LEGAL CHALLENGES TO PERMITTING LOW HAZARD DAM REMOVALS

Pete Haug[1] and Debbie Peterson[2]

According to the Association of State Dam Safety Officials (ASDSO) records, Wisconsin had 3653 state regulated dams in 2008, and ninety percent were low hazard dams.[3] In 2002 the Wisconsin Department of Natural Resources (WDNR) had documented 50 dam removals since 1967,[4] but today the WDNR lists the total of Wisconsin dam removals at about 100.[5] The peak of dam removals in Wisconsin has apparently passed with 31 dams removed between 2000 and 2005. [6] While many books and articles have been written about the technical challenges[7,8] or decision-making processes[9,10,11] of dam removals, this paper presents recent legal challenges to owners applying for removal or abandonment permits and contends that permit litigation has contributed to the peaking and subsequent decline of Wisconsin dam removal frequency.

Litigation regarding dam removal has shifted[12] from relicensing challenges[13,14,15,16] supporting dam removals to contested cases[17] challenging dam removal permit approvals. Initially, permit applications were contested for perceived property devaluation[18,19] and recreational loss,[20] but recent contesters are challenging dam ownership rights, dam roadway usage rights, riprap and geotextiles usage in restoration, and dam maintenance responsibilities (or negligence of it).[21,22] This paper discusses recent legal challenges for low hazard dams using two case studies including the 2012 Grimh Dam removal (30-foot-high dam with 710 acre-feet of maximum storage[23]) and the 2009 Woodley Dam removal (18-foot-high dam with 140 acre-feet of maximum storage[21]).

Case 1: Grimh Dam

In the early 1900s, Wisconsin's Sawyer County had plentiful forests and locations for mill waterwheels. When Frans Grimh built a 21-foot-high dam to power a shingle factory with the swift Court Oreilles or Couderay River, residents of the Village of Radisson also enjoyed lake front property and flowage recreation. The original 21-foot-high timber crib dam, though noted by the WDNR as "flimsy and hardly substantial" in a 1930 file memo, was eventually modified from 1934 to 1942 to become a 30-foot-high concrete dam and hydroelectric facility. In 1959 North Central Power bought the dam and operated the facility until 1997.[24]

A legal notice to abandon Grimh Dam was published in 1997, followed by a WDNR drawdown order in 2000, a civil lawsuit from property owners filed 2002, and a permit application for dam abandonment filed in July 2003. [25] With legal tension mounting, the WDNR finally completed the Environmental Assessment in July 2007, and the subsequent contested case lasted from October 2007 to June 2008. Radisson's residents protested in court that the dam's removal would dry up their shallow wells, destroy a pristine fishing area, and lower property values. Certainly public fears of property damage can be understood, but in an era of publicized lawsuits to remove West Coast dams (such as the lower Snake River dams[14]) in the name of environmental restoration, the Grimh Dam lawsuit seemed countercultural. Sawyer County's logging industry was declining since paper mills were being ousted by foreign competition, and the nearest large cities were more than 90 minutes away. The once deep flowage was now filled with 15 feet of silt, and the shallow impoundment often froze-out overwintering fish populations. With WDNR dam safety regulations pressing on the dam owner to restore the dam or remove it, North Central Power could not economically justify repairs and decided to sell the dam. They offered the dam to anyone willing to buy the dam

and restore it to WDNR standards. When no suitable buyers were found, the dam's owner had no choice but to comply with WDNR requirements to remove the dam via first applying for a dam abandonment permit.

While he sympathized with many of the residents' arguments against dam removal, the WDNR administrative law judge finally granted the dam abandonment permit in June 2008 contingent upon complete dam removal by June 2012. After one last effort to find an alternative to removing the dam, the deconstruction contract was awarded in June 2010 and the dam was completely removed by June 2012. The entire decommissioning process took fifteen years from first public notice to removal completion.

Figure 1. Grimh Dam powerhouse during removal

Figure 2. Buried rapids upstream of Grimh Dam powerhouse (no bedrock was found though)

Figure 3. Woodley Dam before removal

Figure 4. Woodley Dam after removal

Case 2: Woodley Dam

After a WDNR-ordered impoundment drawdown in 2001, the owner transferred the dilapidated Woodley Dam to Polk County in 2002. In 2004 Polk County decided to remove the dam. Permit applications were initially submitted in January 2005 but resubmitted in June 2006 to reflect new reservoir sediment sampling information (required for dredging silt) and a new bridge structure as a crossing replacement for local snowmobile club and pedestrian usage. The new bridge was thought to be a great compromise for addressing resident concerns about safely crossing the Apple River (the public had unrestricted access to cross the dam before removal).

