

CEDAR LAKE WATER LEVELS AND WATERSHED PLANNING ASSISTANCE GREENBUSH, MI

Kieser & Associates (K&A) has been providing ongoing lake and watershed consulting services to the Alcona-Iosco Cedar Lake Association (AICLA) since 2004 to address local hydrologic and anthropogenic factors influencing lake level conditions during summer recreation, low water periods. In the summer of 2005, K&A completed the first phase of a three-phased approach that compiled available information, confirmed lake volume and watershed boundaries through field reconnaissance surveys, established low-technology field equipment and completed a preliminary mass balance calculation of estimated gains and losses of lake water as influenced by local and regional conditions.

A Phase II investigation further characterized manageable factors influencing lake levels and more formally identified in-lake and watershed management and/or structural solutions to help maintain lake levels during critical summer months. A detailed network of shallow and deep groundwater level monitoring wells, continuous lake level gauging on daily precipitation monitoring provides a defensible and robust data set to assess conditions and

implementation options. Findings have revealed that 75% of the lake shoreline was losing water. Storm sewers directing runoff away from the lake were the most significant cause of the greater than 2-foot annual water level drop in this 5-foot deep, 1,000-acre lake.

Given the complexity of hydrologic issues on the lake, its very limited watershed area (about 3,000 acres) and other pressures on the lake and watershed, the AICLA petitioned their Cedar Lake Improvement Board (Lake Board) to retain K&A for developing a watershed management plan (WMP) funded through a tax assessment. The USEPA-approved WMP, completed by K&A in 2011, outlines a number of approaches to protect and restore critical areas for maintaining lake levels and managing a variety of other water quality, aquatic plant and fisheries concerns. The WMP, supplemented by a K&A 2010-2011 Lake Level Augmentation Feasibility Study, prioritized implementation options for improving natural

sources and aquifer testing to explore groundwater pumping options.

Fundamentally, these detailed studies were necessary for visioning sound management options for Cedar Lake...well beyond simple solutions that might be suggested at first glance or with just the traditional seasonal lake monitoring and data reporting.

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Project Costs:
\$179,700 (K&A)

Project Duration:
August 2004 - present

