
I. Introduction to No Adverse Impact

This is an excerpt from the ASFPM No Adverse Impact Legal Guide for Flood Risk Management.

The entire document is available at no.floods.org/NAI-Legal



FIND THE FULL DOCUMENT FRONT MATTER, SUGGESTED CITATIONS, ACKNOWLEDGEMENTS, TABLE OF CONTENTS, INTRODUCTION TO THIS GUIDE, AND COMMON TERMINOLOGY APPENDED TO THE END OF THIS EXCERPT DOCUMENT.

I. Introduction to No Adverse Impact

No Adverse Impact (NAI) floodplain stewardship is an approach that is easy to communicate and, from the legal and policy perspectives, tough to challenge. In essence, ***No Adverse Impact is the principle that the actions of one property owner should not be allowed to adversely affect the rights of other members of the community.*** The adverse effects, or impacts, of unwise development decisions can be measured by increased flood levels, higher flood velocities, increased erosion and sedimentation, deterioration of natural floodplain functions, increased risks for emergency response personnel, higher infrastructure maintenance costs, or other measurable adverse impacts to a community's well-being. The NAI approach protects the rights of neighboring property owners and also protects the natural systems that provide flood mitigation benefits to the community. NAI elevates the concept of floodplain management to one of floodplain stewardship that requires integrated management of both natural systems and human activities in areas prone to flooding.

“...insisting that landowners internalize the negative externalities of their conduct is a hallmark of responsible land-use policy...”

– Justice Samuel A. Alito Jr., in the majority opinion for the Supreme Court's ruling in *Koontz v. St. Johns River Water Management*, 133 S. Ct. 2586 (2013).

I.A. Local Implementation of NAI

No Adverse Impact programs are implemented at the local level by communities that utilize multiple strategies to promote flood safety, prioritize flood risk reduction, and improve stewardship of flood-prone areas. The steps for implementation are:

- Identify acceptable levels of impact from proposed land use activities;
- Specify appropriate measures to mitigate adverse impacts; and
- Implement actions that reduce or eliminate those impacts.

Implementing NAI strategies doesn't mean that no development can take place in the floodplain! NAI means that adverse impacts generated by land use activities are identified and mitigated on a case-by-case basis. This principle gives communities a way to promote *responsible* development measures through community-based decision making.



Floodplains and waterfronts can be valuable community assets, where open greenspace and parks provide places to relax and enjoy the view. When this area floods, there is no threat to life or real property, and the damage and cleanup requirements are minimal. The NAI approach promotes the use of floodplain land in ways that are compatible with known, or anticipated, flood risks. NFIP CRS Coordinator's Manual cover photo courtesy of John Kinley

I.B. A Legal Foundation for NAI

NAI is a legally sound approach for managing floodplains in a way that promotes public health, safety, and welfare. It has been tested in the courts and found to be reasonable, equitable, and aimed at the "rights of all." It is working in communities both big and small, is easily implementable, and promotes local sustainability.

The law is important for policies and practices related to the use of floodplains. The law, in theory (if not always in practice), encourages responsible behavior on the part of individuals, agencies, corporations, and, certainly, local governments. That responsible behavior is referred to as a "standard of care," and when others suffer harm because that reasonable behavior/standard of care was not exercised, the most sought-after remedy is found in the courts via civil litigation. Most often, if the harm is considered "foreseeable," then the harm is offset by monetary damages awarded to the offended party(ies).

Many attorneys are not experts in community liability or taking issues, so the importance of how local governments can effectively deal with these legal issues cannot be overstated. Local governments can be, and have been, successfully sued when their decision to allow development in areas at risk for flooding caused harm to others.

Sovereign immunity is a legal doctrine under which a ruling governing body cannot be sued without its consent. However, local government protections under sovereign immunity are decreasing – or are becoming less robust – in most jurisdictions, and many feel that this trend is likely to continue, opening the door for potential future liability for adverse development actions taken today. If a community approves – and thus knowingly allows – development that causes adverse impacts, then the developer and the community can be brought into court and held accountable for their actions. This is an increasingly common occurrence, because with improved technology, impacts are more easily measured!

I.C. The National Flood Insurance Program (NFIP)

Congress established the National Flood Insurance Program (NFIP) on August 1, 1968, with the passage of the National Flood Insurance Act and has modified the program several times over the years. The elements of the NFIP – mapping, floodplain management, mitigation, and insurance – are central to how flood risks are currently managed in this country.

The NFIP provides flood insurance to help reduce the economic impacts of flood-related damage to buildings. Federally backed flood insurance can be purchased by property owners, renters, and businesses within communities that have adopted and are enforcing minimum floodplain management regulations that are intended to reduce flood damage. NFIP insurance is available to anyone living in one of the 23,000 participating NFIP communities. Homes and businesses in high-risk flood areas with mortgages from federally backed lenders are required, by law, to be covered by flood insurance.

