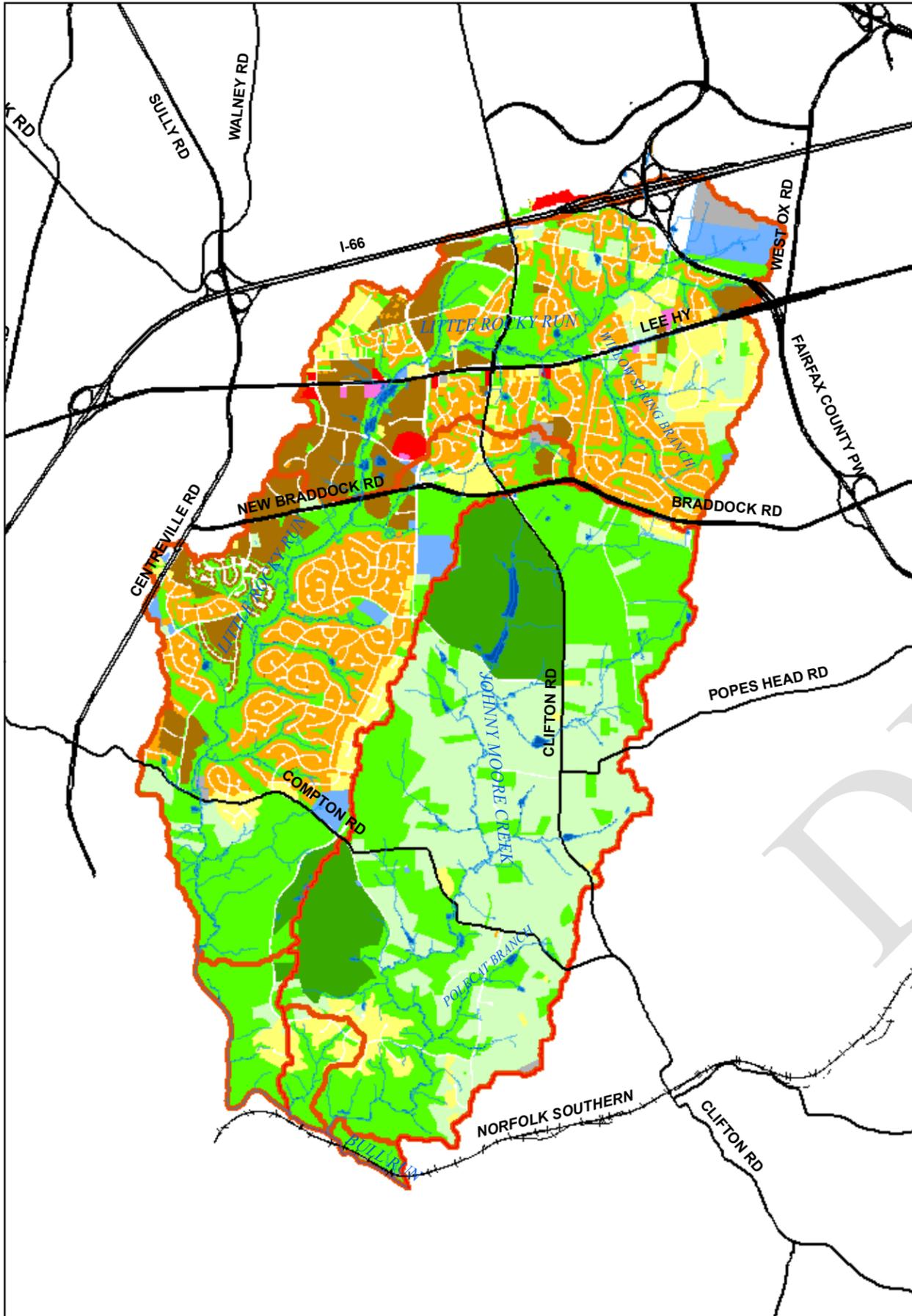
