

## **No Adverse Impact Floodplain Management**

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### **Background**

Flood damages in the United States continue to escalate. From the early 1900s to the year 2000, flood damages in the United States have increased six-fold, approaching \$6 billion annually. This occurred despite billions of dollars for structural flood control, and other structural and non-structural measures. We continue to intensify development within watersheds and floodplains, and do it in a manner where flood prone or marginally protected structures are suddenly prone to damages because of the actions of others in and around the floodplain.

Current national floodplain management standards allow for: floodwater to be diverted onto others; channel and overbank conveyance areas to be reduced; essential valley storage to be filled; or velocities changed with little or no regard as to how these changes impact others in the floodplain and watershed. The net result is that through our actions we are intensifying damage potentials in the nation's floodplains. This current course is one that is not equitable to those whose property is impacted, and is a course that has shown to not be economically sustainable.

Over the past 50 years a system has been established that in many locations has substituted local and individual accountability with federal government programs of flood control and disaster assistance. While funding for the Corps of Engineers, NRCS and other agencies of the federal government will fluctuate, the pattern of the federal government responding to disasters has become firmly entrenched and will not likely change in the foreseeable future. However, what has changed is how disaster relief impacts other domestic programs.

Ten years ago, when Congress was faced with a large disaster, they would fund the disaster with deficit spending. Today, each time Congress passes a bill to provide disaster supplemental funding for disasters, offsetting cuts in domestic programs must be made. Despite investment theories regarding benefits and costs, our problem has become one of cash flow. Each needless incremental increase in flood damage represents a lost opportunity for support of essential domestic programs of the United States.

Considering the recent emphasis on domestic security and military buildup, the cash flow problem is only going to get worse. At its broadest level, No Adverse Impact floodplain management is about local government taking steps to reduce the drain on national resources, as well as local and state resources. These resources can then be applied to domestic programs enhancing the economy, environment, education, and defense. In essence, current floodplain management approaches are only sustainable at the expense of other important programs.

More directly for local governments, No Adverse Impact floodplain management represents a way to prevent worse flooding in your community---right now! While some state and local governments may have abdicated their responsibility, most local governments have simply assumed that the federal approaches are an acceptable standard of care, perhaps not realizing these very approaches could cause additional flooding and damage within their community. Instead, No Adverse Impact offers communities an opportunity to promote responsible floodplain development through

community-based decision making. Communities will be able to determine better use of federal and state programs to enhance their proactive initiatives and utilize those programs to their advantage as a community. The No Adverse Impact floodplain management initiative empowers the local community (and its citizens) to build stakeholders at the local level. No Adverse Impact floodplain management is a step towards individual accountability by not increasing flood damages to other properties. No Adverse Impact floodplain management is about local communities being proactive in understanding potential impacts and implementing programs of mitigation before the impacts occur.

### History

In 2000, in Austin, Texas, the Association of State Floodplain Managers (ASFPM) first introduced the concept of No Adverse Impact (NAI) at the national conference. The reaction was mixed. There were immediate proponents, there were opponents, there were those that argued over the name, there were those that asked “how do we get there?” and there were those that said “it’s about time.” Yet in spite of those mixed reactions, the NAI initiative has been gaining momentum, definition, and support.

The No Adverse Impact approach was developed by ASFPM to address the problem of ever increasing flood damages. If the nation really is to actually reduce the real dollar costs of average annual flood damages, new approaches are needed. Those approaches must move from “how to build in the floodplain to reduce the risk to that new structure” to “what are the cumulative and sometimes secondary impacts of current and future development on other properties?” The NAI approach is developed with this in mind.

For NAI to flourish, ASFPM is convinced that planning and implementation must begin at the local level. It should be supported by the programs and assistance of state government, federal government, and private sector businesses.

### No Adverse Impact Floodplain Management Defined

“No Adverse Impact Floodplain Management” is a managing principle that is easy to communicate and from a policy perspective tough to challenge. *In essence, No Adverse Impact floodplain management is where the action of one property owner does not adversely impact the rights of other property owners, as measured by increased flood peaks, flood stage, flood velocity, and erosion and sedimentation.* No Adverse Impact floodplains could become the default management criteria; unless a community has developed and adopted a comprehensive plan to manage development that identifies acceptable levels of impact, appropriate measures to mitigate those adverse impacts and a plan for implementation. No Adverse Impact could be extended to entire watersheds as a means to promote the use of retention/detention or other techniques to mitigate increased runoff from urban areas.

While the No Adverse Impact approach will result in reduced damages for the 1% chance flood event, its true strength is that it virtually ensures that future development actions which impact the floodplain must be part of a locally adopted plan. This removes the mentality that floodplain management is something imposed by FEMA, and promotes local accountability for developing and implementing a comprehensive strategy and plan for the floodplain. Giving locals the flexibility to adopt comprehensive local management plans, which would be recognized by FEMA and other federal programs as the acceptable management approach in that community, will provide the community with control and support for innovative approaches.

Finally, No Adverse Impact is an approach that makes sense and is the right thing to do. Too often our discussions on development approaches turn into arguments over the range of application and the impact these approaches might have on those who are choosing to encroach into the floodplain. It is time to change and begin managing from the perspective of not causing additional flood impacts on other properties, giving local communities the ability to manage flood losses through comprehensive local plans.

### **Incorporating NAI into Community Activities**

As communities move forward in building, planning and policy creation, consider incorporating the No Adverse Impact concept into their work. They can do this by making sure that the actions taken in the floodplain, and throughout the watershed, do not lead to adverse impacts on other property. Adverse impacts need to be mitigated to prevent transferring the problems to another property or community.

