

Zoar Levee and Diversion Dam, Dam Safety Modification Study
Community Advisory Committee
Meeting Summary
June 14, 2012
7:00-8:30 pm
Zoar School House

A regularly scheduled Zoar Levee & Diversion Dam, Dam Safety Modification Study, Community Advisory Committee (CAC) meeting was held at the Zoar School House on June 14, 2012. Those present included: Mayor Larry Bell (Zoar), Jon Elsasser (Zoar), Steve Shonk (Zoar), Scott Gordon (Zoar), Kathie Bjork (Zoar), Bill Bjork (Zoar), Aaron Smith (USACE), Adam Kays (USACE), Rodney Cremeans (USACE), Gus Drum (USACE), Tom Leach (USACE), Mary Tipton (USACE – Nashville) and Mitzy Schaney (USACE – Nashville).

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.

Mitzy Schaney and Mary Tipton were in the area conducting aquatic and terrestrial habitat studies for the Baseline Condition the Corps is establishing.

Bill and Kathy Bjork are new members and residents of the Village.

Rodney Cremeans indicated that there had been no schedule slips or extensions since the last CAC meeting and that several key dates in the schedule included the completion of the draft study report in Spring of 2014, submittal of that draft report to the Ohio River and Great Lakes Division office and the Headquarters office of the Corps in Summer of 2014, the anticipated approval of the final report in Spring of 2015. Other important schedule events included the completion of the baseline risk assessment and the Zoar PDT review of that document.

Rodney Cremeans indicated that the District had many comments on first draft of the baseline risk assessment and asked the Risk Management Center to address the preliminary comments before committing the team's time to the Corps' formal comment process.

Hans Fisher asked whether sending the baseline risk assessment back for revision would delay the schedule of the study.

Rodney Cremeans explained the process of reviewing those types of documents and the many steps needed to assure a quality study report. He noted that it would likely lead to an approximate 4 week slip in the schedule, but he indicated that throughout that process we would seek opportunities to make that time up on the schedule.

Aaron Smith added that it was very important that we have a solid foundation to work from when formulating various alternatives so any additional time we spend on the risk assessment would be worth any delay.

Jon Elsasser asked specifically what was wrong with draft baseline risk assessment.

Aaron Smith answered that the problem wasn't technical errors so much as the report didn't meet the goals and objectives of the study and wasn't a good summary of the risks that needed to be addressed.

Rodney Cremeans added that the team needed a clear story of the risks that needed to be addressed by the District and the report was not very clear in that regard.

Aaron Smith had previously distributed the May 17, 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.

Tom Leach provided a status of the installation of the data logger at the Diversion Dam. This data logger will alert Corps' staff if and when water begins to pool behind the Diversion Dam, so it can be monitored accordingly. He indicated that the new building was on site and that it would be painted soon. The equipment was in stock and would be delivered and installed in mid-July.

Mayor Bell asked if the electric service was underground and Tom replied that it was being installed aerial because of land ownership issues and that the electric company would be installing the poles within two weeks.

Tom Leach also discussed the status of the seepage collection ditch and weir installed at the base of the gravel berm placed in 2008 by the Rock Knoll. The ditch and berm were complete and the weir plate would be installed soon. The fence located at the lower edge of the gravel berm would be moved the other side of the soil berm to restrict public access to the new ditch and weir area for safety reasons.

Aaron Smith discussed the recent designation of the Village of Zoar as one of the 11 Most Endangered Historic Sites in America by the National Trust for Historic Preservation.

Aaron Smith explained that the designation is significant in highlighting the importance Zoar Village has to the historic preservation nationally and that would be captured during the study per planning policies & procedures and statutory requirements under the National Environmental Policy Act and the National Historic Preservation Act.

Aaron Smith noted that this designation does not impose any limitations to any course of study on the Corps part. He explained that the National Trust web site (cited below) has locations to provide stories about Zoar Village and to comment on the Dam Safety Modification Study. He passed out print-outs of the webpage and its various links for awareness.

<http://www.savingplaces.org/treasures/village-zoar>

Aaron Smith noted that the National Trust had worked with the Corps on this webpage to ensure that the comments on the study are automatically directed to the Corps dedicated email address (zoarlevee@usace.army.mil) so that they will be captured and addressed during the study process.

Jon Elsasser asked if the web site has a blog.

Aaron Smith said he was not sure and suggested that Jennifer Sandy at the National Trust for Historic Preservation be contacted with that question. He noted that only study comments were being forwarded to the Corps.

Bill Bjork asked whether the number of comments received, the content of the comments, or who provided the comments was the most important aspect of the comment process.

