V. NATURAL ENVIRONMENT

Environmental sustainability is an important legacy for the future of the Marlboro Pike Corridor. All of the area's stakeholders will benefit from environmental preservation, restoration, and enhancement measures. These will include preservation of green infrastructure, and measures to improve water quality, air quality, noise quality, and energy efficiency.

Natural environmental resources in the project study area include parkland, rivers and streams, floodplains, watersheds, wetlands, and forested areas (Figures V-1a and V-1b, pages 70–71). The John Eager Howard Community Center Park and the Greater Capitol Heights/Oakcrest Community Park are the two largest parks in the study area and are located in the western portion near the Washington, D.C., border. In addition, the Greater Capitol Heights/ Oakcrest Community Park has significant frontage along Marlboro Pike. Other smaller community parks are dispersed throughout the area. Parkland serves as a natural resource as it provides tree cover and natural buffers that help to counter the effects of urban development, including stormwater runoff and air pollution.

The plan area falls within portions of the Oxon Run, Henson Creek, and Southwest Branch watersheds. Both Oxon Run and Henson Creek drain to the Potomac River, while the Southwest Branch watershed drains to the Patuxent River. A watershed is an area of land from which all water (both surface and groundwater), sediments, and dissolved materials drain into a common outlet, typically a stream, lake or river. Oxon Run and Ritchie Branch are two streams located in the project area. In close proximity to the planning area, the Suitland Bog is designated as a wetland of special concern by the State of Maryland, and is included as a special conservation area (SCA) in the *Approved Countywide Green Infrastructure Plan.*

Although the sector plan contains sensitive environmental resources it is very urban in nature. This is a highly developed area that contains extensive impervious surfaces throughout. Over time, resources have degraded, as is evident from the numerous channelized and piped streams and from loss of forest. It is important to find a balance between the built and natural environments, which is what the strategies put forth in this section seek to achieve.

ENVIRONMENTAL GOAL: Improve water, air, noise quality, and energy efficiency throughout the Marlboro Pike sector plan area by protecting and preserving environmental resources and ensuring that development is environmentally sustainable.

The overall goal for the environment reflects both environmental health and quality of life issues. A healthy community includes a healthy environment. Below are specific elements related to the environment that achieve the overall goal discussed above.

