Dulles North
Area Management Plan

Loudoun County, Virginia
DULLES NORTH AREA MANAGEMENT PLAN
WITH AMENDMENTS TO DECEMBER 1993
The Dulles North Area Management Plan is a component of the Loudoun County Comprehensive Plan. This land use document consists of three planning elements. The first element provides an inventory of existing conditions in the Dulles North Area. The second element establishes Loudoun County's specific planning goals for the area. The third element establishes the County's community, transportation, environmental and historic preservation land use policies designed to realize these goals. The document concludes with a Plan Map which represents the County's interpretation of the many goals and policies established in the text of the Plan.
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A. **PURPOSE**

The Dulles North planning area lies largely between Route 659 and Route 28 and between Dulles Airport and the Potomac River, an area of nearly 34 square miles or approximately 22,000 acres primarily in the Broad Run watershed (See Figure 1, page 2). The Dulles North area is crossed by central water and sewer lines and while not served by an internal road system capable of handling suburban traffic, it is served by two arterial roads, Route 7 and Route 28 on the northern and eastern edges of the planning area. Because of the central sewer and water availability, the northern portion of the area is attracting employment and residential development pressure and much acreage is likely to be proposed for zoning changes in the near future. The Dulles North area is greatly influenced by the presence of Washington Dulles International Airport and a large portion of the area will be subject to increasingly louder ambient noise levels as the airport operations are expanded. The search for appropriate development patterns, given such ambient noise levels, was a major task of this plan. Since the existing internal road network of the area could not sustain even moderate residential and employment growth, a largely new road network was designed. The purpose of this document is to present the existing conditions and trends in force within the area and establish goals and policies to guide growth in the future.

B. **PLANNING PROCESS**

Overall County Process:

The County’s comprehensive planning program provides the basis for land use and zoning decisions and consists of several related elements. The initial plan that provides an overall framework for all subsequent plans is the Resource Management Plan adopted in 1979. The RMP consists of general goals and policies that apply to the entire County. Area Plans are specific land use plans for particular areas or communities (See Figure 2, page 3). In them, the RMP goals and policies and their implications for land use are examined in detail and more detailed area specific guidelines based on the RMP are established. To date, the County has adopted the Eastern Loudoun Area Management Plan, the Leesburg Area Management Plan and the Rural Land Management Plan. Figure 3, page 4, illustrates the geographical boundaries and current work program of the various Area Plans.

A very strong County policy advocates citizen and community participation in the formulation of the area land use plans. Since these plans affect the overall character of a specific area, its housing types and densities, the construction of major roads and utilities and the placement of public facilities such as schools, libraries and community centers, it is appropriate that local and interested citizens should compile the initial draft of a plan. The citizen committee drafting process took eight months and the subsequent Planning Commission review and revision required two months. The Commission certified its plan to the Board of Supervisors on February 27, 1985. The Board of Supervisors in its turn adopted the major part of the plan on October 7 and its noise component and plan map on October 21, 1985.
The Resource Management Plan forms the core document of the county planning program. Special Studies and Area Plans provide detailed guidance in specific areas of the County, while the Zoning and Subdivision Ordinances and the Capital Improvements Program are tools used to implement the County planning program.
1. Eastern Loudoun (adopted 1980)
2. Leesburg (adopted 1982)
4. Round Hill (draft)
5. Dulles North (adopted 1985)
6. Dulles South
7. Waterford (draft)
8. Purcellville - Hamilton
9. Middleburg - St. Louis
10. Lovettsville
C. PLAN DIVISION

In order to hasten adoption of important goals and policies needed for the review of major land use proposals in the new year, the Dulles North Plan has been divided into two components or phases. Table 1 shows the structure of the total plan when completed while the asterisk against items 1, 2, and 3 indicates those components contained in this document, the first phase of the completed plan.

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<td>4. Zoning Implementation</td>
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<td>5. Program Implementation</td>
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<td>6. Transportation Implementation</td>
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Table 1 shows that this document or first phase of the complete plan is predominantly concerned with the identification and adoption of both major area goals and the strategic policies needed to achieve such goals. Phase II, the subsequent component of the plan, will address the many phasing, land use, zoning, capital improvement and transportation programs which will be required to implement adopted policies in order to realize County goals.
A. **EXISTING LAND USES**

The estimated 34 square miles or approximately 22,000 acre planning area (See Figure 1, page 2) finds a focus in the 19th century Village of Ashburn approximately two miles south of Route 7 where there is a concentration of some 60 dwellings and a number of local commercial and construction businesses. A secondary, largely transportation focus is in the Ryan crossroads area, which is 1.8 miles south of Ashburn and 3.3 miles west of Route 28, where there are some twenty dwelling units. Between these two focal points and surrounded by open fields is the Broad Run High School. While residences are scattered throughout the planning area at a density of 2.8 units per square mile, most of the land is open, predominantly in woodland or cultivated in corn, soy-beans or pasture, or vacant farmland. The very large acreage in institutional use noted in Table 2, page 8 represents mainly the Federal Government’s Weather Research Station, 430 acres of primarily open fields adjacent to the 10,000 acre Dulles Airport. *(The airport is not included in this plan.)* School sites represent the next largest single land use category with Broad Run High School and Ashburn Elementary totaling nearly 47 acres. The educational facilities on the Xerox property do not lie within the planning area but approximately 820 acres of Xerox owned open space do. Table 2, page 8, lists land uses in order to predominance while Figure 4, page 7, shows these uses in geographical terms.

Growth has been very slow in this community. Because the soil is generally unsuitable for septic systems, there has not been such a single-family residential development surge as experienced elsewhere in the County. However, with a great proportion of land in large holdings under absentee ownership, this growth may come soon. Indeed, Ashburn Village represents perhaps the first of a number of applications that may change the area greatly.

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1 The Loudoun County School Board owns an additional 14 acres of land adjacent to the Ashburn Elementary School but is not presently using this land.

2 The Ashburn Village *(ZMAP #329)* application consists of 1,580 acres of land extending southward from Route 7 just east of the Route 7 and 641 intersection.
### TABLE 2

**EXISTING LAND USES IN THE DULLES NORTH PLANNING AREA**

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<td>Institutional</td>
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<td>Residential</td>
<td>365</td>
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<td>Utility Lines</td>
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<td>Churches</td>
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<tr>
<td>Industrial</td>
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<td><strong>TOTAL</strong></td>
<td><strong>21,600</strong></td>
<td><strong>100%</strong></td>
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**B. EXISTING POPULATION**

The U.S. Bureau of the Census reported that the Dulles North area, which lies within Census tracts 6007 and 6008, had a 1980 population of 1,043 persons of whom 71, or 7% were black⁴ (overall, 8.7% of the County's population is black). Figure 5, page 9 shows the number of persons residing in each Census block within the planning area. According to the 1980 Census, the population of this area has been scattered, relatively stable and slightly older than the Loudoun County norm. 57% of the households resided in the same dwelling units in 1975 while an additional 12% were residents of the County prior to that time.⁵ The median age of residents in the two Census Tracts was 31.6 and 31.9 years which is about two years older than the median age countywide.

In terms of children, the population of the Dulles North area resembles that of western rather than suburban eastern Loudoun. While 39% of the population in Sugarland Run and Sterling Park are below 18 years of age, only 30% of the Dulles North residents

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³ Compiled by Loudoun County Department of Planning, Zoning and Community Development from aerial photography and Planimetric Maps 1979, and from Office of the Commissioner of the Revenue, Use Value Assessment Files 1981.

⁴ U.S. Census 1980

⁵ U.S. Bureau of the Census, 1980 Summary Tape File 3 Tabulation 34
CENSUS TRACTS AND POPULATION

0000 CENSUS TRACT NUMBER

CENSUS TRACT BOUNDARY

000 POPULATION (1980 CENSUS)

PLANNING AREA BOUNDARY

FIGURE 5

OCTOBER 21, 1985
are below 18. 59% of the population in Census Tracts 6007 and 6008 is between 18 and
62 and the remaining 10% is more than 62 years old. The average size of households
in Census Tract 6007 is 2.92 persons and that of 6008 is 3.06 persons which is very close
to the County average of 3.05.

The per capita and household income of persons residing in Census Tract 6008 is
relatively low compared to the County average. According to the 1980 Census, median
countywide household income in 1979 was $24,434 whereas Census Tract 6008 household
income was $15,781. Census Tract 6007 reported a higher income level of $20,553 which
was still below that of the countywide average.

C. LAND OWNERSHIP

The Dulles North area has a number of very large and significant property holdings.
Table 3 identifies some of the major tracts or contiguous parcels of land in the area, which
are also shown on Figure 6, page 12.

<table>
<thead>
<tr>
<th>Holding Number</th>
<th>Tax Map/Parcel</th>
<th>Acreage</th>
<th>Owner Status: Local/Absentee</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>62-2A</td>
<td>2,267.5</td>
<td>Local</td>
</tr>
<tr>
<td>3</td>
<td>62-16A, 62-24</td>
<td>1,154.6</td>
<td>Absentee</td>
</tr>
<tr>
<td>4</td>
<td>62-5, 62-5A, 62-7, 62-17A, 63-4C, 63-5A, 80-1, 80-2, 79-34, 63-3, 63-10, 63-11, 63-12, 63-13</td>
<td>2,443.9</td>
<td>Absentee</td>
</tr>
<tr>
<td>5</td>
<td>102-4, 102-5A, 93-22A, 93-20B, 93-30, 93-31, 93-33</td>
<td>1,203.7</td>
<td>Absentee</td>
</tr>
<tr>
<td>6</td>
<td>92-19, 92-23, 92-37A, 92-40, 93-1 78-22, 77-32</td>
<td>1,179.5</td>
<td>Local</td>
</tr>
<tr>
<td>7</td>
<td>62-4A; 62-5, 62-6</td>
<td>641.3</td>
<td>Absentee</td>
</tr>
<tr>
<td>8</td>
<td>78-55</td>
<td>610</td>
<td>Absentee</td>
</tr>
<tr>
<td>9</td>
<td>79-52; 79-29</td>
<td>538.8</td>
<td>Absentee</td>
</tr>
</tbody>
</table>

---


7. U.S. Bureau of the Census 1980 Summary Tape File 1 Tabulation 34
TABLE 3

MAJOR PROPERTY HOLDINGS IN THE DULLES NORTH AREA

<table>
<thead>
<tr>
<th>Holding Number</th>
<th>Tax Map/Parcel</th>
<th>Acreage</th>
<th>Owner Status: Local/Absentee</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>78-55A; 79-3; 79-3A</td>
<td>587</td>
<td>Absentee</td>
</tr>
<tr>
<td>11</td>
<td>92-18</td>
<td>454.2</td>
<td>Absentee</td>
</tr>
<tr>
<td>12</td>
<td>80-1-3</td>
<td>425.4</td>
<td>Absentee</td>
</tr>
<tr>
<td>13</td>
<td>92-4</td>
<td>415.3</td>
<td>Absentee</td>
</tr>
<tr>
<td>14</td>
<td>61-51; 61-52</td>
<td>389</td>
<td>Absentee</td>
</tr>
<tr>
<td>15</td>
<td>93-13</td>
<td>309</td>
<td>Local</td>
</tr>
<tr>
<td>16</td>
<td>62-1</td>
<td>281</td>
<td>Absentee</td>
</tr>
<tr>
<td>17</td>
<td>92-15; 92-16</td>
<td>274</td>
<td>Absentee</td>
</tr>
<tr>
<td>18</td>
<td>61-22</td>
<td>273.9</td>
<td>Absentee</td>
</tr>
<tr>
<td>19</td>
<td>78-49; 78-51, 78-54, 78-54C</td>
<td>238.9</td>
<td>Local</td>
</tr>
<tr>
<td>20</td>
<td>93-6</td>
<td>232.6</td>
<td>Absentee</td>
</tr>
<tr>
<td>21</td>
<td>92-24</td>
<td>226</td>
<td>Absentee</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>16,541.9 acres</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that over 12,500 acres of land or 75% of the major properties are held by absentee owners and that the average parcel or contiguous tract size is over 650 acres. The fact that over 60% of the land in the planning area is owned by people or corporations who may wish to develop it is significant. The average size and general interlocking character of such a large number of holdings suggest that it would be in the best interests of the property owners as well as the County to consider future disposition and/or development in a comprehensive and coordinated manner.

D. EXISTING ZONING

The Zoning Ordinance is an important instrument of local government in implementing community land use decisions and policies. The existing zoning in the Dulles North area reflects a number of historical factors which may no longer be appropriate for this area (See Figure 7, page 13). An erroneous assumption that this area could be developed on individual septic fields and private wells is reflected in the nearly 11,000 ares of R-1 (single-family, one acre lot minimum) between Route 659 and Broad Run. Immediately in and around Ashburn is a significant 36.4 acre cluster of C-1 (Commercial)
EXISTING ZONING

A-3  PD-G1
C-1  PD-SC
PDH-24  R-1
PD-IP  R-2

NOTE: FLOOD HAZARD ZONING DISTRICTS are not shown on this figure. See Figure 16, Page 37 for generalized floodplain information.
parcels which formed the Old Washington and Old Dominion Railroad depot, a mill and other commercial enterprises. The very extensive 6,753 acres of PD-IP along Route 7 and Route 28 reflects the expectations of the 1960’s and early 1970’s for Dulles Airport’s impact on local employment expansion. There are only 3,318 acres of A-3 zoning in the easternmost section of the planning area. A total of 299 acres of land in the center of the planning area are zoned PDH-24 for 692 dwelling units. The land in question lies at the right angle bend of Route 772 and was rezoned as two tracts, Broad Run Meadows in 1976 and Ashburn Associates in 1977. Future land use proposals will probably require large scale rezonings, particularly of the residentially zoned land.

<table>
<thead>
<tr>
<th>Zoning Districts</th>
<th>Acreage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-1 Single-family, one-acre min. lot</td>
<td>10,797 ac.</td>
<td>50.0%</td>
</tr>
<tr>
<td>R-2 Single-family, 1/2 acre min. lot</td>
<td>172 ac.</td>
<td>0.8</td>
</tr>
<tr>
<td>PDH-24 Planned Development Residential</td>
<td>299 ac.</td>
<td>1.4</td>
</tr>
<tr>
<td>A-3 Rural Residential/Agricultural Uses</td>
<td>3,639 ac.</td>
<td>16.8</td>
</tr>
<tr>
<td>C-1 Commercial</td>
<td>54 ac.</td>
<td>.3</td>
</tr>
<tr>
<td>PD-IP Planned Development Industrial Park (Light)</td>
<td>6,523 ac.</td>
<td>30.2</td>
</tr>
<tr>
<td>PD-GI Planned Development Industrial Park (Heavy)</td>
<td>116 ac.</td>
<td>0.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>21,600 Ac.</td>
<td>100%</td>
</tr>
</tbody>
</table>

The general location of these zoning districts in the area are shown on Figure 7, page 13.

Table 5 highlights recent zoning actions in the Dulles North area which include a number of employment districts being added to the south side of Route 7 and two residential districts added to the center of the Planning area which were noted above. The locations of these zoning actions are shown on Figure 8, page 16.

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8 This table does not include the approximately 3,800 acres of the Floodplain district.

9 Figures computed by Loudoun County Department of Planning, Zoning and Community Development from zoning maps.
### TABLE 5

**RECENT ZONING ACTIONS IN THE DULLES NORTH AREA**

<table>
<thead>
<tr>
<th>Name and File #</th>
<th>Size</th>
<th>Requested Zoning</th>
<th>Final Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashburn Assoc., ZMAP #235</td>
<td>196 acres</td>
<td>PDH-24</td>
<td>Approved - 1976</td>
</tr>
<tr>
<td>Broad Run Meadows, ZMAP #244</td>
<td>103 acres</td>
<td>PDH-24</td>
<td>Approved - 1977</td>
</tr>
<tr>
<td>Glenn Norton, ZMAP #262</td>
<td>4.1 acres</td>
<td>C-1</td>
<td>Approved - 1978</td>
</tr>
<tr>
<td>Birchfield, ZMAP #279</td>
<td>40 acres</td>
<td>PD-IP</td>
<td>Approved - 1979</td>
</tr>
<tr>
<td>Daniel Ross, ZMAP #295</td>
<td>4.9 acres</td>
<td>PD-IP</td>
<td>Denied - 1981</td>
</tr>
<tr>
<td>Ashburn Junction, ZMAP #323</td>
<td>4.9 acres</td>
<td>PD-IP</td>
<td>Approved - 1983</td>
</tr>
<tr>
<td>Philip Norton, ZMAP #322</td>
<td>222 acres</td>
<td>PD-GI</td>
<td>Approved - 1984</td>
</tr>
<tr>
<td>Ashburn Village, ZMAP #329</td>
<td>1,580 acres</td>
<td>PDH-24</td>
<td>Pending</td>
</tr>
<tr>
<td>Leary, ZMAP #84-06</td>
<td>60 acres</td>
<td>PD-GI</td>
<td>Denied</td>
</tr>
<tr>
<td>Sterling West, ZMAP #85-08</td>
<td>347 acres</td>
<td>PDH-12</td>
<td>Pending</td>
</tr>
<tr>
<td>Ashburn Farms, ZMAP #85-15</td>
<td>1,274 acres</td>
<td>PDH-12</td>
<td>Pending</td>
</tr>
<tr>
<td>Potomac Park, ZMAP #85-13</td>
<td>2,267 acres</td>
<td>PDH-12/ PD-OP</td>
<td>Pending</td>
</tr>
</tbody>
</table>

### E. HISTORIC RESOURCES

Figure 9, page 17 shows the location of historic sites in the planning area which have been researched by the Virginia Department of Historic Landmarks. Table 6, page 18 identifies the sites and gives a short summary of the history of these buildings, structures or sites.

It is clear that the house at Belmont Plantation now in the possession of IBM represents the most significant historical structure in the area. The former Washington and Old Dominion Railroad right-of-way and associated engineering structures across the Broad Run and other smaller streams represent the most extensive man-made engineering project within the planning area. Figure 8, page 16 suggests just how important the W&OD was in the development of Ashburn in the late 19th and early 20th century.

The majority of the structures and/or sites surveyed by the Department of Historic Landmarks are late 19th century, the period when the area was enjoying agricultural prosperity. None, except Belmont, demonstrate any substantial architectural sophistication but they are of considerable value as vernacular
FIGURE 9

HISTORIC RESOURCES

- HISTORIC SITE SURVEYED BY VIRGINIA HISTORIC LANDMARKS COMMISSION
- PLANNING AREA BOUNDARY

OCTOBER 21, 1985
representations of a way of life. Some, such as the Ashburn Presbyterian Church are very good and well maintained examples of their types.

The village of Ashburn is a fine example of a late 19th century town, built where three roads and the new railroad converged. It was an excellent site for a market town and it prospered. The appearance of the village has changed little in the past 40 years. There are a number of good vernacular Victorian buildings and the residents appear to be interested in maintaining the pleasant character of the place. It is valuable as a somewhat rare example of a whole village built in the late 19th century in a County best known for its 18th and early 19th century structures, villages and towns.

<table>
<thead>
<tr>
<th>VHLC #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>53-84</td>
<td>Janelia Farm - (Part of the Lee family’s Coton Farm). House built in 1936 now on National Register; 66 acre easement along river front donated to Northern Virginia Regional Park Authority.</td>
</tr>
<tr>
<td>53-110</td>
<td>Broad Run Bridge (ruins) and Toll House - Built by Leesburg Turnpike Co. 1820. State and National Registers. (See Eastern Loudoun Area Management Plan.)</td>
</tr>
<tr>
<td>53-276</td>
<td>Washington and Old Dominion Railroad (W&amp;OD) - Originally Alexandria, Loudoun and Hampshire Railroad begun in 1855 and built as far west as Leesburg by 1860.</td>
</tr>
<tr>
<td>53-278</td>
<td>Site of Belmont Chapel - Built 1840, destroyed by fire 1967.</td>
</tr>
<tr>
<td>53-894</td>
<td>Ashburn Presbyterian Church - Built 1876, fine example of board and batten Carpenter gothic.</td>
</tr>
<tr>
<td>53-895</td>
<td>Norman and Harding Feed Store - Built about 1880; typical commercial building; now used by Weller tile.</td>
</tr>
<tr>
<td>63-896</td>
<td>Arundel’s Store - Ruins of combined house and store in Ashburn; 1870’s. Now destroyed.</td>
</tr>
<tr>
<td>53-897</td>
<td>Ashburn School - One room school house, built 1892; poor condition; used as warehouse.</td>
</tr>
</tbody>
</table>
TABLE 6

SITES AND STRUCTURES SURVEYED BY
VIRGINIA DIVISION OF HISTORIC LANDMARKS

<table>
<thead>
<tr>
<th>VHLC #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>53-990</td>
<td>Mt. Hope Baptist Church - 1893. One of the largest frame churches in the County; very good Carpenter Gothic; recently very carefully restored.</td>
</tr>
<tr>
<td>53-991</td>
<td>Hillside Dairy Farm - mid 19th century; stone farmhouse unusual in eastern Loudoun.</td>
</tr>
</tbody>
</table>

F. PUBLIC UTILITIES AND FACILITIES

Introduction

Public facilities such as central sewer and water, roads, airports, schools, recreational centers and parks provide the physical structure for community life. Some of these facilities may be constructed by private developers but they usually represent a very sizable public investment on the part of a community whether the investment was made by the local jurisdiction using property tax revenue, by the State Highway Department using gasoline taxes or by the Federal Government. The planned extent of residential and commercial or industrial growth in the Dulles North area will have considerable implications for sewer and water provision. The question of how much sewer capacity may be available is critical to the planning decisions made in this area plan. The following inventory provides background on the public utilities and facilities which will have a major influence on future development in the area.

1. Sewer:

   The soils in the planning area generally do not support septic systems and many area homes are experiencing septic field problems. The Dulles North planning area lies mainly within the Broad Run watershed and can all be sewered by a wastewater main which originates at Dulles Airport, follows the Broad Run to the Potomac and then joins the Potomac Interceptor Sewer. This major installation terminates at the District of Columbia's Blue Plains Sewage Plant.

   At this time, the planning area is crossed by one sewer line, constructed by the Xerox Corporation which extends from the Broad Run trunk line up Russell Branch to Ashburn Junction where it crosses Route 7 into the Xerox Training Facility. Figure 10, page 20, shows the location of sewer lines in the planning area.
Loudoun County at present discharges some 2.1 million gallons of sewage per day into the Potomac Interceptor Sewer from 7,000 residences in eastern Loudoun. A further 10,000 - 14,000 residences are planned in that planning area\textsuperscript{10} which is estimated to generate at buildout a total of up to 6.3 million gallons of sewage per day. Residential development in Dulles North equal in size to eastern Loudoun would generate a combined sewage flow of at least 13 million gallons per day for the two planning areas.

There is a question regarding Loudoun County’s reserved sewage capacity at Blue Plains. Under an agreement of October 24, 1963 between the Loudoun County Sanitation Authority and the District of Columbia, the County has on reserve 17.93 million gallons per day of sewage treatment capacity. Between 1970 and 1974 a series of interrelated legal suits on the part of Federal, State and local authorities reduced the District of Columbia’s expansion plans at Blue Plains while increasing the quality of effluent which Blue Plains could discharge into the Potomac. In a compromise agreement to which Loudoun was not a party, the County’s reserved sewage capacity was reduced from the original 17.93 million gallons to 3.208 million gallons. In January of 1974 the Loudoun County Sanitation Authority filed a suit for Declaratory Judgement in the Superior Court of the District of Columbia seeking to confirm the validity of its 1963 agreement with the District of Columbia. The matter was temporarily resolved in July 1974 when Loudoun County and the District entered a stipulation that the 1963 agreement "is valid, subsisting and enforceable according to its terms."\textsuperscript{11}

Since that time, the Loudoun County Sanitation Authority has received assurances from the District of Columbia that it, "acknowledges Loudoun County’s and the Authority’s reliance upon the District to provide for Loudoun’s sewage treatment needs as set forth in the 1963 agreement and this (letter) will serve as your commitment that the District will exercise its best efforts to meet these needs."\textsuperscript{12} (Underlining by Loudoun County Department of Planning, Zoning and Community Development.)