The Federal Emergency Management Agency (FEMA), through the NFIP, issues Flood Insurance Rate Maps (FIRMs) that delineate high-risk floodplains, called Special Flood Hazard Areas (SFHAs). For some floodplains, FEMA has also determined Base Flood Elevations, or BFEs, (the modeled height of flood waters during the base flood) and regulatory floodways (areas reserved to convey floodwaters). The FIRMs and supporting Flood Insurance Study (FIS) reports provide flood hazard and flood risk information for use in local floodplain management programs of participating communities.

Communities participating in the NFIP must administer the following rules for floodplain development:

1. At a minimum, a community must regulate development in the SFHA shown on its FIRM. The community must use the BFE, or a higher flood protection level. If FEMA publishes a new FIRM, the community must revise its local flood ordinance to adopt the new FIRM.
2. All development in the SFHA must have a permit from the community. "Development" is defined as any manmade change to improved, or unimproved, real estate. It covers constructing or altering a building (referred to as a "structure" in the NFIP) and other changes to the land, including mining, dredging, filling, grading, paving, excavation, or drilling operations, and storage of equipment or materials.
3. Development along a river or other channel cannot obstruct flows so as to cause an increase in flooding on other properties. To ensure this, an analysis may be required to measure the cumulative effect of the proposed development. A project in a regulatory floodway cannot cause any increase in flood heights.
4. New buildings may be built in the floodplain, but they must be protected from damage caused by the base flood. The lowest floor of a residential building must be elevated to, or above, the BFE or to the elevation required by state or local flood damage prevention regulations. This is typically done by elevating the building on fill or piers, or by elevating the finished living space on foundation walls over a flow-through crawlspace or enclosure. Nonresidential buildings must be either elevated or dry floodproofed (to prevent the entry of water) to a protection level at or above the BFE.
5. If an existing building in the SFHA is "substantially improved," it is treated as a new building. The regulations define "substantial improvement" as "any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement." This requirement also applies to buildings that are substantially damaged by any cause, such as flooding, fire, or windstorm, regardless of the actual repair work performed.

I.D. Limitations of Minimum NFIP Standards

While the NFIP provides the maps, studies, and a regulatory basis for local floodplain management programs; it is, at its core, an insurance program and its minimum standards allow for at-risk development in areas prone to flooding. Communities that rely on the minimum NFIP standards as their **only** flood-related development regulations have only limited protection against the damage and destruction wrought by the natural forces of flooding on human

development. In addition, communities that do not sufficiently protect their residents and property from known hazards may be open to potential legal challenges.

The NFIP minimum construction standards for regulating development within the mapped SFHA are a good starting point for addressing floodplain management needs in a community, but for maximum flood-risk reduction, they cannot be the only tool in the toolbox to stop and reverse the long-term trend toward increasing flood damage because:

- They do not address the entire floodplain. In other words, they neglect the potential for larger floods / flooding outside of the SFHA, other unmapped flood hazards, or the effects of urbanization and a changing climate on flood hazards.
- They focus on how to build to reduce flood-related losses within a floodplain, rather than how to avoid unsafe locations.
- They allow floodwater conveyance areas to be reduced, essential valley storage to be filled, and/or flood velocities to be increased—all of which can adversely affect others.
- Sedimentation, erosion, channel migration, debris/ice jams, and coastal erosion often cause flood hazards that are not adequately reflected on the NFIP's FIRMs, and are therefore not accurately accounted for in hazard mapping or local planning.
- They assume that the ground is stable and that if a building (or other development) is high enough it will be protected from damage. This is not the case in areas subject to erosion, subsidence, or mudslides.
- There are no accepted national flood loss reduction standards for levees, and inadequate mapping for areas protected by levees.
- The regulated SFHA does not include residual risk areas downstream of dams. There is a continued problem of increasing development downstream of dams, necessitating that existing structures be retrofitted to a higher protection standard (which doesn't always occur).
- There are no commonly applied flood loss reduction standards for infrastructure and critical facilities, such as wastewater treatment plants and emergency operations centers. The definition of what is, or is not, a critical facility is ever-changing.
- In areas subject to subsidence, floodplain maps lose their accuracy when the ground settles over the years and map revision efforts don't keep pace with the change.
- NFIP regulatory standards may not work adjacent to lakes where water levels may remain high for months or years.

For these reasons, and many more, relying on NFIP mapping and minimum development standards will not stop, and may only minimally reduce, flood losses within a community. Unfortunately, for many communities, it may only be a matter of time until a major flood event occurs. In addition to the direct damage to buildings and infrastructure, floods have significant impacts on local economies, as well as the health and safety of residents. If federal disaster assistance is available post-disaster – which is often not the case – this assistance typically falls far short of the actual flood recovery costs.

Federal Disaster Assistance

For **federal disaster assistance** to be available post-disaster, the event must be formally declared a federal disaster. All federal disaster declarations are made solely at the discretion of the President of the United States. Many floods are devastating for the locally community that is impacted, but do not cause sufficient total monetary damage to receive federal disaster declarations.

