

Zoar Levee and Diversion Dam, Dam Safety Modification Study
Community Advisory Committee
Meeting Summary
September 20, 2012
7:00-8:30 pm
Zoar City Hall Council Room

A regularly scheduled Zoar Levee & Diversion Dam, Dam Safety Modification Study, Community Advisory Committee (CAC) meeting was held at the Zoar City Hall Council Room on September 20, 2012. Those present included: Mayor Larry Bell (Zoar), Sandy Worley (Zoar), Steve Shonk (Zoar), Aaron Smith (USACE), Adam Kays (USACE), Rodney Cremeans (USACE), Darin White (USACE), Tom Leach (USACE), Andy Johnson (USACE), Brian Maka (USACE), Mike Nield (USACE), Gus Drum (USACE) and Tom Davidson (USACE). Zoar Village meeting attendance was limited due to a large contingent of the village residents visiting several cities in Germany.

Rodney Cremeans began the meeting by thanking everyone for attending and requesting that everyone fill in the sign-in sheet for the meeting minutes. Everyone then introduced themselves around the table.

Tom Davidson and Andy Johnson were new attendees.

Tom Davidson works for the new Risk Cadre and is based out of New England District in Boston. He was in the area taking an advanced site visit to Zoar to aid Huntington District in characterizing the conditions for the Risk Cadre and Risk Management Center (RMC).

Andy Johnson is the Corps Wildlife Biologist assigned to the Zoar Levee & Diversion Dam, Dam Safety Modification Study and was present to provide an overview of the aquatic and terrestrial baseline studies nearing completion.

Aaron Smith had previously distributed the August 16, 2012 meeting minutes by email and asked if anyone had any changes, comments or additions to the minutes. There were no responses and he indicated that any changes could be emailed to him at a later date.

Rodney Cremeans reminded the group that the District developed a Scope of Work for the New Risk Cadre to complete the Baseline Risk Assessment, that includes a time-frame for completing the draft report, submitting it to Huntington District for DQC review, preparing it for review by an Agency Technical Review (ATR), a review by the Quality Control and Consistency (QCC) panel and finally approval by the Senior Oversight Group (SOG) for dam safety.

Rodney Cremeans explained that Huntington District had submitted a schedule to the Risk Cadre for review and they responded with a revised schedule. Rodney Cremeans went on to provide some milestones in the Baseline Risk Assessment schedule:

- 1) On-Site Meeting End of October / Beginning of November
- 2) Conduct the Potential Failure Mode Analysis late November 2012

- 3) Provide a Draft Baseline Risk Assessment to Huntington District for District Quality Control (DQC) Review March 2013.
- 4) Conduct Agency Technical Review (ATR) of the Baseline Risk Assessment April 2013
- 5) Quality Control and Consistency (QCC) Review of the Baseline Risk Assessment May-June 2013
- 6) Senior Oversight Group (SOG) approval of the Baseline Risk Assessment July 2013.

Mayor Bell stated he did not understand what the Potential Failure Modes Analysis was and asked for clear explanation of what that meant?

Tom Davidson explained that the Risk Cadre would brainstorm every possible way Zoar Levee and Diversion Dam could fail, including scenarios like overtopping and/or seismic events. Following, the Risk Cadre would determine which failure modes or ways the project could fail were credible, or actually likely to occur.

The Risk Cadre would then assign a probability of that each credible failure could occur in a given year; this is called the annual probability of failure. This probability is derived by analysis of various factors associated with failure mode.

For example, for under-seepage, the Risk Cadre will take into account the expected frequency of various pools of water being held against Zoar Levee. In other words, what is the annual likelihood that Dover Dam will retain a pool of water to a certain elevation? Then the Risk Cadre has to consider the expected duration of that loading, or how long would we expect water at a certain elevation to be held against the levee. The Risk Cadre must also consider the type of material underneath the levee. For example, fine sands can be transported by water in a manner that could leave voids or holes that could lead to the levee failing. Other materials do not transport as easily or would collapse on themselves, closing any voids before they became significant dangers to the structural stability of the levee. The Risk Cadre also looks to see if transported material could exit on the inside of the levee without any barriers, or filters like the one in place at the Rock Knoll of the levee. These are just examples of the types of considerations given during a Potential Failure Modes Analysis.

