properties on the block.
  - Provision of a public plaza that was constructed by the applicant at the corner of 14th Street N and N. Courthouse Rd.
  - The applicant’s offer to contribute $100,000 to the operation of the Homeless Shelter.
  - The proposal to require the property at 1222 N. Veitch St. which will allow 13th St. N. to be extended to N. Wayne St.
- At the time of site plan approval, there was no additional density available to the site plan. Eligible Site Plan density assumes the approval of new major site plan amendment application by the County Board.
- Eligible Site Plan development statistics are derived from C-O Zoning: 3.8 F.A.R. for office uses and 4.8 F.A.R. for residential or hotel uses. These statistics do not assume bonus density.
- At the time of site plan approval, a public dining facility was provided as an amenity to the public since few dining options were available in the area. A 2012 site plan amendment amended this condition to
convert the remaining dining space into office space, while providing improvements to the plaza in front of the building and having the building serve as a polling place.

Relevant Site Plan Conditions:

- **42:** The applicant shall demolish the buildings at 2054 and 2060 – 14th Street North. Following demolition, the applicant shall construct on the site occupied by those buildings a public landscaped plaza...The applicant shall dedicate a public access easement and a scenic easement over the area covered by the public plaza.

- **43:** The applicant shall provide that the public plaza...will include an art work, sculpture or other feature at a cost to the applicant of approximately $50,000 which shall be provided in Phase II of the plaza construction...

- **44:** After completion of the public plaza referenced in condition number 42, the applicant shall work with the DPRCR or other appropriate County agency to provide for concerts, temporary art exhibits or other cultural/recreational programming in the plaza with the intent of creating activity and interest for the public using this space.

- **51:** Parking shall be provided for each building according to the approved parking ratio. This parking need not be located within the parcel designation of each building but must be located within the overall project, as referenced in Section 36.H.2.b of the Zoning Ordinance.

- **52:** The density allocation for any subdivided parcel on the site shall be based on the approved density for the entire site. No additional density shall be allowed on any individual parcel formed by subdivision of the site, as referenced in Section 36.H.2.b. of the Zoning Ordinance.

### 4) Courthouse Plaza (SP #231)

This portion of the study area is subject to approved Site Plan #231, Courthouse Plaza. This table entry represents the entire site plan. The Courthouse Sector Plan Addendum provides for additional development guidance on only a portion of the site plan area.
Summary of the History of Site Plan #231:

- On May 18, 1985, the County Board approved SP #231, which included what is known today as Courthouse Plaza (the hotel, two office buildings, residential building, and theater) as well as the (at the time) existing County Police/Jail building, Court Tower, and old Courthouse.
  - The Site area for this approval included the right of way for N. Veitch St. (which existed at the time and was subsequently removed) and land that was dedicated to become Clarendon Blvd. (which did not exist at the time and was subsequently created).
- On April 22, 1987, the County Board approved a major site plan amendment and subdivision of the site into six lots. The lot size of these lots is subsequently smaller than the site area in the original approval.
  - The County Board also approved Site Plan Condition #50 stating that the density allocations for all subdivisions of the site shall be based on the approved density for the entire site.
- Between 1988 and 1990, the two office buildings (2100-2300 Clarendon Blvd), residential building (Courthouse Plaza Apartments), and theater were completed.
- With the demolition of the old County Courthouse in 1997, the last of the county owned buildings in the original 1985 site plan approval were demolished. The area originally devoted to these buildings was turned into a surface parking lot.
- In 1993, the County Board approved a site plan amendment to allow a dentist office within designated retail space. In 1996, the County Board approved a site plan amendment for the conversion of approximately 4,290 square feet of additional retail space to secondary retail, medical office, and law office use.
- On August 13, 1997, the County Board approved a major site plan amendment for approximately 280,000 sf county office building, vacation, and rezoning to SP #231 in 1997.
  - The Board approved a rezoning (Z-2441-97-5) from C-3 to C-O for the Court Square West building and adjacent portion of vacated N. Uhle. St.
  - This action supported the rezoning of the above parcels by including them in the site plan area of SP #231, suggesting that they would benefit by being brought into a unified site plan.
  - The Board approved Alternative B, a site plan amendment for 282,392 square feet of gross floor area, up to 18 stories in height, with designated retail space on the ground floor. This building was never constructed.
  - The County Board also approved a Condition that required the developer (Arlington County was the applicant) to submit drawings that meet the requirements of Administrative Regulation 4.1 at an April 1998 County Board Meeting and/or prior to the start of any construction. These drawings were to include a final design of the exterior façade of the building and a final design for the Courthouse Square Plaza.
- On September 26, 1998, the County Board deferred to no specific date a site plan amendment for SP #231 for the final design of the exterior façade of the building and the public plaza in the 1400 block of North Courthouse Rd.
- On February 25, 2006, the County Board approved a major site plan amendment for a 176 room hotel. This approval was for the hotel site only, and represents a total GFA of 141,110 sf. The original 1985 approval for this site was for a 276 room hotel at 202,984 sf.
- The hotel component of SP#231 (a Residence Inn) was completed in 2009.
Summary of Existing, Eligible, and Proposed Development Densities.