Although the NFIP was established in 1968 and has been implemented in conjunction with numerous other flood risk management efforts, subsequent decades have not led to reduced flood damage in the United States. In fact, the per person annual flood losses have increased by a factor of six over the last 60 years, with nationwide flood losses averaging nearly \$17 billion per year since 1990.¹³



Minimum national floodplain development standards do not take into account the risk of erosion. Photo taken on the Cowlitz River, Washington, 2007. Source: FEMA photo by Marvin Nauman.

¹³ Source: CEMHS, 2019. Spatial Hazard Events and Losses Database for the United States, Version 18.1. [Online Database]. Phoenix, AZ: Center for Emergency Management and Homeland Security, Arizona State University. www.sheldus.org.

Local Flood Impacts

Studies show that communities experiencing a major flood often take years, if not decades, to recover. When flooding impacts a developed area, any and all of the following impacts on residents, businesses, and community institutions can be expected:

- Costs incurred due to post-flood clean-up and repair of buildings and infrastructure;
 - Loss of jobs and services due to businesses closing or cutting back on operating hours;¹⁴
 - Decreased revenue due to loss of income, sales, tourism, and property taxes;
 - Risk of injury or loss of life, including first responders rescuing those who did not evacuate or are stranded;
 - Mental health and family impacts, including increased occurrence of suicides and divorce;
 - Loss of historical or unique artifacts;
 - Loss of programs or services that are cut to pay for flood recovery; and
 - Deterioration of homes and neighborhoods as floods recur.
-

¹⁴ A commonly cited statistic suggests that 25 percent of businesses never reopen after a disaster and others struggle to stay in business (Institute for Business & Home Safety, 2007, “Open for Business: A Disaster Protection and Recovery Planning Toolkit for the Small to Mid-Sized Business,” https://www.preventionweb.net/files/7280_OpenForBusinessnew.pdf; Federal Emergency Management Agency, 2018, “Stay in Business after a Disaster by Planning Ahead,” <https://www.fema.gov/press-release/20210318/stay-business-after-disaster-planning-ahead>; U.S. Small Business Administration, “Prepare for emergencies” page of online “Business Guide,” referenced January 2023, <https://www.sba.gov/business-guide/manage-your-business/prepare-emergencies>).



Floodwaters can cause extensive damage to structures and contents, leaving behind debris, mud, and mold. The personal and financial costs of recovery can have devastating impacts on individuals, businesses, social institutions, and local governments. Source: FEMA photo of flood damage in Minot, ND, July 2011

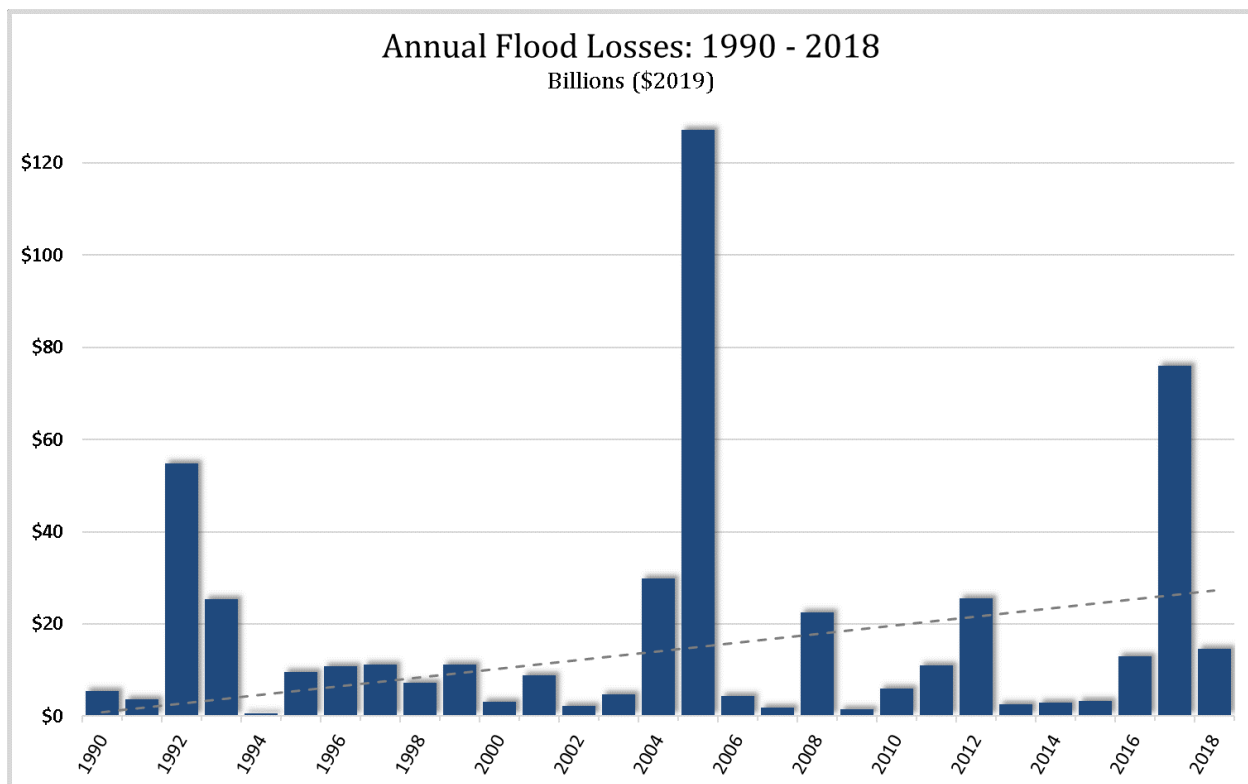
Flood Losses in the Nation

Flood losses in the United States have escalated despite the investment of billions of dollars in structural flood control projects during the last 100 years, as well as the implementation of many other flood protection and flood-risk-reduction measures. Consider the following:

