



ENVIRONMENTAL RESOURCES PLAN

Bethesda is and will continue to be an urban environment. However, there are elements of the natural environment that should be preserved and enhanced. The challenge of environmental planning in the Bethesda CBD is to respect the natural environment and mitigate undesirable consequences of urban development as much as possible.

7.1 PLAN OBJECTIVES

The Plan's environmental objectives are:

1. Contribute to improved air quality by encouraging more travel by non-autodriviers during peak traffic periods.
2. Increase recycling within the Sector Plan area.
3. Reduce the impact of noise on the public environment and in residential areas.
4. Mitigate the impact of stormwater runoff on area streams.
5. Ensure sufficient water supply and sewerage facilities to serve Sector Plan development.

7.2 AIR QUALITY

On November 15, 1990, the Clean Air Act Amendments of 1990 became law. This legislation fundamentally changed the law and significantly altered the approach for attaining air quality standards in areas that currently do not satisfy the standards (called non-attainment areas). The Clean Air Act is intended to reduce the severely adverse impact air pollution has on the health of our citizens as well as on property and resources such as crops, forests, streams, and the Chesapeake Bay. The Washington D. C. Area, which includes all of Montgomery County and consequently, the Bethesda CBD, is in the "serious" category for ozone. (See Appendix G for technical information.)

Although there are many provisions in the Clean Air Act Amendments, the major focus for the Washington area will be on reductions in usage and emissions from mobile sources, such as automobile commuting. Reduction of single-occupancy automobile transportation is the most



important component for achievement of air quality standards. The Clean Air Act, as amended, requires state and local governments to develop extensive plans to reduce emissions. When those plans have been completed and strategies adopted, all development (including new or expanded transportation facilities) in the planning area should be evaluated for compatibility with and implementation of the adopted strategies. Land use plans that encourage higher-density development near transit corridors should help achieve air quality standards.

Other new federal requirements for the Washington region relevant to the Bethesda CBD include new regulations for stationary air pollution sources, installation and use of gasoline vapor-recovery systems, and new particulate emission standards for urban buses.

Another way of improving air quality is through energy efficiency and energy conservation. The County's Energy Plan (CEP), adopted in February 1990, advocates incorporating energy conservation measures into building design and construction, and into land use planning.

The Sector Plan includes the following recommendations that will help improve air quality:

1. Reduce dependency on automobile travel by encouraging a mixture of residential, retail, and office uses to increase the opportunities for work and shopping trips on foot, bicycle, or public transit.
2. Allow higher density development in the Metro Core to facilitate the use of transit and carpooling.
3. Develop parking policies such as constrained employee parking, preferential short-term parking rates, and reserved spaces for carpools to encourage people to commute via transit or carpools.
4. Create a system of bikeways to provide access to and from the CBD.
5. Develop a Transportation Management Organization (TMO) which involves employers in new and existing developments in reducing single occupancy-vehicle commuting. This program includes providing transit coordinators, providing bicycle parking, and subsidizing mass transit.

In addition, the following design guidelines should be followed to improve overall air quality:

1. Locate garage and emission exhaust systems away from fresh air intakes, public plazas, and pedestrian ways.
2. Design and locate public spaces in a way that avoids human exposure to polluted areas such as major intersections or garage exhaust facilities.

7.3 SOLID WASTE MANAGEMENT

Central business districts generate considerable amounts of waste material, mostly paper from office buildings; cardboard from retail establishments; and metal, glass, plastics, and food waste from restaurants and multi-family developments. The collection, transportation, and disposal of solid waste is costly and time-consuming to the County. Sanitary landfills use land for the ultimate disposal of solid waste. The waste stream of the Bethesda CBD, however, contains great potential for recycling.

The goal most relevant to the Bethesda CBD in the County's Ten Year Solid Waste Plan is achievement of a minimum 35% recycling rate by 1995 for all waste producers. Furthermore, a 50% recycling rate is to be achieved by the year 2000. This recycling goal will be largely met for businesses through the establishment of a private sector recycling infrastructure that will collect and process recyclables. The reduction of almost a quarter of the total waste stream will be accomplished by encouraging onsite grass cycling and composting.

The County requires that specific materials from all commercial and multi-family residential sources be recycled. Recycling from both businesses and residences presents challenges in collecting, temporarily storing, and transporting materials to a recycling facility.

A primary challenge to instituting recycling in the CBD is finding space for collection and temporary storage of recyclable materials. The high land values of the CBD put space at a premium. Interim measures should be established to support recycling in the CBD while permanent solutions are being developed.

The Montgomery County Department of Environmental Protection (MCDEP) is responsible for ensuring that the mandated recycling goals are met. MCDEP has ongoing programs for non-residential recycling and multi-family residential recycling.