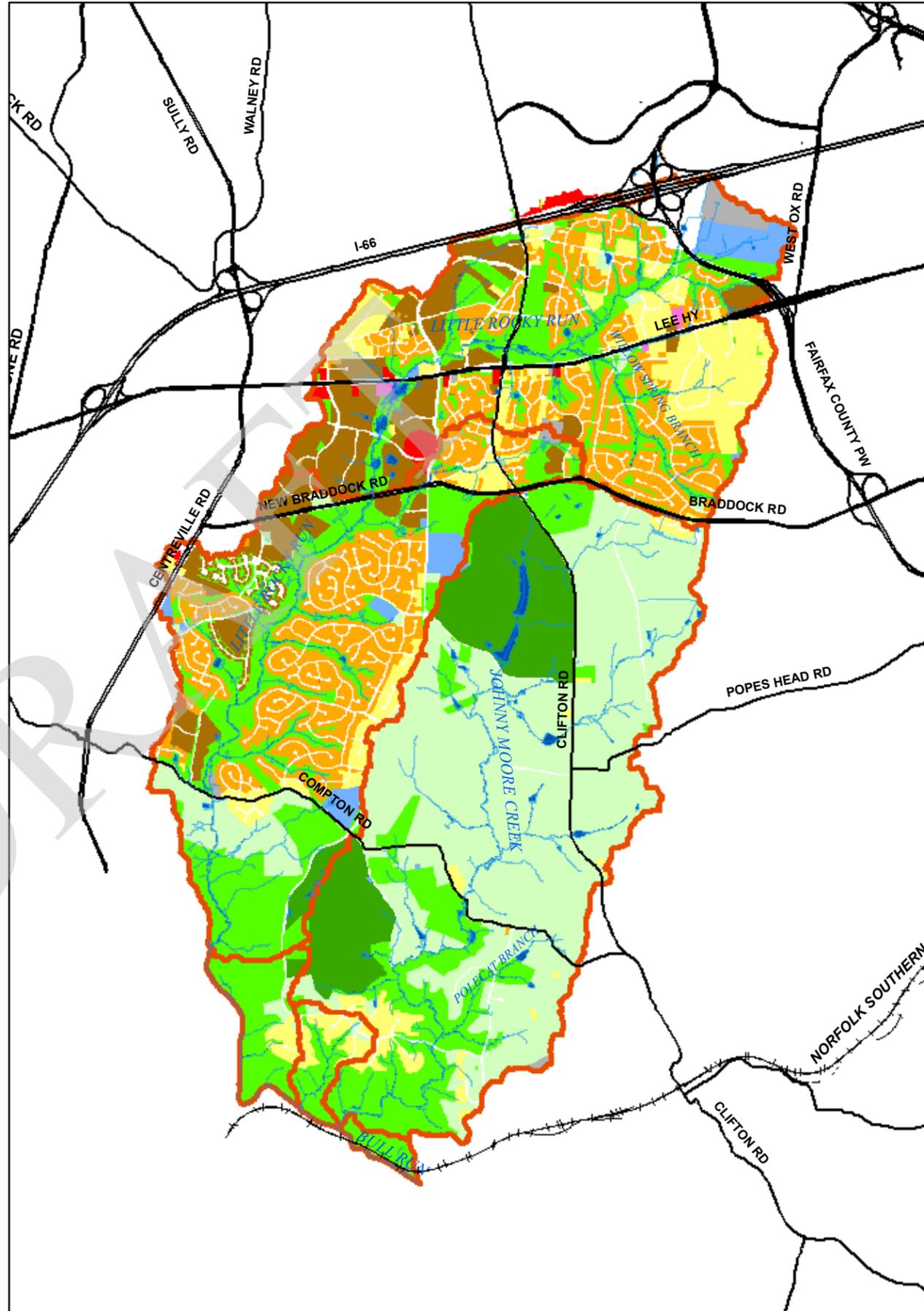


