



Chattanooga Buffer Tool Summary Memorandum

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Prepared by:



Summary of Work

The City of Chattanooga's Water Quality (WQ) Buffer Program is one of several tools that protect the City's water quality. The Water Quality group regulates impacts to riparian buffers along streams and provides compensatory mitigation options for unavoidable impacts that occur with land development. The program can seem somewhat complex to the regulated public and can present challenges to City staff for administration. WK Dickson was engaged to assess the Buffer Program, make recommendations to streamline the mitigation process, and to develop tools for improved efficiency for both applicants and City staff.

After reviewing the City's current WQ Buffer Mitigation Program, relevant ordinances, and staff procedures, WK Dickson recommended simplified definitions and calculations for determining both WQ buffer impacts and required mitigation to improve consistency and efficiency.

Clear, concise definitions and simplified mitigation ratios maintain the City's priority to protect water quality while also reducing administrative burdens for City personnel implementing the WQ Buffer Program. The regulated public may also better apprehend the requirements for land development within WQ buffers and more easily navigate the permitting process when impacts require mitigation.

WK Dickson worked with City staff in an iterative process to develop an interactive spreadsheet tool (the Buffer Tool) based on the revised WQ buffer calculations, providing consistent and accurate output of WQ buffer mitigation requirements based on most foreseeable combinations of impacts to protected riparian buffer zones.

The project deliverables to the City from WK Dickson included four files:

1. A Microsoft Excel™ file the City can have available for users to download and utilize for calculating stream buffer impacts and stream buffer mitigation requirements.
2. A Microsoft Word and PDF file the City can have available for users to download as a troubleshooting guide.
3. A PDF of a process diagram to guide City personnel as new users of the spreadsheet tool.
4. This Summary Memorandum.

Overview of the Buffer Tool

The Buffer Tool is an Excel™ spreadsheet that includes seven tabs. The first two tabs provide a Quick Start Guide and the definitions of terms used throughout the spreadsheet tool. The remaining tabs guide the user through steps for data entry with instructions incorporated into the spreadsheet. The tool is dependent upon the user providing specific information on the project location's watershed and the type of water resource located on the property. The Buffer Tool provides guidance on finding this information on the TDEC Division of Water Resources Public Data Viewer. Error messages pop up if inappropriate data are entered.

After the user provides information on the watershed and protected water resource, macros within the Buffer Tool calculate the total existing WQ Buffer area based on user input. The Buffer Tool further guides the user through calculations of buffer impacts and proposed on-site and off-site mitigation to

compensate for impacts to Water Quality buffers. The Buffer Tool notifies the user when proposed mitigation measures satisfy mitigation requirements.

Limitations of the Buffer Tool

The Buffer Tool requires the user to be familiar with general knowledge of the project's watershed and the water resource on the property. To help guide users through this process, WK Dickson incorporated user friendly instructions throughout the spreadsheet to facilitate the customer's experience.

The Buffer Tool requires the user to be familiar with how to calculate the WQ Buffer area, the area of impacted WQ Buffer, the area of proposed buffer mitigation, and the length of stream mitigation proposed.

The current form of the Buffer Tool does not have a GIS interface and is not able to georeference project location information.