The Plan recommends the following actions to help achieve the County's solid waste management goal:

1. Create local recycling centers where appropriate, provided that noise, litter, hours of operation, and visual pollution do not have a negative impact on neighboring properties.
2. Encourage participation of Bethesda businesses in the County's business recycling program, including voluntary acceptance of recycling center facilities.
3. Encourage participation of new office or retail uses, including restaurants, in County-wide waste volume reduction and recycling programs.
4. Make approval of new non-residential uses subject to the designation of adequate areas for pickup and storage of recycled goods.
5. Develop multi-family recycling programs in accordance with County regulations.



7.4 NOISE

A. MOBILE NOISE SOURCES

The principal causes of noise pollution in the Bethesda CBD are mobile sources such as cars, trucks, buses, and Metrorail. The impact of mobile source noises can be controlled by quieting the source or protecting the receiver of the noise. Generally speaking, control of noise originating with vehicles is a federal responsibility and is preempted from local control. Therefore local control of mobile source noise involves protecting the receiver people living and working in the CBD.

Noise mitigation for outdoor areas can be achieved in an urban area in a variety of ways. For instance, sitting areas should be set back from traffic, not placed on sidewalks adjacent to major roadways if possible. Buildings should be sited as barriers to provide quiet outdoor areas. In addition, residential balconies should be on the sides of the building away from noise sources, or if that is not feasible, designed to mitigate noise through use of noise-absorptive surface treatments and solid barriers in place of standard open balcony railings.

Outdoor spaces can also be protected from excessive noise by vertical separation from the roadway, integrated design of multipurpose noise barriers (e.g., planters or decorative walls), masking noise sources (e.g., fountains), and the use of substantial landscaping to provide the perception of noise reduction by blocking the view of the source.

After all options for exterior reduction have been implemented, acoustic building treatments may be necessary to provide an acceptable interior sound environment. In most circumstances, building materials commonly used for energy efficiency are sufficient to meet interior noise standards.

In areas where short-term, intense noise peaks are likely to occur (e.g., along main roads with sirens from emergency vehicles), higher levels of acoustical treatment are recommended. Changing window and door specifications usually provides the necessary reduction. Acoustic windows and doors are similar to standard thermal windows; their primary difference is the amount of air space between the panes.

The Plan recommends the following land use and site design measures to protect people working and living in the CBD from excessive noise:

1. Integrate noise mitigation measures in all projects in the earliest phases of site layout and building design.
2. Use design features to buffer public and private exterior amenities from noise sources. Such features include using buildings as barriers, landscaping, streetscaping, vertical separation, and using noise absorbing building materials.
3. Encourage acoustic treatment for doors and windows of buildings subject to intense short-term noise peaks. (See Appendix G for technical information.)

B. STATIONARY NOISE SOURCES

Stationary noise sources-noise emanating from a particular property and land use can be locally controlled. Montgomery County and the State of Maryland have regulations intended to control truly stationary sources, such as heat pumps, commercial heating and air conditioning systems, and backup generators, as well as portable sources that commonly operate on a particular property, such as trucks, front end loaders, forklifts, or other heavy equipment.

The State's Department of the Environment has almost no resources to implement or enforce the provisions of the State Noise Control Regulations at the present time and for the foreseeable future. However, the Montgomery County Noise Ordinance takes precedence because it is deemed equal to or more stringent than the state regulations. MCDEP also has the option of enforcing the provisions of the state regulations through, and with the concurrence of, the Attorney General's Office.

Deviations from the County noise limits are permitted for short durations of time, generally during weekday daylight hours, for construction and other noisy activities. Regulatory levels are 20 dBA higher for construction than the normal 55 or 62 dBA property line limits during weekday daytime hours. For all other noise sources, daytime noises that are 5, 10, and 15 dBA above the appropriate property line limits are allowed for 12 minutes, 3 minutes, and 30 seconds, respectively, out of any hour.

The Plan makes the following recommendations to mitigate the impacts of stationary noise sources:

1. Enforce existing State and County regulations for stationary noise sources.
2. Use site design features noted earlier to mitigate the impact of stationary noise sources.

7.5 STORMWATER MANAGEMENT

Water is one of the most powerful forces in nature and, if permitted to run uncontrolled, can destroy the County's stream valley system and degrade its water quality. The Sector Plan area drains to Little Falls and Rock Creek, and, ultimately, to the Chesapeake Bay.

Since most of the Bethesda CBD was developed prior to enactment of regulations for sediment control and stormwater management, changes in land use have had an adverse impact on the stream systems draining the area. These negative impacts include: streambank erosion, reduced base flows, stream valley disturbance for installation of storm drains, water and sewer lines, litter, poor water quality, and reduced diversity in aquatic species.