Aaron Smith replied that all comments are considered during formulation regardless of who provides the comments, what they say, or how many are received. In the case of this project, almost all the comments were focused on concern about the historic significance and value Zoar Village provides to the public. He noted that most of these comments request that the Corps also repair the levee.

Aaron Smith added that given that there has been a notable unified theme to date, that the quantity of comments could help demonstrate the level of concern various constituents have about the project. However, there are no milestones or quantifiable numbers in policy or statute about the number of comments required to express concern or concerns.

Aaron Smith explained that as comments were generally unified in their concerns, he had been categorizing by different types of constituents. In general, he has been organizing them by General Public, Academic Institutions, Descendants, Historical Societies, International, Comments Received via the National Trust Website, and other parties, such as communities that have passed resolutions.

Aaron Smith clarified that he was categorizing the comments this way as each constituent-group in some instances had different perspectives on the value of Zoar and he noted this was a good way to capture the different concerns. He noted how the public valued Zoar could be a good measure to consider different options to evaluate mitigation options, if required. For example, Aaron Smith relayed that many comments talk about the educational value Zoar provides to students of all ages. Therefore, if the Corps does have to provide mitigation for adverse effects to Zoar Village from any alternative, it might be able to focus its mitigation strategy towards enhancing educational experiences.

Bill Bjork asked how many comments had been received to date.

Aaron Smith replied that he would guess that approximately 200 comments had been received.

UPDATE: Approximately 249 comments have been received as of 21 June 2012.

Hans Fisher asked whether it was better to send emails or letters, or use the National Trust's website.

Aaron Smith replied all three methods were equally fine. He noted that when alternatives were formulated and provided to the public in 2012, he anticipated many more comments would be received.

Kathie Bjork asked whether that number of comments surprised the Corps.

Aaron Smith replied he really didn't have a baseline to gauge if the number of comments received were surprising.

Aaron Smith explained the contents and purpose of the draft Risk Communication Cards and showed an example of the card (in 8 X 11.5 inch size) with its color-coding and text.

The two-sided card addresses Corps surveillance activities for both Zoar Levee and the Goose Run Diversion Dam. Each color of the card was associated with particular pool levels on the Tuscarawas River or Goose Run that would actuate Corps surveillance activities and actions.

Aaron Smith explained that the card describes the heightened Corps response activities associated with each successive raise in elevation of the water levels in the Tuscarawas River or in the Diversion Dam impoundment, sometime referred to as Goose Run or Lime Kiln lake.

Aaron Smith asked the committee members whether they would prefer wallet-sized cards and whether the card displayed too much or too little data for the users.

Adam Kays provided a more in depth explanation of the Corps activities at each water elevation level shown on the card example. Adam stated that a pool level shown in the red zone of the card was not an automatic indication of failure and that all personnel would keep working on the assigned activities at that level, including above the target elevations we try not to exceed unless necessary (LEVEE = 909 / DIVERSION DAM = 906).

Adam Kays also wanted to make it clear, that while the Corps would not raise the Tuscarawas River or Goose Run above the target elevations discussed above without approval of the District Dam Safety Officer, there are events that will be beyond the ability of the Corps to control the elevation of either drainage. Further, he noted that decision on whether to raise the pool above these elevations will be based impacts downstream, forecasts, and performance of Dover Dam and Zoar Levee & Diversion Dam.

Mayor Bell asked if we had seen a pool elevation of 908 at the Diversion Dam.

Rodney Cremeans noted that the pool behind the Diversion dam had reached that height last year although the Corps was not able to monitor that event. He noted that the data logger would provide that data instantly and contact the Corps of that impending event so we could monitor it in the future.

Rodney Cremeans and Adam Kays noted that the diversion dam and pump station at the levee work together to reduce interior flooding. While we want to avoid inducing a pool behind the Diversion Dam, there may be times that we have to shut the gates at the diversion dam to protect the pump station from flooding.

Aaron Smith indicated that the Corps would be onsite during such events to make decisions as things progressed and that during such an event many different projects would be operating to reduce risks and that balancing act would be orchestrated by the Corps. He noted that specifically that the Corps would not act rigidly according to the surveillance plan and would adjust according to the conditions on the ground.

Adam Kays noted that the purpose of the surveillance plan was to the Corps the best available data during an event. He noted that our ability to forecast performance is based on best available data and

professional judgment but is ultimately limited. Carefully monitoring the project is the best way to mitigate for this uncertainty.

Adam Kays explained that it is possible that the levee may not perform as expected at lower elevations or the levee could exceed our forecasts and continue to perform adequately above elevation 909. He also noted that the amount of time the levee is holding water may also significantly affect its performance.