Subsequent to this assurance, a consortium\textsuperscript{13} of the major jurisdictions and users of Blue Plains initiated a study to determine Blue

\textsuperscript{10} Loudoun County Department of Planning, Zoning and Community Development, Land Development Section, 1984.

\textsuperscript{11} D.C. Superior Court, CA-121-74

\textsuperscript{12} Letter from James O. Gibson, Assistant City Administrator for Planning and Development, to Stanley M. Franklin, Esq., Boothe, Prichard and Dudley, Attorneys for the Loudoun County Sanitation Authority, June 7, 1979.

\textsuperscript{13} The District of Columbia, Montgomery and Prince Georges Counties, Maryland and Fairfax County, Virginia.
Plains’ sewage treatment capacity given current technologies, flows and the region’s growth rate. This study included a feasibility review of possible off-site treatment plants such as the construction of an 11 million gallon per day facility on Broad Run in Loudoun County. The construction of a plant on Broad Run would comply with Virginia State Water Control Board (SWCB) policy for the watershed. In conformance with this policy SWCB will approve and assist in finding financial assistance for the construction of one large regional sewer plant in the Broad Run watershed. The consortium study concluded that an 11 million gallons per day sewage plant located on Broad run would cost between $47.5 - $62.7 million in 1983 dollars. The wide range of costs reflected uncertainty on the level of water purification which would be required.

2. Central Water:

The City of Fairfax owns and operates a Water Reservoir and Treatment Plant on Goose Creek, just west of the planning area. The treated water is then conveyed in the 24" water main which the City of Fairfax constructed along Route 642 west of Ashburn and the Washington and Old Dominion railroad right-of-way (See Figure 11, page 23). The Loudoun County Sanitation Authority has installed a 20" water line across the Dulles North Planning Area. This main was laid in a northerly direction along Route 659 to Route 7 and then follows Route 7 to Broad Run and eastern Loudoun. The City of Fairfax Water Plant currently has an average delivery capacity of 15 million gallons per day with a potential of some 30 million gallons per day. Loudoun has first tapping rights on the water of Goose Creek and presently the Sanitation Authority purchases 2.3 million gallons of water a day from the City of Fairfax.

Development buildout of eastern Loudoun will require a tripling of these water purchases while development of the Dulles North area will further increase the County’s need for Goose Creek water. This increase may be accomplished by expansion of the Goose Creek waterworks. This might require the County’s cooperation with the City of Fairfax in building additional capacity. On the other hand, the City of Fairfax presently sells water to Herndon and western Fairfax. These areas now have the option of purchasing water from the Fairfax County Water Authority’s new Potomac Intake Facility located at Lowes Island. If the City of Fairfax ceased supplying Herndon and western Fairfax, sufficient capacity of the present Goose Creek Plant would be released to serve new development in and around Ashburn.

3. Transportation:

a. Roads

The Dulles North area is served by a set of roads which were designed to accommodate a very low density farm community (See
WATER MAINS

FIGURE 11

LOUDOUN COUNTY SANITATION AUTHORITY MAINS
FAIRFAX CITY MAINS
PLANNING AREA BOUNDARY

OCTOBER 21, 1985

- 23 -
Figure 12, page 25). Thus considerable road improvements will be necessary to accommodate future high density growth. Further description of the existing road system is provided by Table 7, page 26. Route 659 is hard surfaced and largely defines the western edge of the planning area while Route 641 is also hard surfaced and, when extended south by Route 772, forms a central north/south spine. Route 607 further east is not paved. Since Route 607 crosses Russell Branch, Beaverdam Run and Broad Run with their extensive floodplains, improving this road will be expensive. Route 625, which constitutes the Dulles North area east-west roadway north of Broad Run is paved only in part. Route 643 which follows a diagonal path across the Planning Area and could be developed as a logical commuter artery to Route 28 and the Dulles Toll Road, is not paved and would require extensive and costly construction, especially at the Broad Run floodplain.

Arterial road linkage to Tysons Corner and Washington, D.C. is now mainly provided by Route 7 while Rt. 625 to Route 28 and the Dulles Access Road provides a minor linkage to the metropolitan core. Some commuters may follow Route 659 to Route 50 and go from there to the Fair Oaks area or even to Route I-66. The extension of the Toll Road to the Route 15 Bypass would provide an alternative east/west connector arterial route to Route 7 through the County. This road would not only provide a regional link, but an intercounty one between the east, Dulles Airport, and the Town of Leesburg. Construction of this limited access road which follows the alignment shown on the land use map creates a new link to the employment and recreational cores of the region.

Major development in the Ashburn area will require substantial new road investments. The County and the Virginia Department of Highways and Transportation unfortunately do not have the resources to implement such investments. However, for the preparation of the area plan, the Metropolitan Washington Council of Governments (COG) has conducted a preliminary traffic study based on one possible land use pattern shown on Figure 13, page 27.

A TRIMS (Transportation Integrated Modeling Systems) transportation model for the year 2010 was run on the Metropolitan Washington Council of Governments' computer. The model allocated vehicle trips from 11,000 dwellings and associated employment uses and thus assumed that the Dulles North area would be about 50% towards an ultimate buildout of 23,000 dwellings. The model also assumed that bridges would have been built over Broad Run at Routes 643 and 607 thus permitting traffic to flow directly to the Dulles Toll Road.
## TABLE 7

### PRIMARY AND SECONDARY ROADS IN THE DULLES NORTH AREA

<table>
<thead>
<tr>
<th>Route</th>
<th>Length</th>
<th>R-O-W</th>
<th>No. of Lanes</th>
<th>Pavement</th>
<th>Average Daily Trips&lt;sup&gt;14&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>4.5</td>
<td>200' - 215'</td>
<td>4</td>
<td>Hard Surface</td>
<td>14,310</td>
</tr>
<tr>
<td>606</td>
<td>4.07</td>
<td>80' - 90'</td>
<td>2</td>
<td>Hard Surface</td>
<td>2,305</td>
</tr>
<tr>
<td>607</td>
<td>3.20</td>
<td>30'</td>
<td>2</td>
<td>All Weather</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>0.50</td>
<td>30'</td>
<td>2</td>
<td>Hard Surface</td>
<td>480</td>
</tr>
<tr>
<td>614</td>
<td>1.60</td>
<td>30'</td>
<td>2</td>
<td>Hard Surface</td>
<td>120</td>
</tr>
<tr>
<td>625</td>
<td>2.30</td>
<td>30'</td>
<td>2</td>
<td>All Weather</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>3.27</td>
<td>50'</td>
<td>2</td>
<td>Hard Surface</td>
<td>1,285</td>
</tr>
<tr>
<td>640</td>
<td>1.24</td>
<td>30'</td>
<td>2</td>
<td>Hard Surface</td>
<td>151</td>
</tr>
<tr>
<td>641</td>
<td>4.10</td>
<td>30' - 40'</td>
<td>2</td>
<td>Hard Surface</td>
<td>906</td>
</tr>
<tr>
<td>642</td>
<td>1.80</td>
<td>30'</td>
<td>2</td>
<td>Hard Surface</td>
<td>119</td>
</tr>
<tr>
<td>643</td>
<td>1.70</td>
<td>30' - 40'</td>
<td>2</td>
<td>Light Surface</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>2.2</td>
<td>30' - 40'</td>
<td>2</td>
<td>All Weather</td>
<td>822</td>
</tr>
<tr>
<td>645</td>
<td>1.00</td>
<td>30'</td>
<td>2</td>
<td>Light Surface</td>
<td>70</td>
</tr>
<tr>
<td>647</td>
<td>2.00</td>
<td>30'</td>
<td>2</td>
<td>All Weather</td>
<td>35</td>
</tr>
<tr>
<td>659</td>
<td>9.62</td>
<td>30' - 50'</td>
<td>2</td>
<td>Hard Surface</td>
<td>400-1,600</td>
</tr>
<tr>
<td>772</td>
<td>3.17</td>
<td>30'</td>
<td>2</td>
<td>Hard Surface</td>
<td>490</td>
</tr>
<tr>
<td>774</td>
<td>1.1</td>
<td>30'</td>
<td>2</td>
<td>Light Surface</td>
<td>13</td>
</tr>
<tr>
<td>789</td>
<td>.8</td>
<td>30'</td>
<td>2</td>
<td>Light Surface</td>
<td>43</td>
</tr>
<tr>
<td>805</td>
<td>.24</td>
<td>30'</td>
<td>2</td>
<td>Hard Surface</td>
<td>305</td>
</tr>
<tr>
<td>842</td>
<td>.59</td>
<td>30'</td>
<td>2</td>
<td>All Weather</td>
<td>96</td>
</tr>
<tr>
<td>856</td>
<td>.82</td>
<td>30'</td>
<td>2</td>
<td>All Weather</td>
<td>13</td>
</tr>
</tbody>
</table>

<sup>14</sup> Average Daily Vehicle Trips derived from the 1982 vehicle counts on Route 7 and 1982 vehicle counts on all other roads made by the Virginia Department of Highways and Transportation and reported in *Average Daily Traffic Volumes on Interstate, Arterial and Primary Routes 1982* and *Secondary Traffic Tabulation Counts May - September 1982.*
TRANSPORTATION STUDY MODEL

FIGURE 13

EMPLOYMENT

RESIDENTIAL

PLANNING AREA BOUNDARY

OCTOBER 21, 1975

- 27 -
Figure 14, page 29 shows the number of vehicle trips identified by the model on the Dulles North roads and contrasts these with the vehicle trips actually counted in 1982.

The Metropolitan Washington Council of Governments has also supplied the County with Table 8 which identifies the number of traffic lanes that would be needed to support suburban development in the Dulles-North area.

<table>
<thead>
<tr>
<th>TABLE 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQUIRED MAJOR ARTERIAL LANES IN THE DULLES NORTH AREA</td>
</tr>
<tr>
<td>(At an Average Level of Service &quot;D&quot;)15</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>1980</td>
</tr>
<tr>
<td>Daily East-West Traffic Trips</td>
</tr>
<tr>
<td>East-West Lanes</td>
</tr>
<tr>
<td>Daily North-South Traffic Trips</td>
</tr>
<tr>
<td>North-South Lanes</td>
</tr>
</tbody>
</table>

The Required Major Arterial Lane Table suggests that the Dulles North area has 1/3 of the lanes needed to accommodate traffic in moving east-west and only 1/6 of the lanes needed for north-south traffic in 2010. Some of these traffic lanes may be appropriately provided in part by local collector roads as the subdivisions are developed.

However, such roads can carry only about 50% of the traffic of a major arterial. The importance of increasing the number of traffic lanes on Route 7, Route 606 and Route 28 is evident while Figure 14, page 29, highlights the need for improvements to Route 643 as a controlled access arterial road from Route 641 to the Dulles Toll Road. These major road investments will require a partnership between the public and private sectors to ensure the timely provision of adequate facilities. One last consideration is that of car/van pools and public transit which could reduce pressure on major commuter routes such as Route 28, the eastern sections of Route 643 and Route 606.

---

15 A "D" level of service designates traffic operating with little freedom of maneuver, at varying operating speeds and approaching unstable flow.
b. Dulles International Airport

Part of the Dulles North area lies immediately to the north of the Washington Dulles International Airport. In 1984 a total of 180,000 aircraft operations took place at the airport. 50% of these operations were general aviation, 26% were domestic and foreign airlines, 17% were airtaxi and corporate services and 7% were military flights. While half the aircraft operations were general aviation, more than half of the airport's revenue was generated by the 3.5 million passenger airline traffic. Such revenue will be needed to support new airport investment in land and facilities as Dulles continues to grow to a projected 394,000 operations and 7.5 million passengers in the year 2000. Proposed construction of an additional north-south runway and an additional east-west cross-wind runway in the next century would permit airport expansion to 740,000 aircraft operations per year.

The location of Dulles International Airport has generated employment investments not only in Loudoun but also in western Fairfax and Prince William Counties. High value, relatively light goods can be economically shipped from the airport to arrive within hours at destinations in the rest of the continent and the world. The planning area's proximity to the airport places it in an excellent position to capture a substantial percentage of this possibly "High Tech" employment growth.

4. Recreation:

a. Washington and Old Dominion Railroad Regional and Potomac Heritage Scenic Trail Parks

The Northern Virginia Park Authority, of which Loudoun County is a member, has been developing the former Washington and Old Dominion Railroad right-of-way as a 45 mile linear park for hikers, bicyclists and horseback riders. The Park Authority, which purchased most of the linear facility from the Virginia Electric and Power Company\(^\text{16}\), has also purchased a number of small adjacent tracts of land along the right-of-way and one of these is just west of the planning area near Route 659. The Park Authority has also accepted easements from certain property owners along the Potomac for the future development of the Potomac Heritage Scenic Trail park along the shoreline but much more land is still required to realize this project. Figure 15, page 31, shows the location of recreational facilities in the Dulles North area.

\(^{16}\) The Virginia Electric and Power Company retained an easement to accommodate its power transmission lines.
SCHOOLS AND PARKS

1. NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
   WASHINGTON AND OLD DOMINION RAILROAD TRAIL
2. ASHBURN ELEMENTARY SCHOOL
3. BROAD RUN HIGH SCHOOL AND ANNEX

- PLANNING AREA BOUNDARY

FIGURE 15

OCTOBER 21, 1985
b. County Parks and Recreation Department

The Loudoun County Department of Parks and Recreation has made a number of investments in the Dulles North planning area. As part of its ongoing policy of working with the School Board, the Department has developed a basketball court, a softball field and a fitness trail on the Ashburn Elementary School property. On the Broad Run High School property the Department has built a tennis court and a softball field.

Since both properties belong to the Loudoun County School Board, use of these recreational facilities depends on the discretion of the School Board rather than the Parks and Recreation Department. There is no community center for indoor recreational use in the Ashburn area but residents may use the Leesburg, Arcola or Sterling community centers.

The Ashburn planning area contains a number of properties and land areas such as floodplains and wooded land which are suitable for development as undisturbed nature areas, passive recreation or active recreation areas.

5. Public Safety:

There is a volunteer fire company in Ashburn with an active membership of 30 volunteers. The fire station is located within the village and possesses a rolling stock inventory of two fire attack pumpers, one reserve pumper and one brush fire unit.

The Loudoun County Sheriff's Dept. provides police protection for the Dulles North area from its facilities in the Town of Leesburg.

6. Schools:

There is an elementary school located in Ashburn with a use capacity of 177 students and a 1985 enrollment of 72 or 41% of capacity. Broad Run High School is located on Route 641 between Ashburn and Ryan. The High School has a use capacity of 1,193 students and a 1985 enrollment of 1,022 students or 86% of capacity.

G. NATURAL RESOURCES AND ENVIRONMENTAL FACTORS

Introduction

The natural features of the Dulles North area have greatly influenced the historic settlement pattern and will continue to place constraints on the future development of the area. A major factor is the soil which, while still in agricultural
use, is not as productive as soils west of the Catoctin Ridge. Many of the farms are now either large scale rental operations or abandoned and held for speculation unlike the traditional family farms previously found in the area and still characteristic in the Loudoun Valley. The relatively poor soil also has contributed to the dispersed population and sparse settlement of the area; it is very difficult to locate a suitable site for a septic system and existing communities such as Ashburn are characterized by numerous septic system failures.

The area is generally flat with small sections of steep slopes located along watercourses. The creeks are the dominant feature of the area and include Broad Run and its major tributaries, Russell Branch and Beaverdam Run. Each of these is characterized by a 100 year floodplain\(^\text{17}\) which is unsuitable for intensive development but could be used as a buffer between new communities or industrial and residential developments. Future large-scale growth in the area will significantly alter the present ecological balance which is an especially critical concern with the streams of the area. Intensive development, residential and non-residential, will change the visual character of the environment as well and the existing large expanses of open land will be drastically changed. The plan should take both the ecological balance and the visual environment under consideration.

1. Hydrology/Water Resources:

Water plays a very prominent role in the shaping of land and the water systems of streams and rivers are significant factors in the design of communities. Consequently, it is very important to understand and respect the overall hydrologic system of the Dulles North area before deciding where and when to locate particular land uses.

The planning area is located almost completely in the 82 square mile Broad Run watershed which is entirely within Loudoun County. Broad Run drains directly into the Potomac River and is separated into sub-watersheds, the largest of which are Russell Branch and Beaverdam Run (See Figure 16, page 34).

There are approximately 3,800 acres of 100 year floodplain in the planning area (See Figure 16, page 34) that have been mapped either by the Federal Insurance Administration of the U.S. Department of Housing and Urban Development or the Virginia Soil and Water Conservation Service. Existing County policy designates floodplains as hazardous areas and land uses within 100 year flood zones are currently regulated by a County zoning ordinance adopted in January 1981.

\(^{17}\) 100 year floodplain is not an area which floods every 100 years but where there is a 1% chance of a flood every year.
The Broad Run watershed was ranked as a Priority 1 Critical Watershed based on nine different non-point source pollution factors for 1977\textsuperscript{18}. This means that Broad Run is considered an important watercourse in terms of water quality of the Potomac River and development in this watershed should proceed with care.

Another aspect of the area's water resources is the need for stormwater management to control flooding, reduce erosion and improve water quality. Studies indicate that Broad Run presently has a severe erosion and water quality problem from agricultural activities which could worsen if future land development is not designed and built properly. The County Soil and Water Conservation District estimates that nearly 40% of the land is losing more than the average County loss of four tons of soil per acre per year largely to the area streams.\textsuperscript{19} This is of special concern due to the new Fairfax County water supply intake located on the Potomac River approximately six miles downstream from the mouth of Broad Run.

In addition, future development within the Dulles Planning Area will change much of the existing land surface and will increase both the rate and volume of stormwater runoff, causing erosion, sedimentation and stream flooding, unless stormwater management practices are systematically implemented in the area.

2. Geology/Mineral Resources:

The Dulles Planning Area is located in the Triassic lowlands of the Piedmont physiographic province. The geologic formations have been mapped by USGS and further refined by the Loudoun County Soil Scientist. The majority are either shale or sandstone. The most significant geologic resource in the area is diabase (See Figure 17, page 36) which is quarried for crushed stone at five quarry sites in the County that are not within but are near the Dulles North planning area.

3. Soil Resources:

The soils of the area are generally suitable for crops, such as corn but they are not as productive as those in the Loudoun Valley to the west. There are large sections with poorly drained, clay soil ("jack soil") that are classified by the County Soil Scientist as generally having poor to very poor potential for septic systems and would also present engineering problems

\textsuperscript{18} Analysis of Nonpoint Source Pollutant Loads in the Washington Area and the Selection of Critical Watershed; Department of Water Resources; Metropolitan Washington Council of Governments; February 1980.

\textsuperscript{19} Natural Resource Inventory, Loudoun Soil and Water Conservation District. December, 1981. "Water Quality Modeling Study: Goose Creek, Broad Run and Sugarland Run Watersheds"; Regional Resources Division; Northern Virginia Planning District Commission; June, 1980.
GEOLOGIC RESOURCES

DIABASE FORMATION

PLANNING AREA BOUNDARY

FIGURE 17

OCTOBER 21, 1985

- 36 -
if developed on central sewer and water (See Figure 18, page 38). This poor soil is a major contributor to the historically sparse settlement of the area and is a significant constraint on growth in the area; both Ashburn and Arcola have numerous septic system failures.

In addition, the shrink/swell expansive properties of the clay soil make new construction difficult and expensive. Basements are generally not suitable in this type of soil since the dimensional changes of the soil heave foundations, crack the walls and lead to subsequent flooding. In such circumstances an on-grade concrete “raft” foundation is an alternative, while the best solution may be to completely excavate the jack soil and fill with a more stable soil.

4. Topography/Steep Slopes:

The area is made up of broad, undulating ridges and level land with elevations that generally range from 250 to 300 feet above sea level, with higher areas of 450 feet along Route 659.

Small areas of steep slopes greater than 25% and from 15% to 25% are located along the watercourses, such as Broad Run, Beaverdam Run and the Potomac. Existing County policy discourages new development on slopes over 15% except when appropriate engineering practices are used.

5. Forest and Wildlife Resources:

Large and small tracts of woodlands exist throughout the Planning Area along watercourses, on steeper slopes or on abandoned agricultural land. Species composition of a woodland results from (1) the intrinsic distribution of particular species, (2) physical site factors such as soil, (3) past land use history. The predominant species of area upland hardwoods are white and red oak, hickory, maple and tulip poplar alternating with stands of Virginia pine on the poorer soils or red cedar on recently abandoned farm fields. In the floodplain and low, wet areas, the major species are sycamore, willow, sweet gum and green ash.

There is no existing inventory of the natural diversity of wildlife habitats or ecosystems within the Dulles North planning area or the County as a whole. There are, however, several general concepts which should be considered in the management of vegetation and wildlife when planning for new development:

a. Provision for wildlife habitat is compatible with quality urban development. Proper management of wildlife and a diverse vegetation has been shown to enhance community values.
SOIL DEVELOPMENT SUITABILITY

SOIL WITH VERY POOR POTENTIAL (CLASS IV - PLASTIC, WET, ROCKY, STEEP SLOPES)

PLANNING AREA BOUNDARY

FIGURE 18
OCTOBER 21, 1985
b. Vegetation, particularly woodlands, maintains the quality of water resources, as it reduces flooding and erosion and can improve water quality.

c. Linear corridors, such as stream valleys, floodplains, utility and road rights-of-way and fence rows function as key wildlife feeding, resting and breeding areas. These corridors can be incorporated into the design of new developments as utility and storm drainage easements, neighborhood trails, passive open space recreation areas and 100 year floodplain easements.

6. Aircraft Noise:

In 1984 a total of 180,000 aircraft operations took place at Washington Dulles International Airport. Preliminary 1985 data indicate that aircraft operations will be 14% above the 178,000 operations projected only two years ago. In that same period, four airlines have designated the airport as a regional “hub” and more airlines are expected to follow suit. It appears quite possible that the airport will reach its year 2000 projected 394,000 operation level well ahead of schedule. Such increases in operations are likely to generate a significant rise in ambient noise levels in the aircraft flight paths and in 1982 the FAA commissioned Peat, Marwick, Mitchell and Co. as consultants to prepare a noise impact study as part of the airport Master Plan update.

In order to determine the level of noise generated by airport traffic, the consultants used past aircraft arrival and departure routes and data from sound monitors stationed around Dulles which had been installed some years earlier to measure the noise of the Concorde. Aircraft do not follow specific routes in the manner of automobiles on roadways. Furthermore, the sound impact of an overhead aircraft varies depending on (a) what a person or household is doing: watching T.V., sleeping, entertaining in the backyard, and (b) the time of year: winter with closed windows, summer with open windows.

There is an ongoing study to codify aircraft noise impact. In 1982 the FAA released the third version of an integrated Noise Model (Mod. 3.8) based on (a) the acoustical energy content at 500 Hertz (a note close to Middle C on a piano), (b) the noise event rise time and duration, and (c) the noise peak level. Two measures are available to display the results of the noise exposure calculations, grid cells and contours. Noise exposure can be calculated for the center of a grid of 40 acre cells surrounding the airport given certain aircraft types, arrival and departure routes, etc. Noise contour lines can then be traced through these grid cells for predetermined noise exposure levels. Figure 19 and Figure 20, pages 40 and 41 show the 1982 and future full potential Ldn (average day/night noise levels measured in decibels) noise contour profiles for the Ashburn area. Weather conditions, angle of ascent or descent other than the eight degrees
AIRCRAFT FLIGHT PATHS

FIGURE 21

- FLIGHT PATH
- ULTIMATE DEVELOPMENT OF WASHINGTON DULLES INTERNATIONAL AIRPORT
- PLANNING AREA BOUNDARY

OCTOBER 21, 1985
specified in the model, and pilot judgement will alter the detailed configuration of these routes and thus the precise boundaries of the noise zones.