- Flood hazards are increasing due to more intense storm events and rising sea levels.
- Current development trends in areas with a high risk of flooding are putting more people and property in harm's way. Population growth in areas that are already prone to flooding is a more significant driver of increased flood risk than climate change.¹⁵

¹⁵ It is estimated that future development patterns in the U.S. will result in a 70% increase in the average annual exposure to flooding by 2050 (Wing, O.E.J., Lehman, W., Bates, P.D. *et al.* Inequitable

- Funding for flood protection programs, especially structural flood control projects (such as levees, dams, and seawalls), is not sufficient to protect at-risk populations and infrastructure.
- Tax incentives and funding for disaster assistance have encouraged, and often subsidized, floodplain occupancy and development/redevelopment and reduced local and individual accountability for flood losses.
- The NFIP's national standards for managing floodplain development have not changed in more than 30 years and are assumed, by many communities, to be adequate for their floodplain management program – without considering additional standards that would potentially address the unique hazard(s) in their community.



Source: CEMHS, 2019. Spatial Hazard Events and Losses Database for the United States, Version 18.1. [Online Database]. Phoenix, AZ: Center for Emergency Management and Homeland Security, Arizona State University. www.sheldus.org.

patterns of US flood risk in the Anthropocene. *Nat. Clim. Chang.* **12**, 156–162 (2022).
<https://doi.org/10.1038/s41558-021-01265-6>

The Seven Costliest U.S. Hurricanes on Record

Hurricane Katrina	2005	\$190 billion	1,833 deaths
Hurricane Harvey	2017	\$151 billion	89 deaths
Hurricane Ian	2022	\$113 billion	152 deaths
Hurricane Maria	2017	\$109 billion	2,981 deaths
Hurricane Sandy	2012	\$84 billion	159 deaths
Hurricane Ida	2021	\$80 billion	96 deaths
Hurricane Irma	2017	\$61 billion	97 deaths

The top seven costliest U.S. hurricanes on record have occurred in the past two decades, with a significant portion of the estimated costs being flood-related losses. Source: NOAA National Centers for Environmental Information (NCEI), Billion-Dollar Weather and Climate Disasters (2023), with CPI-adjusted estimated costs, <https://www.ncei.noaa.gov/access/billions/>, DOI: [10.25921/stkw-7w73](https://doi.org/10.25921/stkw-7w73).

This *Guide* addresses legal concerns that may arise when communities develop, implement, and enforce higher regulatory standards for managing flood risks, such as those found in the NAI approach.

I.E. The NAI Approach

FEMA encourages communities that participate in the NFIP to enact higher floodplain management standards that will lead to safer, stronger, and more resilient communities – communities able to withstand the next major flood event. Local jurisdictions can build on the minimum standards in various ways, including additional requirements for development in the regulated floodplain, expansion of the regulated flood-prone areas (beyond the flood zone boundaries on NFIP maps), restrictions on the allowed uses and development densities, and protection of natural features and functions. Communities are encouraged to expand their floodplain oversight beyond the local ordinances that require permits for floodplain development to also address flood risks in other land use regulations, such as standards for subdivisions, zoning, building codes, site planning, roads and driveways, natural resource protection, stormwater drainage, etc.

Freeboard

Many states and communities require a factor of safety by including freeboard in their floodplain development requirements. Freeboard is the additional height above the Base Flood Elevation that determines the level to which development must be protected from flood damage. This is intended to compensate for the many factors that contribute to flood depths greater than those anticipated by FEMA mapping studies, such as wave action, valley fill, debris, land use changes in the watershed, higher magnitude flood events, changing climate conditions, subsidence, and other factors.

These higher standards and development restrictions can be legally defensible if they support local objectives for improved flood safety and reduced flood risk / flood damage. Implementation involves more than just local floodplain managers. If there is to be any headway made in the build-flood-rebuild-flood dilemma, responsibility for flood risk reduction and flood resilience must be shared with planners, zoning administrators, construction and building code officials, code enforcement personnel, engineers and stormwater experts, municipal mayors and administrators, municipal attorneys, and others.