Figure V-1a: Environment/Existing Conditions

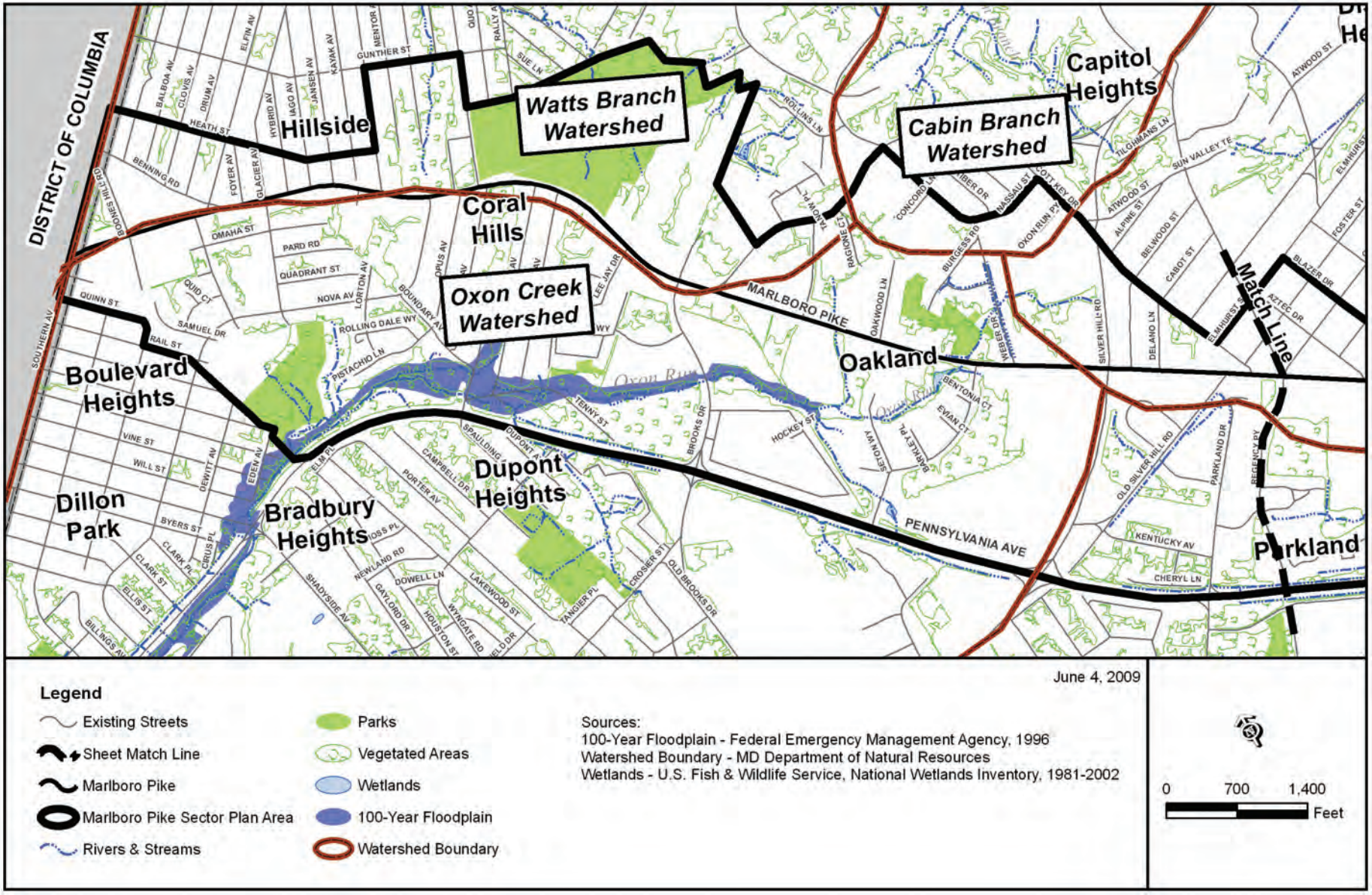