A 1980 Federal Interagency report on noise and community reaction to it is summarized in Table 9, page 44 which indicates that below Ldn 55, community reaction to noise is slight while a certain amount of community stress may be expected in areas subject to Ldn 55-65. Significant negative community response may be expected in areas subject to Ldn 65-70 and HUD considers such areas undesirable for residential use. Very severe community reaction may be expected in areas subject to Ldn 70-75 and HUD would only consider approval of development in such areas if there were no alternative sites available to ease a pressing housing problem.

Peat, Marwick, Mitchell and Co. consultants for the Federal Aviation Administration, have developed a noise compatibility chart based on the U.S. Department of Transportation, "Federal Aviation Regulations, Part 150, Airport Noise Compatibility Planning."20 The standards use slightly different Ldn noise classifications from those used by the Federal Interagency group and thus Table 9, page 44, has been adjusted to reconcile the two systems. It should be noted that the consultants' table assumes that the building itself will reduce sound by 20 decibels by means of sealed windows and the installation of mechanical air handling systems. The consultants recommendation for noise level reduction components would require construction devices in addition to sealed windows and mechanical air handling. The Table further assumes that the County could obtain special enbling legislation from the Commonwealth of Virginia to implement unique deviations from the Virginia building code. Legislative experience, however, suggests that the prospect of obtaining such legislation in the near future is uncertain. Of course, little can be done to reduce sound either inside a building if windows are opened in warm weather or outside in yards and on patios. A particular land use thus ultimately becomes inappropriate for a given high ambient noise level and areas exposed to such noise should be planned for activities and uses which are not affected by high noise levels. Offices, for example, frequently have fixed windows and mechanical air systems and are not normally used as places to sleep. A quarry generates much noise by itself and would not be disturbed by overhead aircraft noise.

<table>
<thead>
<tr>
<th>LDN</th>
<th>General Community* Attitude</th>
<th>Average Community** Reaction</th>
<th>HUD Noise*** Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-55</td>
<td>Noise is no more important than various other factors</td>
<td>Slight</td>
<td>Acceptable. Ldn 55 is a goal for outdoors in residential areas.</td>
</tr>
<tr>
<td>55-65</td>
<td>At double the noise intensity of the previous category, noise may be considered an adverse aspect of the environment. 95% hearing intelligibility at 2 feet.</td>
<td>Moderate</td>
<td>Acceptable</td>
</tr>
<tr>
<td>65-70</td>
<td>At double the noise intensity of the previous category, noise is one of the important adverse aspects of the environment. 95% hearing intelligibility at 1.5 feet.</td>
<td>Significant</td>
<td>Discretionary(^{24}) Normally unacceptable.</td>
</tr>
<tr>
<td>70-75</td>
<td>At double the noise intensity of the previous category, noise is one of the most important adverse aspects of the environment. 95% hearing intelligibility at 0.9 feet.</td>
<td>Severe</td>
<td>Normally unacceptable(^{24}) &quot;should not occur as a general rule and only if less exposed sites are not available.&quot;</td>
</tr>
</tbody>
</table>

* Federal Interagency Committee on Urban Noise, "Guidelines for Considering Noise in Land Use Planning and Control" (June 1980), Table D-1

** Ibid, Table 1.

*** The HUD Noise Regulations allow a certain flexibility for non-audiocoustic benefits such as existing community in-fill projects or lack of alternative sites. However, HUD will not "endorse development in the latter portion of the Discretionary - Normally unacceptable zones unless sites with less noise exposure are not available," letter from HUD to Fairfax County dated 9/20/78.
<table>
<thead>
<tr>
<th>Land Use</th>
<th>Below Ldn 60</th>
<th>Ldn 60 to 65</th>
<th>Ldn 65 to 70</th>
<th>Ldn 70 to 75</th>
<th>Ldn 75 to 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential:</td>
<td>Compatible</td>
<td>Compatible</td>
<td>Discretionary NLR Required&lt;sup&gt;21&lt;/sup&gt;</td>
<td>Normally unacceptable NLR Required</td>
<td>Incompatible</td>
</tr>
<tr>
<td>(Slight community reaction to noise in the 45-55 range and moderate community reaction in the 55-60 range.)</td>
<td></td>
<td></td>
<td>(Noise is a significant community issue.)</td>
<td>(Noise is a serious community issue.)</td>
<td></td>
</tr>
<tr>
<td>Public Use:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools, hospitals, etc.</td>
<td>Compatible</td>
<td>Compatible</td>
<td>NLR required</td>
<td>Incompatible</td>
<td>Incompatible</td>
</tr>
<tr>
<td>Churches, auditoriums</td>
<td>Compatible</td>
<td>Compatible</td>
<td>NLR required</td>
<td>Incompatible</td>
<td>Incompatible</td>
</tr>
<tr>
<td>Governmental services</td>
<td>Compatible</td>
<td>Compatible</td>
<td>Compatible</td>
<td>NLR required</td>
<td>NLR required</td>
</tr>
<tr>
<td>Transportation</td>
<td>Compatible</td>
<td>Compatible</td>
<td>Compatible</td>
<td>Compatible</td>
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</tr>
<tr>
<td>Parking</td>
<td>Compatible</td>
<td>Compatible</td>
<td>NLR required</td>
<td>NLR required</td>
<td>NLR required</td>
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<tr>
<td>Commercial Use:</td>
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<tr>
<td>Offices; business, and professional</td>
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<tr>
<td>Wholesale and retail:</td>
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<tr>
<td>building materials,</td>
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<tr>
<td>hardware, farm equipment</td>
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<tr>
<td>Retail trade—general</td>
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<tr>
<td>Utilities</td>
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<tr>
<td>Communication</td>
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<tr>
<td>Manufacturing &amp; production:</td>
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</tr>
<tr>
<td>Manufacturing: general</td>
<td></td>
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<td></td>
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<tr>
<td>Photographic and optical</td>
<td></td>
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<tr>
<td>Agricultural (except livestock) and forestry</td>
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<tr>
<td>Livestock farming</td>
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<tr>
<td>Mining</td>
<td></td>
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<tr>
<td>Recreational:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor sports arenas</td>
<td></td>
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<td></td>
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<tr>
<td>Outdoor amphitheaters</td>
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<td></td>
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<tr>
<td>Nature exhibits and zoos</td>
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<tr>
<td>Amusements: parks, resorts, etc.</td>
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<td></td>
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<td></td>
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<tr>
<td>Golf, riding, and water recreation</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<sup>21</sup> Based on Psut, Marwick Mitchell and Co. *Air Traffic Forecasts and Preliminary Noise Exposure* (June 1983), p. 46

<sup>22</sup> Noise level reduction.
CHAPTER TWO

GOALS

A goal is a desired future state. This plan takes its primary general goals from the Resource Management Plan\(^{23}\) while it specifically seeks to achieve the following goals within the Dulles North area:

1. Provide a complete living and working environment for the present and future population of the planning district.

2. Establish balanced communities with a total long-range build-out of 32,000 - 80,000 residents and 11,600 - 29,200 dwellings, with adequate provision of residential, employment and both public and private service support facilities and utilities.

3. Provide housing and employment opportunities to match the varied needs of the area's present and future residents.

4. Encourage employment opportunities in Dulles North for County residents and others in the Northern Virginia area.

5. Conserve the natural, archaeological and historic endowments of the planning area while promoting the provision of all necessary utilities and facilities in a manner which causes the least environmental, social or community dissonance.

6. Promote a transportation system which provides safety and accessibility for Dulles North residents and businesses.

7. Provide regional transportation links through the planning area concurrent with contiguous development which will not disrupt the planned communities and will resolve projected traffic overloads on Routes 7, 50 and 28.

8. Assist countywide farmland preservation efforts by absorbing some of the residential growth which would otherwise occur in areas of the County which have important agricultural resources.

9. Promote appropriate industrial development which will assist the County in meeting its fiscal goals.

10. Manage residential development patterns and levels in order not to unduly strain County or planning area resources including tax base, transportation system, service support facilities and utilities.

11. Promote residential development patterns which facilitate civic awareness and the involvement of residents in local community activities and volunteer services.

The policies contained in Chapter III of this plan are designed to achieve these goals. The policies are guides to action, for they spell out what principles should be followed by builders and governmental agencies in the development of the Dulles North area to achieve community desires. The generalized Plan Map (Figure 27) at the end of this document (foldout) represents Loudoun County’s interpretation of the policies contained in this plan. The map serves as a general development guideline and, therefore, final implementation may deviate somewhat from the plan map. However, the goals will be achieved if the policies are upheld. Thus, an emphasis on goals and policies rather than on a detailed map will permit creativity on the part of builders and governmental agencies while ensuring that the County’s overall goals are achieved.
CHAPTER THREE

ISSUE STATEMENTS, RESOLUTIONS AND POLICIES

I. AGRICULTURAL POLICIES

A. Issue Statement and Policy Resolution

   The Dulles-North area is extensively farmed at present. Should this land use be actively preserved?

   The soils in the Broad Run watershed are not the County’s best agricultural soils. The presence of Dulles Airport, proximity to the Washington metropolitan area and availability of sewer/water utilities render the area particularly suitable for community and employment development. The County will accordingly encourage continued farming in the area until its orderly conversion to community and employment uses takes place. The County will also use the Dulles North area as a receiving zone for transfer of development density programs designed to preserve agricultural uses in those areas of the County which have long-term agricultural potential.

B. Policies

   1. The County will encourage the agricultural industry in the area as long as local farmers wish to continue farming, but will not prohibit the conversion of farmland to community and to employment uses.

   2. The County will maintain countywide assistance to the agricultural industry in the area.

   3. The Dulles North area will be a receiving zone for transfer of development density for the purposes of agricultural preservation and regional recreation. The County endorses the application of TDR and Density Transfer Programs to the area.

   4. The sending areas of transfer of development density will comprise those rural areas designated by both the Rural Land Management Plan and this plan, those areas designated for a regional park as stipulated in IV.B.4.a., page 60, and those areas designated in forthcoming County Ordinances.
II. RESIDENTIAL COMMUNITY POLICIES

A. Issue Statement and Policy Resolution

What should be the form, size, and densities of the new residential communities and where should these be located in the Dulles North area?

Two residential communities outside of the Ldn 65+ (Loudness Day Night Index) Noise Zones will be located in the Dulles North area. The new residential communities should be assembled in a hierarchy of identifiable subcommunity units. These subcommunity units range from residential blocks of 100 - 300 dwellings to a neighborhood of 3,500 - 5,000 people. Each neighborhood might consist of three to seven blocks while three or more neighborhoods might compose a residential community. Residential densities within these communities and neighborhoods will range from 1.6 to 4.0 dwelling units per net residential development acre. The neighborhoods and communities will be interrelated by transportation, recreational, commercial and educational systems and supported by a complement of public facilities and utilities (See Figure 22, page 50).

B. Policies

1. One residential community with a long-range build-out of 9,200 - 23,000 dwellings will surround the existing village of Ashburn while another community of 2,500 - 6,200 dwellings will be located near Royville.

2. Each of these communities will be designed as a self-contained unit of three or more neighborhoods possessing a range of housing types and a full complement of public utilities and facilities, which would include retail commercial and office functions, public sewer, water, electricity, schools, libraries, fire stations, post offices, community parks, recreation centers and other appropriate facilities.

3. Each neighborhood of 1,500 - 2,000 dwellings should be focused on a set of local public facilities which will include an elementary school and a park.

4. One local commercial center serving the two or more neighborhoods of a community should be located in a central place to serve these neighborhoods.

5. Collector and arterial roads will be designed to define and link the communities with each other, local employment areas and the metropolitan region. These collector and arterial roads should be designed to minimize disruptions of the community and neighborhoods and thus increase safety by reducing the need for
RESIDENTIAL BLOCK

NEIGHBORHOOD

COMMUNITY

COMMUNITY DESIGN CONCEPT

FIGURE 22

OCTOBER 21, 1985
school children and other pedestrians to cross major roads. Major and minor local access roads will provide the principal direct access to individual properties.

6. The new communities will be located outside the Ldn 65+ (Loudness Day Night Index) Noise Zones as measured on the Integrated Noise Model, Mod. 3.8 (See page 88) and projected by the Federal Aviation Authority and the Metropolitan Washington Airports Authority in their noise studies for the Washington Dulles International Airport when the facility is operating at full five-runway capacity. (See Figure 20, Ultimate Airport Noise Contour, page 41 and Figure 20A, Ultimate Airport Noise Contour - 1991, page 41A).

7. New development in and immediately around the existing Village of Ashburn will be designed to reinforce and enhance the predominantly 19th century character of the existing village.

8. The County encourages the coordinated design of neighborhoods and communities processing a full complement of public facilities and utilities. The County will establish a range of residential densities between 1.6 and 2.8 dwelling units per net acre\(^{24}\) (See Figure 23, page 52) plus an incremental density of 0.6 dwelling units per net acre for density transfer programs and an incremental density of 0.6 dwelling units per net acre for off-site road assistance making a total maximum of 4.0 dwelling units per acre. The density granted by the County will be the function of a developer’s assistance in creating a full complement of public facilities and utilities - (See Appendix A: "Public and Private Sector Policy Guidelines for the Financing of Capital Facilities and Utilities", on page 92 of this plan for further explanation regarding density and proffered assistance). The following paragraphs outline the densities which will be considered for various types of assistance:

   a. 1.6 - 2.0 dwelling units per net acre will be considered by the County for conventional residential development with adequate road, stormwater and utility provisions and the provision of residential, block-scaled facilities such as a school path system, volleyball courts, tot lots and playgrounds.

   b. 2.0 - 2.4 dwelling units per net acre will be considered by the County for clustered residential development with adequate road, stormwater and utility provisions, those facilities suggested for the residential blocks and the provision of neighborhood-scaled public facilities such as school sites,

\(^{24}\) Net acre in this instance is the tract area less lands in floodplain, lands with steep slopes of 25% or over, and lands to be devoted to commercial or employment uses.
### 100 ACRE TRACT

<table>
<thead>
<tr>
<th>Description</th>
<th>Acres</th>
</tr>
</thead>
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<tr>
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</tr>
<tr>
<td>Less floodplain</td>
<td>-10</td>
</tr>
<tr>
<td>Less steep slopes</td>
<td>-6</td>
</tr>
<tr>
<td>Less commercial/employment</td>
<td>-6</td>
</tr>
<tr>
<td><strong>NET RESIDENTIAL DEVELOPMENT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ACREAGE FOR DENSITY CALC.</strong></td>
<td>78</td>
</tr>
</tbody>
</table>

**Figure 23**

**NET RESIDENTIAL DEVELOPMENT ACREAGE**

October 21, 1985
neighborhood or linear park sites and/or financial assistance through trust funds to support the creation of such facilities.

c. 2.4 - 2.8 dwelling units per net acre will be considered by the County for planned community development with a full complement of those roads, utilities and public facilities of a residential block, neighborhood and community-wide character and/or financial assistance through trust funds to support the creation of such facilities as delineated in this plan.

d. A density increment of 0 - 0.6 dwelling units per net acre will be considered in the rezoning process by the County at stages a., b. or c. in return for significant off-site road improvements which would be of countywide benefit.

e. A density increment of 0 - 0.6 dwelling units per net acre will be considered in the rezoning process by the County, at stages a., b. or c. in return for developer evidence of participation in agricultural conservation or recreational efforts associated with transfer of development density.

9. The design of neighborhoods and the smaller residential block areas that comprise them should create living areas that are attractive, safe and stable. Lot sizes should be varied within the neighborhood and within the residential blocks and an efficient street and utility network should be provided.

10. Housing types within the neighborhoods should be varied with single-family detached, single-family attached and patio houses and apartments. Housing types and lots should provide not only for the nuclear family, but also for young and older single-person households and the extended multigeneration family through the provision of space for “granny” houses, mother/daughter duplexes and similar accommodations. (These “granny” provisions will require the addition of sections in both the Zoning and Subdivision Ordinances).

11. Housing types in each neighborhood should range between 30% - 60% single-family detached, 30% - 60% townhouses and 5% - 15% apartments. Additionally, 5% - 15% of the single-family detached house lots should be large enough to accommodate a detached “granny” house as suggested in #10.

12. The new communities of Ashburn and Royville should be encouraged to incorporate.
13. The area located between the western community development portion of Royville and this plan’s boundary and which is located in the Broad Run watershed, will be a rural residential sending zone. The number of units transferred will be the product of the sending area’s net acreage times the appropriate density determined in II.B.8. on page 51. Sewer lines will not be extended into this area which is intended to act as a transitional buffer for the rural balance of the Broad Run watershed.

III. EMPLOYMENT POLICIES

A. Issue Statement and Policy Resolution

Where should the new employment uses be located? Where should the new warehouse/ manufacturing employment uses be located?

A variety of employment uses will be designated in the Dulles North area and located to accommodate a wide spectrum of businesses ranging from high visibility, prestige offices to general employment, assembly, warehouse and manufacturing enterprises. The employment zones will be located within the Ldn 65+ Loudness Day Night Index Noise Zones and in those areas both crossed by arterial and collector roads and served by sewer and water lines designed to support such employment uses. Office/research and high technology employment uses should be located along existing and future major cross-country arterial roads while warehouse, manufacturing and repair uses should be located along the less visible industrial collector roads.

B. Policies

1. Employment land uses will be designated along Route 7, Route 28, the Dulles Toll Road (portion located in DNAMP), and Route 606 and the proposed Route 607/645 corridor.

2. Employment land uses will be designated in the Ldn 65+ Loudness Day Night Index Noise Zones as measured on the Integrated Noise Model Mod 3.8 and projected by the Federal Aviation Authority and the Metropolitan Washington Airports Authority in their noise studies for the Washington Dulles International Airport when the facility is operating at full five-runway capacity (See Figure 20, Ultimate Airport Noise Contour, page 41 and Figure 20A, Ultimate Airport Noise Contour - 1991, page 41A).

3. Employment land uses bordering Routes 7 and 28 and the proposed relocated Route 643/Dulles Toll Road Extended will be designated for office/research and high technology assembly uses.
4. Land bordering the constructed Dulles Toll Road extension will be designated employment keynote in the area east of the East Spine Road. Residential and mixed use developments are proposed for the area to the west of the East Spine Road which abuts the Toll road alignment. Suburban densities will not exceed 4.0 dwelling units per acre while employment densities will not exceed .4 FAR.

5. Land bordering Route 606 and the proposed Route 607/645 corridor will be designated for general employment uses (e.g., manufacturing, bus/trucking repair facilities warehouse and assembly).

6. Heavy employment uses such as metal fabrication or quarries should be buffered from residential or office/research uses by less intensive employment uses such as warehouses or by major environmental areas (e.g., the Broad Run floodplain).

7. Additional floor area up to 25% of allowable Floor Area Ratio will be granted by the County in return for developer evidence of participation in agricultural conservation efforts associated with transfer of development density.

8. Development of General Employment uses along Route 606 should incorporate 150 foot building set-backs from Route 606; 50 foot parking set-backs; inter-parcel access with a minimum number of entrances onto Route 606; adequate screening along Route 606 and adequate sewer and water facilities sufficient to meet Health Department approval.

9. Designate the entire strip of land designated as "airport expansion area" as general employment, rather than amending the plan for individual parcels on a piecemeal basis.

IV. COMMUNITY FACILITY POLICIES

A. Issue Statement and Policy Resolution

What sort of community facilities should be located in the Dulles North area? Where, when and by whom should these facilities be acquired?

Loudoun County will seek to provide residents of the Dulles North area with an appropriately located, coordinated and balanced complement of community facilities such as schools, parks and libraries as these are needed. The location of these facilities is very important since the use by local residents is greatly affected by visibility and ease of access. Public facilities that are well used deliver the greatest amount of public benefit per tax dollar spent.
The County anticipates that the sites for many public facilities will be reserved for school, park, library, or other public uses at the time of land development review and that these will be dedicated by developers to the County as needed. The County anticipates that no development would provide the location of all the facilities noted herein although the larger developments will be expected to contain a significant number of public facility sites. Facility construction and operational costs will largely be borne by County taxpayers, but Loudoun will seek assistance from other public agencies, such as the Northern Virginia Park Authority, quasi-public entities, such as Homeowner Association or the YMCA and the private sector in the development and operation of these facilities.

B. Policies

1. General Public Facility Policies

   a. Phasing:

      i. The County will encourage incremental and compact growth of the Ashburn and later the Royville communities by developing public facilities and utilities initially in the cores of these communities and later, additional facilities further from the core.

      ii. The County will weigh the provisions of public facilities and utilities in rezoning, subdivision, special exception and site plan proposals in making its decision to approve or deny the proposal.

   b. Site Acquisition/Location:

      i. Community facility sites will be identified and reserved for public use at the time of rezoning, special exception or subdivision and dedicated when needed to the County, the Northern Virginia Regional Park Authority or other appropriate public bodies.

      ii. Community facilities serving extensive geographical areas and/or large populations, such as community or neighborhood parks, health clinics or post offices should be located on major collector, community "spine" roads and/or within the commercial/office centers.

      iii. Community facilities serving limited geographical areas and/or local populations, such as elementary schools or tot lots, should be located within the neighborhoods
on minor collector or local access roads and pedestrian path systems.

iv. The County will encourage the grouping of compatible community facilities, such as active recreational facilities and schools, when appropriate.

c. Ownership and Operational Responsibility:

i. Community facilities serving a regional function and/or population, such as the W&OD Trail or a regional park will be generally owned and operated either by a regional agency such as the Northern Virginia Regional Park Authority or the County.

ii. Public facilities serving a countywide or community-wide function, such as a community park, pool or recreational facility will generally be owned and operated by the County. When appropriate, the County will consider an ownership/operation joint venture with non-profit or for-profit entities. County policy in this case would be to ensure timely and cost effective provision of recreational services.

iii. Public facilities like a lot or volleyball field servicing a small geographical area such as a subdivision will generally be owned and operated by a homeowners’ association.

2. Educational Facility Policies

a. School sites will be identified, then reserved at the time of rezoning, based on school children generation rates established by the Loudoun County School Board. Such sites will be deeded to the Loudoun County School Board when requested or at the time of subdivision or site plan approval.

b. School sites will be located to the satisfaction of the Loudoun County School Board and the Virginia Department of Education at focal points in the residential community areas and should not be located in commercial or employment development areas.

c. School sites will be rectangular and generally flat, with well drained soils possessing a structural bearing capacity acceptable to the County in the areas
designated for school buildings and accessory structures.

d. Public utilities (sewer, water, gas, electricity, phone, and cable TV) will be installed underground by the developer to the property lines of a school site at locations specified by the Loudoun County School Board.

e. Elementary Schools:

i. Elementary school sites will be located at the focus of the attendance area and should be no further than eight-tenths of a mile from the residences of the majority of the students, along year-round, safe and effective pedestrian pathways.

ii. Elementary school sites will have safe and direct access to a minor collector road.

iii. Pedestrian pathways to elementary schools from the residential areas will be designed and constructed as a logical and convenient year-round system. Elementary school pathways will cross collector, residential community "spine" roads and arterial roads in a safe, grade-separated manner.

iv. Elementary school sites will be large enough to accommodate school structures and programs and will be at least 15 acres in size.

f. Middle Schools:

i. Middle school sites will be located at the focus of the attendance area and should be no further than one and one-half miles from the residences of the majority of the students.

ii. Middle school sites will have safe and direct access to a major collector or residential community "spine" road or to a minor collector road.

iii. Middle school sites will be located at the focus of a year-round, safe and effective path system.
iv. Middle school sites will be large enough to accommodate school structures and programs and will be at least 30 acres in size.

g. High Schools:

i. High schools will be located at the focus of the attendance area and should be no further than one and one-half miles from the residences of the majority of the students.

ii. High school sites will have safe and direct access to a major collector or residential community "spine" road or to a minor collector road.

iii. High schools sites will be located at the focus of a year-round, safe and effective path system.

iv. High school sites will be large enough to accommodate school structures and programs and will be at least 45 acres in size.