Kathie Bjork asked if the Village needs to be concerned about the levee being overtopped by flood waters.

Aaron Smith explained that the problem the levee has experienced is water seeps below the levee due to the presence of glacial outwash material underlying the levee base. This seepage occurs when flood waters are impounded behind Dover Dam and the pressure of the water outside the levee forces the water underneath the levee re-surfacing within the Village on the inside of the levee. Although minor amounts of under-seepage are not dangerous, as the amount of water increases exit points or boils form that can eventually result in piping of material from beneath the levee. If piping is not addressed by measures such as the gravel blanket placed in 2008, the levee could fail.

Aaron Smith added that the Probable Maximum Flood (PMF), or a theoretical flood developed by the Corps to help in designing dams and levees would reach elevation 937 on the Tuscarawas River upstream of Dover Dam. He noted at this point, Dover Dam is being overtopped and is no longer controlling flooding downstream. Also any property located above elevation 916 (spillway crest of Dover Dam and limit of flowage easement maintained by the Federal Government upstream of Dover Dam) will be flooded.

Aaron Smith noted that Zoar Levee affords Zoar Village protection above elevation 916, as it was raised to elevation 928.5 in the 1950s. However, above that elevation, the levee would be overtopped and Zoar Village inundated.

Scott Gordon indicated that the Risk Communication card only addressed what the Corps would do under the various water elevations, but says nothing about what people in the Village should be doing during this time to prepare for potential flooding in the interior of the levee.

Mayor Bell responded that an emergency plan had been developed since 2005 and had been coordinated with the Tuscarawas County Emergency Services office. The Mayor indicated that several surrounding fire departments could be mobilized to assist the village residents to move belongings or families in the advent of a serious emergency at Zoar.

Scott Gordon noted that the residents should have something in their hands that helped them to decide when to take action similar to what the Corps had prepared.

Rodney Cremeans added that when the Corps determines that the flooding situation warrants emergency action the Corps would notify the Tuscarawas County Emergency Services Office. In turn, they would notify the Village leadership and emergency personnel. He explained that in emergency

situations the Corps' emergency response center kicks into action and notifies all necessary parties including the county.

Tom Leach indicated that during an emergency situation the communication process is around the clock if necessary. He noted that someone from the Corps' Emergency Operations Center is usually dispatched to the Tuscarawas County Emergency Management Service office during events of concern.

Mayor Bell recounted the 2008 situation when the fire departments were ready to mobilize in the event that everyone had to be moved to higher ground.

Jon Elsasser suggested that the issue of appropriate local actions during an emergency situation be set aside for a separate meeting among the residents and Village leadership as it was not the Corps responsibility and not relevant to the study at this time.

Hans Fisher asked whether the Corps would make the decision to impound water above 909 foot elevation upstream of Dover Dam in consultation with the Village of Zoar.

Aaron Smith indicated that the Corps would advise emergency personnel of these decisions. However, the decisions were made by Corps personnel, based current conditions and future forecasts, to protect life and property to the maximum extent possible from being flooded. He noted that this often requires a trade-off analysis of up and down stream risks and impacts.

Rodney Cremeans indicated that the Corps has control points (elevations) downstream of Dover Dam that we try to operate the dam for so no flooding occurs but that some storms can hit that we 'd have no control over and flooding would occur. He also reiterated that the Corps can never guarantee that the Tuscarawas River would not exceed elevation 909 upstream of Dover Dam.

Jon Elsasser asked whether performance issues at Dover Dam influenced how much the Corps would store at Dover in an emergency situation.

Rodney indicated that the 909 target elevation is based both on current condition of Dover Dam and Zoar Levee.

Hans Fisher asked what conditions would lead to a decision to put Zoar Village at risk to protect downstream development.

Rodney Cremeans responded that the decision about operating Dover Dam in a major event would be decided based on the current performance of the dam and Zoar Levee, and even other projects such as Bolivar Dam. He added that weather forecasts and the anticipated level of damages and threats to life in the area would also be analyzed and considered.

Hans Fisher asked whether the Corps' decision to increase releases downstream of Dover Dam or not would involve the people in Zoar.

Rodney Cremeans responded that the decision would be the Corps' alone and be based on the best available data to protect life and property the maximum extent possible from being flooded.

Jon Elsasser suggested that perhaps Tuscarawas County Emergency Services should provide a primer for all Village residents on and what may happen in the event of an emergency.

Bill Bjork agreed.

GENERAL NOTE: Based upon the feedback received The Corps hopes to finalize this card and provide copies of it to the Village by the Community Advisory Committee Meeting on August 16, 2012.