Figure V-1b: Environment/Existing Conditions

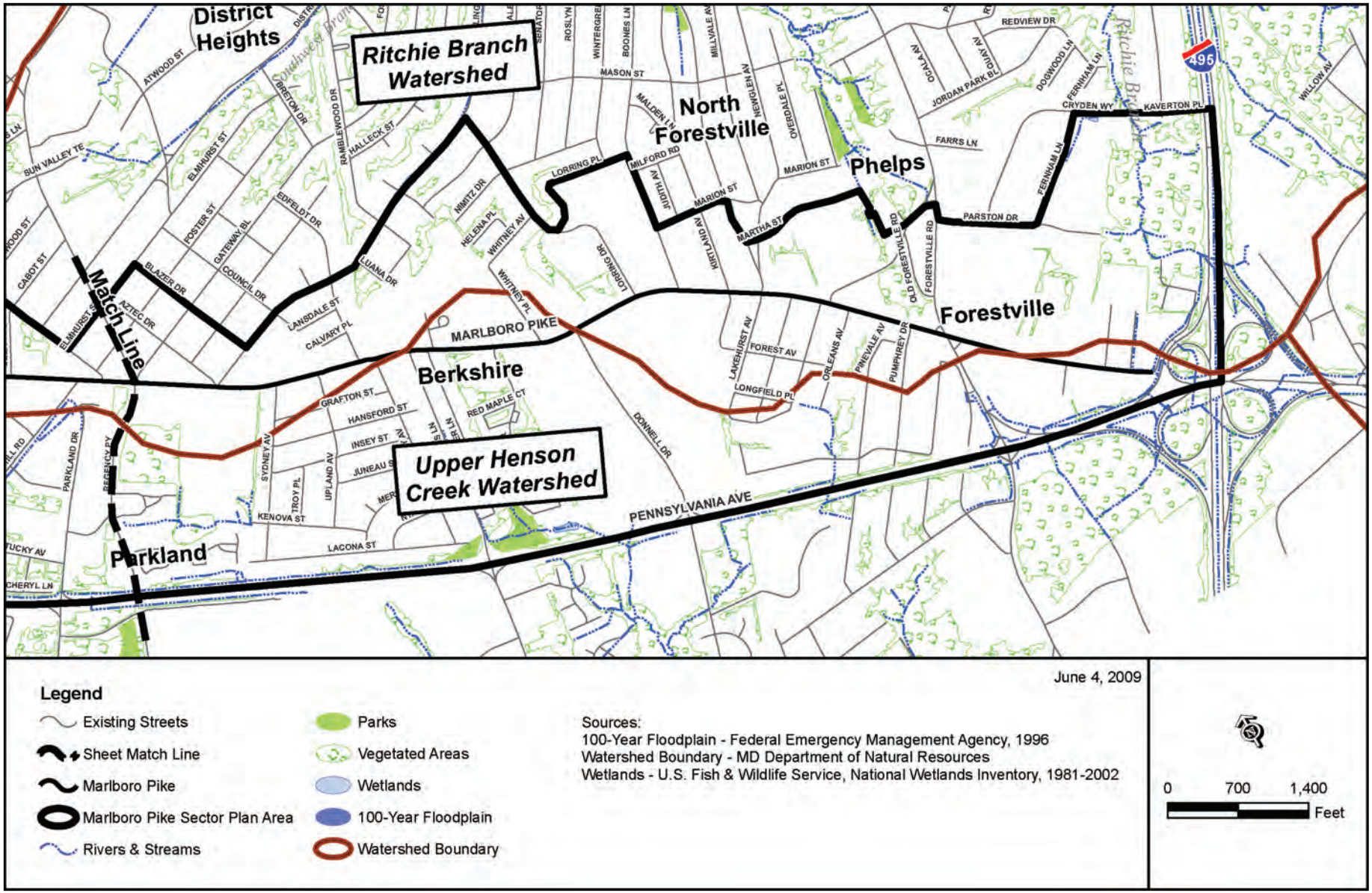


Figure V-2a: Countywide Green