Mayor Bell asked if the 2008 emergency blanket placed on the Rock Knoll is the best type of material to provide filtered exit at this location.

Adam Kays responded that typically the size of stone used in filter blanket is determined by the size of the particles or soil exiting from the seepage. Unfortunately, as the 2008 event was an emergency, we did not have the luxury to be able to analyze the particle sizes. Therefore, we used our best judgment on the size of the stones used in the 2008 emergency blanket.

Mayor Bell followed up by asking if the stone used for the 2008 emergency blanket were likely to large.

Tom Davidson responded that generally when designing a filter blanket it is good to lay down a lens of sand then gradually increase the size of the stones as the blanket grows vertically.

Mayor Bell asked if we ever put down a geo-textile fabric as the base of a filter blanket.

Adam Kays stated that generally it is good practice to avoid using geo-textile filters in dams and levees. They are susceptible to smearing or lacking intimate contact with the base soil, and therefore can clog easier than a properly designed sand/gravel filter.

Darin White supplemented the update on the Baseline Risk Assessment provided by Rodney Cremeans, adding that Huntington District was working proactively to make sure we had the best available information for the Risk Cadre. He noted that the time it was going to take to complete the Baseline Risk Assessment is not the fault of the Risk Cadre, as they have a lot of data to digest and consider, as well as attend milestone training required by the Risk Management Center (RMC).

Aaron Smith added that the time it took to complete reviews once the Draft Report was ready in March is a result of process and successive vertical nature of these reviews. For example, the Quality Control and Consistency (QCC) panel was made up of senior level personnel, including the Director of the Risk Management Center, which only meets periodically. The Senior Oversight Group (SOG) is made up of the heads of all the Communities of Practice in the Corps of Engineers at our headquarters. The SOG only meets regularly twice a year. Both groups require submittal of the draft Baseline Risk Assessments a number of weeks prior to their meeting.

Mayor Bell asked if the slip of the Baseline Risk Assessment would move out the preparation of draft Dam Safety Modification Report.

Rodney Cremeans responded yes, but that he had not had time to update the total project schedule as we just received the revised Baseline Risk Assessment schedule.

Aaron Smith stated that while the slip was unfortunate, the Corps wanted to make sure we had the best data possible and the Baseline Risk Assessment was a key component required for moving forward.

Aaron Smith reminded the group that the Baseline Condition is made up of the Baseline Risk Assessment, the Baseline Community Impacts Study, the Baseline Historic Property Study, the Baseline Habitat Study, the Baseline HTRW study, the Baseline Economics study. Once assembled, Huntington District will take all potential measures brainstormed to date, and in consultation with our Vertical Team, prepare a draft array of measures to carry forward into formulation. Huntington District will also prepare a list and explanation of why any potential measures are proposed to be eliminated. This analysis occurs at the Alternative Scoping Meeting. Following the ASM meeting, lists of proposed measures to carry forward and those that were eliminated will be made available for public and all stakeholders, to review and comment and/or add to it before it is finalized.

Aaron Smith noted a draft list of potential measures potential measures brainstormed for the Zoar Levee & Diversion Dam, Dam Safety Modification Study, being conducted by the U.S. Army Corps of Engineers, Huntington District had been developed at the request of Section 106 of the National Historic Preservation Act consulting parties.

Many of the measures on the list have been provided by the public and/or other stakeholders for the Huntington District to consider during the formulation, evaluation, and comparison of Risk Management Plans to address dam safety issues at Zoar Levee & Diversion Dam. This list of potential measures is not a comprehensive array of alternatives to be formulated. Inclusion on the list below does not imply that a

potential measure is appropriate for addressing the risk. This only is a working draft of potential measures that could be considered when formulation of alternatives begins. It is possible that other potential measures will be considered and that some of the measures listed below will be dropped from consideration for any number of reasons. Measures can be considered as a stand-alone alternative and/or combined in any number of ways to form alternative plans. The potential measures listed below are divided into two categories, Potential Rehabilitative Measures and Other Potential Measures. Potential Rehabilitative Measures are generally ways of addressing the risk by rehabilitating the levee and/or diversion dam. Other Potential Measures are generally ways of addressing the risk without directly rehabilitating Zoar Levee & Diversion Dam.

