

# **DAM CONCERNED CITIZENS, Inc.**

## **Annual Report,2009**

**Dam Concerned Citizens, Inc. ( DCC ) is a fully chartered non-profit entity, under section 501 (c) 3 of the federal tax codes, which means that charitable contributions to DCC are tax-deductible. ~~~ For further information, visit our website at [www.dccinc.org](http://www.dccinc.org) ~~~**

Dam Concerned Citizens, Inc. is a non-profit citizens' advocacy group formed as a watchdog for Schoharie Valley concerns regarding safety issues at the Gilboa Dam / Schoharie Reservoir.

### **Crisis in Schoharie Valley**

In September 2005, it was revealed by New York City's Department of Environmental Protection (NYCDEP) that the Gilboa Dam, built by the City of New York in 1926 as part of its water supply system, had developed critical structural vulnerabilities that posed serious risks for the Schoharie Valley downstream, in Schoharie, Montgomery and Schenectady Counties. After a long history of deferred maintenance, the adhesion between the dam structure and the underlying bedrock had been seriously compromised, resulting in a risk of the dam potentially sliding in a high water situation. It was imperative that appropriate emergency response plans be developed and that both short-term and long-term rehabilitation of the dam structure be undertaken.

### **Public Participation and Information**

Since the outset of this crisis, Dam Concerned Citizens (DCC) has been a catalyst for mobilizing public participation in the process, and for getting critical information to the public throughout the region, including weather and water level data via the DCC website, and for ensuring accountability of government agencies at all levels.

Immediate concerns advocated by DCC included development of emergency evacuation plans, signage for flood evacuation routes, and a state-of-the-art system of emergency sirens throughout the valley.

DCC also actively proposed enhancements to the interim structural measures undertaken to reinforce the dam, including the addition (and retention throughout the long-term construction project) of four siphons, the de-icing of these siphons to ensure operability throughout the winter months, and the retention of the spillway Notch.

DCC has also proposed improvements to the ultimate design for the long-term rehabilitation project, slated to begin this spring. Most critical for future flood mitigation is our proposal to add a 4' high "Crest Wall" to the spillway extending westward part way towards the existing 220' x 5.5' "notch". This would provide additional attenuation or slowing down of discharge in time of flood. Passing the same volume of water over a longer period of time means lower

flood elevations downstream of the Gilboa Dam. Also, NYCDEP should commit to a 50-75 cfs conservation release from the Schoharie Reservoir in times of non-spillage of the Gilboa Dam.

The past three and a half years since our formation have been a period of intense activity by DCC. The persistence and commitment of time and resources by many members have been productive in achieving some tangible, hard-won results. Further such efforts will be required to address remaining challenges.

This is a summary of DCC's achievements to date, and of key remaining challenges ahead that will require the ongoing vigilance and participation of DCC and our grassroots members.

## **DCC Achievements in our first 3 ? years**

With the grassroots support of local DCC activists, much has been accomplished since this crisis first came to light.

- **Engineering Safety Standard Maximized for Dam Structure**

DCC was adamant that New York City be required to ensure the highest possible safety standard in the renovation of Gilboa Dam. There is an engineering formula known as the Factor Of Safety (FOS) which, with the persistent urging of DCC, has been set at 1.5 / 2.0. Simply put, this safety standard --- higher than originally proposed by the City --- will ensure that the completed project will be 50% stronger than the forces created by the heaviest flood anticipated, and 100% stronger than forces created by a normal full pool of water reaching the breaking point.

- **Siphons**

DCC advocated the installation of siphons at the dam, to proactively drain more water downstream to alleviate pressure on the dam and avoid flooding in high water episodes. After initial resistance, NYCDEP agreed to this proposal and installed four large siphons, which, along with the notch carved into the dam face, have proven to be valuable components in alleviating high water problems.

- **Notch and Siphons for Flood Control to Remain for Duration of Project**

The City's original plan was to remove the siphons and replace the notch once the anchors had been fully installed. DCC requested that both the notch and the siphons remain in place until the long-term renovation project has been completed, to be used as needed to release water proactively within safety levels during high level episodes. The City has agreed to keep them operational for the duration of the project.