Infrastructure

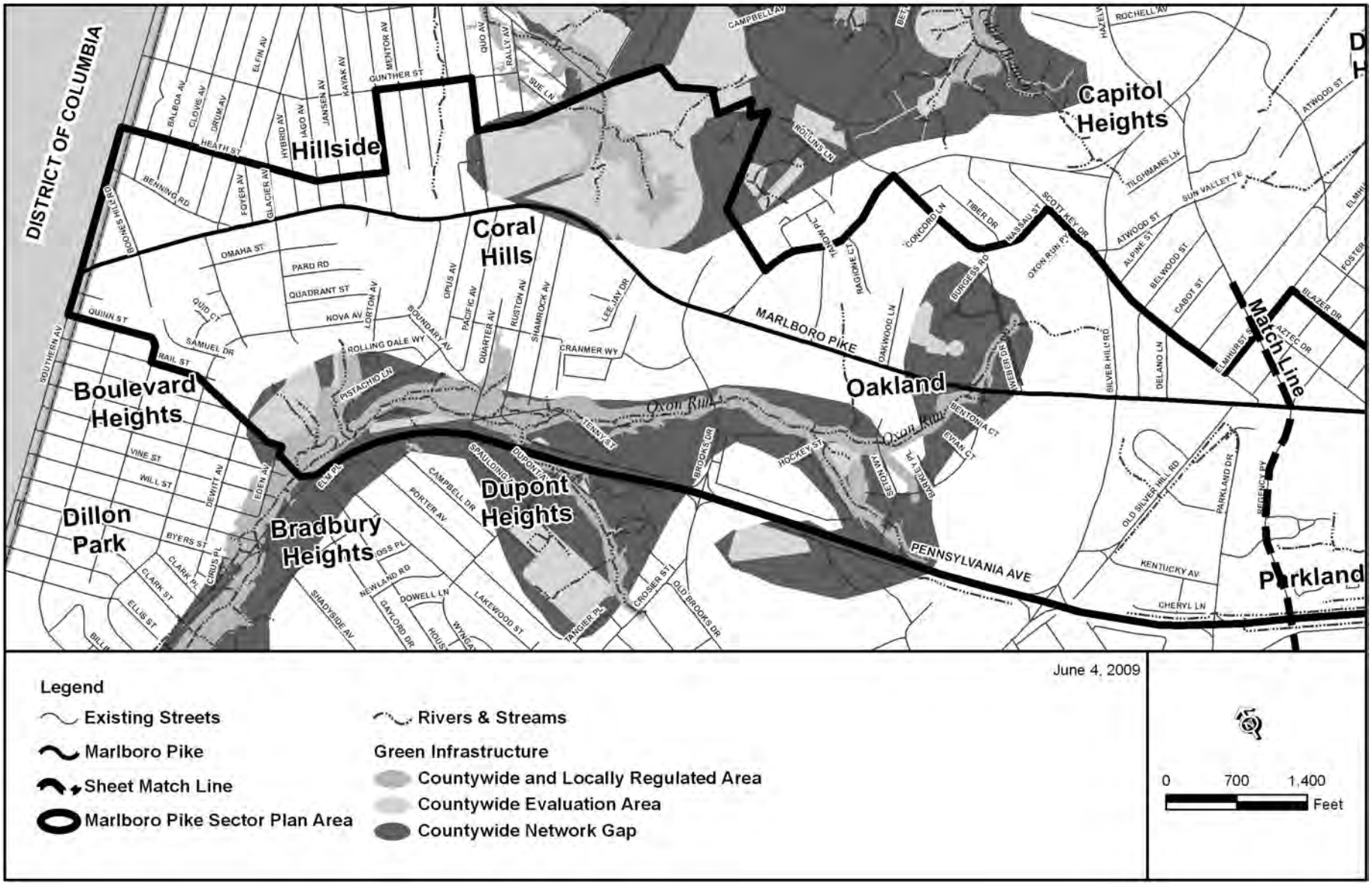
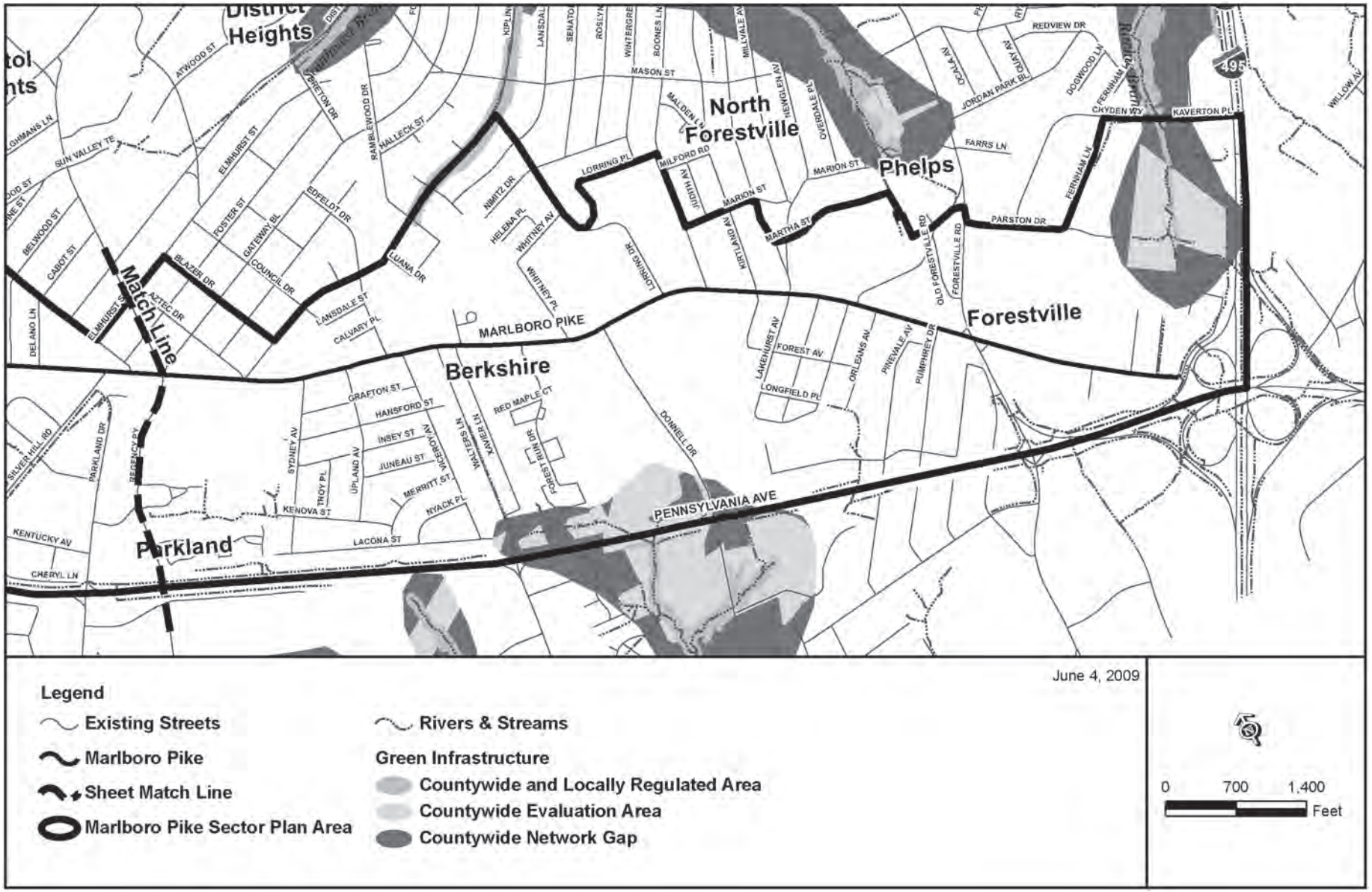