<table>
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<tbody>
<tr>
<td><strong>GLUP</strong></td>
<td>½ High O-A-H/ ½ High Residential, Government and Community Facilities</td>
<td>½ High O-A-H/ ½ High Residential, Government and Community Facilities</td>
<td>Changes to GLUP and Zoning will be determined in follow up implementation actions taken by the County Board.</td>
</tr>
<tr>
<td><strong>Zoning</strong></td>
<td>C-O</td>
<td>C-O</td>
<td></td>
</tr>
<tr>
<td><strong>Site Area</strong></td>
<td>Site area at the time of Site Plan approval in 1985: 379,019 sf. An additional 25,099 sf of site area (CSW and N. Uhle St. Parcel) was added to the site plan in the 1997 major site plan amendment and rezoned to “C-O.”</td>
<td>For the amended site area in 1987, density is based on the original approvals – not the site area. An additional 25,099 sf of site area (CSW and N. Uhle St. Parcel) was added to the site plan in the 1997 major site plan amendment and rezoned to “C-O.”</td>
<td>For the amended site area in 1987, density is based on the original approvals – not the site area. An additional 25,099 sf of site area (CSW and N. Uhle St. Parcel) was added to the site plan in the 1997 major site plan amendment and rezoned to “C-O.”</td>
</tr>
<tr>
<td><strong>Development</strong></td>
<td>Residential building: 433,871 GFA. Theater: 38,842 GFA. Office Buildings: 622,240 GFA. Hotel: 141,110 GFA. Court Square West (CSW): 56,543 GFA.</td>
<td>The 2006 major site plan amendment approved a smaller hotel amount that was approved in the original site plan. Under a major site plan amendment, the hotel site could be eligible to achieve an additional 61,874 sf of hotel GFA. The demolished County buildings (253,941 sf) were included in the original 1985 approval. The 1997 rezoning of CSW to C-O allows for 95,376 sf of office sf. This yields 349,317 sf of available office density, which is reduced to 292,783 sf if CSW is retained. The 1997 approval retained CSW and utilized the above density to approve a currently unbuilt 276,224 sf office building. Were the 1997 site plan amendment to be amended, there is an eligible 292,783 sf of eligible office density. With the remaining buildings on the site retained, this could potentially result in an additional 292,783 sf of office GFA and 61,874 sf of hotel GFA.</td>
<td>Retention of the residential building, office buildings, and hotel. Demolition of the Theater (38,842 sf) and Court Square West buildings (56,543 sf) and addition of a private or county office building on those sites of approximately 325,000-360,000 sf. Addition of a civic building of approximately 45,000-50,000 sf at the south square. The proposed plan results in a total of approximately 370,000-410,000 sf of new GFA. GFA that is potentially eligible by site plan (292,783 sf) and the demolition of the theater (38,842 sf) and CSW (56,543 sf) result in 388,165 sf of eligible office GFA.</td>
</tr>
</tbody>
</table>

