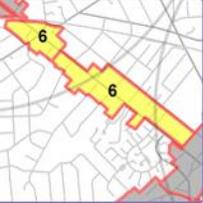


8. Utilities & Environment



West Broad Street Connecting Falls Church

Introduction

Utilities and the natural environment are the infrastructure building blocks of any community. The vision and goals of this Plan call for making the West Broad Street POA environmentally sustainable, pedestrian friendly, and an all-around great place. Achieving these ends depends on having the right infrastructure to build upon. This means updates to the City’s “grey infrastructure” – traditional utilities lines, and the City’s “green infrastructure” – the environment.

This chapter explores the existing conditions of utilities and environment in this POA and identifies strategies for achieving the vision and goals of this Plan.

Overhead Utilities

Overhead utilities in the West Broad Street consist of electric, telecommunications, Cable TV, and Fiber Optic wires strung along 34 foot high utility poles. Some utility poles hold other equipment such as transformers, traffic signs, street lights, and stop lights.

Overhead utility poles are aesthetically unpleasing, interfere with the growth of mature street trees and in many cases inhibit pedestrian access. In some cases, pedestrian access is so limited that it does not meet the minimum standards specified by the American with Disabilities Act (ADA). Undergrounding overhead utility lines frees up space for other uses – like street trees and pedestrian access – and improves the look of the area. Many of the recent redevelopment projects in the area have undergrounded utility lines along their property. However, many utility lines in the area remain above ground.

A general cost range for undergrounding overhead utility lines in the Washington, D.C. region is between \$8 million to \$13 million per mile. The exact costs will vary depending on specific circumstances and approach. Using this general cost metric, the total cost to underground all the overhead utilities related to the

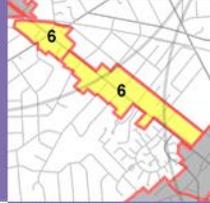


Above: Overhead utility lines along Park Avenue inhibit pedestrians and ADA access.



Above: Overhead utility lines along side streets between West Broad Street and Park Avenue inhibit pedestrians and ADA access.

West Broad Street Planning Opportunity Area 6



Above: Overhead utilities along West Broad Street inhibit pedestrians and ADA access, as well as block views of buildings and conflict with street trees.

Below: The stop lights at the West Broad Street/Spring Street (Left) and Park Avenue/Little Falls (Right) intersections will need to be replaced as part of the undergrounding process.



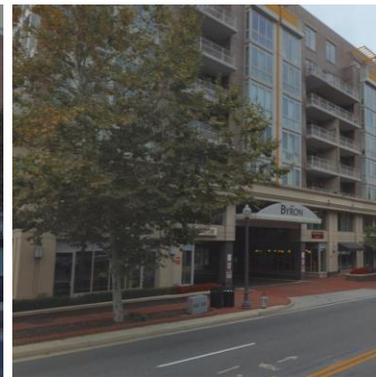
West Broad Street POA would be between \$19.2 million and \$31.2 million. Combining utility undergrounding with other Public Works projects, such as stormwater improvements or sidewalk rehabilitation, can help to reduce the total cost by limiting the need to make subsequent pavement cuts and by using available labor and equipment.

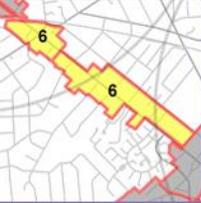
Strategy: Work with developers to underground overhead utility lines as part of redevelopment. In cases where a development project is too small to effectively underground utilities in the vicinity of the project, consider working with the developer to contribute to an utility undergrounding fund.

Strategy: For sites that are unlikely to redevelop soon or for projects that are too small to effectively underground, invest public funds to underground remaining above ground utility lines.

Strategy: Incorporate utility undergrounding into public projects in the POA.

Below: The Spectrum (Left) and The Byron (Right) undergrounded overhead utilities along West Broad Street when constructed. It allows more space for pedestrians, streetscape elements, and trees.