Figure V-2b: Countywide Green Infrastructure



A Green Infrastructure

The sector plan area includes environmentally sensitive areas designated in the *Approved Countywide Green Infrastructure Plan* (2005) as being of countywide significance. The areas include the Oxon Run stream valley and the Ritchie Branch stream valley. The green infrastructure within the sector plan area is a significant amenity for the community, providing benefits for health and wellness opportunities, aesthetic value, environmental awareness, and the overall quality of life. Figures V-2a–V-2b (see pages 72–73) show the countywide green infrastructure network within the Marlboro Pike sector plan boundary.

GOAL: Preserve green infrastructure throughout the sector plan area.

POLICY: Preserve, protect, enhance or restore the green infrastructure network and its ecological functions while supporting the desired development pattern of the Marlboro Pike sector plan.

STRATEGIES:

- Through the development review process, limit development in the Evaluation Areas[1] and Network Gaps[2] in order to preserve the integrity of the green infrastructure network.
- Through the development review process, target priority areas for development and allow for alternative designs that maximize the utilization of properties.
- Avoid, minimize, and mitigate environmental impacts associated with new development in the corridor.
- Minimize impervious surfaces by reducing parking lot sizes and using on-street parking.
- Encourage environmental stewardship measures to enhance environmental quality for redevelopment at existing properties throughout the corridor.

POLICY: Preserve and expand the green infrastructure network and promote community connectivity with the environment.

STRATEGIES:

- Preserve viewsheds and allow for greenway trail access to natural areas, allowing the community to retain a connection with green infrastructure and park facilities.
- Preserve forested riparian buffers surrounding Oxon Run and Ritchie Branch as well as other natural environmental resources, including parkland, as part of the overall Prince George's County green infrastructure network.
- Acquire unprotected lands within the green infrastructure network for preservation.

POLICY: Increase the vegetated cover throughout the sector plan area.

STRATEGIES:

- Require canopy trees and landscaping in all new development and redevelopment projects.
- Increase vegetation in existing properties with landscape enhancements.

B. Water Quality and Stormwater Management

Much of the existing environment was built prior to current stormwater treatment requirements. Much of the stormwater run off throughout the sector plan area is untreated or not treated to current standards. In addition, much of the area is urban and includes a large quantity of impervious surfaces, which leads to high levels of runoff. It is important to consider hydrology and stormwater management functions as early as possible in the planning process to ensure they are properly accommodated and designed to minimize environmental damage.