# Map 1-3: Existing and Future Land Use

Existing Conditions Land Use Map



Future Conditions Land Use Map



## Map 1-3 Existing and Future Land Use Maps

### Little Rocky Run / Johnny Moore Creek Watersheds

#### Legend

- Streams
- Major Roads
- Railroad
- JM watershed
- Watershed Management Areas
- Land Use**
- Estate Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Low Intensity Commercial
- High Intensity Commercial
- Industrial
- Institutional
- Golf Course
- Open Space
- Water
- Transportation



Scale



### 1.3 Little Rocky Run and Johnny Moore Creek - Review of Previous Studies and Data

Fairfax County has collected data and prepared reports on its watersheds for over 20 years. These reports were prepared by various agencies within the County with different missions and goals; therefore, the documents focus on a multitude of issues. In this chapter, the data and reports are summarized and their context and purpose is described.

Table 1-2 provides a listing of the available reports grouped according to their main topic area and presented in chronological order.

**Table 1-2 List of Reports Reviewed by Topic and Date**

Report	Date	Prepared By
<b>Topic: Data</b>		
Occoquan Environmental Baseline Report	February 1978	Parsons, Brinckerhoff, Quade & Douglas
Fairfax County Stream Water Quality Reports	Annually 1997-2002	Fairfax County Health Department
Fairfax County Stream Protection Strategy Baseline Study	January 2001	Fairfax County Department of Public Works & Environmental Services, Stormwater Planning Division
Fairfax County Stream Physical Assessment	August 2005	CH2M Hill
Annual Report on Fairfax County's Streams	November 2005 October 2006	Fairfax County Department of Public Works & Environmental Services, Stormwater Planning Division
Virginia Department of Environmental Quality Data: <ul style="list-style-type: none"> <li>• Virginia 2006 305(b)/303(d) Water Quality Assessment Integrated Report, October 2006</li> <li>• Benthic TMDL Development for Bull Run, Virginia, June 2006</li> <li>• Bacteria TMDLs for Popes Head Creek, Broad Run, Kettle Run, South Run, Little Bull Run, Bull Run and the Occoquan River, Virginia, October 2006</li> </ul>		Various: VA Department of Environmental Quality The Louis Berger Group, Inc. George Mason University
Virginia Natural Heritage Resource Database	Continuously updated	VA Department of Conservation and Recreation
<b>Topic: Policy</b>		
Infill and Residential Development Study	July 2000	VA Department of Planning & Zoning VA Department of Public Works & Environmental Services VA Department of Transportation
Fulfilling the Promise: The Occoquan Watershed in the New Millennium	January 2003	New Millennium Occoquan Watershed Task Force
Fairfax County Park Authority, Natural Resource Management Plan, 2004-2008	October 2004	Fairfax County Park Authority Natural Resource Management Project Team
<b>Topic: Proposed Projects and Improvements</b>		

Report	Date	Prepared By
Proposed Drainage Plan, The Occoquan Watersheds	April 1979	Parsons, Brinckerhoff, Quade & Douglas
Fairfax County Master Plan Drainage Projects	Continuously Updated	Fairfax County Department of Public Works and Environmental Services
Regional Stormwater Management Plan	January 1989	Camp Dresser & McKee
The Role of Regional Ponds in Fairfax County's Watershed Management	March 2003	Fairfax County Environmental Coordinating Committee, Regional Pond Subcommittee

The previous studies conducted by Fairfax County and others indicate that the Little Rocky Run and the Johnny Moore Creek watersheds are in fair to good condition. The studies recommended the use of innovative Best Management Practices (BMPs) and new Low Impact Development (LID) techniques, the preservation of trees and open space, and identified the need to update the Public Facilities Manual (PFM). The studies also identified opportunities to educate and involve the public, and to promote regional cooperation between agencies, citizens, and nongovernmental organizations.

### 1.3.1 DATA

#### Occoquan Environmental Baseline Report, 1978

The *Occoquan Environmental Baseline Report* was written by Parsons, Brinckerhoff, Quade & Douglas in February 1978, based on data collected in 1976. The report presented a comprehensive review of the environmental baseline conditions for the 11 watersheds in the southern area of the County that drain into Bull Run and the Occoquan Reservoir. The baseline water quality of the 11 watersheds in the study was rated “very good.” Two sites were sampled on Little Rocky Run at Lee Highway and Compton Road and one site was sampled on Johnny Moore Creek at Compton Road. The yearly log average fecal coliforms in 1976 (Table E-4 in the report) were 35 fecal coliforms per 100 milliliters of water (35/100 ml) and 24/100 ml for the Little Rocky Run site and 33/100 ml for the Johnny Moore Creek site.