West Broad Street Connecting Falls Church



Overhead Utilities

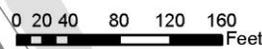
-  West Broad Street POA
-  Parcel
-  Building
-  Utility Pole to be Undergrounded
-  Utility Lines to be Undergrounded



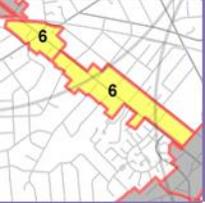


Overhead Utilities

-  Parcel
-  Building
-  Utility Pole to be Undergrounded
-  Pole Mounted Transformer to be Undergrounded
-  Utility Lines to be Undergrounded



Utilities & Environment



West Broad Street Connecting Falls Church

Utilities & Environment



Overhead Utilities

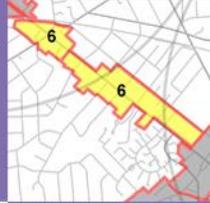
- Parcel
- Building
- Utility Pole to be Undergrounded
- Pole Mounted Transformer to be Undergrounded
- Utility Lines to be Undergrounded



0 20 40 80 120 160 Feet



West Broad Street Planning Opportunity Area 6



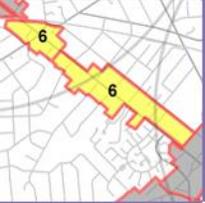
Overhead Utilities

- Parcel
- Building
- Utility Pole to be Undergrounded
- Pole Mounted Transformer to be Undergrounded
- Utility Lines to be Undergrounded

0 25 50 100 150 200 Feet



Utilities & Environment



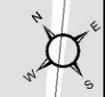
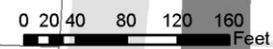
West Broad Street Connecting Falls Church

Utilities & Environment

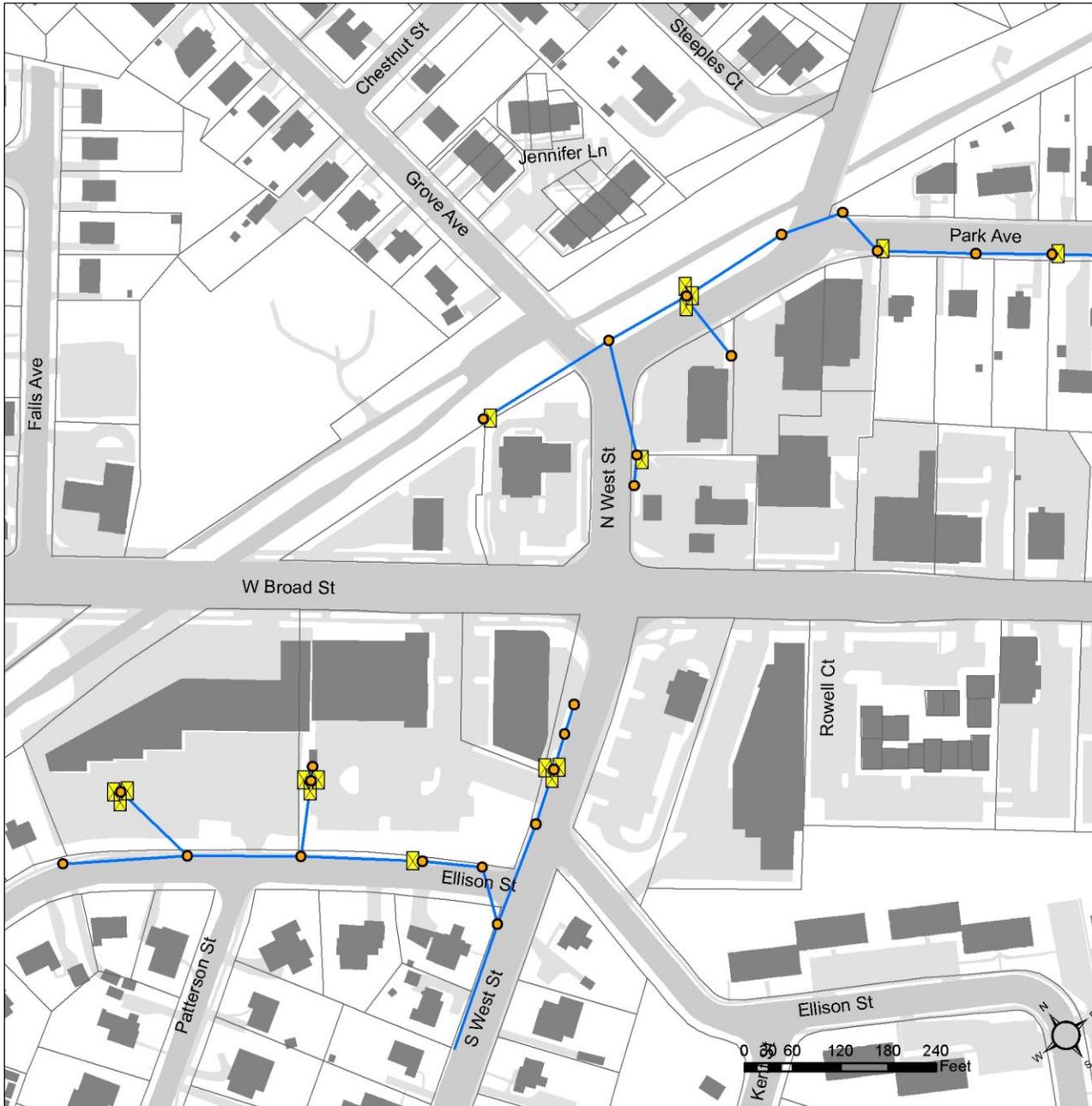


Overhead Utilities

-  Parcel
-  Building
-  Utility Pole to be Undergrounded
-  Pole Mounted Transformer to be Undergrounded
-  Utility Lines to be Undergrounded

