Farmington River Watershed Association Water (FRWA) Quality Monitoring and Related Programs

In 2003 FRWA initiated a water quality monitoring program to fill in gaps in existing data and to support the DEP both in documenting the high water quality of the river system and in identifying trouble spots. The data collected has contributed to the baseline data and provides documentation of changes in water quality in the Farmington River and tributaries.

A well established network of volunteers, working with the state, towns and other partners, assists in monitoring and reporting on water quality. The volunteers also help with public education and the work of protecting this vital resource. This successful program has resulted in greater local understanding both of the high quality of the Farmington River and also of the factors that influence lower quality stretches and the factors that cause fluctuations of water quality. The program also helps determine what projects are needed to improve the condition of the resource and to further educate the public regarding the benefits of a clean water resource.

The monitoring program is designed to involve volunteers, to have a strong educational element and at the same time provide for the collection of key scientific data that is needed to evaluate the health of the watershed. The program is comprised of the following parts:

1. **Bacteria Monitoring**- Given the heavy recreational use of the Farmington River and Salmon Brook it is important to have a monitoring program to assess the safety for contact with water. Approximately 20 sites are monitored on a rotating bi-weekly basis during the recreational season to establish baseline data and monitor changes over time. The largest source of bacterial contamination is a result of stormwater run-off. Results of this program are reported to the DEP and stored in a shared database. DEP utilizes this data in their water quality assessments.

2. **Temperature Monitoring**- FRWA works with the DEP to monitor water temperature in Farmington River tributaries using HOBO Water Temp Pro temperature probes supplied to the DEP as part of a volunteer monitoring equipment loan program sponsored by the US EPA. The aim of this ongoing study is to collect and analyze water temperature data during the warm summer months to complement ongoing watershed efforts to protect/restore aquatic habitat especially for species that thrive in cold water such as brown and brook trout. There are currently eight sites in the Farmington River Watershed streaming 24-hour data on temperature data to the DEP.

3. **Surface Water Monitoring** – Annual surface water monitoring for chemistry, metals and bacteria occurs from April through November in the upper Farmington River and tributaries.

4. **Rapid Bioassessment in Wadeable Streams & Rivers** – This is a volunteer based program that's provides supplementary data to DEP regarding high water quality sites and indicators of possible declines in stream health. The FRWA selects eight to ten sites per year for evaluation. The volunteers under staff guidance, collect and report on the presence of macroinvertebrate species sampled from the streams. Sensitive to water quality conditions, these organisms are indicative of water quality over time and are therefore an excellent way to monitor ongoing or declining health of the streams.

5. **Waste Water Sampling** – Waste water sampling was conducted in the upper Farmington River Watershed to measure for compounds not typically treated by sewage treatment plants. FRWA worked in collaboration with the Farmington River Coordinating Committee and the USGS on this project to document whether a host of household product, hazardous wastes and pharmaceuticals could be detected above and below the two sewage treatment plant outfalls.

6. **Stream Walking Program**- This is another educational volunteer based program designed to collect information on the physical condition of streams and was the first monitoring program implemented by FRWA. Over a six year period volunteers identified impairments, confirmed outstanding and pristine conditions and helped to identify conservation measures necessary to protect the streams. The majority of streams in the watershed have been observed as a result of this effort.

7. **Vernal Pools Monitoring**- Vernal pool locations have been identified in many of the towns in the Watershed through a mapping process. In some of the towns the FRWA has sponsored detailed training for volunteers to learn how to field check vernal pools by identification of amphibians and aquatic life that are dependent on vernal pools for breeding.

8. **Pharmaceutical Pick-Up Day**- FRWA held Connecticut's first ever collection and environmentally safe disposal of unwanted medications. 59 gallons of unwanted and expired drugs that may otherwise have ended up disposed of in sinks and toilets, ultimately contaminating the Farmington River were collected and safely incinerated. Flushed medications slip through sewage treatment plants and enter the river where they may pollute surface water, and into septic systems where they can contaminate groundwater, and in some cases, may affect drinking water. These contaminants have been implicated in widespread reproductive defects, immune system disorders, and cancers among many fish and wildlife species, and in people who regularly drink water containing these compounds.

9**. Streamside Buffer Planting Projects-** Restoration of plants to the stream corridors is an important component of the monitoring program because a streamside buffer is a proven method for improving water quality by filtering runoff, and reducing inputs of sediment, nutrients and contaminants. Vegetation along streams also provides shade thus reducing water temperature and that is good for water quality and aquatic life.

Proposed Expansion of Water Quality Monitoring Program includes:

1. Provide support to ongoing monitoring program.
2. Expand temperature monitoring program to additional tributaries as well as evaluate the natural cold water variability of the Salmon Brook.
3. Develop an accessible database as a clearinghouse for all water quality data.
4. Conduct sampling required to develop a Total Maximum Daily Load (TMDL) analysis for impaired sites in streams.
5. Assess the streams for existing barriers to fish passage and seek solutions for continuity of fish access.
6. Convert the Stream Walk program to an Adopt a Stream program for continuity of monitoring and protection.