A Use Attainability Analysis (UAA) is a scientific assessment of a water body’s physical, chemical, and biological conditions. This assessment provides the foundation for a lake-specific best management practices (BMPs) plan that is used to maintain or attain the existing and potential beneficial uses of a lake, such as swimming, fishing, or aesthetic viewing.

**Goals for Bush Lake**

*Nine Mile Creek Watershed District*

**Water Quality Goal:**
Level I Classification—full support of swimmable use and a Secchi disc reading $\geq 2.0$ m.

**Investigative Techniques**

The Bush Lake UAA includes both a water quality analysis and prescription of protective measures for Bush Lake and its watershed. This analysis and prescription is based on:

- Historical water quality data
- Aquatic plant surveys
- Intensive lakewater quality study
- P8 computer simulation modeling of runoff water quality
- Lake hydrologic and phosphorus budget analyses (see below)
- Best management practices (BMPs) analysis

Atmospheric deposition accounts for more than 46 percent of Bush Lake’s annual phosphorus load.

This graph illustrates Bush Lake’s historic and predicted future summer-average water clarity (transparency). Transparency is measured as the depth at which a black-and-white patterned disc (a Secchi disc) disappears from view as it is lowered into the water.

The land use on a lake’s watershed directly impacts the water quality in the lake. Therefore, the Bush Lake UAA assessed existing and ultimate watershed land-use conditions.
**Water Quality Problems**

**Biological Issues**

Problem: Exotic lake weed species (see left)

Cause: Urban stormwater runoff conveying large amounts of phosphorus to the lake; curlyleaf pondweed, Eurasian watermilfoil, and purple loosestrife

**Recommended Remedial Measures**

**Conventional Runoff BMPs**—No further BMPs are required to meet the district’s water quality goals.

**Water Quality Goal Modification**—More stringent goals are recommended to provide greater protection of Bush Lake.

- Total phosphorus concentration \( \leq 24 \) micrograms per liter
- Chlorophyll \( a \) concentration \( \leq 7 \) micrograms per liter

**Biological Management Techniques**

- Aquatic plant management
- Whole-lake fluridone treatment to control Eurasian watermilfoil and curlyleaf pondweed

*Implementation of remedial measures may change based on municipal petitions.*