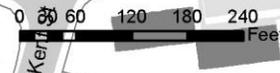


West Broad Street Planning Opportunity Area 6

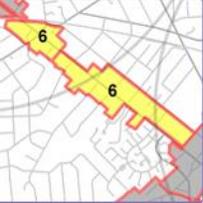


Overhead Utilities

- Parcel
- Building
- Utility Pole to be Undergrounded
- Pole Mounted Transformer to be Undergrounded
- Utility Lines to be Undergrounded



Utilities & Environment



West Broad Street Connecting Falls Church

Water

Water service in the City is provided by the Fairfax Water Authority. Water mainlines are located along West Broad Street, Park Avenue, Virginia Avenue, Pennsylvania Avenue, Oak Street, Spring Street, and West Street. The water mainlines are generally six (6) inch diameter along West Broad Street and sixteen (16) inch diameter along Park Avenue.

Fire Hydrants

There are eleven fire hydrants located within the borders of the West Broad Street POA. The majority of commercial structures are located within 300 feet of a fire hydrant. Gaps in fire hydrant coverage exist along Park Avenue between North Oak Street and North Spring Street, as well as along West Broad Street near the West End Plaza Shopping Center, Jiffy Lube, and Rite Aid.

Strategy: Work with developers during redevelopment to ensure adequate water supply and fire hydrant coverage are provided.

Sanitary Sewer

The sanitary sewer system is maintained by the City of Falls Church, Department of Public Works. Sanitary sewer lines are located under all public streets within the West Broad Street POA. Generally, eight (8) inch diameter sanitary sewer lines are located under West Broad Street and Park Avenue, as well as side streets.

Strategy: Work with developers during redevelopment to ensure adequate sanitary sewer coverage are provided.

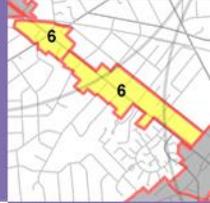
Stormwater

The Stormwater system is maintained by the City of Falls Church, Department of Public Works. The stormwater system is independent of the sanitary sewer system. The West Broad Street POA lies within the Tripps Run watershed, all storm



Above: The existing conditions along the Coe Branch.

West Broad Street Planning Opportunity Area 6



Above: Before (Left) and after (Right) examples of stream restoration projects in other jurisdictions.

sewers drain into Tripps Run or a branch of Tripps Run. There are no Resources Protection Areas (RPAs) in the POA.

Approximately 62 percent of the land cover in the West Broad Street POA is impervious surface, covered by buildings, roads, surface parking, and sidewalks. The older buildings and developments are particularly heavy in the use of impervious surface and do less to mitigate storm water impacts. In contrast, newer developments incorporate onsite systems to limit stormwater impacts.

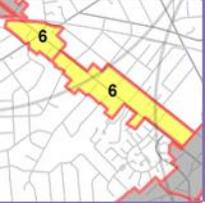
The City's adopted Watershed Management Plan recognizes the detrimental impacts stormwater can have on the region's ecosystem. These impacts include flooding of downstream communities and pollution and destruction of ecosystems. A driving force behind a multistate agreement to reduce stormwater volumes and stormwater pollutants is the severe impacts that stormwater pollution have had on the Chesapeake Bay – a major regional economic and recreational resource.

To manage the stormwater system, the City uses a combination of grey and green infrastructure. Grey infrastructure includes large pipes to carry water, underground vaults to temporarily store water, and chemical filters to remove pollutants.