3. Library Policies

Two library sites, one for a branch library in the Ashburn community and one for a neighborhood library in Royville, will be identified and reserved at the time of rezoning and dedicated to Loudoun County when requested by the County.

a. Ashburn:

i. The Ashburn branch library site will be located near the existing village of Ashburn, in close proximity to a local commercial shopping center and will be located on a major collector road with access to this road or preferably to a minor road.

ii. The Ashburn branch library site will be at least two and one-half acres in size, will be rectangular and generally flat with well drained soils possessing a structural bearing capacity acceptable to the County in the areas designated for buildings.
b. Royville:

i. The Royville neighborhood library will be located in close proximity to a local commercial shopping center and will be located on a major collector road with access to this road or preferably to a minor collector road.

ii. The Royville neighborhood library site will be at least one acre in size, will be rectangular and generally flat, with well drained soils possessing structural bearing capacity acceptable to the County in the areas designated for buildings.

4. Parks and Recreational Policies

A balanced and coordinated recreational system will be established in the Dulles North area and will include one regional park, a regional linear park network, two community and nine neighborhood parks, environmental reserve, passive recreational areas and partial use of Loudoun County School Board recreational areas. In general, 10 acres of active recreational parkland per 1,000 people or 350 dwellings will be reserved at the time of rezoning for dedication to the County when requested by the County.25 Part of this requirement for active recreational land will be satisfied by acreage on public school sites, but no less than seven acres of land per 1,000 people or 350 dwellings will be reserved for active recreation independent of the school sites.

a. Regional Park:

i. Location

The regional park will be located between one of the communities in Dulles North and the Town of Leesburg or within one of the communities. It will be in close proximity to Goose Creek, with excellent access to a major collector road and to regional trail networks linking these urban developments. A significant water feature should be associated with the regional park for boating and fishing activities.

The standard of 10 acres of local parkland per 1,000 population is widely used in the U.S. and is incorporated in the 1984 Virginia Outdoors Plan prepared by the Commonwealth of Virginia, Department of Conservation and Economic Development (Richmond, 1984), page 30.
ii. Size, Topography and Vegetation

The regional park will be 150 - 500 acres in size, will consist of a variety of topographical and ecological environments from level to rolling to sloping terrain and from open fields for sports to woodlands for camping and nature walks.

iii. Ownership and Operation

The regional park will be owned and operated by a regional park authority, the County and/or an organization established to provide recreational services which is deemed acceptable by the Loudoun County Board of Supervisors.

b. Regional Linear Park Network:

i. Network Extension

The regional linear park network will be designed to extend outwards from the existing Washington and Old Dominion Railroad Regional Park to link the new communities in Dulles North with the future Potomac Heritage Scenic Trail, the proposed regional park near Goose Creek and environmental reserve areas on Broad Run. The network will link areas of diverse environmental and cultural features.

ii. Network Size and Travel Modes

The regional linear parks will be a minimum of 60 feet in width and will be designed to provide safe and effective links within Dulles North and between the new communities, eastern Loudoun and Leesburg, using a variety of travel modes, including equestrian, pedestrian and bicycling.

iii. Ownership

The regional linear parks will be owned and operated by a Federal or State agency and/or the Northern Virginia Regional Park Authority.
c. Community and Neighborhood Parks and Recreation Centers:

i. Location

The community and neighborhood parks and recreation centers will be located throughout the new residential neighborhoods of the Ashburn and Royville communities in proximity to the Loudoun County School Board properties. The community and neighborhood parks will be located on a major collector or community "spine" road with access to this road or preferably to a minor collector road and will have access to the pedestrian path network focused on the schools (See Figure 24, page 63).

ii. Size, Topography and Vegetation

The community and neighborhood park and recreation center sites will be a minimum of 30 and 15 acres in size respectively, will be predominantly flat with well drained soils possessing a structural bearing capacity acceptable to the County in the areas designated for recreational structures in order to provide year-round active recreational opportunities and playing fields.

Although natural woodlands, streams and floodplain areas for passive recreational purposes may form a component of these parks, such features will be limited to 30% of the acreage.

iii. Ownership and Operation

The neighborhood parks will be owned and operated by a regional park authority if closely associated with the linear park network, otherwise by the County Parks and Recreation Department and/or an organization established to provide recreational services which is deemed acceptable by the Loudoun County Board of Supervisors.
DULLES NORTH
LOUDOUN COUNTY, VIRGINIA

NEIGHBORHOOD PARK EXAMPLE

FIGURE 24
17 ACRE EXAMPLE SITE

OCTOBER 21, 1985
d. Cooperative Agreements between the Department of Parks and Recreation and the School Board:

Existing cooperation between the County and the School Board regarding use of school playgrounds will be continued in the future and codified in agreements between the Board of Supervisors and the School Board as necessary.26

e. Residential Block Parks:

i. Location

Residential block parks, which provide a variety of small scale, local recreational facilities such as tot lots, volleyball, basketball or tennis courts and/or swimming pools, will be located throughout the residential blocks of the communities.

ii. Size and Character

The character and extent of the individual block park facilities will be proposed by the individual applicants at the time of rezoning, special exception, subdivision or site plan. County review of the proposal will take into consideration the compatibility of this proposal with the character of the overall development and the proximity of other recreational facilities, such as the nearest neighborhood or community park.

iii. Ownership and Operation

Ownership and operation of residential block parks will be the responsibility of the respective homeowners’ associations.

f. Passive Recreational Parks:

i. Location

Passive recreational parks will be designated on the floodplain areas and on other lands

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26 Note that the County anticipates that three acres of active recreation land per 1,000 population will be located on school sites as noted in Policy #4, page 60.
possessing significant woodland or environmental features such as rock outcrops or wooded slopes which are in close proximity to community development areas. These passive recreational areas are intended for picnics, walking and loosely structured group activities on the part of adjacent residents. The passive recreational areas may form part of a regional trail network but are generally considered to be local natural areas for the enjoyment of individual neighborhoods and blocks.

ii. Ownership and Maintenance

The passive recreational parks will require a minimum of development and maintenance designed to avoid unnecessary brush fires, mosquitoes or other nuisances to the surrounding residents. Unless the area forms part of a regional path network, ownership and maintenance of the passive recreational areas will be the responsibility of the neighboring homeowners’ association.

g. Environmental Reserve Areas:

i. Location

The environmental reserve areas will be selected at the time of rezoning, special exception, subdivision or site plan review with the goal of conserving a representative sample of the area’s diverse vegetation and wildlife habitat. The reserve areas should be surrounded if possible, by uses compatible with the reserve such as commercial woodland or meadow bottomland, or be adjacent to the passive sectors of the regional park.

ii. Size and Access

Environmental reserve areas of normally two - five acres but which might be up to 50 acres will be located on one or more tracts of land, usually in extensive floodplain, for the purpose of preserving a representative sample of the natural environment of the Dulles North area. The nature and compatibility of the adjacent
uses will powerfully influence the amount of acreage necessary to preserve this environmental sample and thus the County will review proposed management practices of the surrounding land in its determinations. Access to the areas would be restricted to school groups, local scientific organizations and others engaged in the observation of undisturbed ecosystems.

iii. Reserve ownership can range from an open space easement to fee simple ownership by an organization dedicated to the preservation and study of natural habitats such as the Northern Virginia Regional Park Authority. Minimal management of the reserve is anticipated. Maintenance of the reserve areas might range from a legal commitment on the part of a private landowner to certain management practices (e.g., no clearcut forestry) to a management practice of minimal disturbance of the natural state of the reserve.

5. Church and Service Organization Facility Policies:

a. Church and service organization sites will be reserved for purchase by those organizations at the time of rezoning, special exception, subdivision and/or site plan review, to accommodate private facilities for community worship and/or service functions.

b. Church and service organization sites will be identified at a rate of three acres of land for every 1,000 people or 350 dwellings. These sites may range from two to five acres and should be rectangular and generally flat, with well drained soils possessing an acceptable structural bearing capacity.

c. Church and service organization facilities should be designed, landscaped and buffered so that they are compatible with neighboring development. The facilities will possess adequate on-site parking and landscaping/screening in order to reduce community friction to a minimum.

d. Church and service organization sites may be located on major collector or community "spine" roads and may also be located on minor collector roads. Access
to these facilities may be obtained from the major collector road but access from a minor collector road is preferable.

e. Church and service organization sites should generally be located near shopping center, school and/or park sites in order to facilitate the shared use of parking lots.

6. Local Government Center and Post Office Site Policies

a. Government Center Site:

i. The government center site in the Ashburn Community with local offices for the County Treasurer, Commissioner of the Revenue and other functions will be identified and reserved at the time of rezoning and dedicated to Loudoun County when required by the County.

ii. The government center site will be located on a major collector or community "spine" road in close proximity to a local commercial center in the Ashburn Community.

iii. The government center site should preferably be located in close proximity to the existing Village of Ashburn and should be designed to be compatible with both the new and the old development in architectural design and type of use.

iv. The government center site will be five acres in size, be rectangular and generally flat, with well drained soils possessing a structural bearing capacity acceptable to the County.

b. Post Office Site Reservation:

i. Two post office sites will be reserved for purchase by the postal facility sponsor(s) in the Dulles North area, one in the Ashburn community and one in the Royville community.

ii. The post office sites will be located on a collector or community "spine" road in close proximity to a neighborhood commercial center.
The Ashburn post office site should be two acres in size while the Royville site should be one acre in size. The sites should be rectangular and generally flat, with well drained soils possessing structural bearing capacity acceptable to the County.

7. Combined Fire, Emergency Rescue and Sheriff Substation Site Policies

Three fire and emergency rescue station sites and one Sheriff’s substation will be designated in the Dulles North Area. One of the fire/emergency sites will be within the Ashburn community, another within the Royville community and one combined fire, emergency rescue and the Sheriff’s substation will be located within the employment area north of Dulles Airport and between the airport and the Ashburn community. One satellite emergency rescue station will also be located in the Ashburn community in a different sector from the combined fire and emergency rescue facility.

a. The fire and emergency rescue station sites should be located adjacent to a major collector or community spine road and, preferably, close to the intersection of the road with a transverse collector road. The Ashburn and Royville community stations should have a high visibility location within the two communities, such as close to the shopping centers, in order to stimulate community knowledge and interest in volunteer fire and emergency rescue services.

b. The Sheriff’s Department substation should be located at the same site as the fire and emergency rescue station designated for the employment area in order to provide some isolation from noises associated with 24 hour law enforcement operations, to facilitate police and fire cooperation and to provide a focal point for major police/fire operations in this area.

c. The Ashburn and Royville community fire and emergency rescue station sites will be two acres in size. The combined fire and emergency rescue and Sheriff’s substation will be five acres in size. The Ashburn satellite emergency rescue facility will be one-half to one acre in size. The sites should be level, rectangular, with well drained soils and possessing a structural bearing capacity acceptable to the County.
d. The County encourages new development in the planning area to contribute significantly not only to the creation of these volunteer fire and emergency rescue organization facilities, but also to the annual costs incurred by the purchase of equipment and operational expenses.

V. COMMERCIAL FACILITIES POLICIES

A. Issue Statement and Policy Resolution

Where will the residents of Dulles North shop? Should there be a large number of small shopping centers or fewer and larger commercial centers?

Smaller shopping centers generate proportionally more traffic than larger commercial centers while their diminutive size renders them less able to invest in necessary entrance and exit improvements. County experience furthermore indicates that community residents tend to bypass smaller centers in favor of larger commercial centers. Accordingly, two local shopping centers will be designated for the Ashburn community and one local shopping center will be designated for the Royville community. In addition to these local commercial facilities a community shopping center will be designated in the Dulles North area near the proposed Route 643/Dulles Toll Road Extended and in the employment area. A regional shopping center site has been designated in the southwest quadrant of the Routes 28 and 625 intersection. An additional regional shopping center site has been designated in the southeastern quadrant of the Routes 28 and 7 intersection. Finally, a regional location is designated at the northwest quadrant of Routes 625/28. No additional regional shopping center sites will be identified in this plan. More than 20 acres of land located on the eastern boundary of the existing village of Ashburn and forming the residual land base of the old Washington and Old Dominion Railroad depot and associated mills are zoned for commercial uses but are largely not developed in such uses. The County encourages the appropriate development of these properties in employment and commercial uses.

B. Policies

1. Commercial establishments, such as grocery stores, opticians and beauticians will be developed in compact centers as elements of community and local shopping centers. Commercial services ancillary to industrial and employment uses, such as office supply, printing or sandwich shops, will be permitted to locate within industrial areas.
2. Two local shopping centers will be designated in the Ashburn community in opposite quadrants of the community and one local shopping center will be designated in the Royville community. A community shopping center will be designated near the proposed Route 643/Dulles Toll Road Extended in the employment area.

3. In shopping centers the following commercial activities are encouraged to develop.

a. Regional Shopping Centers

i. Retail: 600,000 - 1,200,000 gross square feet of retail space on 70 - 80 acres. Tenants should include a wide range of retail facilities to be agreed upon at the time of rezoning.

ii. Office: Adjacent land may be zoned for office uses.

b. Community Shopping Center

i. Retail: 100,000 - 300,000 square feet of gross retail floor space on sites of 20 - 40 acres of shopping center site. The community shopping center should contain a bank, restaurants/fast food establishments, movie theaters, a supermarket, hardware and furniture stores, specialty and clothing stores and a junior department store in a compatible design.

ii. Office: 100,000 - 300,000 square feet of gross office floor space included within the community shopping center and/or freestanding office buildings adjacent to the center.

4. Commercial centers will be designed, landscaped and buffered so that they are compatible with neighboring development. Accordingly, the centers will possess adequate on-site parking, storage and loading areas as well as landscape screening of these functions from surrounding neighborhoods. Massing, signs and exterior cladding on the front, sides and rear facades of the centers which create negative visual impacts should be reduced to a minimum. Pedestrian and vehicular circulation systems in and around the commercial centers will form a safe and convenient network. Outdoor lighting will be designed for both effective nighttime use of the facility and to reduce off-site glare to a minimum.
5. Commercial centers will be located adjacent to transportation facilities that are adequate to serve them. Accordingly, the community commercial center should be located near the intersection of an arterial and major collector road in the center of the Dulles North planning area while the local commercial centers should be located near the intersection of a community “spine” road and either a major or minor collector road.

6. Access to commercial centers will be controlled to provide safe and efficient movement of traffic into the centers, without impeding traffic movements along the adjacent roadways. Accordingly, entrances to the community commercial center should be at least 250 feet from the centerline of the major collector/arterial road intersection while the entrances to the local commercial centers should be at least 150 feet from the centerline of the major collector road/community “spine” road intersection. Generally, entrance to and exit from the commercial centers will be made from the minor road serving the center to cause the least disruption to traffic on the major roadway (See Figure 25, page 72).

Furthermore, to reduce unnecessary road crossover movements, community and local commercial centers will be confined to a single quadrant of an intersection. In order to reduce left hand turns, the commercial centers should generally be located on the commuters’ right as they are returning home in the evening.

7. Random siting of drive-in establishments and/or strip commercial development with multiple individual access points along roadways will not be approved in the Dulles North area.

8. Ancillary commercial services to industrial and/or employment areas such as stationary supply stores, printing shops, food establishments or repair shops, will be located within these developments and will be reached by means of the entrances and roads established for the employment park developments.
MINOR LOCAL ACCESS ROAD

MAJOR LOCAL ACCESS ROAD

SCHOOL

RECREATION

CHURCH

SHOPPING CENTER

MINOR COLLECTOR

MAJOR COLLECTOR / COMMUNITY SPINE ROAD

ROAD NETWORK CONCEPT FIGURE 25

OCTOBER 21, 1985
9. The former railroad depot and related properties which are zoned for commercial use and which are located on the eastern edge of the existing village of Ashburn should be developed in a mixture of commercial and office employment uses in a way which is sensitive to the historic village. Road and pedestrian linkages between these properties should extend eastwards to the proposed local shopping center, the government center and the library. This road and path system should be designed to relieve the anticipated vehicular and parking congestion in the existing village of Ashburn which would be caused by commercial development on the already zoned commercial land in the village.

VI. TRANSPORTATION POLICIES

A. Statement of Issue and Resolution

How should the transportation system in the Dulles North Area be designed and implemented to ensure a condition of stable flow and efficient travel time for people and product movement?

Existing roads in the Dulles North area could not support traffic generated by any significant level of development since these roads were designed to support a low intensity, 19th century, dairy oriented, farming community. Therefore, a new road network will be needed and the County will oversee the design and implementation of a transportation network which promotes safe and convenient vehicular traffic; protection of neighborhood residents, particularly children; reduction of long-term road maintenance costs; efficient investment of public and private road construction resources; protection of neighborhood character by limiting neighborhood traffic volume, speeds, noise and fumes; efficient use of land and reduction to a minimum of impervious surfaces with consequent enhancement of water quality. The central design concept underlying County policy is one of separation of different types of travel from one another and from incompatible land uses.

B. Road Policies

1. The road network in the Dulles North area will consist of a coordinated and balanced hierarchy of arterial roads (including freeways), major collector/community “spine” roads, minor collector and major and minor local access roads designed to achieve the safe, efficient, and functional movement of people and products (as illustrated in Figure 27, Generalized Plan Map, and foldout).

2. All roads in the Dulles North area will be built to Virginia Department of Transportation standards for acceptance into the State Highway system.
3. Arterial Roads:

a. Designation

The arterial road network will consist of Route 7, Route 28 and the Dulles Toll Road Extension. The Route 647 Relief Collector Road for Route 7 will assist the east/west movement of commuters as well (See Plan Map, end foldout).

b. Functional Description

The arterial roads will be designed to accommodate 41,000 - 48,000 vehicle trips per day. The three arterial roads collectively will accommodate 137,000 vehicle trips per day in a condition of stable travel flow at speeds averaging 50 miles per hour at time of peak flow, although with some restriction in lane changes.

c. Design

Route 7, Route 28 and the Dulles Toll Road Extension will be designed at a minimum as six lane roads with limited access. Intersections along the roads will be grade separated and controlled. Design of Route 7 will follow the provisions contained in the adopted Route 7 Corridor Study.

The major collector roads directly serving Route 7 will generally have limited access for that portion of the road within 1,000 feet of Route 7, consistent with requirements for traffic operation, safety and all applicable VDOT standards.

Within the DNAMP, grade separated interchanges for the Dulles Toll Road Extension will be constructed initially at or in the vicinity of Routes 28, 606, 607, 772 (East Spine Road), and 659. A future interchange is planned at the West Spine Road. Necessary right-of-way for the ultimate design of initial and future interchanges, as approved by the Commonwealth Transportation Board and VDOT, shall be acquired prior to commencement of the Toll Road construction. Interchanges will be designed to provide maximum capacity consistent with reasonable long-range growth projections to accommodate cost effective construction of incremental improvements in those instances where future expansion of interchanges is contemplated. The designation of interchanges as initial reflects a satisfactory road network or a commitment on the part of the Toll Road and affected property owners to provide necessary right-of-way for and to construct the appropriate connector roads to
serve with the interchanges. Failure to coordinate constructions of necessary connector roads may result in the delayed opening of interchanges. The County plans for a future mass transit facility to be constructed in the median of the Toll Road. The Toll Road builder shall reserve sufficient land in the median for full access to the median for future transit facilities. The County will coordinate with affected landowners to accept dedications of land for future transit stations and parking facilities.

The construction of the limited access Toll Road will have an effect on the nearby traffic patterns. Traffic generation on local feeder roads is anticipated to increase; therefore, the County will coordinate with affected landowners in the DNAMP planning area to plan, designate and establish an effective parallel collector road system on the north and south sides of the Toll Road to be completed concurrently with the development of adjacent properties.

Construction of the Toll Road will traverse existing state roads. The existing road network should not be disrupted, degraded or severed by the Toll Road unless such degradation is offset by other improvements made by the Toll Road builder.

d. Route 7 Landscaping and Setback Plan

A landscaping plan with a 300 foot building restriction setback from the right-of-way, will be developed along Route 7 in the Dulles North area and will be implemented concurrently with development on both sides of the road.

Buffering will be required along the Toll Road to protect adjacent land uses from noise, dust, fumes, and odors caused by traffic. Such buffers could include: concrete sound barriers, earthen berms, and/or dense vegetation combined with substantial setbacks within the right-of-way. A table should be developed which includes each type of land use found abutting the road and a range of required mitigation measures for each use. During construction, the Toll Road builder shall provide appropriate buffers from existing residential and non-residential uses, and from similar land uses approved but not yet constructed prior to the Toll Road’s construction, while buffer for future land uses will be provided by the affected landowner/developer.
4. Major Collector/Community "Spine" Roads:
   a. Designation

   The major collector/community "spine" roads will consist of Route 625/640, Route 607/645, Route 606, the proposed Western Ashburn/Royville Community "spine" road, the proposed Eastern Ashburn Community "spine" road and the Route 647 Relief Collector Road for Route 7.

   b. Functional Description

   The major collector roads will be designed primarily to assist vehicular movement through the Dulles North area and not for access to individual lots. The major collector roads will be designed to accommodate 20,000 - 30,000 vehicle trips per day at speeds averaging 40 miles per hour in a condition of stable flow.

   c. Design

   Major collector roads directly serving Route 7 will generally have limited access for that portion of the road within 1,000 feet of Route 7, consistent with requirements for traffic operation and safety and all applicable VDOT standards. While access to property will not be the intent of these roads, access to a major facility such as a shopping center or a regional park would be granted if safe travel flow were ensured. Parking will not be allowed on major collector roads.

5. Minor Collector Roads:
   a. Functional Description

   Minor collector roads conduct and distribute traffic from the major collector roads to the local access roads and to major residential developments, public facilities and commercial centers. The minor collector roads will be designed to accommodate 3,000 - 7,000 vehicle trips per day at design speeds averaging 35 miles per hour.

   b. Design

   Minor collector roads in residential areas will be designed to permit very few if any direct residential lot access points. In employment areas the minor collector road could
be designed to provide direct access to larger employment facilities if safe and stable traffic flow were ensured.

In residential areas, the minor collector roads could provide access to schools, parks, apartment complexes, churches and service organization facilities. The minor collector roads will be designed to discourage through traffic from other developments and will not be designed to provide on-street parking. *(See Figure 26, page 78).*

6. **Major Local Access Roads:**

   a. **Functional Description**

      Major local access roads will provide access to abutting properties and may also conduct traffic from local access roads that intersect them. The major local access roads will accommodate a traffic volume no greater than 3,000 vehicle trips per day at speeds of 25 miles per hour. *(Each half of a looped major local access road may be treated as a single road conveying a maximum of 1,500 vehicle trips per day.)*

   b. **Design**

      Major local access roads will be designed to twice intersect a minor collector road if the total traffic volume is expected to exceed 1,500 vehicle trips per day. Major local access roads will be designed to exclude all external through traffic. Lateral parking could be allowed on major local access roads if two safe moving lanes are maintained *(See Figure 26, page 78).*

7. **Local Access Roads:**

   a. **Functional Description**

      Local access roads will provide access to abutting properties and will be designed to carry no more traffic than that which is generated on the road itself. In residential areas a local access road will accommodate a traffic volume no greater than 500 vehicle trips per day at speeds of 0 - 25 miles per hour. *(Each half of a looped local access road may be treated as a single road conveying a maximum of 250 vehicle trips per day.)*
PREFERRED DESIGN

An example of a residential block with a clear hierarchy of roads. Through traffic travels on a divided collector road. Lots do not access onto this road but rather onto secondary roads. The residential block is free of through traffic while most lots access either onto a major or minor local access road.

POOR DESIGN

An example of a residential block without a clearly defined road system. Direct access from lots and school/church onto the inadequate collector road is hazardous and encourages traffic to seek short cuts through the residential block. Later rezonings on either side of the block may generate additional traffic which the local roads were not designed to carry. This will require later front yard condemnation and costly road widening.
b. Design

Local access roads will be designed to twice intersect the same minor collector or major local access road if the total traffic volume is expected to exceed 250 vehicle trips per day. Local access roads will be designed to exclude all external through traffic. Lateral parking could be allowed on a local access road if two safe moving lanes are maintained (See Figure 26, page 78).