No Adverse Impact floodplain management is an approach that ensures the action of any community or property owner, public or private, does not adversely impact the property and rights of others. An adverse impact can be measured by an increase in flood stages, flood velocity, flows, the potential for erosion and sedimentation, degradation of water quality, or increased cost of public services. No adverse floodplain management extends beyond the floodplain to include managing development in the watersheds where floodwaters originate. NAI does not mean no development. It means that any adverse impact caused by a project must be mitigated, preferably as provided for in the community or watershed based plan.

For local governments, No Adverse Impact floodplain management represents a more effective way to tackle their flood problems. The concept offers communities a framework to design programs and standards that meet their true needs, not just the requirements of a federal or state government agency. The NAI floodplain management initiative empowers communities (and their citizens) to work with stakeholders and build a program that is effective in reducing and preventing flood problems. NAI floodplain management is about communities being proactive-understanding potential impacts and implementing prevention and mitigation activities before the impacts occur.

NAI has many benefits. By developing activities that really address a community's situation and that do not harm others, a community can:

- prevent flooding from increasing or damaging others;
- see a reduction in flood losses over time;
- avoid challenges and lawsuits over causing or aggravating a flood problem; and
- receive recognition for efforts through the Community Rating System.

No Adverse Impact is a principle, not a specific set of standards, requirements, or practices. The objective is to incorporate the NAI concept into all ongoing local community activities. There are many ways a community can do this. A community can incorporate the approaches into their plans, adopt specific regulatory or policy language, initiate individual projects, start or revise entire programs or prepare a master plan that addresses all activities that impact flooding.

Below is a list of seven types of actions that a community can undertake in the normal course of business. Suggestions are included which communities can incorporate as they do these day-to-day activities, thus moving a community toward the goal of No Adverse Impact.

### **Hazard Identification**

When a community conducts any mapping project, they should think through the comprehensive approach. Mapping efforts should realistically reflect the existing hazards and the future impacts of development. Identify all flood related hazards not normally identified by the minimum standards of the NFIP, such as dam failure, levee overtopping and channel migration. Include small watersheds, erosion and sedimentation among other considerations. Analyze how new development may have an impact, such as increased flood levels, and include the results of that analysis in the mapping project.

### **Planning**

Community planning activities that are already undertaken can easily incorporate the NAI concept. All local planning, including comprehensive, watershed, mitigation, housing, neighborhood, transportation, economic, and capital improvement plans should recognize flood and flood related hazards. Review these plans in light of the individual and cumulative impacts on others, now and in the future, and recommend methods to prevent or mitigate adverse impacts. Likewise, hazard planning needs to consider and incorporate all of these other planning efforts.

### **Infrastructure (Public Works)**

All actions to maintain, repair, replace, and expand infrastructure (roads, utilities and public facilities) should include a review of the hazards, how the infrastructure can be protected from those hazards, and the impact that the planned action may have on others. Providing infrastructure to a high risk area can influence whether the area gets developed or not. Again, any adverse impacts need to be mitigated while not transferring the problems to another property or community.

### **Emergency Services**

Actions taken during and after a flood or other disaster should recognize adverse impacts. Adverse impacts need to be mitigated while not transferring the problems, such as increased flood heights or flood velocities, to another property or community. Flood warning and response activities should be pre-planned with accommodation for adverse impacts. For example, erecting a temporary levee during an emergency could have adverse impacts on others. Local emergency plans should identify alternative approaches, such as floodproofing, to protect property from flooding.

### **Regulations and Standards**

A community should incorporate regulations and standards which prevent the adverse impacts of individual and cumulative impacts caused by current and future development. In order to protect existing and future development from the adverse impacts of new construction, regulatory policies, ordinances, standards and activities should prohibit development that causes adverse impacts. Standards should be set to evaluate the potential impact. For example, many communities require freeboard, where the first floor of new construction is placed a foot or two above today's flood level, recognizing that tomorrow's flood levels will be higher.

### **Corrective Actions**

A community should take actions to correct existing hazards that were caused by past development and to not transfer the problems to another property or community. Many of these actions, often called mitigation, can be accomplished after a disaster, using the disaster as impetus for change in how the community addresses its hazards. Preventive actions can also be taken before a disaster hits, through planning and development/re-development activities. Consider all possible approaches, including elevation, acquisition, floodproofing and land treatments.

### **Education and Outreach**

The community should convey the NAI message to specific target audiences. Target audiences can include members of the public, property owners, decision makers, design professionals, and developers. The community message should be: know your communities' hazards, understand how your actions could adversely impact others, make changes now to avoid legal consequences of actions that have an adverse impact on others, and identify how community members can protect themselves and others. Communities probably have a variety of outreach programs and dissemination tools already in place; these can be modified to incorporate the NAI concept.

### **Conclusion**

The central message that ASFPM is trying to communicate is that we continue to cause flood damages and these flood damages have not been communicated effectively. This is in part due to the floodplain management community as a whole spending too much time debating issues of individual standards while not stepping back and evaluating the broad impact of the range of management approaches throughout the watershed.

Current management systems to reduce flood losses are costly and often allow development that fails to evaluate or mitigate adverse impacts on other properties, both now and in the future.

No Adverse Impact is an approach that will lead to reduced flood losses throughout the nation while promoting and rewarding strong management and mitigation actions at the local level.