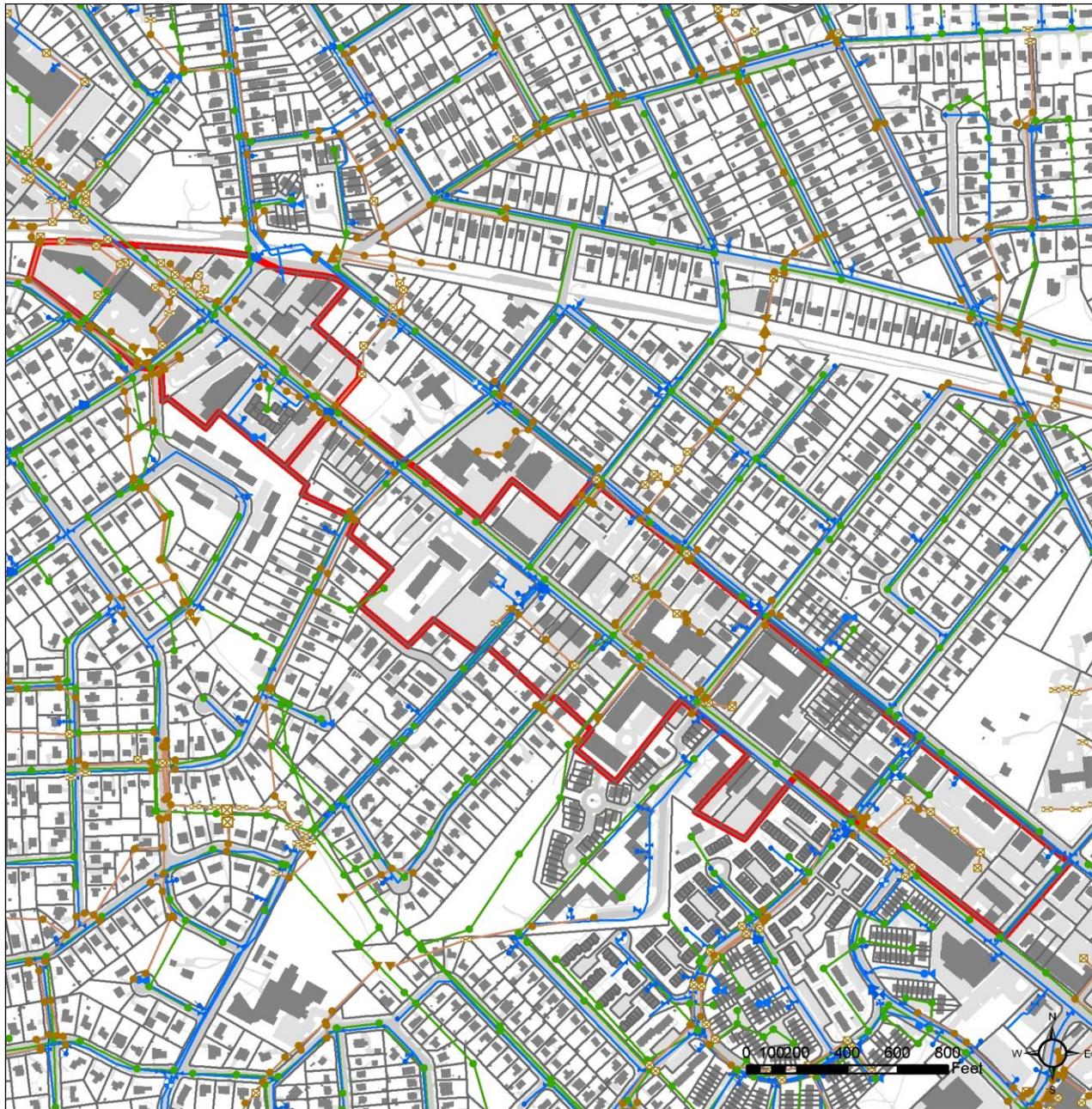
Green infrastructure includes techniques that limit or slow water flow through the system and naturally remove pollutants. Techniques include rain gardens, green roofs, permeable paving, and stream restoration.

The City recently completed two stream restoration projects in the vicinity of the West Broad Street Area. The City restored the Pearson Branch and the Coe Branch of Tripps Run. Through restoration, the stream bed was reshaped to better handle water flows from storm events and landscaping was updated to reduce erosion.

Strategy: By City policy, all redevelopment projects are expected to reduce impacts on the storm water system from existing conditions. This requirement can be met by



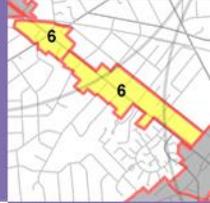
West Broad Street Connecting Falls Church



Underground Utilities

- West Broad Street POA
 - Parcel
 - Building
- ### Water System
- Air Release Valve
 - Blow Off Valve
 - Check Valve
 - Fire Hydrant
 - Meter
 - Plug
 - Pump Station
 - Reducer
 - Separation Valve
 - Tank
 - Valve
 - Water Line
- ### Sanitary Sewer
- Sewer Manhole
 - Sewer Line
- ### Storm Sewer
- Curb Inlet
 - Grate Inlet
 - Manhole
 - Pipe Inlet
 - Pipe Outlet
 - Storm Pipe





Permeable pavers in Richmond, VA.

a variety of grey and green systems incorporated into the design of the project.