The report also assessed the aquatic environment by surveying the aquatic fauna at two sites in the Little Rocky Run watershed and at two sites in the Johnny Moore Creek watershed (Table 7 and Figure 13 in the report). The sites along Little Rocky Run were at Braddock Road and at Compton Road, and the sites along Johnny Moore Creek were at Twin Lakes Road and near the confluence with Polecat Branch. The stream fauna quality was ranked “good” to “very good” on Little Rocky Run at Compton Road and on Johnny Moore Creek near Polecat Branch, “good” on Little Rocky Run at Braddock Road, and “fair” to “good” on Johnny Moore Creek at Twin Lakes Road.

Severe erosion was noted at several locations on Little Rocky Run, Johnny Moore Creek, and their tributaries. Along Little Rocky Run, severe erosion was noted in four areas upstream of Lee Highway, two areas upstream of Compton Road, and one area downstream of Compton Road. Along Willow Spring Branch, severe erosion was noted in one area slightly upstream of Lee Highway. An unnamed tributary to Little Rocky Run located south of Interstate 66 and west of Stringfellow Road was also experiencing one

area of severe erosion. Along Johnny Moore Creek, severe erosion was noted in one location downstream of Twin Lakes Drive, two locations downstream of Compton Road and the power line, and one location near the confluence with Polecat Branch.

The *Occoquan Environmental Baseline Report* noted severe sedimentation at three locations in the Little Rocky Run watershed and one location in the Johnny Moore Creek watershed. Two locations were noted along Little Rocky Run, one upstream of Lee Highway and one upstream of Compton Road. One location within the Little Rocky Run watershed was noted along Willow Spring Branch, upstream of Lee Highway. The one location within the Johnny Moore Creek watershed was noted on Polecat Branch, upstream of the power line.

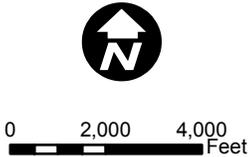
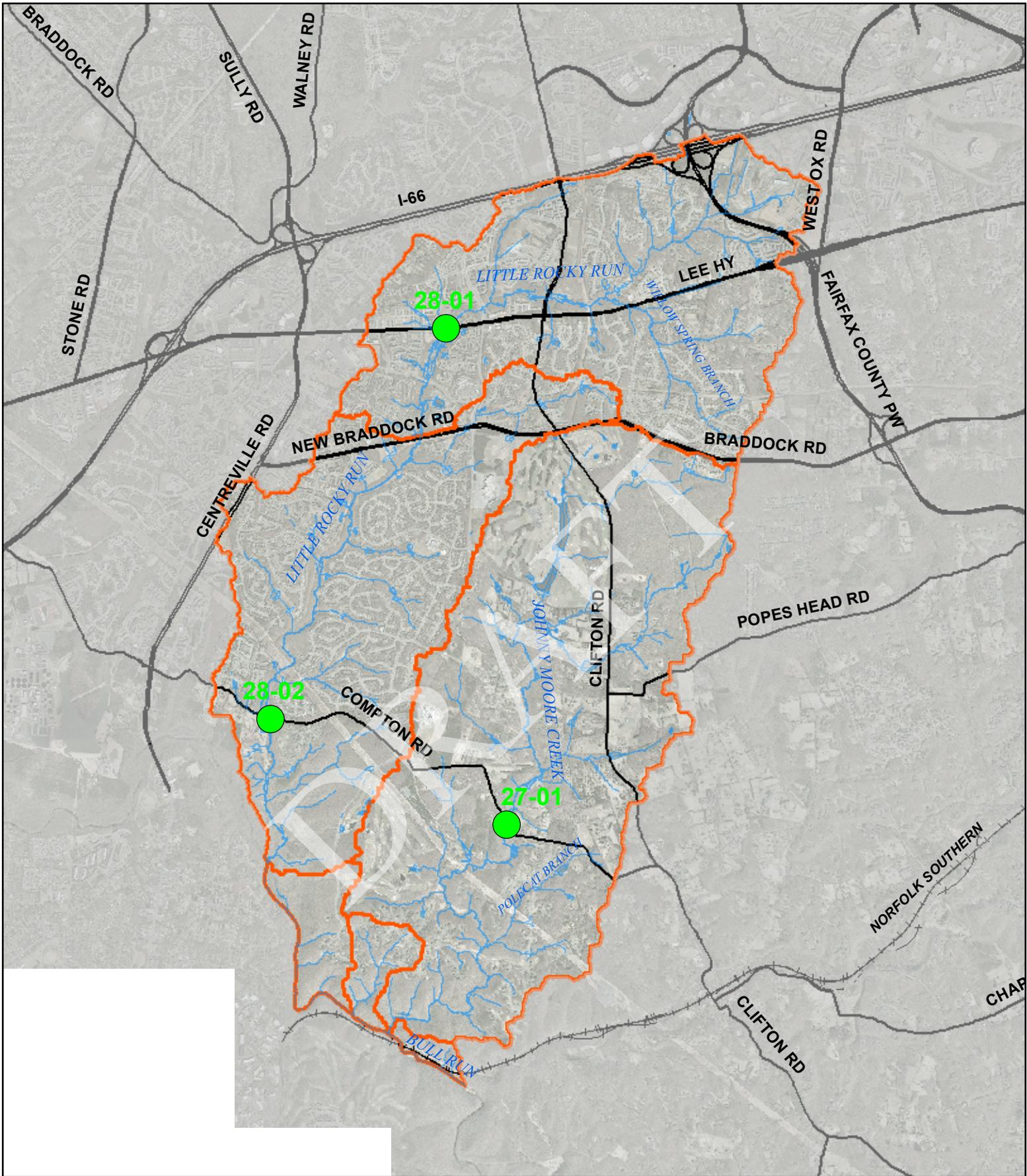
The data in this report provide baseline information that can be compared to more recent data collected for the *Stream Physical Assessment* and the *Stream Protection Strategy* reports. Little Rocky Run and Johnny Moore Creek have more recent stream physical assessments that were performed in 2003 (*Fairfax County Stream Physical Assessment*, 2005). The more recent assessments and field observations conducted as part of this watershed planning study will be used to identify erosion and sedimentation areas for mitigation in the Watershed Management Plans.