GOAL: Restore and enhance water quality in areas that have been degraded and preserve areas not degraded.

POLICY: Ensure that future development and redevelopment along the corridor incorporates innovative and sustainable solutions to stormwater management and utilize the most current water quality standards.

[1] **Evaluation Areas** contain environmentally sensitive features, such as interior forests, colonial waterbird nesting sites, and unique habitats, that are not regulated (i.e., not protected) during the land development process.

[2] **Network Gaps** are those areas that are critical to the connection of the regulated and evaluation areas and were included in the mapping to provide areas of possible connectivity. These areas should be evaluated for restoration opportunities to enhance the ecological functioning of the network.

Figures V-3a, b, c: Stormwater Best Management Practices

A small scale stormwater management and water quality facility incorporated into a parking lot landscaped island.

Innovative stormwater management is included as part of a streetscape design.

An attractive stormwater management pond designed as a visual amenity.

STRATEGIES:

- Upgrade existing stormwater management facilities within the sector plan area to meet the Maryland Department of the Environment's (MDE) most recent standards.
- When designing stormwater management for new development or redevelopment sites, include additional treatment for drainage from existing neighboring developments that do not meet current stormwater management standards.
- Restore natural drainage patterns to preserve watershed hydrology and wetland functions during the land development process.
- Build stormwater management facilities to address any untreated areas offsite that are included within the drainage area of a development site.
- Identify areas for retrofit projects in collaboration with the Department of Environmental Resources and the Department of Public Works and Transportation.

POLICY: Utilize best management practices and environmentally sensitive design techniques throughout the study area.

STRATEGIES:

- Decrease impervious surfaces to reduce volumes of run off in stormwater management facilities and to accommodate smaller size structures in lieu of larger single treatment areas.
- Incorporate infiltration devices, rain barrels, pervious paving, green roof technologies, and recycling of stormwater for irrigation where feasible. Figures V-3a, b, and c, alongside, illustrate examples of stormwater management best practices.
- Include rain gardens, or bioretention facilities, in site development projects as a part of the landscaping.

C. Green Building and Energy Efficiency

As environmental technologies evolve into the future, the most innovative practices should be used to achieve environmentally sensitive designs that are sustainable. Green building is the practice of planning, designing and constructing low-impact, sustainable, and energy efficient buildings and communities. It is recommended that future development be certified in Leadership in Energy and Environmental Design (LEED), which is a green building rating system developed by the US Green Building Council (USGBC) that sets the bar for environmentally-sensitive technologies in building construction. According to the USGBC, LEED emphasizes the creation of compact, walkable, vibrant, mixed-use neighborhoods with good connections to nearby communities. Promoting neighborhood conservation is a key component in LEED principles to reduce the need for new building in undeveloped areas. Living in a mixed-use environment within walking distance of shops and services will result in increased walking and biking, which helps to reduce auto-dependency and promote healthier lifestyles and environmental stewardship.

LEED certified buildings use innovative strategies to reduce environmental impacts, energy consumption, and waste while promoting healthier living and working environments. These design

practices also reduce long term operational costs, are more commonly desirable and highly marketable.

GOAL: Reduce the overall energy consumption of new development, and implement environmentally friendly building techniques.

POLICY: Utilize the most innovative energy efficient and environmentally sensitive design technologies for all new development and redevelopment that occurs throughout the sector plan area.

STRATEGIES:

- Encourage new buildings to meet LEED certification standards. Attract developers who are accredited LEED professionals or follow environmentally sensitive design practices.
- Encourage infill development and adaptive reuse of existing buildings.
- Encourage mixed-use and pedestrian and transit oriented development.
- Encourage waste reduction strategies and use of recycled construction materials.
- Encourage community gardening for family food production in public parkland and open spaces.
- Encourage the use of alternative energy sources, such as solar and wind power.
- Require the use of green building techniques such as green roofs, rainwater capture and reuse, sustainable building materials, and alternative energy sources.