Aaron Smith handed out the Corps' Peer Review plan for the study. He explained the purposes of the review plan and what steps were incorporated in the plan including the District Quality Control (DQC) Review, the Agency Technical Review (ATR), the Type I & II Independent Expert Panel Reviews (IEPR) and that these steps helped to assure a quality study and good decisions in the planning process. The review plan can be found online at:

http://www.lrh.usace.army.mil/approved_review_plans_rps/?syspage=document&item_id=27429

Jon Elsasser asked why Zoar Levee was raised by the Corps from elevation 919 to 928.5 in the 1950's.

Aaron Smith indicated that the Corps conducted a hydrologic and hydraulic analysis based on the possibility of having a standard project storm hit the basin when Dover Dam was fully loaded to elevation 916. The combination of the two storm flows would result in Zoar Levee being overtopped.

Jon Elsasser asked whether the historic significance of Zoar was part of that decision to raise the levee since it was obvious that the place was important.

Rodney Cremeans responded that there was one sentence in a period document that spoke of the importance of the historic character of Zoar influencing the original decision to construct the levee.

NOTE: A 1950 memorandum concerning raising the crest of Zoar Levee stated:

"At the time Dover Dam was being planned, consideration was given to evacuating the population of 200 persons. However, since the village is of considerable historical importance and since two state-owned museums are located there, it was decided to protect the site by constructing earth levees rather than to evacuate the population".

Aaron Smith added that the book "A Valley Renewed" (Authored by Hal Jenkins, Published by The Kent State University Press, 1976), about the development of the Muskingum Watershed Conservancy District, indicated that the Bolivar Dam was constructed instead of a reservoir at Massillon, Ohio to allow Dover Dam's planned spillway height to be lowered, in part, to facilitate the construction of Zoar Levee & Diversion Dam.

Gus Drum explained the components of several nonstructural measures being considered as part of the plan formulation process, in addition to "Remove the Project".

Gus Drum explained that the District was looking at revising the operation of Dover Dam to release more water during high water events to reduce the threat to Zoar Levee. The potential effects of that

altered release schedule downstream were being investigated including flooding of roads and critical infrastructure and numerous homes and the potential costs of mitigating those impacts.

Gus Drum also stated that raising the flood control storage of upstream reservoirs including Bolivar, Atwood and Leesville was being analyzed. Since those projects are already being fully operated during flood events to reduce flooding at Zoar, further modifications of their operating schedules wouldn't be profitable, but increasing storage at those projects was possible. Rough calculations of the uncontrolled watershed area upstream of Dover Dam indicated that about 84,000 additional acre feet of storage would be required to help reduce risks at Zoar levee. This is the equivalent of the total storage at the Corps' Yatesville Lake (a multi-purpose flood control reservoir in Kentucky). Raising the spillways at the three reservoirs would increase upstream storage capacity and reduce the height and frequency of filling the Dover Dam pool that in turn threatens the Zoar levee.

Gus Drum stated that, in addition to these two alternatives, the Corps will investigate the potential for additional storage in the watershed above Dover Dam. Currently there are 1,404 square miles of watershed above Dover Dam of which 622 square miles are controlled by Atwood, Bolivar and Leesville. The remaining 742 square miles are uncontrolled by either Corps or other agency facilities. As part of the formulation of nonstructural alternatives the Corps will investigate the feasibility of other storage facilities in that uncontrolled area. The costs and impacts of providing that additional storage will be part of the formulation and evaluation of project alternatives.

Aaron Smith noted that while the Corps had the ability and mandate to study many different measures and alternatives, many of the non-structural measures/alternative may exceed the Chief of Engineer's discretionary authority and may require additional authorization outside of our Headquarters office in Washington D.C.

Jon Elsasser commented that the meeting with the Corps Great Lakes and Ohio River Commander, Brigadier General Margaret Burcham, with Representative Bob Gibbs (OH) in Zoar on June 12th appeared to go well.

Rodney Cremeans explained that COL. Peterson had invited Brigadier General Burcham to visit the upper Muskingum Area, as it was a command priority, given all the various dam safety issues. The visit also provided Brigadier General Burcham an opportunity to meet with Representative Gibbs to talk about the project.

Rodney Cremeans noted that COL. Peterson's Command of the Huntington District was coming to an end this summer, but that he was bringing our new commander to tour the region in the near future, as this area would continue to be a priority.

NEXT MEETING:

Given various conflicting activities, including the preparation and execution of the Zoar Harvest Festival, the group decided to skip a July meeting.

The next CAC meeting is on **August 16, 2012 between 7:00 and 8:30 pm at the Zoar School House.**

The meeting was adjourned at 8:40pm.

Prepared By:

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