



Oklahoma Comprehensive Water Plan Supplemental Report

Floodplain Management Issues & Recommendations

February 2011

This study was funded through an agreement with the Oklahoma Water Resources Board under its authority to update the Oklahoma Comprehensive Water Plan, the state's long-range water planning strategy. Results from this and other studies have been incorporated where appropriate in the OCWP's technical and policy considerations. The general goal of the 2012 OCWP Update is to ensure reliable water supplies for all Oklahomans through integrated and coordinated water resources planning and to provide information so that water providers, policy-makers, and water users can make informed decisions concerning the use and management of Oklahoma's water resources.

Oklahoma Comprehensive Water Plan



Floodplain Management Issues & Recommendations

The following report was submitted by the Oklahoma Floodplain Managers Association, in support of the Oklahoma Comprehensive Water Plan, to expressly present the state's most pertinent long-term floodplain management needs.

Floodplain Management Issues & Recommendations

Floodplain management efforts in Oklahoma have been comprised mainly of the efforts made by local communities to comply with the federal regulations that govern participation in the National Flood Insurance Program (NFIP). Local communities (cities, towns, counties) enact and enforce land use and development regulations relating to construction in areas of flood hazard so that federal flood insurance will be available to residents and business owners within the community. The Oklahoma Water Resources Board serves as the state coordinating agency and is responsible for assisting local communities in these efforts, as well as for regulating development on state owned property. Tribal governments are also eligible to participate in the NFIP.

Areas of flood hazard are determined by the Federal Emergency Management Agency (FEMA) through the issuance of Flood Insurance Studies (FIS) and Flood Insurance Rate Maps (FIRMs). New studies and maps are developed and issued by FEMA. When mapped areas need to be altered because of development, availability of more accurate data, or other factors, the effective maps can be officially altered by petitioning FEMA for a letter of map change. A large number of communities within the state have recently received or will soon receive new maps through federal programs known as Map Modernization or RiskMAP.

Communities that entered the National Flood Insurance Program before 1980 (pre-80 communities) adopt floodplain management regulations by ordinance of the governing body. Communities that entered the program after 1980 (post-80 communities) must follow specific requirements set forth in the Oklahoma Floodplain Management Act, including adopting floodplain management regulations by action of a five member floodplain board. All participating communities must have a floodplain administrator accredited by the Oklahoma Water Resources Board.

Floodplain management in Oklahoma is supported by a network of private-sector professionals, many of whom have gained national recognition for their work in the field. Public and private floodplain management professionals have joined together to form a non-profit organization known as the Oklahoma Floodplain Managers Association, Inc (OFMA). OFMA administers a nationally recognized certification program (Certified Floodplain Manager, or CFM), provides basic and advanced level training, and conducts educational and outreach programs aimed at saving lives and reducing property losses due to flooding.

Moving forward, floodplain management cannot be based solely in a desire to comply with federal regulations. If floodplain management is undertaken only as a means to the end of making flood insurance available in a community, the opportunity to capitalize on relationships between floodplains and other aspects of water resources will never be realized, and the opportunity to mitigate the impacts of flooding on the lives of Oklahomans will be lost.

The following actions should be taken to allow floodplain management to serve as an important and beneficial part of the state's future water resource strategies:

- *Encourage the preservation of the natural and beneficial functions of the floodplain.*

The floodplain is, first and foremost, a natural feature. Floodplains are, by their very nature, supposed to be inundated with floodwaters. Development within floodplains, whether building a new housing subdivision or lining a creek channel with concrete, serve to reduce the ability of floodplains to serve their intended purposes, including storage of floodwaters, provision of habitat space, improvement of water quality. Of particular importance is the role that floodplains, and particularly the vegetation that tends to be naturally present, play in improving the quality of stormwater before it reaches receiving waters. Local communities should be encouraged to adopt a regulatory philosophy that exploits the synergies between floodplain management and stormwater quality and properly recognizes the natural and beneficial functions of the floodplain.