In its broadest sense, NAI is a set of “do no harm” principles that any community can follow when planning, designing, or evaluating public and private development activities in areas at-risk for flooding. Careful stewardship of our nation’s floodplains is critical for protecting people and property, and reducing the financial strain on businesses, private property owners, and municipal budgets from flood losses and impacts. NAI tools and techniques ensure that private development, public infrastructure, and planning activities do not have direct or indirect negative consequences on the surrounding natural resource areas, private property, or other communities.

NAI isn’t limited to regulatory standards. To truly address a flood problem, the community needs to use all of the other tools in the toolbox. NAI tools have been identified for: hazard identification/mapping, education/outreach, planning, regulations/development standards, mitigation, infrastructure, and emergency services. The benefits achieved by integrating NAI principles into multiple community programs are discussed below.

I.E.1. Local Empowerment

NAI is a bottom-up approach, as opposed to a top-down approach (imposed by federal or state government). Local flood risk reduction needs are met with local engagement and local buy-in.

NAI also encourages development of a better-informed public and strives for wise development decisions.

I.E.2. More Effective Programs and Projects

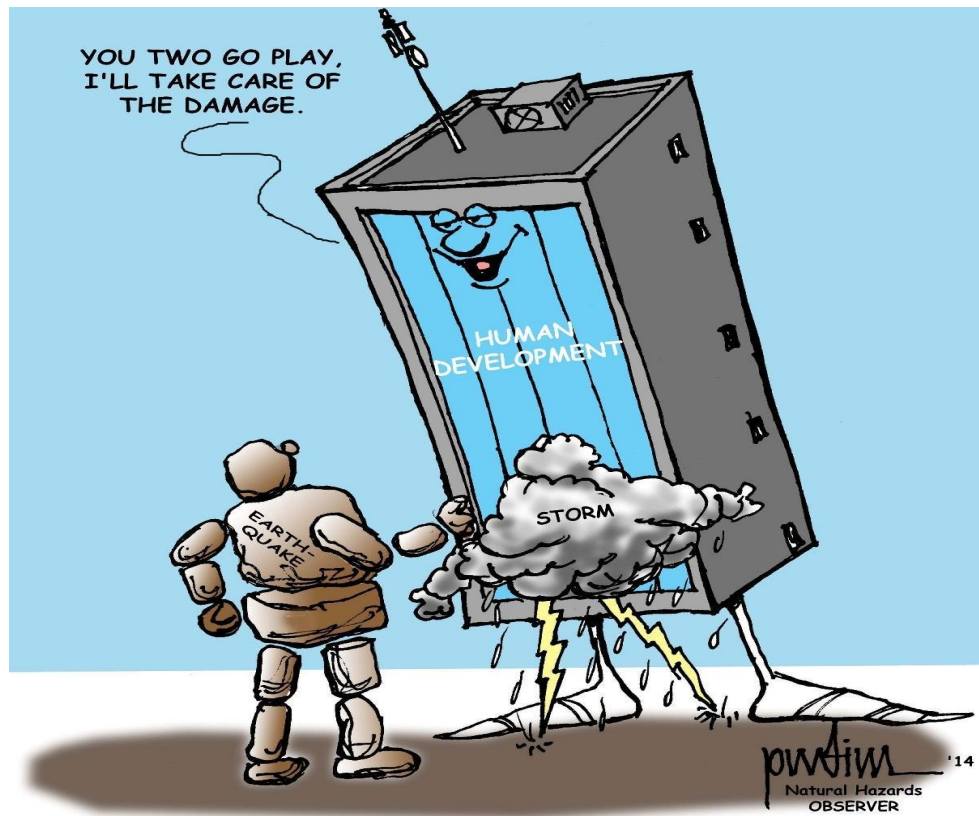
Floodplain stewardship programs and flood mitigation projects are better tailored to local needs and conditions with the NAI approach. Communities are able to better utilize federal and state programs to support their own local initiatives.

Riparian Corridor Requirements

Because streams and rivers are active systems that move over time, some communities strive to protect new development from streambank erosion risks by requiring that new buildings be located a specified distance from stream and river banks. Other communities have mapped erosion hazard areas and use this mapping to restrict development in erosion-prone locations. Riparian buffer requirements can also protect beneficial vegetation and other features near rivers, streams, lakes, and wetlands. Natural features in floodplains serve a variety of functions important to people and the environment as a whole by: preserving water quality by filtering sediment from runoff before it enters rivers and streams; protecting streambanks from erosion; and providing a storage area for floodwaters.

I.E.3. Lower Long-term Costs

Over time, the NAI approach will reduce local government expenditures. For example: a mitigation project that relocates buildings, infrastructure, or other development out of a flood-prone area not only can result in a community open space amenity, but also in less maintenance of roads and public utilities, less risk to first responders who must conduct search and rescue operations when it floods, and lower disaster recovery costs.



Source: Comic created by Rob Pudim and appeared in *Natural Hazards Observer*, May 2014, Natural Hazards Center, University of Colorado.

I.E.4. Improved Partnerships

A holistic flood risk reduction program requires collaboration among departments and organizations as well as with neighboring jurisdictions. This is especially true when everyone within the community, from the local government down to the individual citizen, realizes that they have a role and a responsibility to address the community's flood problems, i.e., "many hands make light work."