8. Major Upgrading of Existing Roads:

Major collector/community "spine" roads and minor collector roads serving new development should generally not use existing road rights-of-way particularly in those areas, such as Ashburn and Ryan, where existing roads provide local access to individual lots, businesses and dwellings.

9. Other Existing Roads:

Existing secondary roads in the Dulles North area which have not been included in earlier road designations will be evaluated and classified as proposals are made to the County. The existing secondary roads will generally be assumed to qualify as minor collectors, with limited property access characteristics and no lateral parking, but may be designated otherwise if the County deems this appropriate.

10. The County expects that proposals in the Dulles North area will incorporate a hierarchical road network from local access to major collector roads commensurate with the traffic flows associated with the proposal. Proposals located in the path of the proposed Route 643/Toll Road Extended arterial road may receive additional residential density and local commercial uses in return for undertaking the dedication and construction of this arterial road. Without this arterial road, development in the center of the Dulles North area would necessarily be restricted to that which could be accommodated by the major collector system.

11. The County anticipates that developers in the area will assist in the creation of the road network which, by providing vehicular access to all parts of the Dulles North area, will benefit all local landowners.

12. The number of roads crossing the Washington and Old Dominion Railroad Regional Park should be limited whenever possible to major collector/community "spine" roads. Provision should be made for the intersection of this facility with the roads.
C. **Shared Ride Policies**

1. The County will encourage the use of the arterial and collector road network by carpools, vanpools and commuter buses by cooperating with metropolitan information exchange efforts.

2. The County will encourage the daytime use of portions of shopping center parking lots located near arterial roads by those seeking to share commuter rides.

3. The County will cooperate with the Virginia Department of Transportation in the creation of park-and-ride lots within the Dulles North area.

4. The County will consider proposals to locate a commuter bus terminal in an employment zone if the proposed use is compatible with surrounding development and if appropriate public facilities and utilities are available to support the facility.

5. The County will consider proposals to locate trucking and bus repair facilities in the employment zones of the Dulles North area if the proposed use is compatible with surrounding development and if appropriate public facilities and utilities are available to support the facility.

D. **Airport Policies**

1. The County will encourage the use and expansion of the Washington Dulles International Airport to achieve its full potential as a five runway facility so long as this growth does not negatively affect the local community. The County reaffirms its commitment to supporting the goals and plans of the Airport Authority, and to protecting the public interest by ensuring that land uses adjacent to the airport are compatible with airport functions and the long term plans of the Airports Authority, while ensuring each landowner a reasonable use of his property.

2. The County will cooperate with the Washington Dulles International Airport authorities to research and refine effective operational procedures which will permit compatible growth of the airport and the Dulles North area.

3. The County will negotiate with the Washington Dulles International Airport authorities such agreements on airport operations as will ensure harmonious community development in the Dulles area.
4. The County will map present and future corridors of aircraft arrival and departure in the Dulles North area and will only permit land uses in these corridors which are compatible with the height, noise and vibration characteristics associated with low flying aircraft.

5. Appropriate land uses for the "airport expansion area", should be of low intensity, low capital investment, low height and compatible with existing and planned airport activities as well as existing and planned adjacent land uses along Route 606. No office uses, other than those which are accessory or incidental to permitted industrial uses will be allowed in this area, nor will bulk storage of gasoline, petroleum products or natural gas will be permitted or private airports or heliports. Sewer service for the expansion area should be provided by a line along Horsepen Run rather than by a pump-over to Broad Run or by package plants.

6. The County urges the Metropolitan Washington Airports Authority to act expeditiously in acquiring the land in the designated expansion area. The airport expansion area is suitable for interim general employment or agricultural uses.

VII. SOLID WASTE DISPOSAL POLICIES

A. Issue Statement and Policy Resolution

The projected growth for the Dulles North area and other portions of the County will generate large amounts of solid waste and construction debris. How will the County address the future solid waste and debris disposal needs of the Dulles North area?

With the existing County landfill on Route 621 south of Leesburg reaching its full capacity in the next ten years and the closing of the Hidden Lane debris landfill in October 1984, the County has begun to examine future alternatives for solid waste disposal. These include potential sites for a new landfill and new methods and techniques for waste disposal to extend the life of a landfill site. A task force has been established to review these questions and the County may adopt additional policies.

B. Policies

1. The County will not permit the location of sanitary or debris landfills in Class IV soils due to the potential problems with subsurface and surface drainage, grading and excavation in these soils.

2. The County will prohibit the location of sanitary or debris landfills or solid waste transfer stations in areas planned for residential and
community oriented land uses, while it will consider special exception applications for these operations in areas designated for general employment uses.

3. The County will actively pursue the acquisition of new sanitary and debris landfill capabilities to serve the Dulles North area and the County. Site locations will be based on technical, economic, community impact, demographic and transportation criteria approved by the County.

4. In a forthcoming study of the matter, the County will investigate the economic and technical feasibility of new technologies to reduce the total volume of solid waste and extend the life of sanitary and debris landfill sites.

5. Given the toxicity of many household materials and residual County obligations to protect the health, safety and welfare of citizens long after the closing of such facilities, the County will not allow the operation of a private sanitary landfill in the Dulles North area. Properly designed, managed and monitored private building debris landfills may be allowed by special exception in designated employment areas of the Dulles North planning area.

VIII. SEWER SERVICE POLICIES

A. Issue Statement and Policy Resolution

How should the County manage wastewater treatment in the Dulles North area to minimize public expense and avoid future problems?

The wastewater treatment needs for the Broad Run watershed in the Dulles North area can be provided for by means of the Potomac Interceptor Trunk Line Sewer owned and operated by the District of Columbia. A 1963 agreement between the Loudoun County Sanitation Authority and the D.C. government allows Loudoun County to pump 17.93 million gallons of sewage per day into the line which should be sufficient to service the proposed future development in eastern Loudoun and the Dulles North area. In the event that Loudoun might require sewer treatment capacity which the District of Columbia could not provide, the County will maintain a fallback sewer service position.

B. Policies

1. The County will continue to rely on the Potomac Interceptor Sewer as the provider of 17.93 million gallons per day of sewage flow for future development in the Broad Run watershed, in the Eastern Loudoun and Dulles North areas.
2. In addition to policy VIII.B.1., the County will examine the options of developing a new wastewater treatment plant, to be located within the general employment area along the Broad Run to accommodate the remaining sewage needs of the Dulles North and the upper Broad Run areas.

3. To establish the options of creating a sewer plant on the Broad Run, Loudoun County shall direct the Loudoun County Sanitation Authority to pursue the water quality studies and other necessary tests as well as review appropriate sites which would meet the permit requirements of the State Water Control Board.

4. In the event that the County can neither obtain sufficient sewer capacity from Blue Plains via the Potomac Interceptor Sewer Line, nor acquire sufficient sewer capacity on the Broad Run, the County will reexamine this plan and, if necessary, draw up a revised land use plan.

5. The County will not extend sewer lines to serve private development in the Dulles North area, and will require that line extensions be the responsibility of the private sector.

6. The County will seek ways to extend sewer lines into the existing village of Ashburn once development in the surrounding areas has brought trunk sewers to the edges of the village.

7. The County will require the pretreatment of toxic wastes from industrial land uses before these wastes are allowed to enter the main sanitary system.

IX. WATER SUPPLY POLICIES

A. Issue Statement and Policy Resolution

How should the County plan for the future water supply needs in the Dulles North area?

The water supply needs for the Dulles North area can be provided by means of the Goose Creek impoundment and water supply facility owned and operated by Fairfax City. The agreement obligates Fairfax City to provide for the County's reasonable water needs. Should future water demands in Loudoun expand beyond the capacity of the existing plant, Loudoun will negotiate with existing water suppliers in the County for an increased share and/or role in water supply.
B. **Policies**

1. The County will continue to rely on Fairfax City's Goose Creek impoundment as the provider of water for future developments in the Dulles North area.

2. The County will review and renegotiate the agreement with Fairfax City in the future if such an action is determined to be in its best interest.

3. The County will authorize the Sanitation Authority to examine other water supply options including the existing Potomac River water plants operated by the Town of Leesburg and the Fairfax County Water Authority and the construction of its own water facility on the Potomac.

**X. WATER RESOURCES AND WATERSHED MANAGEMENT POLICIES**

A. **Issue Statement and Policy Resolution**

The Dulles North area is part of the Broad Run watershed which is currently experiencing some soil erosion due to natural soil conditions and certain farming practices. Extensive residential and employment development planned for this area would result in a major increase of impervious surfaces, such as roads, parking lots and roofs, and thereby accelerate the rate of water runoff and the volume of surface water. If the problem is not addressed, a pattern of erosion, flash flooding and lowered water quality would result. How should the County manage existing and future development in the watershed to abate environmental degradation?

The County will continue and will supplement existing policies which seek to maintain the existing watershed and watercourse system in a stable, long-term pattern. Existing floodplain ordinances designed to reduce disturbance to the streambed profile to a minimum will be maintained. Any changes to the floodplain will not be allowed to increase either the erosive velocity or height of floodwaters above or below the altered property in order to protect the property rights of adjacent landowners. The County anticipates that the development of holding basins, runoff restriction sluices and the planting of vegetation belts will lengthen the flow cycle of surface water runoff from new developments with their extensive impervious surfaces. The County will expect and strongly encourage the retention of all watercourses in as natural a state as possible because this is in harmony with its policy of maintaining the hydrologic patterns in a historically stable equilibrium.
B. Policies

1. The County will seek to preserve the 100 year floodplains in their natural state and will ensure that land development and changes do not increase flooding beyond what would occur in a 100 year flood.

2. The County will encourage multiple use of the 100 year floodway and floodway fringe for timber and firewood production, wildlife habitat, passive recreation and trails to the extent that these activities maintain hydrologic and ecological balance.

3. The County will encourage maintenance of stream channels and other elements of the natural drainage system to the maximum extent possible.

4. If the natural drainage system must be modified, the County will encourage the restoration of the streambed and adjacent slopes to a comparable hydrologic and ecological condition.

5. The County will discourage all but the minimum number of stream and floodplain crossings and will encourage the use of streams and floodplains as natural divisions between neighborhoods and differing land uses.

6. The County will seek to ensure that the overall management of the Broad Run watershed will ensure that the watershed will not suffer water quality reduction. The County will further seek to enhance the existing environmental quality by means of on-site or off-site stormwater catchment facilities and vegetation belts.

7. The County expects that developers of the Dulles North area will incorporate stormwater catchment facilities and vegetation belts as an integral part of development proposals. The County prefers that these measures be associated with and integrated into the proposals for residential block parks and passive recreational parks.

XI. MANAGEMENT POLICIES FOR PROBLEM PRODUCING SOILS

A. Issue Statement and Policy Resolution

The Dulles North area contains many acres of soil which could produce problems if not addressed during residential or employment development. These soils include those with poor drainage, those with rock formations close to the surface and "jackland" which is a highly plastic soil with poor surface drainage, subject to expansion and contraction and liable to crack concrete surfaces such as basement walls, roads and parking lots. What policies should the County adopt with regard to problem soils?
Development in problem soils, particularly "jackland", could lead to cracked roads and foundations, wet basements and other situations that are very difficult and expensive to correct retroactively. The County will accordingly adopt a policy of requiring engineering practices and design features that positively address the question of problem soils in initial development.

B. Policies

1. Soil conditions should be a determining factor when developers assemble a rezoning, subdivision, special exception or site plan proposal for County review. Furthermore, the County will weigh the conformance of a proposal with the underlying soil conditions in decisions to approve or deny the proposal.

2. The County prefers the utilization of building types which will reduce potential soil related problems for future users to a minimum. Thus residences in areas with high water table soils should have on-grade storage rather than excavated basements.

3. The County and its agencies will consider soil conditions in evaluation and acceptance of any proffered public facility sites. The County will prefer sites with few problem soil areas but will accept otherwise suitably located sites which have been improved by exchanging the original poor soils for better soils.

XII. MINERAL RESOURCE EXTRACTION POLICIES

A. Issue Statement and Policy Resolution

Located within the Dulles North area are some formations of diabase rock, a material useful for roads and concrete foundations. Surrounding the planning area are five active diabase quarries. There may be other geologic formations in the Dulles North area with economic potential for mineral extraction. Should the County allow mineral extraction or quarries in the Dulles North area?

Quarrying, which directly employs some 150 people, is an important basic industry in Loudoun County. A quarry is, however, a very difficult neighbor for residential, office, community commercial and recreational uses due to blasting, stone crushing noise, heavy trucks and equipment operation. The County may allow the development of quarries in the general employment areas of Dulles North. Mineral extraction will not be allowed in the community development areas nor in the prestige or "Keynote" employment areas. A reclamation plan with attendant financing method will be required from all quarry applicants. This reclamation plan
and financing vehicle will be designed to provide a stable and safe environmental situation in the quarry area after operations have ceased.

B. Policies

1. The County will not allow mineral extraction in the community development areas.

2. The County will not allow mineral extraction visible from the Route 7, Route 28 and the relocated Route 643/Dulles Toll Road Extended employment corridors.

3. The County will allow mineral extraction in areas designated for general industrial uses if the proposed activity demonstrates benefits to the local economy while ensuring protection of existing and planned neighboring uses from such dangers as economic, safety and health hazards and the environment from short and long-term degradation.

4. The County will adopt the policy of requiring a rezoning and special exception application for all mineral extraction proposals in areas designated for such use. The proposal will, furthermore, be accompanied by a geotechnical report detailing the following:

   a. Description of the geologic formation and evidence of proven reserves.

   b. The effects of extraction operations on groundwater supply sources using current industry-wide technologies and procedures.

   c. The effects of blasting on nearby structures, uses or areas designated for community development or prestige employment areas.

   d. The proposed program to monitor short and long-term damage to affected structures and groundwater supplies.

   e. The proposed program and financing mechanisms of soil erosion abatement and eventual site reclamation designed to provide a stable and safe environmental situation in the quarry areas, although a complete restoration of the area to its former contours is not necessarily expected.

   f. The phases of site development, the nature of noise and vibration abatement procedures, setback and buffer screen designs and the location of ancillary extraction or processing
operations such as concrete block manufacture and/or storage, or other activities such as hot bitumen preparation.

XIII. NOISE MANAGEMENT POLICIES

A. Issue Statement and Policy Resolution

Several low flying aircraft routes cross the Dulles North area. These routes will be used with increasing frequency in the future as operations at Washington Dulles International Airport expand. Growth in air traffic along these routes will accordingly result in a significant rise in ambient noise. Noise will also increase in those areas of Dulles North dedicated to industrial employment and along major traffic corridors. This increase in ambient noise will create an increasing nuisance to residential communities and could lead to human discomfort and/or depressed property values if not positively addressed. How should Loudoun County manage its planning efforts to reduce the negative effects of aircraft, transportation and employment noise on County residents?

The County will not permit the development of noise sensitive land uses in the air corridors used by low flying aircraft en route to or from Washington Dulles International Airport. Residential uses should be kept away from and/or protected from major collector/community "spine" roads. Buffer zones, berms and vegetation belts between conflicting uses will be the preferred technique of ensuring community harmony between uses which are not completely noise compatible.

B. Policies

1. The County will continue to negotiate with the Washington Dulles International Airport authorities to refine airport operations and aircraft arrival and departure routes in order to minimize the effects of noise on existing and future noise sensitive land uses.

2. The County will generally not approve the location of future residential land uses within the projected Ldn (Loudness Day Night index) 65+ Noise Zones, as measured on the Integrated Noise Model, Mod 3.8, and as shown on Exhibit 15 of the "Final Report, FAR Part 150, Noise Compatibility Program, Washington Dulles International Airport", prepared for the Metropolitan Washington Airports Authority dated January 1985 and amended November, 1991 (See Figure 20, Ultimate Airport Noise Contour, page 41 and Figure 20A, Ultimate Airport Noise Contour - 1991, page 41A). The County will make an exception to this rule in the following cases:
a. To complete residential subdivisions recorded before plan adoption.

b. To "fill-out" a new community where a natural feature or other factor would warrant a minor intrusion of noise sensitive land uses in the noise zones.

3. The County will institute review procedures for proposed new noise sensitive land uses located within the projected Ldn 65+ noise zone such as medical or other offices. Approval for noise sensitive uses will be subject in part to the installation of noise attenuation measures in the fabric of the structure.

4. The County will seek to buffer noise sensitive land uses such as residences from noise generating uses such as industrial employment in order to reduce noise based community frictions.

5. The County will establish appropriate buffering, berm and vegetation planting standards to minimize the effects of traffic or noise generating land uses on noise sensitive land uses.

XIV. VEGETATION AND WILDLIFE RESOURCE MANAGEMENT POLICIES

A. Issue Statement and Policy Resolution

To what extent should the County attempt to preserve the natural environment in its undisturbed state?

"Trees and other vegetation: help stabilize the soil and prevent erosion; decrease stormwater run-off and maintain water quality through canopy interception and root zone absorption; aid in energy conservation and human comfort through the moderation of temperature extremes and provision of shade and windbreaks; provide buffers and screens that help to reduce noise and air pollution; filter pollutants from the air; assist in groundwater recharge; contribute to the reduction of flood magnitudes; provide important psychological, social and aesthetic benefits in urban and suburban areas; function as integral components of the natural eco-system and serve as a habitat for various animal and bird species which in turn assist in the control of insect populations; and tend to conserve and increase property values." 27

B. Policies

1. "...It is the policy of the Loudoun County Board of Supervisors to preserve and protect the existing natural vegetation of the County to the maximum practical extent." 27

27 Loudoun County Vegetation Preservation Policy adopted May 4, 1981.
2. "The Loudoun County Board of Supervisors shall implement this policy by amendment to existing and adoption of new ordinances and regulations and by incorporation of adequate vegetation analysis into all aspects of the County planning, zoning and land development process." 27

3. Existing vegetation should be a significant factor when developers assemble a rezoning, subdivision, special exception or site plan proposal for County review. Furthermore, the County will weigh the conformance of a proposal with the existing vegetation in decisions to approve or deny the proposal.

4. Where existing vegetation is disturbed in development, indigenous species should be used in landscape restoration.

XV. HISTORIC RESOURCE POLICIES

A. Issue Statement and Policy Resolution

What efforts should be undertaken to conserve the area’s archaeological and historic endowment while new development takes place in and around it?

New development which respects the forms, scale and textures of existing historic structures will be welcomed in the Dulles North area. The new development should be located in a way that will enhance the old, and be grouped in ways compatible with the existing pattern of dwellings, stores and community facilities. A clear spatial boundary between the new and the old such as a landscaped screen of vegetation is preferred. New developments in close association with the old should not generate negative offsite traffic, parking or other effects which would be detrimental to the archaeological remains, historic structures and general character of the area.

B. Policies

1. Individuals, organizations and groups will be encouraged by the County to preserve archaeological sites and historic structures and groupings of such structures possessing characteristics illustrative of the local cultural and architectural past and to carry out archaeological and historical research in the area. The County will aid such efforts by providing the use of its historic files and liaison assistance commensurate with the County’s resources and ability to provide such aid.
2. Protection of archaeological sites and historic structures and groups of structures will be sought and encouraged by the County at the time of land rezoning, subdivision, special exception and site plan review and development.

3. Compatible design of new development on land adjacent to archaeological sites and historic structures and groups of structures will be sought and encouraged by the County at the time of rezoning and development review.

4. A transition zone between new development and archaeological sites and historic structures and groups of structures will be sought by the County during review of new development proposals. The retention of adjacent existing woodlands and/or vegetative screens will be strongly encouraged.

5. The County will analyze new development proposals located in and around archaeological sites and historic structures and groups of historic structures at the time of rezoning and development review of identify any negative off-site traffic, parking or other effects and will encourage the abatement and/or elimination of such undesirable impacts.

6. An archaeological inventory of the Dulles North planning area will be compiled by the County as resources are available.
APPENDIX

PUBLIC AND PRIVATE SECTOR POLICY GUIDELINES FOR THE FINANCING
OF CAPITAL FACILITIES AND UTILITIES

A. Issue Statement and Policy Resolution

If the Dulles North planning area were developed as outlined in this plan, two key questions would be raised:

1. What would the County need to spend in order to support development in Dulles North with a full complement of essential public facilities and utilities?

2. How does the County propose to pay for these expenditures?

Residential development in Dulles North may range from 11,600 to 29,200 dwellings. Thus, the necessary public facility requirements to support these dwellings will accordingly vary greatly. Table 1 provides an estimated cost profile in 1985 dollars of one possible scenario, based on a density of 3.3 dwellings per acre, and based on the assumption that 10,800 single-family detached houses, 10,800 townhouses and 2,400 apartments and 43,000 jobs would be located in the planning area.

Table 1, page 92, reveals that supporting private development with all the necessary public facilities and utilities will require very substantial expenditures. The current and projected operational funding capabilities of the County, the Virginia Department of Highways, the Northern Virginia Regional Park Authority and other public agencies are and will be insufficient to provide private development with all the public facilities and utilities identified in this plan. However, major delay in the provision of such facilities and services would seriously hamper the marketing, sales and revenue projections of the private development sector. Consequently, the County anticipates that the development community will cooperate with the public sector in the provision of public facilities and utilities identified in this plan.

Table 1 illustrates the unit cost for each new residential dwelling for education, fire and rescue, schools, and other public costs. This type of information allows the County to carefully review the potential fiscal impacts of a residential development proposal on the community in which it would be located and on the whole County. New residential projects need to provide their fair share of funding to assist in providing these public facilities if such facilities are to be created in a timely fashion.
### TABLE 1

**AREA CAPITAL FACILITY AND UTILITY COSTS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost</th>
<th>Total Res. Cost</th>
<th>Unit Cost Per Dwelling</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>$164,209,000</td>
<td>$164,209,000</td>
<td>$6,840</td>
<td>74</td>
</tr>
<tr>
<td>Government</td>
<td>13,937,000</td>
<td>11,707,000</td>
<td>490</td>
<td>5</td>
</tr>
<tr>
<td>Judicial</td>
<td>8,278,000</td>
<td>6,209,000</td>
<td>260</td>
<td>3</td>
</tr>
<tr>
<td>Fire Rescue</td>
<td>3,367,000</td>
<td>1,884,000</td>
<td>80</td>
<td>--</td>
</tr>
<tr>
<td>Library</td>
<td>9,388,000</td>
<td>9,106,000</td>
<td>380</td>
<td>4</td>
</tr>
<tr>
<td>Recreation</td>
<td>22,381,000</td>
<td>22,381,000</td>
<td>930</td>
<td>10</td>
</tr>
<tr>
<td>Sanitary Landfill</td>
<td>8,585,000</td>
<td>6,604,000</td>
<td>280</td>
<td>3</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$227,862,000</strong></td>
<td><strong>$222,100,000</strong></td>
<td><strong>$9,260</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>Sewage Treatment</td>
<td>43,354,000</td>
<td>30,967,000</td>
<td>1,290</td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>143,125,000 (+ land for road r-o-w)</td>
<td>71,525,000 (+ land for road r-o-w)</td>
<td>3,000 (+ land for road r-o-w)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$414,341,000</strong></td>
<td><strong>$324,592,000</strong></td>
<td><strong>$13,550</strong></td>
<td></td>
</tr>
</tbody>
</table>

The proffer system made available through the rezoning process provides developers with a mechanism to provide funding which will assist in meeting the public facility and service needs of Table 1 which their projects generate. The County further anticipates private sector assistance in the provision of necessary public facilities and utilities such as fire/emergency rescue stations or roads from developers of nonresidential/employment uses. The extent of such assistance is

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28 Table 1 is reproduced from a memorandum dated August 12, 1985 from Richard Calderon and Milton Herd, to Phillip A. Bolen: "Capital Costs Associated with Development of the Dulles North Planning Area."

29 The costs here represent just the construction of the sewage treatment facility for Dulles North and assume that the Blue Plains wastewater treatment plant will lack the capacity to serve the planning area. The costs of building major sewer trunk lines are not included nor is land acquisition since these costs are shared by developers in the private sector.

30 Public road construction and funding is the responsibility of the Virginia Department of Transportation.
expected to be a factor of the public facilities and utilities needs generated by each nonresidential/employment project.

