4. Future Efforts

A summary of proposed future efforts in the county's comprehensive monitoring program are presented here. It is anticipated that these efforts will result in more representative countywide data, improved identification of bacteria hotspots, more comprehensive evaluation of trends, and help the prioritization of capital improvement projects to have the most potential to benefit stream biological communities.

Revised Site Selection: In future sampling efforts, a single-stage sampling procedure will be implemented within each stratum to eliminate the need to use correction factors based on sampled stream segment lengths (see Appendix G) when computing stratum means and variances. In addition, a more extensive stratification strategy will be explored, taking into account factors such as physiographic province, and land use within the watershed.

Future Bacteria Sampling: Starting in 2005, the Health Department will drop fecal coliform altogether as an indicator of bacteria contamination, and switch to EPA recommended and the state's standard of enterococci and *E. coli*. Additionally, in 2005 the original Health Department bacteria sampling stations will be dropped. New locations will correspond with the 2005 benthic macroinvertebrate and fish sampling locations. This coordination with the Stormwater Planning Division randomized sampling locations will give provide comprehensive countywide assessment of bacteria levels in the waterways. Each of the new 2005 sites will be sampled four times a year, once per quarter, in order to examine how seasonal conditions affect the level of E. coli and enterococci in the waterways. In the future, "hot spots" or areas with consistently elevated bacteria counts will be tracked and the location(s) of the problem will be investigated with coordinated efforts of Stormwater Management, Wastewater Management, and the Health Department. To isolate these "hot spots" new techniques may be used including Optical Brighteners Monitoring.

Optical Brighteners Monitoring is a technique used to identify potential illicit waste water discharges into the storm drainage network. Optical brighteners are found in most household and industrial laundry detergents and fluoresce or glow under a UV light. To aid in narrowing down the area where potential cross-connections (between the sanitary and storm sewer systems) may be occurring, these techniques may be applied in the upper sections of the site's sub-watershed where streams regularly have bacteria concentrations well above the state standard.

Volunteer Data and Trend Stations: Fairfax County continues to use volunteer data to supplement county data in evaluating general trends. Possible additional volunteer sites will be identified on a yearly basis after random selection of county sites is completed. In working together with volunteer monitoring organizations such as Audubon Naturalist Society and Northern Virginia Soil and Water Conservation District, the county effectively doubles the number of sites it monitors in a given year.

Volunteer data will be standardized to be compatible with county data and data collection will be centralized. Volunteer data will eventually be collected online in an Access database utilizing the same format as the county's data. Land use in each subwatershed will be

characterized to aid in trend analysis. Information and photos of all volunteer sites will be available in the county's GIS-based Stream Assessment Tool.

Project-Specific Monitoring: Currently there are several stream restoration projects that are in the design stages in the Stormwater Planning Division. As projects like these are identified in the watershed management plans, the Stormwater Planning Division, with the help of others, will monitor these locations to assess how quickly biological communities recover and differ from the original community.