The WDNR gave plan approval (2006) and permit approval (April 2007) for dam removal, bridge construction, and channel protection designed to limit reservoir sediment incision and abutment scour.[26] While the local snowmobile club supported the removal project, the river user groups and some local residents were not supportive. In June 2007, the Apple

River Association and chapter of Trout Unlimited contested the dredging, grading, and bridge permits alleging impacts to water quality, fisheries, and scenic beauty.[27] Another citizen alleged the use of riprap and geotextiles degraded river habitat[28] and would contribute toxic leachate to the river.[29] While public comments are expected to yield an occasional red herring (the toxic leachate argument), the engineers and dam owner were surprised that a river advocacy group which normally favors natural restorations and removal of manmade influences would sue a dam abandonment project's dredging permit that was designed to prevent sediment stored behind the dam from overwhelming the downstream trout habitat.

In July 2008 and based on arguments submitted by the Apple River Association and Trout Unlimited, the WDNR held a contested case hearing, but quickly dismissed the case and approved dam abandonment in August 2008. Per conditions of the approval, mechanical dredging of the upstream sediments was designed to proactively remove sediments from the future river channel and stabilize those sediments left on the overbanks. After construction was awarded, the contractor only needed from August to October 2009 to complete the removal. So while the construction activities took less than three months, the entire decommissioning process took five years from first public notice to removal completion.

Conclusion

Given the increasing public awareness of environmental issues at high hazard dam sites,[30] future permits for removing low hazard dams may face challenges of downstream habitat degradation from sediment transport volume, upstream habitat degradation from invasive species migration, and loss of impoundment wetlands and floodwater storage. Based on recent Wisconsin dam removal opposition, key oppositional concerns to dam removal may also include wild rice or other habitat loss, navigational impacts to recreational boaters, property devaluation through shoreline loss, upstream migration potential of exotic fish/plants/mussels, and increased public financial burdens (public fund usage and utility rate increases).

In the last couple years, Ayres Associates completed dam removal assessments for at least six low and high hazard dams. In most cases where homes bordered the impounded flowage, the opinion of probable project costs included a 40% increase in engineering fees simply for defending dam abandonment permits and participating in contested case hearings. Construction budgets were also increased by an additional 30% to include mitigation costs associated with pre-removal sediment dredging, post-removal fish passage restoration (what happens when the manmade fish ladder is removed?), and other construction costs not directly attributed to physical dam removal activities. In summary, no longer can dam owners assume that dam removal and its associated stream restoration are supported by local residents or even environmental advocacy groups, and costs to remove a dam should be reflective of an increasingly litigious society.

References

[1] Peter E. Haug, MS, PE. Ayres Associates, Inc. 3433 Oakwood Hills Parkway, Eau Claire, Wisconsin 54758. Phone 715-834-3161. Email HaugP@AyresAssociates.com

[2] Debbie Peterson, Director. Polk County Parks & Forestry, Buildings, & Solid Waste, 100 Polk County Plaza Suite 10, Balsam Lake, Wisconsin 54810. Phone 715-485-9278. Email DebbieP@co.polk.wi.us

[3] Association of State Dam Safety Officials. "Wisconsin Dam Safety Program." Accessed 7/12/2010 from http://www.damsafety.org/map/state.aspx?s=50. Also note that "low

hazard dams" in Wisconsin are defined as dams which would not likely cause loss of life if they fail. Larger dams such as Grimh Dam and Woodley Dam are classified as low hazard dams if a dam failure analysis proves a dam failure flood wave would not inundate habited structures.

[4] WDNR records reported by Emily H Stanley and Martin W Doyle. "Trading Off: The Ecological Effects of Dam Removal." Frontiers in Ecology and the Environment. Volume 1, Issue 1, 2003. Page 15.

[5] Wisconsin Department of Natural Resources. "Dam Removal – WDNR." Accessed 7/15/2010 from http://dnr.wi.gov/org/water/wm/dsfm/dams/removal.html.

[6] Data from "Table B.2." A Summary of Existing Research on Low-Head Dam Removal Projects. Prepared for the American Association of State Highway and Transportation Officials (AASHTO) by ICF Consulting (MA). September 2005.

[7] American Society of Civil Engineers. Guidelines for Retirement of Dams and Hydroelectric Facilities. American Society of Civil Engineers, New York, 1997.