- *Recognize that the minimum standards for participation in the National Flood Insurance Program are not sufficient to adequately reduce the frequency and severity of flood losses.*

The National Flood Insurance Program was designed to reduce reliance on disaster assistance and provide a mechanism to protect lenders who extended credit in areas at risk for flooding. The land use and development controls that comprise the minimum standards for community participation in the NFIP were designed to facilitate the provision of insurance, not necessarily to adequately reduce flood risk. Local communities must be encouraged to develop and implement "higher standard" regulations that are appropriate to mitigate the actual flood risk that exists within the community. Further, current methods of flood risk mapping do not adequately account for the inevitable increase in flood risk caused by development within the watershed. Regulations that require freeboard, or elevation of structures above the minimum standard "base flood elevation" or "BFE" could help account

for increased future risk. A minimum freeboard requirement of one foot is necessary just to account for the increase in flood elevation already built in to the maps. A higher freeboard requirement might be necessary and appropriate in many communities. Similarly, a prohibition of construction or improvement of any structure (at very least, any residential structure) within an established regulatory floodway would protect against risk of damage to the structures in question but would also preserve the integrity of the floodway, reducing flood risk throughout the surrounding area.

A requirement that the ability of the floodplain to store floodwaters not be reduced would significantly limit future increases in flood risk. This regulation could be implemented by requiring that compensatory storage, at a hydrologically equivalent location, be provided whenever an obstruction is placed anywhere in the floodplain. In areas with particularly serious flood risks, regulations prohibiting placement of any fill or structures in the floodplain could have far-reaching benefits.

As long as there is development within a watershed, floodplains are going to increase in size. A potential solution to this problem is to require that any new impervious surface added anywhere in a community be offset by installation of stormwater detention, whether on-site or on a regional basis.

All of these possible “higher standard” regulations have been successfully implemented in Oklahoma communities. It should be noted that many communities have been recognized for their higher regulatory standards by membership in the NFIP’s Community Rating System. Membership in the Community Rating System can lead to significant discounts on flood insurance rates for all structures in the community. In particular, the City of Tulsa has been recognized as having one of the three most effective programs in the entire nation because of their higher regulatory standards and other aspects of their floodplain management program. With the proper education, outreach, and technical assistance, these strategies for reducing risk could become more accessible to all communities in the state.

- *Provide a mechanism for comprehensive master drainage planning.*

Communities facing flooding problems often seek structural solutions – levees, culverts, storm sewers, detention ponds, etc. Tremendous resources are committed to the construction and maintenance of these projects, often without any real assurance that they will fix the underlying problem. The only way to determine the solution to all but the most

simplistic flooding problem is to conduct a comprehensive master drainage plan. Such a plan not only identifies the true nature of the problem, but allows for real cost-benefit analysis of the proposed solutions. Unfortunately, funding can be obtained for projects but generally cannot be obtained for comprehensive master drainage plans. To continue to allow projects to be planned and constructed without watershed and sub-watershed level analysis is an irresponsible use – if not a blatant waste of taxpayer monies. This problem must be addressed by identifying a funding mechanism for comprehensive master drainage plans that can be accessed by all communities in the state, regardless of size or resources.

- *Allow Oklahoma to continue to serve as a model for state floodplain management programs.*

Oklahoma's floodplain management program is, in many ways, a model for all other state programs. The floodplain administrator accreditation requirements are groundbreaking. Many other states are seeking to adapt systems for permitting development on state-owned property that mirror the OWRB program, with particular focus on the level of cooperation between OWRB and the Oklahoma Department of Transportation. The relationship between OWRB and the Oklahoma Floodplain Managers Association is envied by state coordinating agencies and state floodplain managers associations across the nation, particularly with regard to the partnership that exists whereby OFMA's Training Cadre has taken responsibility for teaching OWRB's advanced floodplain management training courses.