Aaron Smith said he would bring copies of the list of potential measures to the next CAC meeting.

Aaron Smith added that the Corps wanted to use the extra time it was taking to assemble the Baseline Risk Estimate to improve the other baseline studies thru additional review and revision time, but also by providing additional outreach opportunities, including public meetings. The ability to do these activities will depend on the resources we have available,.

Aaron Smith noted that the Historic Property Baseline Study was three volumes alone and contained a great deal of information that should be checked for accuracy and quality by the general public, scholars, and stakeholders. One item of particular interest was have home and business owners check the data collected on their buildings, like estimated date of construction, or renovation. This data was collected to help assess the eligibility of the buildings for inclusion on the National Register of Historic Places. Usually this is done using professional judgment at a reconnaissance level. However, given the additional time, it would be good to provide property owners an opportunity to review and check the data collected. Aaron Smith asked the group for suggestions on how best to accomplish this review. He offered suggestions such as password protected websites or public meetings.

The Group decided that perhaps individual mailings would work the best.

Aaron Smith indicated he would check on the ability of the Corps to do this.

Gus Drum then handed out a summary of the types of data collected for the Baseline Community Impacts Study. In general this data is collected into two categories: (1) Social / Economic / Demographic and; (2) Social Profile Data. Both are assembled from pre-existing data sets like the U.S. Census.

1. Social / Economic / Demographic data includes:
 - A. Population data (e.g. density, gender, age, ethnicity, education)
 - B. Household data (e.g. family vs. individual, head of household, average size, income)
 - C. Housing data (e.g. owner/renter, values, taxable value)
 - D. Employment (e.g. percent of labor force employed, unemployed, retired, industry, place of work)
 - E. Travel to Work (e.g. commute mode and time)
 - F. Wealth and Poverty (e.g. per capita income, supplementary security income, public assistance)
2. Social Profile data includes information on :

- a. Community Identity
- b. Health and Safety
- c. Economic Vitality
- d. Social Connectedness
- e. Participation, and
- f. Leisure and Recreation.

This data is collected and compared with three comparison communities and the county as a whole not to rank Zoar Village in any way but to understand what are the social and community drivers of the village in comparison to others. This data will be utilized to assemble questions to be asked at small workshops during the formulation of alternatives to help us evaluate and compare which may have more or less impacts to the community. These questions must be pre-approved by the Office of Management and Budget.

Andy Johnson then gave a summary of the terrestrial habitat studies being conducted for the project.

Andy Johnson noted that the only significant species that could exist in the area is the Indiana Bat and thus the Corps would have to consider impacts to this species when formulating, evaluating and comparing alternatives.

Andy Johnson handed out a map of 300 acres of wetlands identified within the Baseline Study Area. Andy Johnson noted that wetlands are usually categorized, as 1, 2 or 3. Category 3 wetlands are the most significant and they presumably provide the best habitat and environmental benefit.

Andy Johnson noted impacts to wetlands and streams were regulated by the Clean Water Act and that each state also regulated these impacts to these wetlands. Therefore, the Corps would likely have to mitigate for any impacts to wetlands and streams and this mitigation cost would have to be considered with evaluating and comparing alternatives.

Andy Johnson noted that our first goal would be to avoid impacts to wetlands, but that is not always possible depending on the alternative.

The meeting adjourned.

NEXT MEETING:

The next **CAC meeting** is scheduled for
Thursday **October 25, 2012**
Between **7:00 and 8:30 pm**
At the **Zoar School House.**

Prepared By:

Aaron Smith, Lead Planner, USACE