- **Anchors' Integrity Ensured; Additional Anchor Installed**

A major feature of the Interim Repairs done to the Gilboa Dam in 2007 was the installation of 80 post tensioned anchors, each consisting of a bundle of 56 braided steel cables. When 8 cable strands broke from a bundle in one of the post tensioned anchors, DCC asked that an additional anchor (230 feet long) be installed adjacent to the compromised anchor. The 79 anchors originally installed increased the Factor Of Safety significantly; this 80th anchor further reinforces the dam's strength.

- **Flood Mitigation ( vs. “Spillage” Control ) Incorporated in Future Design**

Traditionally New York City had maintained that its sole responsibility was ensuring its water supply. The city had been reluctant to concede any responsibility for flood control. DCC has persistently urged, through public hearing testimony and other advocacy, that the City be required to incorporate flood mitigation in the renovation. NYC, in a historic precedent, eventually committed publicly to incorporate flood mitigation mechanisms in the design for the long-term renovation project. This will provide future ability to drain down 90% of the reservoir in 10 days if necessary, assuming no upstream inflow, which is an accepted engineering standard.

- **Low Level Water Releases**

It is important that, in addition to the capacity to release water when the reservoir is at critical flood level, there also be in place mechanisms for low level releases to be made proactively and gradually, before a critical flood level is reached. The City’s agreement to incorporate low-level release capability is another important achievement of DCC’s advocacy.

- **Greater Accountability by Government Agencies and Dam Owners**

DCC has testified at public hearings for greater dam safety measures, and for strengthening the state Department of Environmental Conservation (DEC) division relating to oversight of dam safety. We were pleased that the state budget for FY 2007 added 12 additional positions to the dam inspection team, to ensure better oversight and avoid further dam catastrophes in New York State; more resources are still needed.

- **Critical Resource to County Emergency Efforts**

DCC has been a resource in helping ensure public participation in emergency plans, including flood evacuation routes and signage, and distribution of critical information to the public. Most significantly, DCC pressed for and ultimately ensured the commitment by NYC to fully reimburse Schoharie County for the cost of emergency sirens in the valley, as well as for other emergency expenses.

- **Schoharie County Chamber of Commerce Community Leadership Award**

DCC was honored in 2007 by the Chamber with its annual Leadership Award for its activities on behalf of the community.

## **Future Challenges that DCC --- with Your Help ---Must Aggressively Pursue**

- **Advocate for Design Modifications to Further Strengthen the Gilboa Dam**

Beginning with Phase I in 2009, through a projected six-year period ending in 2015, New York City will embark on a long-term rehabilitation of Gilboa Dam. This major renovation, at a projected cost of \$ 535 million, is expected to extend the life of the dam for another 50 years. DCC continues to be a watchdog for the public safety, and in that role we have proposed several improvements in the design which would strengthen the dam and enhance the capacity for proactive flood mitigation, thereby reducing the risk to lives and property downstream.

**DCC has advocated the addition of a crest wall, four feet high, to the spillway. This**

feature would, at minimal cost, significantly increase the ability to release excess waters during high precipitation and snowmelt events. The frequency and magnitude of major storms has increased dramatically in recent years, a trend which is expected to continue. During the interim repairs undertaken by the City, the creation of the 220 foot Notch in the spillway has proven to be effective in alleviating flood conditions by proactive release of waters downstream. Adding the additional crest wall to the spillway would further increase the City's ability to respond to these events and release more water, in an attenuated manner, when needed for public safety.

- **Advocate for Continuous Downstream Conservation Flow of 75 CFS**

DCC has also called upon the City to commit to a continuous release downstream of 75 cubic feet per second (CFS). With the Low Level Release mechanisms that are being added to the Gilboa Dam in the renovation, there will now be a capacity to provide this minimal flow downstream, restoring some of the ecological vibrance of Schoharie Creek that was so drastically diminished with the construction of the dam. The benefits of such a continuous release (easily accomplished without jeopardizing the city's water supply needs) would enhance the prime agricultural lands of the valley, restore fishery habitats in the forever-wild stretch below the dam and beyond, and increase recreational use, benefiting the regional economy. This proposal has also been endorsed by the Schoharie County Conservation Association and by the Schoharie County Farm Bureau.