The County anticipates that the balance of these public facilities costs will be borne out of the operational revenues, user charges and debt service funds of the various public agencies.

B. Policies

1. The County anticipates that the provision of public facilities and utilities in the Dulles North planning area will be a joint effort on the part of the public and private sectors.

2. The County will consider development community proposals of cash and in-kind assistance in the provision of needed and mandated public facilities identified in the adopted Comprehensive Plan.

3. The County expects that proposals of public facilities and utilities assistance by residential developers would be in conjunction with their requests for development approval of residential dwelling densities above this plan's adopted density base of 1.6 dwelling units per net acre.

4. To assist the County in an equitable and uniform evaluation of developer proffers and other proposals for densities above a reasonable base of 1.6 dwellings per net acre which otherwise conform with this plan's policies, the County will establish the following guidelines:

   a. Developer assistance valued at 20% of capital facility costs and 10% of major road costs per incremental dwelling unit above the base density of 1.6 dwelling units per net acre would merit additional density of up to 0.4 dwellings per net acre for a maximum density of 2.0 dwelling units per net acre.

   b. Developer assistance valued at 25% of capital facility costs and 15% of major road costs per incremental dwelling unit above the previously reached density of two dwelling units per net acre would merit additional density of up to 0.4 dwellings per net acre for a maximum of 2.4 dwelling units per net acre.

   c. Developer assistance valued at 30% of capital facility costs and 20% of major road costs per incremental dwelling unit above the previously reached density of 2.4 dwelling units per net acre would merit additional density of up to 0.4 dwellings per net acre for a maximum density of 2.8 dwelling units per net acre.
The County will also consider two categories of density increments associated with the provision of major roads and residential density transfer. These incremental densities may be applied at levels a., b., or c.

d. Developer assistance valued at 30% of capital facility costs and 100% of major road costs per incremental dwelling unit would merit a density increment of up to 0.6 dwellings per net acre.

e. A density increment of up to 0.6 dwellings per net acre would be granted in return for developer evidence of participation in land conservation efforts associated with transfer of development density.

The number of incremental transfer units or credits will be determined by the County’s TDR overlay district regulations. Until such regulations are adopted, the standards set forth in the Rural Land Management Plan will apply.

5. The County will fund the balance of the capital facility and utility expenditures and the operational service expenditures associated with them according to existing countywide fiscal policies adopted by the Board of Supervisors on December 17, 1984 or as subsequently amended.
TABLE 2

WORKSHEET EXAMPLE

AN EXAMPLE OF PROPOSED DENSITY/PROFFER RATIOS ON
A HYPOTHETICAL TRACT OF LAND OF 800 NET DEVELOPABLE ACRES

The worksheet below traces one possible density/proffer option between a
developer and the County regarding a hypothetical tract of land in the Dulles North
area. The County first granted the developer a base density of 1.6 dwellings per
net acre or 1,280 units and was subsequently proffered $688,000 for an additional
320 units. In succeeding negotiations the County was proffered $883,840 and
$1,079,680 in return for 640 additional units. This brought the overall density to 2.8
dwellings per net acre. The developer lastly offered to purchase 240 TDRs valued
at $1,200,000 and to place $2,305,600 in the County’s Road Trust Fund in return
for 400 bonus dwelling units.

The worksheet scenario thus concludes with the developer obtaining 2,880
dwelling units or a density of 3.6 dwelling units per net acre in return for a proffer
package valued at $6,157,100.

<table>
<thead>
<tr>
<th>Additional Units</th>
<th>Total Units</th>
<th>Increment Per Lot</th>
<th>Additional Proffer</th>
<th>Cumulative Proffer</th>
<th>Average Proffer Per D.U.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base 1,280 1.6 d.u./ac.</td>
<td>1,280</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>a. 320 1.6-2.0</td>
<td>1,600</td>
<td>$1,851 facil.</td>
<td>$688,000</td>
<td>$688,000</td>
<td>$430</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$293 roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 320 2.0-2.4</td>
<td>1,920</td>
<td>$2,314 facil.</td>
<td>$883,840</td>
<td>$1,571,840</td>
<td>$819</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$448 roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 320 2.4-2.8</td>
<td>2,240</td>
<td>$2,776 facil.</td>
<td>$1,079,680</td>
<td>$2,641,520</td>
<td>$1,184</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$598 roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads 4000.5</td>
<td>2,640</td>
<td>$2,776 facil.</td>
<td>$2,305,600</td>
<td>$4,957,120</td>
<td>$1,878</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$2,988 roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDRs 2400.3</td>
<td>2,880</td>
<td>$5,000</td>
<td>$1,200,000</td>
<td>$6,157,100</td>
<td>$2,138</td>
</tr>
</tbody>
</table>

---

31 While the plan makes provision for a maximum of 0.6 d.u./ac., in the example of the Road
Trust Fund is assigned 0.5 d.u./ac. and TDR is assigned 0.3 d.u./ac.
32 A TDR is assumed to be valued at $5,000.
ROUTE 7 CORRIDOR PLAN
LEESBURG PIKE LOUDOUN COUNTY

FROM: INTERCHANGE ROUTE 7 & 15
TO: LOUDOUN - FAIRFAX COUNTY LINE

Prepared by: Transportation Planning Division With assistance from the Town Of Leesburg and Loudoun County Planning Departments
FEBRUARY 1990
PROPOSED TYPICAL SECTIONS
ROUTE 7 CORRIDOR PLAN

EXISTING 200' VAR. R/W (CONVERT TO LIMITED ACCESS)

EXISTING 200' VAR. R/W

EXISTING 200' R/W

EXIST. GROUND

PARALLEL COLLECTOR ROADS AND
NORTH/SOUTH COLLECTOR ROADS

NORTH/SOUTH CONNECTOR ROADS AND SERVICE ROADS

(width, including number of lanes, may vary)

SEPARATE TURN LAKES MAY BE REQUIRED AT MAJOR INTERSECTIONS
"The County endorses the continuation of a limited access condition for Route 1 west to the Loudoun Corporate Limits. The future of the Route 607 access will be addressed jointly with the County of Loudoun, the Town of Leesburg and the Virginia Department of Transportation."
The north parallel road will be realigned to the north to lessen its impact on existing homes. This alignment may encroach on the floodplain and would need to be sensitive to floodplain requirements.

A grade separated point of access that crosses the north parallel road will be provided to maintain access to the Patapsco River. This access shall accommodate emergency vehicles.

A second point of access that minimizes the attraction of through traffic will be identified.

NOT TO SCALE
For the north service road, alignment adjustments and buffering should be used, at the site plan stage, to minimize impacts on residential areas and the site.
CPAM 1992-0010
Greenways and Trails Policies

Adopted September 21, 1994
SECTION I: BACKGROUND

A. INTRODUCTION

Greenways are areas of open space, usually linear, which connect and protect various natural, recreational, and cultural resources. They often follow linear landscape features such as streams, ridges, or abandoned railroads. Greenways can be publicly or privately owned, and may be open or closed to visitors. They are not necessarily parks or public land. Parts of a greenway may be a scenic resource or an important wildlife habitat, owned and maintained by a private landowner, with no public access. Other parts may include public trails for hiking, bicycling, or horseback riding. Greenways that include trails provide linkages for people to natural and community resources. They enable citizens to travel without motor vehicles to schools, community centers and parks.

Greenways serve a variety of functions, including recreation, alternative transportation, wildlife habitat, water quality protection, flood hazard reduction, aquifer recharge, erosion prevention, property value enhancement, economic development and scenic beauty.

The Loudoun Greenways plan encourages pathway connections which would provide our own residents with alternative transportation corridors, independent of car ownership. It is a comprehensive plan which takes a "big picture" look at Loudoun's future development. It recognizes the need for Loudoun's existing communities to develop resource corridors which unify the County, creating an amenity for the benefit of business and residential communities as well as the tourist industry.

B. CONTEXT AND PURPOSE

Loudoun County and its county seat, the Town of Leesburg, border the Potomac River in northern Virginia approximately 35 miles northwest of Washington, D. C. The County as a whole offers a wealth of historic and natural features and a blend of urban amenities, rural landscapes, and small communities.

Proximity to Washington and the presence of a major international airport, Dulles, in the southeast part of the County stimulate strong growth trends. While development provides welcome economic opportunities, many citizens are concerned about the effects of growth and the potential for loss of local recreational opportunities and valuable natural, scenic and historic resources. Greenways and trails are one method of preserving some of these features unique to the County.

The purpose of this plan is to acknowledge a commitment to the establishment of a county-wide system of greenways and trails. This system should link people and resources, put open space within a short walk of people's homes and connect major regional and national trails. Greenways can protect natural resources and do not necessarily contain trails or have public access. Where
trails provide a link between home and work, an alternative to auto dependent transportation can be provided.

C. RELATIONSHIP TO OTHER COUNTY DOCUMENTS

Loudoun County's Comprehensive Plan consists of several related documents with the General Plan performing the function of an "umbrella" document which establishes county-wide goals and policies. Chapter 8 of the General Plan addresses implementation as a continuing process with future actions which should be undertaken to implement the Plan.

County-wide Recommendation #21 is the action of adopting CPAM 1992-0010, Greenways Plan, as an element of the General Plan. The Greenways Plan would also add one more building block toward implementing policy recommendations for Water Quality Buffers (#5), Scenic River Corridors and Potomac Shoreline Protection (#10), Protection of Endangered and Threatened Habitats (#23), and Rural Transportation Strategies for Bicycle Routes (#18).

In recognition of existing County policy and public testimony which encourage a viable agricultural community, the following goals and policies will apply only to the rapidly developing areas of the County described in the following area plans: Eastern Loudoun Area Management Plan, Dulles North Area Management Plan, Dulles South Area Management Plan, Cub Run Area Management Plan, Leesburg Area Management Plan, and the adopted plans for the Urban Growth Areas of the western towns.

D. COMMUNITY PLANNING PROCESS

The documentation for the greenways and trails system is contained in the 1993 Greenways and Trails Master Plan for Loudoun County and Leesburg, Virginia. This plan was developed by a citizen-government partnership, through an open public process. As a result of a Memorandum of Understanding signed by the County of Loudoun, the Town of Leesburg, the directors of the Leesburg and Loudoun County Parks and Recreation Departments, representatives of the National Park Service's Rivers, Trails and Conservation Assistance Program, and the Northern Virginia Regional Parks Authority, a citizens' advisory committee was formed in the fall of 1989. The group represented the interests of businesses, development, landowners, conservationists and recreationists. The Plan was developed over a two year period and was based on regular public input from public workshops, presentations and public meetings. Documentation of specific public outreach is contained on page 69 of the 1993 Greenways and Trails Master Plan for Leesburg and Loudoun County, Virginia.
SECTION II: COMMUNITY GOALS

A. MISSION STATEMENT

The purpose of a greenways and trails system is to preserve the County's essential natural and historic resources as the County passes from rural to suburban, to provide recreation for a growing population, and to provide alternative transportation corridors.

B. GOALS OF THE GREENWAYS AND TRAILS SYSTEM

- Link neighborhoods and communities including schools, shopping areas, community centers, parks and other public facilities
- Link towns in Loudoun County.
- Provide recreational opportunities and alternate transportation corridors for foot traffic, cyclists and horseback riders.
- Protect historic resources.
- Protect rivers, streams, and drainage basins.
- Protect ecologically critical and sensitive areas.
- Maintain and link wildlife habitats.
- Provide natural flood and erosion control to discourage channelization.
- Include scenic roads.

SECTION III: POLICIES

A. RESOURCES

A sound greenways and trails system depends on the identification of the County's significant natural, cultural, recreational and community resources. The Citizens' Committee dedicated the first year of its effort to identifying and mapping those resources, using a variety of existing data and the knowledge of local citizens. These resources contribute greatly to the distinctive character of the County. They can serve as the hubs and spokes of a greenways and trails network and can provide a basis for making decisions on where greenways should be located. Listed below are the county resources agreed to by the Committee as significant features of the County. These resources are contained in the Geographic Information System Map created by the citizens. (resources described on pages 14, 15, and 16 of the Greenways and Trails Master Plan for Leesburg and Loudoun County, Virginia.)

- State Scenic Rivers
- Perennial Streams
- Floodplains
- Ridges
- Natural Heritage Sites
- Existing and Planned Parks
Greenways Policies

- Existing and Planned Trails
- Historic Sites and Districts
- Historic Settlements
- Schools
- Community Centers
- Discontinued Roads
- Scenic Roads
- Incorporated Towns

POLICIES

1. The inventory of cultural, historic and natural resources should be maintained with the County GIS and should be used for reference in greenway and trail planning.

2. Greenways should be a mechanism to protect important or sensitive resources.

B. PUBLIC PARTICIPATION

The process of turning a plan for greenways into a reality will require a cooperative effort involving many people and organizations. While the total land area of any proposed greenways network is relatively small, its benefits will be widely felt and its many parts varied in terrain, ownership, and proposed use. The County will play an integral role in establishing the system although it is unlikely that a single entity would have the means to acquire or manage an extensive system. Therefore, it is recommended that a network of greenways and trails be owned and managed through a partnership effort, rather than by a single agency organization. The system could be established piece by piece by a number of different entities using a variety of public and private conservation methods. Public agencies, private organizations, businesses, civic groups, clubs and individuals should participate in the creation and management of the system. It is assumed that exact locations of greenways and trails will be determined by the communities of interest.

POLICIES

1. Inform and educate the public about the opportunities generated by the greenways and trails system.

2. Encourage public involvement in the planning and development of the greenways and trails system.

C. DEVELOPMENT STRATEGIES

Members of the community have expressed concern about the loss of open space and the changing character of the County resulting from increased development. Greenways are a way to retain some rural landscapes and incorporate open space within developments. Citizens also
expressed a desire for trails between adjacent developments to allow walking and/or biking to neighbors' houses or other parts of the community. The greenways concept is a mechanism to guide the development process to create useful areas of open space.

POLICIES

1. Incorporate greenways and trails plans into the land development process and land use decisions. Creation of greenways and trails should occur primarily in the developing areas of the County with initial effort focused on the rapidly developing areas of the eastern portion of the County and around the western towns.

2. Create options and incentives which will encourage landowner participation in the establishment of greenways and trails.

3. Coordinate the establishment of greenways and trails with landowners using a variety of conservation methods. Three categories of landowners should be encouraged to participate in the greenways and trails system:
   - The development community: proffers of greenways and trails should be encouraged and referrals administered by the Planning Department with input from impacted agencies and citizens as needed.
   - Private landowners: voluntary donations, conservation easements, bequests, leasebacks, remainder interest and other non-coercive methods should be facilitated to encourage participation by private landowners.
   - Public land: negotiations of right-of-ways through land already dedicated to public benefit including, but not limited to, County, State and Federally owned land, utility easements, and roads discontinued for public maintenance.

4. Parcels under consideration as greenways or trails must meet one or more of the following criteria
   a. **Linkage:** The identified parcel will provide linkage between or to a significant natural, cultural or historic resource as defined on pages 14, 15, 16 of the Greenways and Trails Master Plan for Leesburg and Loudoun County and listed in Section III.A above.
   b. **Resource Protection:** The parcel contains an identified natural resource or species of value.
   c. **Recreation Enhancement:** The parcel will enhance recreational opportunities either by providing a connection to an existing park or recreational facility or providing in and of itself opportunities for hiking, biking or horseback riding.
d. **Economic Enhancement:** The parcel provides increased access to local business and shopping areas including but not limited to bed and breakfasts and tourist sites.

**D. TRANSPORTATION**

Greenways and trails that are designed to link communities and commercial areas can encourage some people to travel without motor vehicles, thus reducing traffic congestion on roadways. Planning for alternative transportation and recreational opportunities for foot traffic, cyclists and horseback riders is an important public responsibility to provide for increased user safety on transportation corridors. A greenways master plan can be an important element of compliance with the Clean Air Act of 1991.

**POLICIES**

1. Multi-use trails should be encouraged within major road corridors as shown in Appendix G of the *Greenways and Trails Master Plan for Leesburg and Loudoun County, Virginia*. Portions of this trail system should be incorporated as an element of the regional COG Bicycle Plan.

2. Loudoun County review of applications for discontinued roads should encourage appropriate conversions to the greenways and trails system.

3. Loudoun County should pursue grant funding of greenway and trail projects which can be combined with other transportation goals and policies.

**E. FUNDING, ADMINISTRATION AND MAINTENANCE**

Financial and management issues are critical to both the initial establishment of greenways and their long-term vitality. Local government funds for greenways may be scarce and greenways frequently must compete for funds with other uses such as developed parks. The mechanisms used for protecting land or securing public access can be a major factor determining the cost of implementing greenways. Public land purchase, the most expensive technique, is only one of a variety of possible techniques. Others include land donations, purchases or donations of easements, landowner agreements and acquisition by nonprofit groups.

Maintenance is one need that is often overlooked; greenway interests may focus on the establishment of the greenway and neglect to consider long-term maintenance. Long-term greenway success will require careful planning for funding and maintenance. Administrative overhead might be reduced if the system were managed by a private organization focused only on the greenway system.
POLICIES

1. Require that established greenways and trails adequately provide for long-term funding, maintenance, and administration for the implementation of the greenways and trails system through public-private partnerships.

2. When possible the County would jointly hold easements to guarantee long-term protection of land.

3. Assure that right of eminent domain is not utilized to establish greenways and trails.

F. ECONOMIC DEVELOPMENT

The Greenways Master Plan recommends the creation of a comprehensive greenways and trails system primarily based on such natural landforms as valleys and ridges. Other elements are based on an assemblage of linear open spaces of various kinds to create a green infrastructure for the County. Like other forms of infrastructure necessary for development, greenways are part of a good business plan. These key elements of a community's memorable image are increasingly becoming today's marketing tools for economic development.

Few communities today can ignore the economic benefit of tourism. Loudoun's primary tourist attractions are its natural and historic resources. The greenways could include a foot path, a horse path, a bike path or none of the above, simply providing visual respite to the urban resident. The W&OD Regional Trail is an example of a greenway which attracts visitors, businesses and residents to Loudoun. One such business, the Cornerstone Bed and Breakfast near Paonian Springs derives as much as 50 per cent of its clientele from cyclists who ride out from Washington and Maryland to tour the Loudoun area.

In order to attract a balanced variety of businesses, provide housing options with desirable amenities for all income levels, and assist government in managing the resources of Loudoun County, it is time to plan for a greenway system.

POLICIES

1. Loudoun County should incorporate greenways and trails in economic development planning and promotion.

2. Coordinate with an overall tourism plan for Loudoun County.
CPAM 1996-0003
Strategic Land Use Plan for Telecommunication Facilities

Adopted November 6, 1996
CPAM 1996-0001
COUNTYWIDE RETAIL POLICY PLAN AMENDMENT

Adopted February 19, 1997
Amended Through March 15, 2011
I. BACKGROUND

The purpose of this Comprehensive Plan Amendment is to update existing retail commercial policies to accommodate changing trends and to provide consistent policy guidance for retail development in the County's Eastern Urban Growth Area. Loudoun County's Comprehensive Plan consists of the General Plan, several area management plans, strategic plans and related documents. The General Plan provides Countywide goals and policies for managing growth and development while area management plans and strategic plans outline more specific strategies for local planning areas or particular issues.

This plan amendment is a strategic plan for retail commercial development in the County's Eastern Urban Growth Area. It is intended to provide policy guidance to enable the County to capture the retail expenditures of Loudoun's citizens without having the County become a retail center for the Washington Metropolitan Area. It provides specific and comprehensive guidance about the function, location and design of commercial retail centers and uses. As such, these policies supersede General Plan and area plan policies relating to retail commercial development.

The initial recommendations for revisions to the County's retail planning policies were prepared by the Zoning, Comprehensive Planning Committee of the Loudoun County Planning Commission. The full Planning Commission reviewed the Committee's recommendations and certified the final plan amendment language on September 25, 1996. Relevant background data and key findings that shaped the proposed amendments are summarized below.

A. Retail Development Issues

Initial concerns about the County's current retail policies grew out of a series of recent applications seeking commercial retail development in the Route 7 Corridor. These applications raised fundamental questions about how retail centers are classified, where retail development should be located, how much retail development the County can support, and the impact of new retail commercial development on existing retail areas. As discussion of the applications evolved, it became evident that the County needed to take a comprehensive look at its retail policies to ensure that they remain a basis for sound and consistent decision making.

In May 1995, the Board of Supervisors committed to undertake work on a plan amendment to evaluate the County's retail policies. However, recognizing the need for additional information about the County's retail sector, the Board also requested that the Economic Development Commission (EDC) expand the scope of its annual retail study to include a retail demand analysis for Loudoun County. This retail demand analysis provided the technical and analytical framework for evaluation of the County's retail commercial policies and subsequent recommendations by the EDC and the Planning Commission. Key findings of that report and the EDC recommendations based on their findings are summarized below. The August 9, 1995 Retail Demand Analysis and Supporting Tables and Worksheets are Appendixes B and C of this plan.
amendment. The EDC's, November 9, 1995 Report - A Review of Loudoun County Retail Policies is Appendix D.

B. The Current Retail Environment

Retail sales in Loudoun County have increased substantially in the past several years, reflecting rapid growth and an increase in shopping choices. In 1994, retail sales in the County topped one billion dollars for the first time in the County's history. However, many Loudoun County citizens continue to shop outside of the County for comparison goods (apparel, home furnishings and fixtures, general merchandise, etc.) since there are limited opportunities to purchase these goods in Loudoun County today. The Retail Demand Analysis report prepared by Economic Development staff estimated "leakage" of retail sales to other jurisdictions for this type of merchandise at $78 million in 1995.

According to the Retail Demand Analysis, the majority of existing retail space in the County is neighborhood or community-oriented. Loudoun County (including the incorporated towns) contained approximately 3.7 million square feet of constructed retail space in June 1995. Based on the definition of regional retail center used in that report, none of the County's existing shopping centers are classified as regional commercial centers. The County's first regional commercial center, Potomac Run Center (470,000 square feet of retail anchored by several big box users) is currently under construction. An additional 400,000 square feet of large, freestanding commercial uses (Home Depot, Price Club, WalMart, Best) are also classified as regional in nature.

C. Loudoun's Retail Future

The 1995 EDC report recognized that relatively high income levels, rapid growth and other demographic characteristics have made the County increasingly attractive to many established and emerging retailers and heightened pressures on the County to allow additional retail commercial development. Loudoun has become a retail "hot spot", particularly for destination oriented retailers.

Based on 20 year population and income forecasts from the County's recent Zurn Initiative, the Retail Demand Analysis study concluded that an additional 7.1 million square feet of retail space would be needed by the year 2015 to satisfy retail demands within the County. An additional eight million square feet of retail space is already zoned but undeveloped. These projections are based on the assumption that within the Metropolitan Washington Area, a typical household can support 50 to 100 square feet of retail space.

Approximately one-third (2.9 million square feet) of the County's approved, but unconstructed, retail space is regional in nature and comprised of three projects in the Route 28 corridor: Dulles Town Center Mail (1.2 million square feet), Nattak Mall (850,000 square feet), and Dulles 28 Centre (833,000 square feet excluding the auto park). The remaining square footage is planned in neighborhood or community-oriented centers.
Taking this information at face value, it appears that Loudoun County has sufficient land zoned for commercial development to satisfy projected consumer demand through 2015; however, the County continues to hear from the retail community that the areas currently zoned for retail development are not located where the retailers want to be and that site selection is limited.

The EDC reviewed the Retail Demand Analysis information and reviewed the County's current planning policies to determine how well the County is prepared to address future retail development. The EDC concluded that the County's current retail policies were fundamentally sound but a few key policy revisions were needed. The EDC's key recommendations included:

- Emphasizing the Route 7/Route 28 intersection as the focus of the County's destination retail development to spur the synergy provided by the clustering of retail uses and allowing them to season before additional uses are approved;
- Defining the function and limiting the amount of retail uses allowed in Business Communities to protect the County's vision of Route 7 and other major corridors for Keynote Employment development;
- Defining retail relative to its function and market responsiveness and ensuring consistency in County documents;
- Broadening the combinations of retail uses allowed in certain areas (i.e., industrial) to provide flexibility and reflect retail trends;
- Developing retail corridor identities by establishing design guidelines affecting signage and landscaping;
- Providing certainty to protect existing and zoned retail uses when land use changes occur.

