

## **6.0 IDENTIFICATION OF OPPORTUNITIES TO IMPROVE WATER QUALITY**

For each of the water quality problems with a substantial potential for restoration benefit, corresponding opportunities for improving existing conditions were identified (Table 5-1). Site-specific opportunities were included, as were general opportunities that could apply to many areas and thus address cumulative effects throughout the watershed.

Currently, developed areas of the watershed are not extensive nor highly dense; the current percentage of impervious surface is also quite small. The design of newer developments appear to conform to current standards for stormwater management. In contrast to more heavily urban areas of Maryland, where intensive development occurred prior to stormwater management requirements, there do not appear to be severe problems associated with older development. Therefore, opportunities for Frederick County to retrofit existing development in Lower Bush Creek watershed with stormwater management controls are limited.

Many of the most effective opportunities to maintain and improve stream quality in Lower Bush Creek watershed in the face of future development are included in Table 5-1. In addition, these suggestions could be applied effectively to future construction projects at other locations in the watershed. While it is too late for some development (e.g., construction of the Urbana sewer line was near completion), suggestions to reduce impacts to stream quality should be incorporated into all plans for future actions (e.g., construction of the Bush Creek sewer interceptor).

Frederick County should ensure that new developments and stormwater management facilities are designed, constructed, and maintained to minimize impacts to stream quality. For example, construction of in-line stormwater ponds should be discouraged in favor of measures outside of the stream channel to avoid alterations of stream habitat. In addition, it is critical to address development impacts occurring during the construction phase. In the long-term, facilities should be inspected and maintained regularly to assure that stormwater management structures function as intended.

Even with strict adherence to current stormwater control practices and implementation of BMPs for erosion and sediment control, it will be difficult to prevent any diminishment of the current level of stream water quality and habitat integrity in the watershed. Some degree of stream degradation is likely to occur; no practices are 100% effective in reducing sediment and erosion. However, without such measures, far greater degradation would likely result.

There are also several specific opportunities to improve current water quality by stemming other nonpoint pollution sources. Grazing impacts at several locations could be greatly reduced by working with landowners to install cattle fencing and limit livestock access to streams. Runoff from cropland could be reduced by riparian buffer restoration. Collaboration with local resource conservation agencies would be an effective means for the Division of Public Works to undertake public outreach and offer technical assistance to landowners so they can implement these agricultural BMPs.

Impacts of low-density residential areas and golf courses could also be reduced by working with community associations to provide public outreach on important issues such as lawn care practices, streamside vegetation, and septic system maintenance, where applicable. Given the extensive development that is slated to occur in this watershed, the future actions of individual landowners will play a critical role in maintaining stream quality.