Trees Canopy

The City of Falls Church was the first jurisdiction in the Commonwealth of Virginia to achieve Tree City USA status from the National Arbor Day Foundation. In 2014, the City received its 36th sequential designation.

Trees are a defining feature of the City and specifically on West Broad Street. The mature trees that line West Broad Street are a source of community pride and distinguish the City from surrounding areas. The trees are an essential part of the City's streetscape – providing aesthetic benefits, environmental benefits, and increasing walkability.

There are approximately 474 trees within the POA. City policies require the installation of street trees and additional trees for screening between disparate land uses as part of redevelopment.

Trees are a visual reminder of the changing seasons. New leaves herald the beginning of spring, while fall brings changes in color. Seasonal tree decorations can add character to the streetscape and increase the sense of community spirit during holidays. Tree lighting in particular can also help to brighten the area – both literally and figuratively during winter months. During the 2014 and 2015 winter season, the City and local property owners partnered in a pilot effort to add tree lighting to 30 trees in the 100 and 200 blocks of West Broad Street.

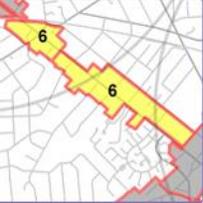
Strategy: As part of the redevelopment process, ensure City policies are met for the provision of street trees and screening trees. Look for opportunities to increase the tree canopy in the POA.

Strategy: Continue and expand the pilot winter tree lighting program through the West Broad Street POA.

Groundcover

Type	Acreage	Percent
Buildings	11.92	21%
Impervious Surface	23.61	41%
Pervious	22.3	38%

Trees: 474



West Broad Street Connecting Falls Church

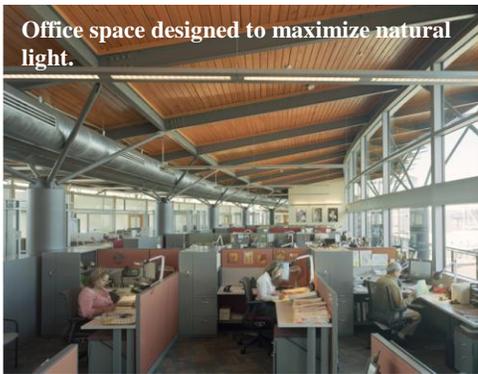
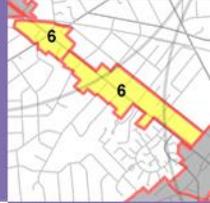
Utilities & Environment



Environment

- West Broad Street POA
- Parcel
- Contour Line (2 ft)
- Tree
- Surface Parking
- Roads & Sidewalks
- Building
- Pervious Surface





Office space designed to maximize natural light.



Bicycle Cages provide secure bike parking for longer term storage.

Building Design

Innovative building design is one of the key concepts of this Plan. One component of these concepts is developing buildings that reduce their environmental impacts in comparison to traditional building techniques.

“Environmental Harmony” is listed as one of the items in the City’s Vision and Long-Term Strategic Plan. To achieve this goal, the City adopted a policy in 2012 that construction and renovation of public buildings achieve Silver status through the Leadership & Environmental Design (LEED) rating system. In addition to public buildings, the City expects that private development will also achieve this standard.

The LEED design standards cover many aspects of site development, including energy use, stormwater management, and transportation access.

Energy use from traditional sources can be reduced by decreasing electrical demand through better use of daylight, newer lighting fixtures, and more efficient heating and cooling systems. Energy demand from traditional sources can also be reduced by incorporating onsite energy generation such as photovoltaic panels and solar hot water heating systems.

Stormwater can be managed by inclusion of grey and green infrastructure tools mentioned previously.

Management of transportation access can reduce both pollution and energy use associated with traditional automobile travel. Improved streetscape increases pedestrian access. Secure bike parking facilities and easily accessible bike racks make biking possible. Electrical vehicle charging stations reduce reliance on gasoline. Priority parking spaces for carpools and vanpools encourage more energy efficient travel.

Strategy: Work with developers to construct buildings and design sites to achieve a minimum LEED Silver status.



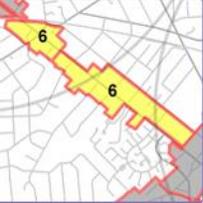
Different types of EV charging stations from Siemens.



Installation of solar panels on Arlington County Central Library.



Green rooftop.



West Broad Street
Connecting Falls Church

This page intentionally left blank.