I.E.5. Reduced Liability

NAI doesn't take away property rights—it protects them by preventing one person from harming another's property. One of the most important options a government typically has for reducing liability for flood losses is to take actions that prevent increased flood levels, increased flood velocities, and erosion hazards. To do this, governments can adopt NAI standards into their regulatory structure and design standards for private development and public infrastructure.

I.E.6. Meet Community Needs

The NAI approach is implemented by a community proactively identifying potential impacts of flooding and then implementing preventive measures and/or mitigation activities. This NAI process provides a framework for designing programs and standards that meet a community's true needs for flood risk reduction, not just the minimum requirements of a federal or state governmental agency.

I.E.7. Greener Floodplain

Flooding is a natural phenomenon, and one goal of NAI floodplain stewardship is to preserve and protect natural floodplain functions, in addition to protecting buildings and infrastructure. An NAI emphasis will result in protection of natural buffers and environmentally sensitive areas; improvement in the biological, ecological and geomorphologic functions of riverine and coastal areas; improved water quality; more open spaces; protected fish and wildlife habitat; and similar benefits that come with maintaining an environmentally sustainable ecosystem.



Source: Comic created by Rob Pudim and appeared in *Natural Hazards Observer*, July 1999, Natural Hazards Center, University of Colorado.

Conservation Zone

Local zoning laws can include floodplain areas, riparian buffers, wetlands, areas with high water tables, erosion zones, areas with fragile ecosystems, and other environmentally sensitive areas in a Conservation Zone, within which new development is restricted in order to conserve natural features and the functions of natural systems. The zoning law may encourage agricultural and/or recreational uses within the Conservation Zone, or may restrict the area to passive or recreational uses. This zoning tool can protect natural functions in floodplain areas, while also directing new development toward safer (i.e., higher) locations.

I.E.8. The Community Rating System (CRS) and CRS Credits

The NFIP encourages communities to implement programs and projects that are above and beyond the minimum requirements, which do a more effective job of preventing and reducing flood losses. As an incentive, the CRS program provides reduced flood insurance premiums in communities that implement NAI floodplain stewardship activities.

CRS Premium Discounts by Class

CLASS	DISCOUNT	CLASS	DISCOUNT
1	45%	6	20%
2	40%	7	15%
3	35%	8	10%
4	30%	9	5%
5	25%	10	–

There are 10 CRS classes. Class 1 requires the most credit points and gives the greatest premium reduction or discount. A community that does not apply for the CRS, or does not obtain the minimum number of credit points, is a Class 10 community and

receives no discount on premiums. Source: National Flood Insurance Program Flood Insurance Manual, October 2022.

I.E.9. Climate Adaptation

Future climate conditions are projected to cause an increase in severe weather events, including more intense storms, frequent heavy precipitation, heat waves, drought, extreme flooding, and higher sea levels. Because these changes could significantly alter the types and magnitudes of flood hazards that communities face, adaptation to flood-related impacts are imperative. Measures that enhance sustainable resilience are important to short- and long-term community safety, security, and stability.

Future Conditions Flood Hazard Mapping

Floodplains are not static. Recognizing that today's floodplain maps will soon be out-of-date, some communities have mapped future flood hazard areas where increased flood risks are anticipated due to watershed development, increased storm intensity, or higher sea levels. These mapped areas, not yet incorporated into the FIRM but adopted by the local community, can be used to require a higher level of protection in local floodplain development standards or can be used as advisory information to encourage more resilient development.

I.E.10. Social Justice and Equity

Flooding has disproportionate impacts on low-income communities and people of color. Unfortunately, each flood event further exacerbates existing racial and social inequities. No Adverse Impact floodplain stewardship practices support equitable outcomes so that all community members—especially those who are most vulnerable—and their needs, are represented and prioritized in local policy development and decision making. No Adverse Impact is a policy for all.

Mitigation

Mitigation of existing at-risk development is an effort to correct "sins of the past," such as poorly planned and/or managed development, environmental degradation, and social inequities. A flood resilience planning process can be

used to identify those projects that will truly benefit the long-term interest of the community without causing adverse impacts.

On the whole, the NAI approach has many benefits at the local, watershed, regional, state, and national levels. With these benefits in mind, the remaining sections of this *Guide* explore how to take advantage of the NAI approach in a community's programs and do so in a legally defensible manner.



No Adverse Impact Legal Guide for Flood Risk Management

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no.floods.org/LegalGuide

Cover Photos (clockwise from top left):

Hurricane Ian flooded houses in Florida residential area;¹ U.S. Supreme Court;² Untitled image of road inundated with floodwater.³

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The Association of State Floodplain Managers Inc. (ASFPM) published this *Guide* as part of its mission to promote education, policies and activities that mitigate current and future losses, costs and human suffering caused by flooding. Founded in 1977, the organization had over 19,000 members as of 2023, including members in 38 state chapters. ASFPM supports professionals involved in floodplain management, flood hazard mitigation, flood preparedness and flood warning and recovery. Members represent local, state and federal government agencies, citizen groups, private consulting firms, academia, the insurance industry and lenders.