#### **Fairfax County Annual Stream Water Quality Reports, 1997 through 2002**

The Fairfax County Health Department monitored stream water quality at 72 sampling sites throughout the County from 1986 to 1999. In 2000, 13 new sites were added, totaling 85 sampling sites. In 2001 and 2002, only 84 sites were sampled. The water quality sampling program was transferred to the Department of Public Works and Environmental Services in 2002 (see the *Annual Report on Fairfax County's Streams*). Reports from 1997 to 2002 were reviewed in preparation of this document.

Two water quality sampling sites were located in the Little Rocky Run watershed and one water quality sampling site was located in the Johnny Moore Creek watershed. The locations of the sampling sites are shown on Map 1-4. Site 27-01 is located on Johnny Moore Creek, and sites 28-01 and 28-02 are located on Little Rocky Run. The three sampling stations from the *Occoquan Environmental Baseline Report* are approximately in the same locations as those used in the *Stream Water Quality* reports. In 2002, 15 water samples were collected from site 27-01, 16 water samples were collected from site 28-01, and 18 water samples were collected from site 28-02. These samples were evaluated for fecal coliform, dissolved oxygen, nitrate, nitrogen, pH, total phosphorous, temperature, and heavy metals. These parameters indicate the amount of pollution contributed from manmade sources and help to evaluate the quality of the aquatic environment. Information regarding the parameters and data collected for the *Fairfax County Annual Stream Water Quality Reports* (1997-2002) can be found on the Fairfax County website at <http://www.fairfaxcounty.gov/hd/streams/>.

The average dissolved oxygen concentration for all three sites in the two watersheds was between 6 and 10 milligrams per liter (mg/l). This is above the minimum standard of 4.0 mg/l considered suitable for aquatic life. None of the samples from site 27-01 on Johnny Moore Creek or site 28-02 on Little Rocky Run had dissolved oxygen concentration less than 4.0 mg/l. However, 18 percent of samples collected from site 28-01 on Little Rocky Run showed a dissolved oxygen concentration of less than 4.0 mg/l. The 2002 report states that 54 percent of the samples measured below 4 mg/l were collected during the



- Monitoring Sites
- Streams
- Watershed Management Areas
- Major Roads
- | Railroad

Map 1-4  
Water Quality Monitoring Sites  
Little Rocky Run / Johnny Moore  
Creek Watersheds