Both the downstream continuous releases from the Low Level Release mechanism, and the spillway crestwall, would be a win-win solution for the City and for local residents. The City of New York is under strict limitations, in its state SPDES permit, in regard to releases through the Shandaken diversion tunnel, due to turbidity issues. This major diminution of outflow capacity southward makes it even more imperative for the city to incorporate design improvements that will enhance their capacity for northward releases downstream to draw down excess water.

- **Independent Dam Inspector**

There is a critical need for a "boots on the ground" independent dam inspector at the Gilboa Dam worksite, for the duration of the long-term renovation project. We need ongoing current facts, rather than rumors, gathered by an experienced person with construction expertise, to apprise the public of progress, and also of any problems encountered during the critical phases of the work (i.e., the pouring of the concrete). This person(s) would be independent of the City and its contractors, accountable to and reporting to the County's consultant engineer and to the public

- **Sirens for Early Warning of Emergency**

Now that the emergency sirens have been installed, Schoharie County emergency management personnel and volunteers have been working with the manufacturer to work on remaining challenges. While the situation has been significantly improved, there are still remaining issues to address, and the work continues to ensure that the sirens are eventually fully operational. The optimum efficiency of this system remains a critical priority for public safety, and toward that goal DCC continues to be a resource to the county government and emergency network in conveying citizen concerns and problems regarding the sirens.

- **Long-Range Preventive Maintenance**

The crisis at Gilboa Dam is the result of neglecting, over several decades, to maintain this

critical infrastructure. The lesson that should be learned from this ordeal is that we defer such maintenance at our peril, and that it is critical to have goals, timetables, and budgeted resources, in place that will ensure ongoing maintenance in the future. Toward that end, DCC will continue to monitor the implementation of the renovation and, beyond that, the commitment by the City to ongoing long-term maintenance in the future, fortified by critical investments outlined in the multi-year NYCDEP budget.

- **Greater Coordination among the Downstream Counties**

The integrity of Gilboa Dam is critical to the entire Schoharie Valley; there is much at stake for Montgomery and Schenectady Counties, as well as Schoharie County. There is a need for much better coordination and communication among these three downstream counties regarding these issues. In addition, there is a need for greater coordination among the counties and local governments throughout the entire Catskill Region watershed, to advance mutual goals in flood mitigation, habitat needs, and other issues.

- **Watershed Commission**

The situation at Gilboa has highlighted the need for a Watershed Commission to address ongoing concerns. Such a commission should include public participation. The value of appointing such a body, which would include representatives of NYSDEC, NYCDEP, County and local governments, scientific and technical experts, and private citizens, has been demonstrated by the tri-state Water Releases Task Force created for the Delaware River Basin.

- **Regulatory Reform**

The state government, through the NYS Department of Environmental Conservation, is the public watchdog charged with oversight responsibility for the safety of our state's dams. There is a critical need to strengthen NYSDEC's authority as well as its professional staff in the dam safety division. Dam Concerned Citizens testified extensively at public hearings held in 2008 by NYSDEC on proposed revisions to regulations pertaining to dam safety. These regulations have not yet been finalized, and we continue to push for our recommendations. Our DCC website outlines the specific recommendations we have submitted.

- **Federal and State Legislation**

DCC continues to work with our federal and state officials, to press for specific issues affecting Gilboa Dam, as well as broader improvements in the laws relating to dam safety statewide and nationwide. In addition to our ongoing discussions with our legislative representatives, we met recently with NYS Commissioner of Environmental Conservation Pete Grannis, highlighting the need for the design improvements called for at Gilboa Dam, and for vigorous oversight by DEC as the construction project evolves.