D. Air Quality

This sector plan is within the Washington Metropolitan area, which is designated by the Environmental Protection Agency (EPA) as a non-attainment area for ozone and fine particulate matter, and is designated as a maintenance area for carbon monoxide (CO). These designations mean that there are currently high levels of these air pollutants in the area, and efforts are needed to reduce their levels on a large scale. Ozone, fine particulate matter and CO are vehicle generated air pollutants. Carbon dioxide (CO_2) is also an air pollutant. CO_2 acts as a greenhouse gas, and is typically generated as a byproduct of ozone and CO interaction. Therefore, areas with high levels of ozone and CO are also areas with high levels of CO_2. Reduction of CO_2 in earth's atmosphere is necessary to lessen global climate change. These gases, together with fine particulate matter, also affect quality of life, because high levels of these air pollutants can also increase asthma cases or other respiratory illnesses.

Changes in land use and transportation patterns are necessary to accommodate a reduction of air pollutant emissions. A significant reduction in single occupancy auto travel is necessary to lower the air pollution levels throughout the metropolitan area, including the Marlboro Pike region. Improving conditions for pedestrians, bicycle riders, and transit service users will help reduce auto-dependency, thus improving air quality.

Preserving forested areas and increasing tree cover can also help improve air quality because vegetation consumes air pollutants. Tree cover also helps to reduce thermal effects by lowering microclimate temperatures. The urban heat island effect is a microclimate condition where areas with a lot of pavement and a scarcity of shade or vegetation become hotter through absorption of solar energy and radiation of heat into the air. Increasing the tree canopy coverage helps reduce the urban heat island effect.

GOAL: Improve air quality throughout the sector plan area to assist the region in meeting the Washington Metropolitan Air Quality Standards.

POLICY 1: Reduce the need for vehicular travel throughout the corridor. Promote alternative modes of travel and development patterns that reduce trips.

STRATEGIES:

- Provide bicycle routes that are safe, convenient, accessible, and comfortable to increase bicycle usage.
- Promote the use of transit services by providing better connectivity to bus stops and more comfortable and convenient waiting areas.
- Provide better connectivity to the regional transit service offered through Metro by establishing a shuttle service to the area's closest Metro stations at Suitland and Addison Road.

POLICY 2: Increase tree canopy coverage in the area.

STRATEGIES:

- Require a minimum of 10 percent tree canopy coverage on each new development project and redevelopment site.
- Ensure the long-term viability of planted and preserved landscapes.
- Preserve existing landscape trees during redevelopment.

E. Noise Intrusion

Noise intrusion in the Marlboro Pike Corridor can be attributed to air traffic from the nearby Joint Base Andrews Naval Air Facility Washington. High levels of noise intrusion may affect quality of life. Directing noise sensitive land uses away from areas known to have higher noise levels increases the overall livability of the corridor. Noise sensitive land uses include residences, schools, libraries, entertainment, faith based, and recreational settings. The *Joint Base Andrews Naval Air Facility Washington Air Installation Compatible Use Zone Study* (AICUZ, 2007) shows that the eastern end of the Marlboro Pike Corridor in the vicinity of Forestville Road is within the average busy day noise levels varying between 65 and 75 decibels ***(see Figure V-4, page 78)***. Noise levels at this range become a nuisance in that they are louder than normal conversation levels. Noise sensitive land use for this area is not recommended because of the higher than average noise intrusion levels.

GOAL: Improve noise quality within the sector plan area.

POLICY: Implement the AICUZ and *Joint Land Use Study* (JLUS) recommendations to reduce noise intrusion to sensitive developments within the sector plan.

STRATEGIES:

- Direct noise sensitive development away from areas with high noise intrusion that include but are not limited to residences, schools, and cultural venues.
- Encourage land uses that are not sensitive to noise to locate within the areas with high noise intrusion, such as commercial properties, auto-oriented businesses, light industrial properties, and open space.
- For all new construction, bring the indoor decibel level down to 45 decibels by increasing insulation, using double pane windows and other common noise attenuation building standards.
- Continue current procedures and requirements within areas affected by noise greater than 65dB which require noise abatement.

Figure V-4: Air Installation Compatible Use Zone and Noise Levels