Courthouse Sector Plan Addendum: Courthouse Square
Relevant Site Plan Conditions:

May 18, 1985 Site Plan Approval and April 22, 1987 Major Site Plan Amendment Conditions

- **5:** The retail, cinema and mechanical areas in the project shall not be converted to office use.
- **37:** A plan of the proposed Metro Station tunnel connection shall be approved by the County Manager or his designee prior to the issuance of any building permits. Also, the developer shall at the time of the building permit request for Phase I identify a tunnel connection from this tunnel directly into the basement of the existing Court House. The Court House tunnel shall be provided by the developer prior to the issuance of a Certificate of Occupancy for Phase I, or as otherwise approved by the County Manager or his designee.
- **49:** Parking shall be provided for each building according to the approved parking ratio; however, this parking need not be located within the parcel designation for each building but must be located within the overall project.
- **50:** Density allocation for all subdivisions of the site shall be based on the approved density for the entire site. No additional density shall be allowed on any individual parcel formed by subdivision of the site.

December 17, 1997 Major Site Plan Amendment Conditions (Unbuilt Office Building)

- **1:** The developer (as used in these conditions, the term developer also includes the owner, the applicant and all successors and assigns) agrees to comply with the standard conditions set forth in Administrative Regulation 4.1 and the plans dated November 7, 1997, prepared by Skidmore, Owings and Merrill, as reviewed and approved by the County Board and made a part of the public record on December 13, 1997 together with any modifications proposed by the developer and accepted by the County Board or vice versa. This approval is granted for an office building with up to 282,392 square feet of gross floor area, up to 18 stories in height, with designated retail space on the ground floor (Alternative B).
- **2:** The developer agrees to submit drawings for a site plan amendment request to be heard by the County Board at its April 1998 public hearing, and/or prior to the start of any construction, which meet the requirements of Administrative Regulation 4.1 for Alternative B as selected by the County Board on December 13, 1997. These drawings shall contain a final design of the exterior façade of the building. These drawings shall also contain a final design for the Courthouse Square Plaza, based on the conceptual drawings described above the approved by the county Board on December 13, 1997. The final façade and plaza designed drawings shall be reviewed by the Site Plan Review Subcommittee before being heard by the Planning commission and County Board, and the final design for the Courthouse Square Plaza shall also be reviewed by the Parks and Recreation Commission before the April 1998 County Board hearing.
- **31:** All plaza areas used for vehicular access and all surface parking areas shall be constructed to support the live load of any fire apparatus. Bollards or curbs shall be used on pedestrian plazas to separate the areas intended for emergency vehicle use from areas intended for pedestrian use. No above grade structure shall be allowed to encroach in fire lanes. Compliance with this condition shall be demonstrated before issuance of the Footing to Grade Structure Permit.
- **43:** The density allocated for any subdivide parcel on the site shall be the same as the approved density for the entire site. No additional density shall be allowed on any individual parcel formed by subdivision of the site.

Lot 6 Conditions (Hotel)

- **61:** The density allocated for any new construction pursuant to the site plan on any subdivided parcel of the site shall be the same as the approved density for the entire site. No additional density shall be allowed on any individual parcel formed by subdivision of the site.
- **83:** The developer agrees to allow public access through the hotel lobby to North Adams Street and the plaza between the house of 6:00 a.m. and 11:00 p.m.
Proposed GLUP Changes

Create Courthouse Square Special District – amend zoning ordinance for C-O sites in the district to achieve heights and TDR options

Change from “Government and Community Facilities” to “High” Office-Apartment-Hotel and extend public ownership cross-hatch.

Change from “Government and Community Facilities” to “Public”

Change from ½ “High” Office-Apartment-Hotel, ½ “High” Residential to “High” Office-Apartment-Hotel

Change from “Public” to “High” Office-Apartment-Hotel
Proposed Retail Plan Changes

Note: recommended changes to the Arlington County Retail Plan only include areas within the Courthouse Sector Plan Addendum Study Area as depicted below in the shaded area.