¹ Bilanol. Accessed May 2023. Hurricane Ian flooded houses in Florida residential area. <https://www.canva.com/photos/MAFOfc76ibY-hurricane-ian-flooded-houses-in-florida-residential-area-natural-disaster-and-its-consequences/>. Used under Canva Pro Content License.

² OZinOH. Accessed May 2023. Supreme Court IMG_2952. <https://www.flickr.com/photos/75905404@N00/3049421552/>. Used under Creative Commons Attribution-NonCommercial 2.0 License.

³ bohemianbikini from Pixabay. Accessed May 2023. Untitled. <https://www.canva.com/photos/MAEF8PqH24s/>. Used under Canva Free to Use License.

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⁴ As a document with legal analyses, this publication utilizes the most common citation format in legal writing, *The Bluebook: A Uniform System of Citation* (Columbia L. Rev. Ass'n et al. eds., 21st ed. 1st.prtg. 2020).

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Introduction to This Guide

This *No Adverse Impact Legal Guide for Flood Risk Management* (a.k.a., the *NAI Legal Guide*) provides legal resources to inform the decisions of community representatives and municipal attorneys who design, implement, and defend NAI programs. It includes:

- Detailed resources for legal professionals, and
- Legal essentials for floodplain managers and community officials.

This Guide supplements other NAI documents that present tools and guidance for integrating NAI principles into local regulations, policies, and programs. It will help readers to understand, anticipate, and manage legal issues that may arise when a community implements activities that enhance flood resilience, especially when those activities exceed state and federal requirements for floodplain management.

This *Guide* is divided into five sections:

Section I – Introduction to No Adverse Impact

Section II – Introduction to Legal Concepts for No Adverse Impact

Section III – Torts

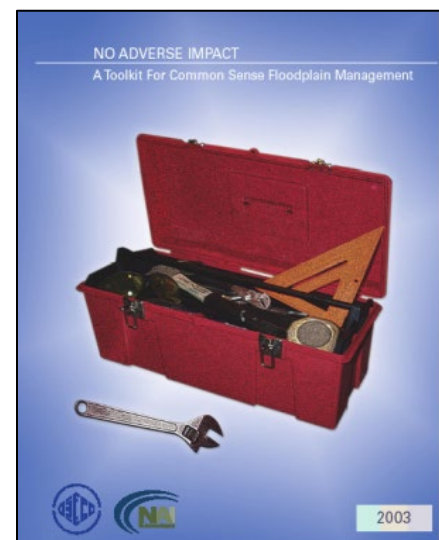
Section IV – The Constitution and Its Protection of Property Rights

Section V – Federal Laws

Section One is an introduction to the concept of No Adverse Impact for those not familiar with its application to flood risk reduction. Section Two focuses on introducing common legal concepts, which is then followed by the detailed legal memos found in Sections Three, Four and Five.

After reviewing this *Guide*, it is recommended that a community conduct an assessment of its flood risk management activities to see if those activities are legally sound, and where they can be improved by using NAI techniques to better protect its population and natural floodplain functions.

[No Adverse Impact Toolkit](#), prepared by the Association of State Floodplain Managers, identifies tools for implementing NAI.



NAI How-to Guides

A series of How-to Guides provide usable information to help communities implement NAI practices:

- [Hazard Identification and Floodplain Mapping](#)
- [Regulations and Development Standards](#)
- [Education and Outreach](#)
- [Emergency Services](#)
- [Planning](#)
- [Mitigation](#)
- [Infrastructure](#)

Common Terminology

Many of the following definitions are derived from NFIP floodplain management; others are specific legal definitions; and yet others relate to NAI tools and approaches. This section is not all-inclusive of the flood risk management and legal terms used in this *Guide*; additional definitions may be provided elsewhere for ease of reference.

Base flood: The flood having a one percent probability of being equaled or exceeded in any given year (previously called the 100-year flood). This is the design flood for the NFIP and is used to map Special Flood Hazard Areas and to determine Base Flood Elevations. Modeling of the base flood uses historic flood data.

Base Flood Elevation (BFE): The modeled elevation of floodwater during the base flood. The BFE determines the level of flood protection required by NFIP floodplain development standards.

Building (structure): A walled and roofed building with two or more outside rigid walls and a fully secured roof that is affixed to a permanent site, as well as a manufactured home on a permanent foundation. The terms “structure” and “building” are sometimes used interchangeably in the NFIP. However, for NFIP floodplain management purposes, the term “structure” also includes a gas or liquid storage tank that is principally above ground.

Within the NFIP, residential and non-residential structures are treated differently. A residential structure built in a Special Flood Hazard Area must be elevated above the Base Flood Elevation. A non-residential structure may be elevated or dry floodproofed so that the structure is watertight to prevent the entry of water.