D. Key Findings/Recommendations

The Zoning, Comprehensive Planning Committee received input and recommendations from a variety of sources during its policy deliberations. Key resources included the recommendations of the EDC, public input and discussions with members of the development community. The Committee also allowed public input at the beginning of each Committee meeting. The comments of all of these groups helped to shape the final recommendations of the Committee. In making its recommendations, the Committee sought, among other issues, to balance public and private sector interests; to assess traffic and visual congestion versus the need for visibility and access; to maintain sight of broad economic development objectives in the face of the short-term, "hot" retail market; to seek viable, supportable commercial retail and avoid speculative development.

1 The full text of the EDC recommendations can be found on pp. 4-7 of Appendix D - "A Review of Loudoun County Development Policies" Loudoun County Economic Development Commission, November 9, 1995.
The Planning Commission held a public hearing on July 10, 1996, to receive public comment on the proposed plan amendment language. The Commission forwarded the plan amendment to the Board of Supervisors with a recommendation of approval on September 25, 1996.

Key policy recommendations are summarized below:

1. **Revise the County's Retail Hierarchy**
   
   The General Plan's current hierarchy of retail centers is not consistent with area plan documents and emphasizes center size rather than function. The revised policies emphasize function as the most important characteristic defining retail centers. A new retail matrix is proposed that recognizes the fundamental difference between retail uses that serve a regional market and need to be located along major corridors and those that are community-serving and that should be located within the areas they serve.

2. **Destination Retail needs to be Directed to Appropriate Areas in Principal Arterial Corridors**
   
   The policies clarify the definition of "destination retail" uses and provide specific policies regarding the location of these uses to keep inappropriate retail development out of residential areas. Policies limiting the development of destination retail to specific areas in the Dulles Greenway, Route 7 and Route 50 corridors will protect these areas as office/employment corridors consistent with the County's long-term vision.

3. **The County needs to Recognize and Provide Opportunities for New Forms of Retail Commercial Development**
   
   The EDC report highlights changing retail trends that will affect retail development in the future. The revised policies seek to accommodate limited accessory retail commercial uses in industrial zoning districts. The policies also clarify the intent of retail uses in non-residential communities and provide specific guidelines to accommodate big box and other large format retailers to ensure that uses are as attractive as they can be and appropriately located.

4. **Channel Community Serving Retail to Appropriate Locations and Consider Market Area As a Factor in Future Retail**
   
   The policies provide specific design and location criteria for retail uses located in residential areas to ensure that retail development does not negatively affect residential neighborhoods. Community-serving retail applications would also include a market analysis to help avoid market saturation and development of non-viable retail uses.

5. **Provide Incentives to Keep Existing Retail Areas Viable and Encourage Other Uses for Less Viable Retail Sites**
   
   New policies are recommended to expand the County's support for existing retail areas. A key policy recommendation is to allow for reduced fee rezonings or a
waiver of rezoning fees to allow less viable retail sites to be rezoned to a more appropriate commercial use.

II. GENERAL RETAIL POLICIES

Convenient, well designed, attractive shopping centers can act as activity centers for residential neighborhoods that contribute to community identity, sense of place and overall quality of life. Large scale retail centers that, by their nature, draw shoppers from a wide market area act as economic assets that augment and diversify the local tax base. For these reasons, the County intends to provide a full range of shopping opportunities within its boundaries to meet the consumer needs of its citizens.

Since there are differences of scale and function between retail uses that serve an immediate area and those that depend on a wider market, the County has divided retail activities into two broad categories that reflect these fundamental differences: Corridor Based Retail and Service Area-Based Retail. Corridor-Based Retail uses are automobile oriented and require a supporting road network that can accommodate high traffic volumes. Corridor-Based Retail activities will be directed to non-residential areas in existing and planned principal arterial corridors. Service Area-Based Retail will be designed and scaled for the intended service population and will act in a support capacity to the residential or employment area it serves.

1. Loudoun County seeks to maintain a robust retail sales sector to meet the needs of the growing population, while mitigating impacts on residential areas, traffic, and other forms of economic development.

2. The County seeks to capture 100% of Loudoun's retail sales expenditures.

3. Retail commercial development in the Eastern Urban Growth Area includes a variety of retail types divided into seven broad functional classifications. Four of these retail types are community serving, or Service Area-Based Retail and will be designed to respond to the particular characteristics of the residential or employment community being served: Neighborhood Convenience, Neighborhood, Community, and Employment Supportive. The other three retail types are broadly described as Corridor-Based Retail Uses. Destination, Freestanding, and Flex Retail uses are oriented along, but will not have direct access to, principal arterial corridors since they are auto-oriented. The Retail Types matrix on p. 22 provides a broad overview of these retail classifications. More specific descriptions, policies relating to each type of retail, and criteria for evaluating retail proposals by retail type are included on pp. 7-18.

4. Each application for a commercial retail rezoning must include a statement describing the catchment or market area to be served and a statement of justification that contains an analysis by the applicant of existing and proposed competing projects.

5. The County seeks to differentiate between Service Area-Based retail uses that serve specific residential or employment communities and Corridor-Based Retail which provides locations for destination retail. The size, format, and tenant makeup of retail uses will depend on the size of the catchment area and the characteristics of the site
(i.e., access, type of community, location, function) as well as the nature of existing and planned retail uses serving the catchment area. The Retail Types Matrix (p. 22) summarizes guidelines for evaluating retail use proposals. The individual components of the matrix should be used as general guidelines for future retail development in conjunction with the policies contained herein. The text of these policies controls in cases of differences between the policies and the matrix.

6. The County seeks to prohibit strip commercial development. Strip commercial development is characterized by multiple entrances serving individual uses, minimal setbacks and landscaping, multiple signs and structures without a unified design scheme.

7. The County may consider rezonings of properties in the Village of Ashburn, the Village of Arcola, and the Old Sterling mini-plan area to allow for individually owned, small scale specialty or local commercial and business uses provided that the proposed use is designed to be compatible with the character of the village or the Old Sterling area.

III. CORRIDOR-BASED RETAIL POLICIES

Large scale retail uses demand a regional market, relying almost solely on automobile access. Therefore, they will be located outside of Residential Communities along planned and future principal arterial corridors where the County’s transportation network can best accommodate auto intensive retail uses (see maps pp. 23-26). Corridor-Based Retail uses include Destination Retail Centers, Freestanding Retail uses and Flex Retail uses, all of which act as destinations that attract customers from a regional market. Policies pertaining to Corridor-Based Retail uses are focused on mitigating the negative impacts of large scale retail development, accommodating new retail forms such as big box retail and warehouse clubs, and expanding opportunities for appropriate retail development in industrial areas.

A. General Policies

1. Corridor-Based Retail uses will not be permitted outside the County's designated Eastern Urban Growth Area.

2. Corridor-Based Retail uses will be prohibited in Residential Communities in the Eastern Urban Growth Area.

3. Corridor-Based Retail uses will be located in existing and planned principal arterial corridors subject to specific location, transportation, design and development criteria set forth below:
   a. Appropriate transportation infrastructure is or will be available to minimize disruption of traffic flows on principal arterials;
   b. The negative impacts of Corridor-Based Retail uses will be minimized;
c. Development of Corridor-Based Retail uses will be promoted at appropriate sites as designated on the maps on pp. 23-26.

B. Destination Retail

1. Destination Retail uses should be clustered to achieve a pattern of coordinated and complementary retail areas offering a wide range of retail services. Destination Retail areas offer a variety of comparative and specialty retail shopping goods and may include an entertainment component such as theaters. Destination Retail areas may include a variety of building configurations including multi-tenant shopping centers, enclosed malls or freestanding large superstores and big box retail uses. Destination Retail centers (generally ranging from 250,000 to 1.5 million square feet) typically serve a market area of 5,000 to 30,000 households that may include communities within or outside the County.

2. The Destination Retail land use designation specifies those areas where the development of Destination Retail uses can occur. (See the maps on pp. 23-26). Destination Retail areas overlay the existing land use designations of the General Plan (as amended), and applicable area plans (as amended) providing development options for properties located within the destination retail areas. For example, a property located in the Destination Retail overlay may be developed either in Destination Retail uses or in a use that conforms with the land use designation underlying the Destination Retail use designation.

3. The County encourages the clustering of Destination Retail uses in locations where planned and existing intersections and interchanges can support high traffic volumes.

4. The transportation implications of Destination Retail development will be evaluated on a site specific, corridor specific basis. However, all new Destination Retail uses must meet the following minimum criteria:
   a. No direct access to a principal arterial will be permitted. Access will be provided via major or minor collector roads or minor arterials.
   b. A minimum of two ingress and egress access points with two in-out bound lanes will be required. Additional access points may be required depending on the size of the proposed Destination Retail Center.
   c. Transportation impacts attributable to the proposed use need to be mitigated.

5. Destination Retail Centers will be designed and sited to mitigate impacts on adjoining land uses. Destination Retail Center traffic will not be routed through a residential development.

6. Buildings visible from principal arterials will incorporate recesses, off-sets, and other architectural details and building materials, and the like to avoid presenting blank walls to the roadway.

7. The County should consider the following criteria in the review of a Destination Retail Center application:
a. The proposed use respects the ultimate arterial or major collector road proposed in the Countywide Transportation Plan.
b. Utilities are available to accommodate the use.
c. Detrimental impacts on adjoining residential communities are mitigated.
d. The use does not interfere with the function of adjoining light industries or offices.

C. Corridor Policies

The Route 28 Corridor

1. All retail development within the Route 28 Corridor will conform to policies contained in the Route 28 Corridor Plan in Chapter 6 of the Revised General Plan. Retail proposals in the Route 28 Business areas will comply with the design guidelines contained herein.

The Route 7 Corridor

1. A node of Destination Retail is located at the southeast quadrant of the Route 7/ Cascades Parkway interchange.

2. The Route 7 corridor, west of Route 28, is intended to develop as the County's premier keynote office corridor. Therefore, no new Destination Retail uses will be permitted west of Route 28 in the Route 7 corridor.

3. No new direct access to Route 7 west of Route 28 will be allowed for any type of retail uses.

4. Provisions should be made for construction of the planned Route 7 north and south parallel roads (Riverside Parkway and Russell Branch Parkway) for Service Area-Based Retail Center applications. Primary access with connections to other arterial and collector roads should be provided.

5. The first occupancy permit for the Destination Retail center on Tax Map 80, Parcel 102 shall not be issued until after the issuance of the first occupancy permit for Phase I (which includes the 3 anchor stores) of the Dulles Town Center Regional Mall.²

6. A 150' building setback will be established along the Route 7 frontage of the Destination Retail center site unless the Applicant shows and the County agrees that allowing buildings within the 100' to 150' setback is permissible. The setback will be measured from the Route 7 six-lane right-of-way.

7. A 100' landscaped buffer will be established along the Route 7 frontage. The buffer should include trees, shrubs, and berming that will effectively and reasonably minimize the visibility of the Retail center and associated parking areas, dumpsters, and loading areas from Route 7.

² A definition and clarification of what Phase 1 entails will be provided by the property-owner.
8. Adequate building and parking setbacks, and buffers will be provided along the Algonkian Parkway interchange and/or ramps to shield the site from Algonkian Parkway.

9. Any side or rear building elevations which have their surface area parallel to Route 7 will have the facade covered generally with the same building materials as those used on the front of the building.

10. Dumpsters will be enclosed and the enclosures should be constructed of building materials that are compatible with the main structures.

11. Loading areas will be oriented to reduce their visibility from public roads and will be shielded by architectural features, walls, fences, or landscaping to minimize their visibility.

12. The site design and architecture of the Destination Retail center will be generally compatible with the planned Town Center adjacent to it. They will be generally compatible in setbacks, massing, height, scale, materials, facade treatments, landscaping, and signage. Sidewalks and street trees should be incorporated into the site design.

13. The additional trips associated with converting the land use on the Destination Retail site from planned office uses to retail will be mitigated, requiring improvements beyond those already proffered for the approved Dulles Town Center.

14. The ultimate planned road network may not accommodate the traffic generated by adding Destination Retail uses to the uses currently approved on the entire Dulles Town Center property. In which case, improvements beyond those currently included in the Countywide Transportation Plan will be required.

**The Dulles Greenway Corridor**

1. Destination Retail uses will be located in the eastern end of the Dulles Greenway corridor, extending east from the Route 772/Dulles Greenway interchange to the Dulles Airport property as depicted on the map on p. 25. Destination Retail uses will be located within approximately 2000 feet of the Toll Road interchanges in the area designated as Business Community and Business Employment Community on the Toll Road Plan land use map. Destination Retail uses will be located outside of potential node zones and will be subject to the land use, design, and transportation policies of the Toll Road Plan.

2. Destination Retail Centers will have access to a through, parallel, major collector road which connects to an arterial and/or major collector road.

3. Improvements and upgrades to the existing and planned Dulles Greenway interchanges should be provided by the applicant through the retail application process as warranted by the applicant’s pro-rata share of such improvements or upgrades.
D. Freestanding Retail Policies

1. Freestanding Retail uses are comprised of single-tenant, individual stores larger than 50,000 square feet and located on individual parcels not part of a retail center. Freestanding Retail uses will be located in areas the County has designated for Destination Retail Centers and share similar characteristics with such uses, including access points, market area, land use compatibility and floor area ratios, as described on the Retail Types Matrix on p. 22.

2. Freestanding Retail uses will be subject to the transportation policies for Destination Retail uses outlined on p. 8, and will be located in areas identified for Destination Retail as specified in the maps on pp. 23-26.

IV. SERVICE AREA - BASED RETAIL POLICIES

Service Area-Based Retail uses are located within or between the neighborhoods or the employment centers they serve and are not intended to attract customers from outside that area. They provide a community focus while fulfilling the convenience or routine shopping needs of the County's residents and workers. Service Area- Based Retail uses include Neighborhood Convenience, Neighborhood, Community, and Employment Supportive Retail centers located in Residential Communities, and Employment Supportive Retail centers located in Business and Industrial Communities. Policies pertaining to Service Area-Based Retail uses focus on the relationship of the retail use to the surrounding community,

A. General Policies

1. Service Area-Based Retail uses, including Neighborhood Convenience, Neighborhood, Community, and Employment Supportive types, will be located in the areas they serve since they are not intended to attract "drive-by" shoppers or function as destination retail.

2. Service Area-Based Retail uses will not have direct access to a principal arterial.

3. Service Area-Based Retail uses will be designed at a pedestrian-friendly scale, providing convenient internal pedestrian access for neighborhood residents or workers. Safe pedestrian access will be provided on-site with a clear separation between vehicular and pedestrian traffic.

4. Service Area-Based Retail uses will be separated from each other to prevent strip commercial development. Neighborhood Convenience and Neighborhood Retail Centers must generally be separated by a minimum distance of 4000' from any other Service Area-Based Retail Center to prevent the consolidation of centers into a larger commercial complex. Community Retail Centers must generally be at least 10,000 feet away from another Destination or Community Retail Center. The separation distance shall be measured between the two closest points. This distance may be reduced where a permanent natural or man-made barrier provides clear visual separation and eliminates the potential for retail uses to merge.
5. The General Plan, the Toll Road Plan, and the Dulles South Area Management Plan include land use ratios defining the mix of uses to be incorporated into the development of mixed-use communities. The percentage of commercial retail and service uses included in the land use mix ratios should generally guide the amount of commercial retail and service uses appropriate to develop in mixed use communities. However, the Service-Area Based retail policies included in CPAM 1996-0001, Countywide Retail Policy Plan Amendment define the characteristics of the commercial retail and services component of the land use ratio and may limit the commercial retail and service component in order to achieve the County’s retail development objectives.

B. Neighborhood Convenience Retail Centers and Neighborhood Retail Centers

1. Neighborhood Convenience and Neighborhood Retail Centers will be located in Suburban, Traditional, Urban, and High Density Residential Communities generally internal to the residential neighborhood being served.

2. Neighborhood Convenience Centers are intended to serve immediate, convenience (sporadic or as needed) shopping needs for a limited variety of items or personal services. Although Neighborhood Retail Centers may also service convenience needs, these centers are intended to fulfill the planned routine daily and weekly shopping needs of neighborhood residents for items such as groceries as well as personal services. Neighborhood Retail Centers will be larger than Neighborhood Convenience Centers (generally 30,000-150,000 sq. ft.), but will offer limited comparative goods shopping. Specific characteristics defining the County's objectives for the development of Neighborhood Convenience and Neighborhood Retail Centers are included on the Retail Types Matrix on p.22.

3. There are a few differences between the two neighborhood retail types. For example, Neighborhood Convenience Centers can be comprised of an individual, freestanding store (generally not over 5,000 sq. ft.) or a group of small stores (generally up to 30,000 sq. ft.) and typically serving a market area of between 500 and 3,000 households. Only carry-out or delivery restaurants will be permitted in Neighborhood Convenience Centers. Pad sites, full service fast food establishments and restaurants will be permitted in Neighborhood Retail Centers. Neighborhood Retail Centers (generally serving up to 3,000 households) will be developed as a focal point of the neighborhood, providing services that reinforce the neighborhood identity and may include civic uses.

4. Neighborhood Convenience and Neighborhood Retail Centers can include such uses as convenience stores, restaurants, gas stations, drycleaners, banks, medical offices and similar uses.

5. The design and siting of Neighborhood Convenience and Neighborhood Retail Centers will mitigate the impacts of parking, signs, lighting, waste storage, and loading on the adjacent neighborhood.

6. Access to Neighborhood Retail Centers will be provided by means of a minor collector or major collector road. Access to Neighborhood Convenience Centers
will be provided via major collector roads, minor collector roads and major subdivision streets.

7. All new Neighborhood Convenience and Neighborhood Retail Centers must meet the following minimum transportation criteria:
   a. Access will be provided at existing and planned median breaks, intersections or at consolidated access points, where appropriate.
   b. Entrances on undivided roads will be located at least 250 feet away from the centerline of the nearest arterial or collector road unless otherwise approved by VDOT.

8. Neighborhood Convenience and Neighborhood Retail Centers will be visually and acoustically buffered from the surrounding residences and traffic volumes and accessibility requirements will not conflict with residential vehicular and pedestrian traffic.

9. The retail component of a Neighborhood Core as described in the Dulles South Area Management Plan will be consistent with the primary characteristics of Neighborhood Commercial Centers outlined in the Retail Types Matrix, p. 22.

C. Community Retail Centers

1. Community Retail Centers are envisioned as focal points for civic and commercial activities serving several residential neighborhoods with a market area generally ranging from 2,000 to 8,000 households.

2. Community Retail Centers, which generally range from 100,000 to 400,000 square feet are intended to address a wide variety of daily and weekly shopping and personal needs (such as grocery shopping, drycleaning, video rental). However, these centers will also offer opportunities for comparison goods shopping such as clothing, household items, shoes and books. These centers may include pad sites such as banks, gas stations, etc. Specific characteristics defining the County’s objectives for Community Retail Centers are included in the Retail Types Matrix on p. 22.

3. Community Retail Centers will be permitted in Residential Communities and in mixed use Business and Industrial Communities that include residential development. Community Retail Centers will generally be encouraged to locate at the edge of residential neighborhoods or between residential and non-residential areas to minimize potential land use conflicts and maximize convenient access from surrounding areas that will provide the market for such centers.

4. The transportation implications of Community Retail Centers will be evaluated on a site specific basis. However, all new Community Retail Center proposals must meet the following minimum criteria:
   a. No direct access to a planned or existing principal arterial will be permitted. Access will be provided via major or minor collector roads at existing and planned median breaks and/or intersections.
b. A minimum of two points of access will be required to better disperse traffic.

5. The retail component of a Town Center as described in the General Plan, the Toll Road Plan, or a Community Core as described in the Dulles South Area Management Plan will be consistent with the primary characteristics of Community Retail Centers outlined in the Retail Types Matrix, p. 22.

6. The retail component of a Node as described in the Toll Road Plan and urban center and Transit-related Urban Center as described in the General Plan will be consistent with the primary characteristics of Community Retail Centers outlined in the Retail Types Matrix (p. 22) and with the design policies included in the Toll Road Plan and the General Plan.

D. Employment Supportive Retail Centers

1. Employment Supportive Retail Centers are generally intended to provide convenient retail and personal support services such as office supply stores, copying/mailing facilities, restaurants, daycare centers, drycleaners, banks and similar uses to employees and businesses in adjacent office and industrial parks. Destination Retail and Freestanding Retail uses will not be permitted in Employment Supportive Retail Centers. Pad sites may be included in an Employment Supportive Retail Center. Specific characteristics defining Employment Supportive Retail Centers are outlined in the Retail Types Matrix on p. 22.

2. Regional Office Community and Business Employment Communities may include a retail component. The retail component will be limited to 5% of the gross floor area (measured in square feet) of the non-residential uses in the development.

3. The retail component of a Regional Office or Business Employment Community will be developed on a pro-rata basis in proportion to the nonresidential development as construction occurs. For example, for every 100,000 square feet of office space constructed, 5,000 square feet of retail space may be constructed.

V. EXISTING RETAIL AREAS POLICIES

Established shopping centers in Sterling Park, at Herndon Junction, CountrySide and individual retail establishments in the Route 28 and Route 7 corridors have served the shopping needs of eastern Loudoun residents for years. These older commercial areas will remain a visible and viable part of Loudoun’s retail future, particularly if these areas are improved and well maintained. The County will provide incentives to encourage improvements that enhance the appearance of existing commercial areas and that keep these areas competitive in a changing retail environment. Where retail commercial development has occurred in a linear pattern along major transportation corridors, the County will encourage public and private investments to improve transportation safety.

1. Existing retail commercial areas will be protected and reinforced by County plan and practice where such uses are compatible with existing and planned land uses.
2. The County will implement a multi-faceted incentive program to encourage owners of existing retail commercial centers and businesses to renovate facilities on a routine basis and to add amenities that will modernize and improve the appearance and function of older retail centers and businesses. The incentive program will include:

   a. Waiving site plan requirements for retail commercial centers and businesses seeking improvements such as additional landscaping, treed islands in parking areas, street trees along sidewalks and roadways, and retrofitting parking lots with pedestrian walkways, sidewalks and similar features that will make older centers more attractive and pedestrian oriented.

   b. Encouraging new pedestrian-friendly, small scale, personal service and local office uses to locate in conjunction with established commercial centers where such improvements would enhance the function and appearance of the center and better serve the community. New structures should be located at the perimeter of existing parking areas to reduce the visual impact of large parking lots. The County will consider modifications of parking standards with appropriate justification (for example, reduced standards, shared parking) to facilitate such development.

3. The County will consider reducing or waiving rezoning application fees for owners of undeveloped commercially zoned property if the landowner desires to rezone the property to another non-residential use that is compatible with surrounding planned and zoned uses and that better implements the County’s Comprehensive Plan goals (i.e., from CLI to PD-1P or from PD-SC to PD-OP). The County’s intent is for less viable existing commercial sites to be re-evaluated at the owner’s request for conversion to a more appropriate land use that expands the County’s tax base.

4. The County will encourage existing retail centers and individual retail establishments to consolidate access points and share entrances and exits where feasible to minimize traffic congestion and conflict.

5. The County will encourage developers of non-retail projects, adjacent to established retail commercial areas, to consider the presence of the existing centers/businesses in the design of their projects by meeting with business owners and landowners from the adjacent retail area to discuss the proposed project. Additionally, the applicant shall address how the new project relates to the existing commercial area in terms of pedestrian access (if appropriate); providing buffers to reduce the potential for incompatibility between land uses and nuisance complaints; and coordinating and consolidating access points where appropriate.

