

Intergovernmental Success in Multi-Component Flood Mitigation: The Lock Haven Flood Protection Project Experience

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The City of Lock Haven is a small community near the geographical center of Pennsylvania. In 1982 Lock Haven had a population of about 8,500; 2,500 of whom were college students at Lock Haven University. The City, on the West Branch of the Susquehanna River, has experienced severe flooding every seven years on average; most notably in 1936 and 1972. After the 1936 flood a federal protection project was planned but citizens rejected it because of local costs, loss of river access and property, and reductions to the tax base.

Flood protection was revisited after the Hurricane Agnes flood of 1972 which wiped out Piper Aircraft and hit Hammermill Paper Company causing a desperate economic situation, even after a \$18 million federal/state redevelopment project. The U.S. Army Corps of Engineers (USACOE) was called in to study flood protection in the area. At the time, Corps reconnaissance studies, alternatives analysis, and preliminary plans did not require local cost-sharing. The city and the county provided the required Letter of Intent and the project moved forward. Cost-sharing occurred only if the project was constructed.

In 1982 the process was stymied by the need for money from federal appropriations. Redevelopment fund remained so Lock Haven used them to incorporate the Lock Haven Flood Protection Planning Board (FPPB) under the Intergovernmental Cooperation Act. Members of the Board represented the city and county, nearby Woodward and Castanea Townships, Hammermill Paper Company, and Piper Aircraft Company. The FPPB hired a director to chase money, work with the Corps

and the Pennsylvania Department of Environmental Resources on planning and design, and to lobby for necessary legislative action at the state and federal level.

In the early 1990's the Lock Haven Area Flood Protection Authority was created to act as the local sponsor with legal authority to contract, apply eminent domain where necessary, and otherwise accomplish local obligations under a Local Cooperation Agreement (LCA) which was signed in 1992. Constructing the \$86 million flood protection project began soon thereafter. By 1995 the project was complete. Floods in 1996 provided the first test, which it passed! In September of 2004, remnants of Hurricane Ivan threatened the City again. Lock Haven's flood protection prevented over \$144 million in damages from these storms, according to the Baltimore District Corps of Engineers.

Many elements contributed to Lock Haven's success, two of which were the project's design and cooperation among stakeholders at all levels.

The Project

The Lock Haven project was not simply a floodwall and levee, it involved many different solutions to a variety of problems.

There is, of course, a long levee and some floodwall providing the City with protection from rising waters. Some structures were purchased and demolished to make space for these protection measures, but others were purchased, flood-proofed, and resold to new owners. Some structures were demolished along the path of the local airport's

runway extension but others were purchased by a contractor who relocated them to vacant lots purchased from the Redevelopment Authority. In one instance, a huge stone home that was listed on the Historical Registry was permanently elevated to prevent demolition. Upstream, in an area of Woodward Township, a number of seasonal homes, only slightly impacted by induced flooding, were spared from demolition through the construction of an elevated road that allowed for safe egress during floods. All of these actions were undertaken to meet Corps requirements or specific community needs (e.g., preservation of the tax base, efficient use of taxpayer money, etc.) and helped make the project a success in terms of flood protection and property owner satisfaction. Community life also benefited from the protection measures.

On the river side of the levee, there is a new beach and beach house. Below a new bridge there is a new 5,000-seat concrete amphitheater which replaced riverbank seating lost during construction and needed for the annual Labor Day National JC Boat Regatta. There is also a paved, lighted walking path on top of the levee as well as mini-parks at each end. Along Water Street, electrical connections have been installed for vendor use during the Labor Day festivities. For many local non-profit groups Labor Day is the biggest fundraising time of year. Replacing the public boat launch, lost to the levee, is a new one located in a new Woodward Township park with improved parking and better bathroom facilities.

The Partners

Projects like this one do not happen without a real need, committed leadership in the community, and vision and persistence among committed stakeholders. Partnerships were critical to success in Lock Haven, particularly in solving financing problems.

The federal government was a critical partner. The Corps of Engineers, especially the Baltimore District, the North Atlantic Division, and Headquarters contributed their dedication, professionalism, skill, and creativity. Yes, the Corps brings money to the table, but they also bring knowledge and an interest in problem solving. They planned and designed the project, paid 75% (about \$64.5 million), and ensured it was built correctly.

In Pennsylvania, the Department of Environmental Protection (DEP; then Department of Environmental Resources) pays half of the local share; 12.5%, or \$11.5 million, for the Lock Haven project. Their experience elsewhere and constant presence helped solve problems and ensure accountability.

Our partners in business and industry were essential to success. They wanted protection from floods to stay in business. To do so, they contributed land, money, time, and influence to make the project happen. Hammermill Paper donated land for the levee as it passed around its facility leading to \$1.2 million in credit towards local costs. In addition, since Hammermill was in Castanea Township, not the City of Lock Haven where the bonds were being sold, they agreed to pay the City \$40,000 per year for 20 years toward bond costs in lieu of taxes.

The Pennsylvania Department of Transportation (PDOT) helped by constructing an elevated roadway (U.S. 220) for a considerable length of the levee alignment. Although the embankment was not impervious, it did save Lock Haven a lot of money because we could build a much smaller impervious layer of earth next to it. With a little creative interpretation of the Water Resources Development Act of 1986 we claimed a \$5.6 million credit against our local share because of PDOT's contribution.

Lock Haven received \$700,000 in credit for work done by the Flood Protection Planning Board throughout the decade and the Board approved a \$4 million 20 year bond, almost completing the project's financing. Additionally, business people held a fundraiser and the City asked for pledges from non-profits that would receive flood protection reducing their existing insurance premiums. Payments from those pledges defray the annual bond costs allowing for a smaller tax increase. Many churches, the YMCA, and other similar institutions pledged and are still making annual donations.

More than just money was involved here. All of these contributions were a way for everyone to show their support and appreciation for the effort and provided a way to get involved.

Conclusion

The Lock Haven project is finished and hugely successful. It provides flood protection and is used everyday as a recreation area. The river is more

accessible and used more than ever before. Special events, such as the boat regatta and outdoor concerts are well-attended and more successful than before the project. Economic development has occurred that would not have happened without flood protection.

This project did not happen without controversy. People lost their homes, river lots, and businesses. Lock Haven appeared on *60 Minutes* and was written about in the *Wall Street Journal* and *National Geographic*. Elections were won or lost and good people paid a high personal price for making this vision for their community a reality. I sincerely hope and pray that history will appropriately remember these people as heroes and heroines when telling the story of Lock Haven.

Author Bio and Contact Information

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References

U.S. Army Corps of Engineers, Baltimore District. *General Design Memorandum Lock Haven Local Flood Protection Project West Branch Susquehanna River and Bald Eagle Creek, Pennsylvania*, May, 1987.