

**BEC Committee Members:** Bill Beck, Dick Blum, Michael Dourson, John Jass, Alan Klaas, Don Lohrentz, Scott Miller, Chris Schumann, Jim Woell-chairperson

Beach Erosion Committee  
Final Report to the Lutheran Camp Association Board of Directors  
May 26, 2007

### **Introduction**

In October of 2005, the LCA Board of Directors established the Beach Erosion Committee and charged the committee with the following task:

To research and develop a proposal for the purpose of finding a long-range, effective solution regarding the preservation of Camp Arcadia and its buildings and grounds while maintaining a usable, accessible, safe and environmentally responsible shoreline.

To this end, the committee has been researching erosion control methods, contacted and consulted with renowned experts in the field of coastal protection and restoration, conducted a scientific peer review of data and evidence regarding erosion control methods and made every attempt at performing due diligence in regards to the task assigned by the LCA Board of Directors.

### **Process**

For the past two years the BEC has been conducting research, consulting with experts, gathering proposals and seeking a scientifically credible long range solution to the erosion problems that have plagued our shoreline since the inception of Camp Arcadia. In August, 2006, a scientific peer review was conducted by an independent panel of scientific experts and engineers with credible experience in the area of shoreline erosion and protection. The panel was selected by an independent firm. This was done to insure a balanced, non-prejudicial membership on the panel. The recommendations from this panel are listed below with the actions taken by the committee in order to respond to these recommendations. (For specific details from the panelists under each recommendation, please visit the camp arcadia website, click on the "beach" title and download the Final Recommendations report.

Recommendation from Peer Review:

#### **1. Removal/replacement/renovation of existing shore protection structures.**

BEC Response: The concrete pier in front of the Inn will be removed, the wooden shore-perpendicular groin structures will be made physically safe for our guests and the remainder of our shoreline will be cleaned up in order to remove hazards and make our greatest asset more usable and accessible for our guests.

Recommendation from Peer Review:

#### **2. Request the placement of Army Corps of Engineers' Arcadia Navigation Channel's annual maintenance dredge spoil north of Arcadia public beach.**

BEC Response: In 2006, the Army Corps of Engineers responded to requests from BEC and the Village of Arcadia to have the dredge spoils from the Arcadia Harbor Channel placed at the maximum northerly point allowed by the contractors agreement with the ACOE. This point was approximately 3000 feet north of the harbor channel and the spoils were placed in the water in front of the public beach. After a conversation with Lt. Col. Donahue at the Detroit District ACOE on May 10, 2007, it was discovered that there are no contracts being let nor funds available for dredging the Arcadia Harbor channel this year.

**BEC Committee Members:** Bill Beck, Dick Blum, Michael Dourson, John Jass, Alan Klaas, Don Lohrentz, Scott Miller, Chris Schumann, Jim Woell-chairperson

Recommendation from Peer Review:

**3. LCA should undertake studies of existing camp shore protection structures as well as coastal processes and historic recession rates within an area several miles to the north and south of the Arcadia Lake Navigation Channel to document pre- and post-channel construction conditions, including vegetation.**

BEC Response: Bids were received to have a detailed analyses of Camp Arcadia's existing shore-protection structures performed. It was determined that the cost of this analyses was prohibitive due to the knowledge that our existing structures have already outlived their predicted life span and need to be replaced.

Recommendation from Peer Review:

**4. LCA should initiate Army Corps of Engineers Section 111 and Shore Protection Project requests with the LCA's federal legislative delegation to investigate the impact of the Arcadia Lake Navigation Channel on shore damage and establish possible action to mitigate documented shoreline damage.**

BEC Response: It has been determined that documentation for this type of study is easily obtainable. However, after consulting with a leading environmental lawyer in the state of Michigan, it was also learned that there are no funds available for Section 111 studies and that to pursue and be granted funding would result in the loss of any and all local control over a solution. The committee had been tasked to fulfill a charge and a Section 111 study, even if available, would not help us meet our charge.

Recommendation from Peer Review:

**5. The final recommendation entails detailed evaluation of previously outlined options.**

**1. Do nothing**

**2. Retreat**

**3. Beach nourishment**

**4. Shoreline protection structures with a beach nourishment component.**

**This evaluation should consider overall expense, both initial and ongoing; relative merit in light of main LCA Beach Erosion Committee objectives; and relative merits in terms of long term protection of the property compared to enhancement of the recreational beach. The evaluation may also identify additional options not yet recognized as possible solutions. An analysis of the options, including risks and cost analysis of each would be part of the study to aid the Board in future funding plans and decisions.**

BEC Response: The committee constructed a Cost/Benefit - Cost/Risk Analyses model in order to help us determine the overall costs of proposed solutions and their break even points based on information known to be relevant to the process. Items researched included: cost of materials, lifespan of proposed solutions and long term affects of each option mentioned in recommendation 5 from the panel.