[8] Brian Graber et al. "Technical Issues in Small Dam Removal Engineering." The Future of Dams and Their Reservoirs, 21st Annual USSD Lecture Series. United States Society on Dams. Denver, July 30 – August 3, 2001.

[9] American Rivers and Trout Unlimited. Exploring Dam Removal: A Decision-Making Guide. Available online at http://www.americanrivers.org/library/reports-publications/exploring-dam-removal.html.

[10] The Heinz Center. Dam Removal: Science and Decision Making. 2002.

[11] Hewitt et al. "Restoring the Flow: Improving Selective Small Dam Removal Understanding and Practice in the Great Lakes States." Recommendations from the Small Dam Removal Workshop & Working Meeting. Trout Unlimited and River Alliance of Wisconsin. April 26-27, 2001.

[12] Bruce Babbitt. "What Goes Up, May Come Down." BioScience. Volume 52, Number 8. August 2002.

[13] Edwards Dam (ME). Margaret B. Bowman. "Legal Perspectives on Dam Removal." BioScience. Volume 52, Number 8. August 2002.

[14] Lower Snake River Dams (WA/OR). Blumm et al. "Saving Snake River Water and Salmon Simultaneously: the Biological, Economic, and Legal Case for Breaching the Lower Snake River Dams, Lowering John Day Reservoir, and Restoring Natural River Flows." Environmental Law. Volume 28, Number 4. 1998.

[15] Elwha Dam (WA). Brian Winter and Patrick Crain. "Making the Case for Ecosystem Resotration by Dam Removal in the Elwha River, Washington." Northwest Science. Volume 82 (special issue). 2008.

[16] Condit Dam (CA). David Becker. "The Challenges of Dam Remvoal: The History and Lessons of the Condit Dam and Potential Threats from the 2005 Federal Power Act Amendments." Environmental Law. Volume 36. 2006.

[17] Orr et al. "Examination of Physical and Regulatory Variables Leading to Small Dam Removal in Wisconsin." Environmental Management. Volume 33, Number 1. January 2004.

[18] Grimh Dam (WI). Exhibit 50 claimed 18% property devaluation for Grimh Dam neighbors. "Findings of Fact." Case No. 3-NO-2003-58033UC. Wisconsin Department of Natural Resources. June 19, 2008.

[19] Bill Provencher et al. "Does Small Dam Removal Affect Local Property Values? An Empirical Analysis." University of Wisconsin, Agricultural and Applied Economics. Staff Paper Series No. 501, July 2006.

[20] Ward Paper Mill (WI). The Aspen Institute. Dam Removal: A New Option for a New Century. 2002. Page 67.

[21] Woodley Dam (WI). "Woodley Dam Front." Accessed 7/15/2010 from http://www.deerparkwi.org/flood/woodleydam.html.

[22] Grimh Dam (WI). Exhibit 50 claimed 18% property devaluation for Grimh Dam neighbors. "Findings of Fact." Case No. 3-NO-2003-58033UC. Wisconsin Department of Natural Resources. June 19, 2008.

[23] Wisconsin Department of Natural Resources. "Wisconsin DNR – Identify Results." Accessed 7/15/2010 from http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=SurfaceWaterViewer.

[24] Philip Salkin. "A Cultural Resources Study of the Grimh Hydroelectric Facility and Associated Project Area in Sawyer County, Wisconsin." December 1995.

[25] "Findings of Fact, Conclusions of Law and Permit." Case No. 3-NO-2003-58033UC. Wisconsin Department of Natural Resources. June 19, 2008.

[26] Wisconsin Department of Natural Resources. "Findings of Fact, Conclusions of Law, and Approval." Case 3-NO-2002-49045st. June 28, 2006. Permits for dam abandonment, riprap, dredging, and bridge construction were issued on April 11, 2007.

[27] Apple River Association and Kiap-Tu-Wish Chapter of Trout Unlimited. "Petition for Contested Case Hearing on the following Chapter 30 permits issued to Polk County for activities in the Apple River." May 9, 2007.

[28] Sean Ryan. "Woodley Dam demolition Leaves Polk County Locals Leery." The Daily Reporter. May 21, 2008.

[29] Peter Henry. Position Statement sent to Polk County Corporate Counsel and WDNR Administrative Law Judge. June 3, 2008.

[30] Klamath Dams (CA/OR). Hannah Gosnell and Erin Kelly. 2010. "Peace on the river? Social-ecological restoration and large dam removal in the Klamath basin, USA." Water Alternatives. Volume 3, Issue 2. 2010.