



BUNNELL-LAMMONS ENGINEERING, INC.
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS



Bridge over the Dam Engineering Summary

Background

The dam, itself, as a structure to maintain the lake at Lake Junaluska is secure and safe. It is inspected on a regular basis. But, the bridge over the dam is in need of repair. The bridge was closed to vehicular traffic on September 1, 2016 following a visual inspection of the support system for the bridge by the engineering firm BLE. BLE has completed detailed analyses of the support structure to evaluate options for repair and to develop cost estimates which are summarized below.

Options

- **Option A – Restore the bridge for both vehicular and pedestrian use**
 - The support structures for the vehicular portion of the bridge would be replaced and repaired to restore the bridge for use by both vehicles and pedestrians.
 - Estimated cost range - **\$1,386,000 to \$1,756,000**
- **Option B – Restore the current vehicular bridge for pedestrian use**
 - The support structures for the vehicular portion of the bridge would be replaced and repaired to a level that is appropriate for pedestrian use.
 - This option would allow for the potential development of attractive areas such as flower beds and/or gathering areas in addition to the pedestrian walkway. (Such additional costs are not included in the estimate.)
 - Estimated cost - **\$746,000**
- **Option C – Preserve and repair the current pedestrian bridge**
 - The support structures for the pedestrian portion of the bridge would be repaired for the long-term use of this portion of the bridge. The pedestrian portion of the bridge is supported by the current vehicular support structure which would need some repair.
 - The west-end portion of the current vehicular bridge would also be repaired so maintenance vehicles can safely access the gates for the dam.
 - Estimated cost - **\$586,000**
- **Option D – Close the bridge to both vehicular and pedestrian traffic**
 - The roadway and pedestrian portions of the bridge over the dam would be removed.
 - It is essential to maintain access to the gates of the dam. Therefore, the west-end portion of the bridge over the dam above the gates which control the lake level would need to be repaired and maintained for access by service vehicles.
 - There was a strong consensus among the Board of Trustees at their March 2017 meeting that this was not a serious option but is presented as the lowest cost option.
 - Estimated cost - **\$290,000**