### **Recommendations from the BEC to the LCA Board**

Throughout the course of multiple phone conference meetings, email discussions and some face-to-face meetings, the committee has reached consensus in recommending the following:

**BEC Committee Members:** Bill Beck, Dick Blum, Michael Dourson, John Jass, Alan Klaas, Don Lohrentz, Scott Miller, Chris Schumann, Jim Woell-chairperson

### **Summary Recommendations**

Since its inception, Camp Arcadia has never had the luxury nor the time afforded to do in depth research in the hopes of finding a long term solution to its beach erosion issues. It is the belief of this committee that until a new, proven technology emerges that there is only one structural system available that will meet the charges laid on this committee: submerged underwater groins. The fundraising and timing of installing the recommended system are not the responsibility of this committee, but the committee urges the LCA Board to act on the provided recommendations as soon as it is able. This committee recommends that the LCA Board set a target of having the new, recommended system permitted and installed as soon as membership approval is gained and can afford to do so financially.

- A. In the near term, clean up our existing beach-front structures to make them safer, i.e. fix or make safe existing structures and pull out dangerous existing materials. Deposit sand on areas of our beach for the purpose of nourishing currently unusable, depleted areas, and monitor the effectiveness of sand nourishment. This near-term action may require DEQ permitting involving LCA financial and manpower resources.
- B. Recognize the submerged groin system as the committee's recommendation for long term remediation and the replacement option for our beach erosion control system. The BEC further recommends that this type of system be nourished initially in order to satisfy possible permitting requirements. Because of the anticipated costs of this system, the BEC recommends the LCA Board establish an exploratory fundraising committee/apparatus and a shoreline account/fund to hold restricted funds for the purpose of replacing our existing shoreline protection structures.
- C. The committee recommends a long range plan for beach maintenance and restoration which includes a commitment to a system which will meet the initial tasks and charges of this committee. The committee further recommends the beach long range plan becomes an integral part of the LCA long range plan.
- D. Furthermore, the committee recommends that the LCA Board request that whenever the ACOE or any other entity dredges the Arcadia channel, that dredged material be placed or pumped as close to our property as possible. To that end, it is recommended that the LCA Board appoint one of its members to be responsible for making sure that these annual requests are made and that the beach situation is monitored effectively and efficiently.
- E. The committee further recommends that the LCA Board attempt to negotiate a lower installation price with any contractor who submits a bid to do installation work of a submerged groin system. Why? The initial bid received was quite costly and costs may be dependent on the amount of work available for shoreline stabilization. As lake levels rise, so will the cost of installations.

**BEC Committee Members:** Bill Beck, Dick Blum, Michael Dourson, John Jass, Alan Klaas, Don Lohrentz, Scott Miller, Chris Schumann, Jim Woell-chairperson

## **Appendix**

### **Companies solicited for proposals regarding erosion control systems:**

Wetland and Coastal Resources, Inc.  
Tom Bennett and Guy Meadows  
Proposal submitted February 13, 2007  
Withdrew from consideration

Beach Restorations, Inc.  
Marie Horgan-Garrett  
Visited Camp Arcadia on December 11, 2006  
Withdrew from consideration

HTI  
Dick Holmberg  
Visited Camp Arcadia, May 2005  
Still in consideration

Beach Recovery, Inc.  
Affiliate of HTI, Contacted November 2006  
Would work with HTI to cover political bases

Sandsaver/Sandgrabber, Inc.  
Kenneth Herzog and Ed Derbabian  
Macomb, MI  
Insufficient information for proposal, removed from consideration, May, 2007

### **Companies solicited to bid on repairing/replacing existing structures:**

Luedtke Engineering, Frankfort

Gilbert Excavating, Arcadia

### **Companies solicited to perform structural analyses:**

Westshore Consulting, Inc.  
Ron Kadelsik  
Ludington, MI

Coastal Tech, Inc.  
Michael Walther  
Vero Beach, FL

David Schultz, PE  
Whitehall, MI

**BEC Committee Members:** Bill Beck, Dick Blum, Michael Dourson, John Jass, Alan Klaas, Don Lohrentz, Scott Miller, Chris Schumann, Jim Woell-chairperson

**Independent Engineers and Consultants who were contacted and consulted regarding the project:**

Ivan Chou, Environmental Consulting and Technology, Gainesville, FL

Andy Coburn, Duke University

Dave Foster, ACOE Grand Haven, MI

Wayne Schloop, ACOE Director of Operations Detroit, MI

MDEQ, Lansing, MI

Tim Engle, Beach Recovery, Inc.

Dick Holmberg, HTI, Englewood, FL

David Schultz, PE, Whitehall, MI

Luedtke Engineering, Frankfort, MI

Dr. Robert G. Dean, Gainesville, Florida

Dr. Thomas Straw, Ft. Wayne, Indiana

Dr. Guy Meadows, Ann Arbor, MI

Tom Bennett, Lansing MI

Bob Davis, Environmental Lawyer, Macomb, MI