

## Columbia Canal Embankment Repair

July 30, 2010

A portion of the Columbia Canal embankment was cleared of vegetation today so it could be inspected for seepage of water from the canal toward the Broad River. In the past week, a 6 by 3 foot section of the asphalt pavement atop the canal berm sank approximately 4 inches, suggesting the possibility of a water seep. A 26 foot wide area along the river side of the slope was hand cleared of undergrowth to allow engineers to determine the extent of the problem and to plan any necessary repairs.

This work is of critical importance because the canal's primary purpose is to provide water for the Canal Water Plant in addition to provision of hydroelectric power at the Columbia Hydro downstream. It is imperative to prevent failure of the embankment in order to protect our water supply to for city customers.

The work was done in an area just upstream of the I-126 Bridge. Mature trees were not disturbed during the clearing.

Typically, earthen embankments and levees like the Columbia Canal are grassy slopes, free of woody vegetation. This allows routine inspection to identify seepage areas and repair them before they become worse or cause embankment failure. Because the Columbia Canal embankment is heavily vegetated, seeps have developed unseen over the years.

At present, there are nine known areas along the canal embankment where water is seeping through the berm toward the Broad River. Plans are in the works to visually inspect the entire length of the Columbia Canal Embankment under the direction of the Federal Energy Regulatory Commission, (FERC) who licenses the Columbia Hydro. Those plans involve clearing all undergrowth and trees less than four inches in diameter from the river side of the embankment.

The FERC recently instructed the City of Columbia to "mow and trim all of the thick vegetation along the interior and river side of the canal embankment," including the removal of small trees in order to determine the integrity of the embankment. Based on this determination, the City will then take any necessary remedial action.

To make that possible, the City will undertake the following steps:

- All underbrush, shrubbery, saplings and dead trees will be hand cut from the canal embankment with little or no ground disturbance. (SEE ILLUSTRATION)
- A six foot wide path will be cleared along the toe of the embankment (including trees 4 inches in diameter and less) to enable periodic visual inspection of the slope

Once this work has taken place, all seeps, dead trees, animal burrows will be cataloged. Any unsafe conditions such as slope erosion and dead trees that may cause piping will be immediately repaired. (Piping occurs when water flows along pathways opened along decomposing trees' roots zones)

A comprehensive plan for repair and maintenance of the canal can then be designed, using the findings from this study along with previous surveys.

Riverfront Park, situated along the canal berm, is a popular Three Rivers Greenway trail noted for its rich wildlife habitat. Concerns have been raised about the effect of clearing three miles of woody vegetation along the river corridor

The City of Columbia is working with environmental groups coordinated by Sustainable Midlands to lessen negative impacts of the clearing project. Native plants that provide food and cover for wildlife will be identified for potential propagation. Mature grapevines with high canopy vegetation will remain in place. The FERC is involved in ongoing discussions with the City and resource agencies about the project.

*This document was updated on August 2, 2010.*