

**BOARD OF ALDERMEN**

**ITEM NO. D(3)**

**AGENDA ITEM ABSTRACT  
MEETING DATE: December 5, 2006**

**TITLE: A Report on Benthic Macroinvertebrate Surveys in Bolin Creek**

<b>DEPARTMENT: PLANNING</b>	<b>PUBLIC HEARING: YES __ NO <u>X</u></b>
<b>ATTACHMENTS:</b> <b>A. Resolution</b> <b>B. Benthic Macroinvertebrate Surveys in Bolin Creek from Carrboro, North Carolina (August 2006)</b> <b>C. Staff Report</b>	<b>FOR INFORMATION CONTACT:</b> D. Will Autry, <b>918-7326</b>

**PURPOSE**

Conducting benthic macroinvertebrate surveys, or “bug pickin’,” is an excellent method for evaluating a stream’s water quality. Ecological Consultants has been contracted by the Town for annual bug pickin’ in Bolin Creek since 2000, and staff recently received the 2006 benthic macroinvertebrate survey report. A brief report has been prepared describing this year’s results, how they relate to those of previous years, and staff’s recommendations for future studies.

**INFORMATION**

A benthic macroinvertebrate survey is the collection, by a number of different methods, of animals lacking internal skeletons which live on or near the bottom of a waterbody. These “bugs” include crawfish, mayflies, nymphs, worms, snails, etc. Unlike chemical or physical parameters which indicate a snapshot of stream conditions, the number and diversity of benthics is a better indicator of a stream’s ongoing water quality. Because the benthics are relatively immobile, the distribution of more or less sensitive organisms in a particular location is closely correlated with the water quality they experience there.

Ecological Consultants began benthic macroinvertebrate surveys along Bolin Creek in Carrboro in 2000. The first year, sampling events were conducted quarterly; in subsequent years the surveys have been annual. Over this period, most of the sampling events have been conducted in four locations, providing an opportunity to analyze changes at each site over time.

The bioclassification ratings at the four major sampling locations have been trending steadily in the fair range since recovering from the drought of 2002. This year’s data is in line with this trend, except for one site which was not rated because beavers have built a dam in the area, preventing a representative sample. Based on this information, the staff has reviewed Ecological Consultants’ report and presented recommendations in attached staff memo (Attachment C).

**FISCAL IMPACT**

There would be no additional fiscal impact in continuing the monitoring program recommended by staff. If the Board elected to increase monitoring locations, frequency, or parameters as suggested by Ecological Consultants, there would be an associated cost increase relative to the level of additional monitoring.

**RECOMMENDATION**

Staff recommends that the Board accept the attached report describing the most recent benthic macroinvertebrate survey results and the benthic survey trend analysis.