In order to maintain and build on the strengths of the state floodplain management program, a permanent funding source must be identified. Current funding for the floodplain management program comes from FEMA. This federal funding is intended to supplement, not replace, state appropriations or other revenues.

In addition to identifying revenues for the general operation of the floodplain management program, funding is needed to allow for the initiation or expansion of several important programs. Of primary importance is funding for the Cooperating Technical Partner Program, which would allow OWRB to leverage a tremendous amount of federal funding to improve flood hazard mapping throughout the state. A small amount of funding could lead to large returns, and thus should be made a priority. Another important initiative that should be funded is the creation of an inventory of all state owned structures located within the

floodplain, a project that is critical for disaster response and future planning and asset managing purposes.

State agencies other than OWRB also have contributed to Oklahoma having a model floodplain management program. OWRB and OFMA have worked very hard to build relationships with a number of state agencies impacted by floodplain management considerations. Cooperative efforts with the Oklahoma Insurance Department have caused flood insurance issues to be featured in agent and adjuster training, licensing and continuing education. Cooperation with the Department of Education resulted in the implementation of flood safety awareness training for school bus drivers. Oklahoma is the only state in the nation to have a flood safety awareness section in the state driver's manual, a tribute to cooperation with the Department of Public Safety. Emphasis should be placed on expanding these relationships and discovering new way to reduce risk by building partnerships with state agencies.

One potential partnership of critical importance relates to building and construction regulations. The nationally recognized building and construction codes now contain provisions related to floodplain management. OFMA and a number of floodplain management professionals in the state have been heavily involved in working to create and revise the flood safety provisions in these codes, working with FEMA and the International Code Council. Oklahoma, through the Uniform Building Code Council, is in the process of determining what portions of the nationally recognized codes will be the minimum requirements to be enforced for all construction throughout the state. It is critical that a floodplain management professional be added to the Uniform Building Code Council to assist with this process.

- ***Enhance disaster readiness.***

Despite the best mitigation efforts, communities with areas of flood risk will experience flooding disasters. Enhanced flood disaster readiness is critical for every community in the state. With the support of FEMA and OWRB, OFMA has created a Disaster Response Team to assist local communities in times of need. The Disaster Response Team consists of volunteer floodplain management professionals ready to deploy to a disaster to assist the local community in all aspects of disaster response, with a particular emphasis on helping the community comply with all of the requirements for inspections and damage assessments that are required by federal regulations. The OFMA Disaster Response Team is the first of its kind in the nation and has quickly become the model for

similar efforts in a number of other states. Formal support for the Disaster Response Team must continue to be strong, whether financial or administrative.

- *Preserve local control of floodplain management.*

Despite the high level of support provided by the state coordinating agency and statewide professional association, floodplain management is and will remain largely a local function. As such, local communities must be afforded flexibility to determine what sort of floodplain management program is best to address their own flood risk. One action that could greatly enhance the ability of local communities to administer their floodplain management program would be to remove the requirement that Post-80 communities appoint and utilize a five-member floodplain board. While the floodplain board may be appropriate for some communities, it is a burdensome obstacle to others. Some smaller communities have been unable to keep floodplain boards properly constituted, creating a barrier to entering or remaining in the NFIP. This barrier not only jeopardizes the ability of the community to make flood insurance available to its residents and businesses, but it can cause the community to be ineligible for federal disaster assistance.¹ In general, communities should be given options and provided with assistance, but should be granted the ability to craft their own programs and implement their own regulations, subject to the federal standards for participation in the NFIP.

- *Work toward achievement of a No Adverse Impact approach to floodplain management.*

The goal of floodplain management is to reduce the frequency and severity of flood losses, thus reducing the risk of loss of life and damage to property due to flooding. There are many ways to achieve this goal, but the most successful programs do so by adopting a “No Adverse Impact” approach to floodplain management. All communities within the state should strive to craft floodplain management programs that require all development to have “no adverse impact” on any other property in the area, in the community, and in the watershed.

¹ This requirement was removed by statute during the 2011 legislative session.