There is the potential for stormwater management facilities that can mitigate the impact of urban runoff. Further analysis of possible locations for stormwater management facilities is appropriate. One potential location is on the grounds of NIH just west of Wisconsin Avenue. A stormwater management pond there would control an approximately 170-acre drainage area, including the



Woodmont Triangle and the area between Old Georgetown Road and Wilson Lane. The Department of Environmental Protection is working with active community and business input to identify ways to address stormwater quality and quantity issues in the planning area. The decision to establish any stormwater management retrofit facilities should only be made after a comprehensive study has been conducted that includes citizen and business involvement.

All new development and redevelopment within the CBD should address stormwater quantity and quality controls. As rainwater runs over impervious surfaces such as streets, parking lots, and sidewalks, it has little opportunity to percolate through the soil and have pollutants filtered out. The high degree of impervious cover, combined with the enclosed storm drain systems in the CBD, carries pollutants in stormwater runoff directly into area streams.

State and local regulations require that infiltration through trenches, porous pavement, buffer strips, and similar features be the primary means of providing onsite stormwater controls. In the event that infiltration proves infeasible due to soil or site constraints, alternate stormwater control measures should be used. These include but are not limited to flow and pollutant attenuation, onsite retention, detention through underground storage pipes, and any combination of these methods as is appropriate to the site and situation. New SWM technologies should also be considered as they develop.

The existing stormwater management regulations currently have provisions that allow waivers of onsite stormwater management controls. These waivers have historically been granted in urbanized areas like the Bethesda CBD where most of the sites are redeveloping (e.g., paved parking to commercial buildings) because of site constraints, high cost of underground storage facilities, and a storm drain network that conveys runoff to the receiving stream. However, the County Department of Environmental Protection will be considering both onsite stormwater quality and quantity controls for redeveloping areas. Where site conditions permit, onsite water quality controls are generally required.

The majority of streams in the Bethesda CBD are enclosed in the storm drain network. Currently, the only remaining open channels within the CBD are the headwaters of Coquelin Run parallel to the Georgetown Branch railroad, and portions of Willett Branch running through Little Falls Park. Both of these have experienced a significant amount of stream bank erosion. There is little opportunity to provide conventional stream buffers for these areas other than that already provided by Little Falls Park. The Sector Plan supports a comprehensive stream channel improvement program along Coquelin Run.

To mitigate the impact of urban runoff and development on the aquatic system, the Plan recommends the following measures:

1. Require new development and redevelopment to provide onsite water quality controls, where site conditions permit, and safe conveyance of stormwater runoff to the receiving stream.
2. Encourage the National Institutes of Health to incorporate a regional stormwater facility on their grounds as part of their master plan for improvements.

3. Conduct watershed studies to identify possible methods to control quality and quantity of runoff from portions of the CBD area, and to identify potential streambank stabilization projects along the tributaries. All watershed studies should include active community and business involvement.
4. Ensure strict adherence to the guidelines adopted in “Environmental Management of Development in Montgomery County.”
5. Initiate educational outreach by appropriate agencies to inform citizens about ways to improve water quality (e.g., The Citizens Program for the Chesapeake Bay’s Baybook, 1985).

7.6 WATER SUPPLY AND SANITARY SEWERAGE

The Washington Suburban Sanitary Commission (WSSC) provides water and sewer service to the Bethesda Sector Plan area. Bethesda is part of a larger water supply area called the Montgomery Main Service Area, which serves Chevy Chase, Kensington, Potomac, and parts of Silver Spring, Takoma Park, and Wheaton. It supplies water treated at the Potomac Filtration Plant and the Patuxent Filtration Plant. The Bethesda Sector Plan area is served by two sewer systems: Little Falls system and Rock Creek system.

In the 1970’ and 1980’s, the WSSC constructed additional water mains and sewerage capacity necessary to support proposed development. These improvements were: improvement of the Little Falls system to convey anticipated sewage flows, and construction of water mains in Woodmont Avenue, Waverly Street, and Hampden, East, and Edgemoor Lanes. These facilities are complete. In addition, a number of water mains were cleaned and lined. This maintenance work improves water pressures. More water mains in this sector will be cleaned and lined, or replaced, according to WSSC’s Water Reconstruction Program (CIP No. W-1.00).

Water supply CIP projects to serve the future demands of the Bethesda CBD and the rest of the Montgomery Main Zone are:

W-81.06	Bi-County Water Supply Improvement Project
W-150.03	Wheaton Water Pumping & Storage Facilities
W-127.00	Bi-County Water Treatment Expansion
W-127.01	Potomac Bi-County Supply Main

None of these projects are within the CBD itself, but they will improve its water service.

There are no plans for any sewerage system CIP projects that would affect the Sector Plan area at this time. Within the Little Falls Branch basin, at the intersection of Bradley Boulevard and Arlington Road, a single sewer segment may be at or over capacity at buildout of the recommended land use. A flow monitoring study, to be initiated when flows in this segment near its capacity, will help the WSSC decide if a relief or replacement sewer is necessary.