VI. DESIGN GUIDELINES

The following guidelines apply to the development of any retail center. The guidelines are intended to emphasize the site development of retail uses that accommodate the customer, the retail business, and the adjoining land uses. They are also intended to
enhance the physical development of the County’s principal transportation corridors as well as the County’s neighborhood and office centers.

A. Building Placement and Design

1. All retail centers should include a site design that is compact and makes buildings the prominent feature of the site as viewed from adjoining roads.

2. It is desirable to have a green space to separate parking lots from sidewalks.

3. Buildings within a multi-building retail center should exhibit a unity of design through the use of similar elements such as rooflines, materials, window arrangement, sign location and architectural details.

4. Large freestanding stores, retail centers and restaurants should be encouraged to provide usable outdoor spaces.

5. Required drainage and stormwater management facilities, such as holding basins, drainage swales and culverts should be incorporated into the site design of the project. Natural drainage features should be conserved to the greatest extent possible.

6. Building massing should be varied to break down the scale of large buildings and retail centers. Long, flat facades are strongly discouraged. It is desirable that building facades should incorporate recesses, off-sets, angular forms or other features to avoid presenting a "blank side" to neighboring properties.

7. Pitched, mansard and other distinctive roof forms are strongly encouraged.

8. Rooftop mechanical equipment should be screened. Preferably, screening should be incorporated into the roof form. Ground mounted mechanical equipment should be screened.

9. Retail buildings should incorporate continuous arcades over the front walkway to provide weather protection for shoppers and create a pedestrian-oriented environment.

B. Circulation, Parking, and Loading

1. Pedestrian traffic, internal to the retail center, should be provided with a safe travel route from the parking area to the building with a demarcated pathway and clear directional signage. Trees and other plantings should be provided along the walkway.

2. Sidewalks should be provided to Neighborhood Convenience and Neighborhood Retail Centers to accommodate benches, bikes, strollers, and planters.

3. Parking areas should be visually screened from adjacent streets and residential areas by heavy landscaping, depressing the parking area and/or by constructing earthen berms.
4. All loading and storage areas must comply with Zoning Ordinance regulations and must be screened from adjacent residential areas by earthen berms, masonry walls, permanent wooden fencing, or dense landscaping.

C. **Landscaping and Buffer**

1. Large parking areas should be landscaped with trees and shrubs to reduce the visual impact, provide shade, and reduce the heat absorption of the parking area.

2. The street frontage of retail centers should be landscaped with trees to help create a green edge on both sides of the street.

3. Existing natural environmental features such as hedgerows, mature trees, and berms should be integrated into the landscape plan for retail centers, when feasible.

4. Retail buildings and parking areas should be sufficiently screened and buffered from adjoining residential areas by distance, transitional uses, landscaping and/or natural vegetation to mitigate the effects of noise, lighting and traffic on the surrounding residences.

5. Residential areas should be buffered from adjacent retail uses by trees, fences and hedges.

D. **Signs and Lighting**

1. Signs for retail centers should be developed as an integral part of the overall center design. A unified graphic design scheme is strongly encouraged.

2. Lighting should reduce glare and spillage of light onto adjoining properties and streets. Fixtures should be attractive site elements that are compatible with the architecture of the retail center.
Note: The individual components of this matrix should be used as general guidelines for future retail developments in conjunction with the polices contained herein.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Neighborhood Convenience</th>
<th>Neighborhood</th>
<th>Community</th>
<th>Employment Supportive</th>
<th>Destination (Regional)</th>
<th>Freestanding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Function</strong></td>
<td>Serves immediate, convenience shopping needs for a limited variety of items (such as milk, bread, gas) and personal services (such as dry cleaning). Fulfills sporadic or as needed shopping needs. Can be a stand-alone use such as convenience store, bank, gas station, etc.</td>
<td>Serves routine (generally planned) daily &amp; weekly shopping needs for items such as groceries as well as personal service needs. May also serve convenience needs. Offers little or no comparative goods shopping. Fulfills daily shopping needs. May include pad sites such as banks, gas stations, convenience stores, etc.</td>
<td>Serves a wider variety of daily &amp; weekly shopping and personal service needs, but also offers some comparative goods shopping for items; such as, apparel, shoes, and books. Fulfills weekly shopping needs. May include pad sites such as banks, gas stations, convenience stores, etc.</td>
<td>Serves convenience retail and personal service needs of employees in adjacent business or industrial parks/areas. May include pad sites such as banks, gas stations, convenience stores, etc.</td>
<td>Offers the widest variety of comparative and specialty goods and may offer an entertainment component. Not intended to fulfill daily or convenience shopping needs. Fulfills comparative or entertainment shopping needs. May include pad sites such as banks, gas stations, convenience stores, etc.</td>
<td>A single tenant individual store of 50,000 sq. ft. or greater that is located on a separate parcel of land that is not part of a shopping center.</td>
</tr>
<tr>
<td><strong>2. Center Size Range</strong></td>
<td>Generally stand alone uses up to 5,000 sq. ft.; multi-tenant center up to 30,000 sq. ft.</td>
<td>Generally 30,000 - 150,000 sq. ft.</td>
<td>Generally 100,000 - 400,000 sq. ft.</td>
<td>Square footage depends on total non-residential square footage.</td>
<td>Generally 250,000 - 1.5 million sq. ft.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>3. Location</strong></td>
<td>Generally internal to Residential Neighborhood being served.</td>
<td>Generally internal to Residential Neighborhood that is being served.</td>
<td>Generally at the edge of or between Residential Neighborhoods or between a Residential and Non-Residential Community.</td>
<td>Generally internal to Business or Industrial Community being served.</td>
<td>In existing and planned principal arterial corridors, outside of Residential Community (see maps and corridor specific policies).</td>
<td>In existing and planned principal arterial corridors, outside of Residential Community (see maps and corridor specific policies).</td>
</tr>
<tr>
<td><strong>4. Transportation Access Points</strong></td>
<td>Via minor collector, major collector roads, and major subdivision streets at a median break. No direct access to minor arterials or principal arterials.</td>
<td>Via minor or major collector roads at a median break.</td>
<td>Via minor or major collector roads or minor arterials at median break.</td>
<td>Via access points serving the Business or Industrial Community.</td>
<td>Along a principal arterial, but accessed via major collector roads or minor arterials at a median break proximate to a planned or existing interchange (see maps pp.18-19).</td>
<td>Along a principal arterial, but accessed via major collector roads or minor arterials at a median break proximate to a planned or existing interchange (see maps pp.18-19).</td>
</tr>
<tr>
<td><strong>5. Market Area Size</strong></td>
<td>Immediate Residential Neighborhood generally 500 - 3,000 households.</td>
<td>Immediate Residential Neighborhood generally less than 3,000 households.</td>
<td>Several Residential Neighborhoods generally 2,000 - 8,000 households.</td>
<td>Surrounding Business Community.</td>
<td>Several communities within County as well as communities outside County; generally 5,000 - 30,000 households.</td>
<td>Several communities within County as well as communities outside County; generally 5,000 - 30,000 households.</td>
</tr>
<tr>
<td><strong>6. Compatibility with Surrounding Land Uses</strong></td>
<td>Suitable as a component of Residential Community.</td>
<td>Suitable as component of Residential Community.</td>
<td>Suitable as component of Residential or mixed use community.</td>
<td>Suitable as component of Business or Industrial Community.</td>
<td>Incompatible in Residential Community.</td>
<td>Incompatible in Residential Community.</td>
</tr>
<tr>
<td><strong>7. Floor Area Ratio (FAR)</strong></td>
<td>.2 -.3</td>
<td>.2 -.3</td>
<td>.2 -.3</td>
<td>.2 -.3</td>
<td>.2 -.3</td>
<td>.2 -.3</td>
</tr>
</tbody>
</table>

Note: for the purposes of the matrix, 50-100 sq. ft. of retail is assumed for each household.
Strategic Land Use Plan for Telecommunication Facilities

Adopted as part of Loudoun County’s Comprehensive Plan
November 6, 1996
Adopted by:
The Loudoun County Board of Supervisors

Dale Polen Myers, Chairman

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Jim Burton          Elanore C. Towe
Helen A. Marcum    Steve Whitener
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Prepared Initially by:
The Loudoun County Planning Commission

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SECTION I: BACKGROUND

A. INTRODUCTION

There are currently more than forty commercial public telecommunication antenna sites in Loudoun County (see “Existing and Proposed Telecommunication Antennas” map available through the County). Changes in commercial public telecommunication demand and technology have caused a great demand for additional antenna mounting facilities, mostly in the form of lattice towers or monopoles. The increased demand for these facilities poses a number of important land use issues for Loudoun County including facilitating collocation of antennas, ensuring appropriate siting and design, and mitigating impacts of telecommunication facilities.

The policies outlined in this document were developed by the Transportation, Subdivision, and Site Plan Committee of the Loudoun County Planning Commission to balance the public demand for commercial public telecommunication service with the County’s desire to avoid proliferation of towers and monopoles. Guidance is provided for the location and design of commercial public telecommunication facilities only, not amateur operations. The intent of these policies is to provide the overall land use strategy for allowing commercial public telecommunication service in Loudoun County, while mitigating any negative impacts.

B. GOAL AND OBJECTIVES

Goal:

Loudoun County recognizes that modern, effective, and efficient telecommunications is an essential part of creating an attractive economic development environment and meeting the desires of its citizens for high quality service. The County seeks to encourage improvements in telecommunications services while mitigating the impacts on its residents, nearby land uses, scenic beauty, and rural heritage.

Objectives:

1. To identify a hierarchy of areas where future commercial public telecommunication facilities can be located, while minimizing the proliferation of towers and monopoles;

2. To require collocation of commercial public telecommunication facilities on existing structures and towers;

3. To attempt to ensure compatibility of telecommunication facilities with nearby land uses;

4. To establish siting and design criteria to mitigate negative impacts;
5. To establish commercial public telecommunication tower and monopole removal policies; and

6. To establish a process by which an applicant can demonstrate their compliance with these policies.

7. To stay abreast of changing technologies that may reduce the need for new towers and monopoles.

C. COMMUNITY PLANNING PROCESS

The proposed policies were developed initially by the Transportation, Subdivision, and Site Plan Committee of the Planning Commission over a three month period in the spring of 1996 that included two public input sessions. As part of their review, the Committee heard presentations from citizens, telecommunication providers, the FCC, Leesburg Airport, and the County’s Fire and Rescue staff. The Committee then reviewed existing County policy and regulations and looked at the policy and regulations of several other jurisdictions.

On May 22, 1996, the Committee presented the recommended draft policies to the Planning Commission Committee of the Whole. The draft policies were then sent to referral agencies for review. The Planning Commission held a public hearing on the draft telecommunication policies on June 12, 1996 and made further amendments to the draft policies at their June 19 work session. The Board of Supervisors held a public hearing on these policies on September 4, 1996 and subsequently added two new policies and revised others. On November 6, 1996, the Board approved this comprehensive plan amendment establishing this document as part of the County’s comprehensive plan.

D. RELATIONSHIP TO OTHER COUNTY DOCUMENTS

Loudoun County’s Comprehensive Plan consists of the General Plan, several area management plans, strategic plans, and related documents. The General Plan provides the overall countywide goals and policies for managing growth and development while the area management plans and strategic plans outline more specific strategies for local planning areas or particular issues. These telecommunications policies are a strategic plan consisting of goals and policies for the siting and design of telecommunication facilities. As such, these telecommunication policies supersede Energy and Communication Policies 4, 5, and 6 on page 83 and Energy and Communication policy 2 on page 156 in the General Plan and apply in all areas of the County.
SECTION II. TELECOMMUNICATION POLICIES

A. LOCATION POLICIES

The location policies establish a hierarchy of preferred locations for new commercial public telecommunication facilities. The County’s first preference is to have new antennas collocate on existing tall structures, monopoles and towers in order to minimize the need for new towers and monopoles. When a telecommunication antenna cannot locate on an existing structure for technical or location reasons, the County then prefers that new towers or monopoles be located where they are most compatible with surrounding land uses.

The second level of preferred locations for new monopoles or towers is in industrial and employment areas, within overhead transmission line rights-of-way, and on public sites or volunteer fire and rescue company properties (see the “Public Facility Sites” and “Telecommunications By-Right Zoning” maps available through the County). The policies provide incentives, such as allowing monopoles as a by-right use, for applicants to locate in these preferred areas. In urban eastern Loudoun County, the policies encourage telecommunications antennas additionally on light poles within the VDOT or Dulles Greenway right-of-way, and potentially on towers on existing low-rise heavy industrial buildings.

In order to protect the scenic rural beauty of Loudoun County, commercial public telecommunications towers and monopoles in rural areas will be allowed only by special exception. Furthermore, the County will not allow new towers or monopoles to locate in County designated historic districts.

Countywide Location Policies

1. To minimize the need for new towers and monopoles, the County prefers that new commercial public telecommunication antennas be located on existing buildings, towers, monopoles, water tanks, overhead utility transmission line structures and other tall structures wherever possible. Commercial public telecommunication antennas should be permitted by-right on all existing towers, monopoles, and other tall structures subject to performance standards to mitigate visual impacts.

2. Where it is not feasible to locate on an existing structure, the County prefers that new towers or monopoles be located

   a. In planned and zoned industrial and employment areas,
b. Within overhead utility transmission line rights of way where structures greater than eighty (80) feet in height already exist, and

c. On public sites or volunteer fire or rescue company properties where such facilities mitigate adverse impacts on the character and use of the public or public safety site.

3. In order to encourage location in industrial and employment areas, commercial public telecommunication monopoles up to 199 feet in height should be a by-right use, subject to performance standards to mitigate visual impacts, in areas that are both planned and zoned for industrial and employment uses (such as the GB, PDGI, PDSA, PDOP, PDIP, PDRDP and MRHI zoning districts but not the employment areas within PDH districts) provided that the monopole is not located within 750 feet of a residentially zoned property.

4. In order to facilitate use of volunteer fire and/or rescue company sites, telecommunication monopoles should be permitted as a by-right use up to 199 feet in height, subject to performance standards to mitigate visual impacts, on fire and/or rescue sites in rural and agricultural areas (specifically A3, A10, A25, all CR, and RC zoning districts). In addition, The County encourages use of other public sites where telecommunication uses should be permissible as an accessory use by special exception. Any Zoning Ordinance amendments should also consider adoption of visual impact performance standards to mitigate impacts on adjacent residential or other sensitive uses.

5. Except for areas where towers or monopoles are permitted by right, an applicant for a new commercial public telecommunication tower or monopole will demonstrate to the County that location on an existing tall structure is not feasible. An applicant will evaluate the feasibility of using existing or approved towers, monopoles, or other structures greater than 50 feet in height within a one mile radius of any proposed site in the Eastern Loudoun Urban Growth Area and within a two-mile radius elsewhere in the County. Technological, physical, and economic constraints may be considered in determining unfeasibility. Collocation may be determined to be unfeasible in the following situations:

a. Planned equipment would exceed the structural capacity of existing and approved towers or monopoles, considering existing and planned use of those towers, and such towers or monopoles cannot be reinforced to accommodate planned or equivalent equipment at a reasonable cost;

b. Planned equipment will cause interference with other existing or planned equipment for that tower or monopole, and that the interference cannot be prevented at a reasonable cost;
c. Existing or approved towers or monopoles do not have space on which planned equipment can be placed so as to provide adequate service; or

d. Existing or approved towers or monopoles will not provide adequate signal coverage.

6. The County encourages new towers and monopoles to locate in overhead utility transmission line rights of way where there are existing tall structures. The Zoning Ordinance should be amended to allow monopoles up to 199 feet in height by-right, subject to performance standards, within overhead utility transmission line rights of way where there are existing transmission support structures greater than eighty (80) feet in height.

Urban Location Policies

1. The County should revise the Zoning Ordinance to allow towers up to 40 feet in height on existing buildings in areas which are both planned and zoned for heavy industrial uses (such as MRHI and PDGI) subject to performance standards to mitigate visual impacts.

2. The County encourages the location of commercial public telecommunication antennas on light poles and other existing tall structures in the right of way of the Dulles Greenway and VDOT’s arterial roads.

Rural Location Policies

The County recognizes the importance of maintaining the natural scenic beauty and historic character of the rural and historic areas. As such, monopoles and towers are prohibited within the County’s Historic and Cultural Conservation Districts. As in urban areas, the County prefers locating new antennas on existing towers, monopoles or other tall structures. When existing structures cannot be used, new monopoles or towers should be sited within the right-of-way for overhead utility transmission lines where the visual impact of an additional tall structure would be minimal. Elsewhere, towers and monopoles should be located in rural areas only by Special Exception and subject to design criteria for mitigating visual impacts.

1. The County prefers that commercial public telecommunication antennas locate on existing tall structures where possible.

2. Except within overhead utility transmission line rights of way as specified in Countywide Location Policy six (6), commercial public telecommunication towers and monopoles will be permissible in agricultural-residential areas (such as the A-3, A-10, A-25, and CR zoning
districts) only by special exception and subject to performance standards to mitigate visual impacts.

3. Commercial public telecommunication towers and monopoles are prohibited within County designated historic districts.

B. DESIGN STANDARDS

This plan calls for design standards to address visual and land use impacts of commercial public telecommunication facilities. There are two main components of the design strategy. The first is to limit the need for new towers and monopoles by providing for collocation. The second is to mitigate visual impacts through appropriate setbacks, screening, and design. The policies will help minimize and mitigate impacts through appropriate siting and design and provide guidance for development of new Zoning Ordinance performance standards.

Tower and Monopole Design

1. Due to their reduced visual impacts, when technologically and physically feasible, monopoles are the preferred design.

2. Tower and monopole sites should be designed and constructed to the minimum height necessary to accommodate at least three providers on the tower or monopole and provide sufficient land area for additional equipment buildings unless doing so would:

   a. Create an unnecessary visual impact on the surrounding area; or

   b. No additional need is anticipated for any other potential user in this area; or

   c. There is some valid economic, technological or physical justification as to why collocation is not possible.

Countywide Visual Impacts

1. The visual impact of commercial public telecommunication facilities should be mitigated so as to blend with the natural and built environment of the surrounding area.

2. The specific communication facility design issues that should be examined in looking at visual impact are: the setting, color, lighting, topography, materials and architecture. Towers and antennas should be neutral in color to blend with the background, unless specifically required by the FAA to be painted or lighted otherwise.
3. To mitigate the visual and noise impacts of new equipment buildings and accessory uses, these structures should blend in with the surrounding environment through the use of appropriate color, texture of materials, topography, scale of buildings, landscaping and visual screening.

Rural and Historic Areas

1. New commercial public telecommunication facilities sited in rural and historic areas should conform with the following design considerations:

   a. Monopole or tower sites should be sited within areas of existing mature vegetation so that the maximum amount of the structure and associated buildings are screened;

   b. Monopoles or tower sites shall not be located along ridge lines but down slope from the top of the ridge lines to protect views of the Catoctin, Bull Run, and Hogback Mountains, the Short Hill, and the Blue Ridge;

   c. Monopoles or towers proposed where mature vegetative buffering or topographical conditions will not contribute to screening shall demonstrate that there is no existing mature vegetated area nearby that could be used instead. In all cases, the County encourages camouflaging the facility to mitigate visual impacts;

   d. Monopoles or towers should generally be sited toward the interior of a property rather than close to a property line unless a lesser visual impact would occur from locating it elsewhere. Visual impacts should be mitigated by measures onsite rather than relying on offsite conditions for mitigation.

2. When there is not a feasible location with existing mature vegetation then the preferred location for a new tower or monopole is close to existing tall structures.

3. Commercial public telecommunication towers or monopoles on the property of a structure or site that is listed on the National Register of Historic Places should show how the visual impact on views from or toward the structure will be mitigated. The applicant should provide visual imagery from several different perspectives to help determine the extent to which the facility could be designed to mitigate the visual impact on the historic structure or site.
4. Applicants proposing a telecommunication tower or monopole within one mile of a County designated Historic District or State Scenic Byway should provide both a visual impact analysis and justification why the tower or monopole could not be sited elsewhere.

Publicly Owned or Controlled Facilities and Volunteer Fire or Rescue Companies

1. Applicants for commercial public telecommunication towers or monopoles must demonstrate that there will not be any physical or technological interference with the existing or planned function of the public facility or volunteer fire or rescue company facility.

2. Required landscaping may be less stringent for public sites or volunteer fire or rescue company sites where the visual impact of the support building is otherwise mitigated or is consistent with the surrounding area.

By-Right Uses

1. Commercial public telecommunication monopoles in employment or industrial areas should locate toward the interior of a lot rather than along the common boundary with existing or planned residential areas and should mitigate visual impacts onsite rather than relying on offsite conditions for visual mitigation.

2. Within employment or industrial areas, commercial public telecommunication monopoles should be separated from residentially zoned property by a minimum of 750 feet. Along existing overhead utility transmission line rights of way, the 750 foot separation does not apply.

3. In some locations, such as in industrial areas, required landscaping may be less stringent where the visual impact of the support buildings is otherwise mitigated or consistent with the surrounding area.

Arterial Road Corridors

1. The County may consider allowing towers or monopoles in major and minor arterial road corridor setback areas if the tower can be sited within existing mature vegetation or the topographical conditions are such that the visual impact of locating within the setback is less than a nearby location that adheres to the setback.
C. SAFETY AND HEALTH POLICIES

This plan addresses two main issues related to safety and health. The first is the potential for conflict between new towers or monopoles and existing airports. The Metropolitan Washington Airports Authority (MWAA) and the Town of Leesburg have expressed concern with coordination between the commercial public telecommunication providers, the County, and the airport authorities. The Plan calls for a commercial public telecommunications provider to demonstrate to the County that they have contacted the appropriate airport authorities prior to submission of a land development application so that any potential airport issues can be addressed.

The second issue relates to the appropriate abandonment of a site no longer maintained for commercial public telecommunication use. The County has included a policy to require that a site no longer used for commercial public telecommunications be returned as nearly as possible to pre-existing site conditions.

Policies

1. Applicants for any commercial public telecommunications facility shall demonstrate that they have complied with applicable regulations of the FCC and the FAA. If a proposed telecommunications tower or monopole is higher than 200 feet or within (5) five miles of either Dulles or Leesburg Airports, the applicant will provide verification that he/she has notified the appropriate airport authority (Metropolitan Washington Airports Authority or the Town of Leesburg) and that the FAA has determined that the proposed facility is neither a hazard nor an obstruction to aviation.

2. An applicant or its successors shall remove all unused structures and facilities from a commercial public telecommunication site, including towers and monopoles, within 90 days of cessation of commercial public telecommunication use or the expiration of the lease, whichever occurs first, and the site should be restored as closely as possible to its original condition.

D. IMPLEMENTATION POLICIES

The implementation policies specify strategies for the County to execute this telecommunications plan. The policies give guidance to applicants proposing new commercial public telecommunication facilities as well as outline further actions the County intends to take to implement these policies.
1. The County should initiate a *Zoning Ordinance* amendment to develop regulations that comply with this plan. The *Zoning Ordinance* performance standards for commercial public telecommunication facilities should be revised to be in conformance with these policies.

2. The County should maintain maps of existing and proposed telecommunication facilities, public facility sites, and areas of by-right zoning for telecommunication monopoles for information purposes.

3. The Joint Annexation Committees for Purcellville and Round Hill should be encouraged to adopt the County’s commercial public telecommunication policies for their Urban Growth Areas.

4. Require all applications for future monopoles and towers to:
   a. Demonstrate that the location proposed has resulted from the systematic review of all options from the hierarchy of County location preferences and justify the option selected.
   b. Demonstrate compliance with all design criteria. The applicant should provide a photo-image or other similar visual simulation to show the proposed tower or monopole in relation to its surroundings. The applicant should provide such visual imagery from several different perspectives to help determine the extent to which the facility could be designed to mitigate the visual impact on area residences and roads.
   c. Address the terms and conditions under which collocation by other users would be acceptable.

5. Applicants for proposed new towers should notify in writing and meet with citizens in the vicinity of the proposed site at least three weeks prior to the Planning Commission public hearing.

6. Applicants for proposed new towers are encouraged to provide space on the tower for Loudoun County Fire and Rescue communication purposes.