Climate change: Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas.⁵

Community: The NFIP definition of a community is a political subdivision that has the authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction. The term usually means cities, villages, townships, counties, and Indian tribal governments. For the purposes of this *Guide*, a “community” also includes a neighborhood, unincorporated settlement, or other non-governmental subdivision where people live or work together.

Conservation Zone: An area indicated on a map or plan adopted by a local jurisdiction, municipality, or other governing body within which development is governed by special regulations in order to protect and preserve the quality and function of its natural environment.

Community Rating System (CRS): The NFIP Community Rating System is a program that provides reduced flood insurance premiums for policyholders in communities that go above and beyond the minimum NFIP criteria. For more information see <https://www.fema.gov/floodplain-management/community-rating-system>.

Federal Emergency Management Agency (FEMA): The federal agency under which the NFIP is administered.

Flood: A community may adopt a more expansive definition of “flood” than is used by the NFIP in order to include additional sources of water damage, such as groundwater flooding of basements or local washouts associated with a drainage ditch. The NFIP definition of a flood is:

- (a) A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - (1) The overflow of inland or tidal waters.
 - (2) The unusual and rapid accumulation or runoff of surface waters from any source.
 - (3) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
- (b) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water

⁵ Source: United Nations, “What is Climate Change?” webpage, accessed March 2023, <https://www.un.org/en/climatechange/what-is-climate-change>.

exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a)(1) of this definition.

For NFIP flood insurance claims, a flood must inundate two or more acres of normally dry land area or two or more properties.

Flood Insurance Rate Map (FIRM): An official map of a community on which the Federal Emergency Management Agency has delineated the boundaries of Special Flood Hazard Areas. In some areas, FIRMS (with associated maps and studies) may also indicate Base Flood Elevations and regulatory floodways. FIRMs and other mapping products can be viewed and downloaded at FEMA's Map Service Center – <https://msc.fema.gov/portal/home>.

Floodplain: Nature's floodplain is the land area susceptible to being inundated by water from any source. This includes:

- Special Flood Hazard Areas (SFHAs) mapped by FEMA for the NFIP program;
- Flood-prone areas near waterbodies for which SFHAs have not been mapped;
- Areas outside of the SFHA that are subject to inundation by larger flood events or floods that are altered by debris or other blockages;
- Areas subject to smaller, more frequent, or repetitive flooding;
- Areas subject to shallow flooding, stormwater flooding, or drainage problems that do not meet the NFIP mapping criteria;
- Areas affected by flood-related hazards, such as coastal and riverine erosion, mudflows, or subsidence; and
- Areas that will be flooded when future conditions are accounted for, such as climate-related issues, sea-level rise, and upstream watershed development.

The Special Flood Hazard Area mapped for the NFIP is only part of a community's flood risk area, with 40 percent of flood insurance claims occurring outside of the SFHA.⁶ To represent a community's true flood risk, the term "floodplain" is used in this *Guide* instead of "SFHA."

Floodplain stewardship: Caring for and protecting the beneficial biologic and hydrologic functions of areas where the risk of flooding is expected, while managing human uses to minimize the potential for adverse impacts and flood damage.

Floodproof: Floodproofing means any combination of structural and non-structural additions, changes, or adjustments to buildings or other structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents. This term includes dry floodproofing, in which a structure is watertight, with walls

⁶ Federal Emergency Management Agency, 2021, "Myths and Facts About Flood Insurance," <https://www.fema.gov/fact-sheet/myths-and-facts-about-flood-insurance-1>.

substantially impermeable to the passage of water. NFIP development standards allow dry floodproofing of non-residential structures in lieu of elevating the lowest floor.

Freeboard: A factor of safety, usually expressed in feet above the Base Flood Elevation, that determines the required level of flood protection.

Future conditions flood: The flood having a one percent probability of being equaled or exceeded in any given year based on future-conditions hydrology. Also known as the “1%-annual-chance future conditions” flood.

Liability: A party is liable when they are held legally responsible for something. Unlike in criminal cases, where a defendant could be found guilty, a defendant in a civil case risks only liability.⁷

Mitigation: Hazard mitigation is any sustained action taken to reduce or eliminate any long-term risk to life or property from a hazard event. Mitigation is most often thought of as being applied to existing at-risk development. Examples of flood mitigation activities include: floodproofing, elevating, relocating or demolishing at-risk structures; retrofitting existing infrastructure to make it more flood resilient; developing and implementing Continuity of Operations Plans; structural mitigation measures such as levees, floodwalls and flood control reservoirs; detention/retention basins; and beach, dune, and floodplain restoration.

National Flood Insurance Program (NFIP): Federal program that maps flood hazard areas and provides flood insurance in participating communities that agree to regulate new construction in mapped high flood hazard areas. Most community floodplain maps and floodplain management standards have been adopted to meet the NFIP’s criteria. Learn more at www.fema.gov.

Natural floodplain functions: The functions associated with the natural or relatively undisturbed floodplain that moderate flooding, maintain water quality, recharge groundwater, reduce erosion, redistribute sand and sediment, and provide fish and wildlife habitat. One goal of NAI floodplain stewardship is to preserve and protect these functions, in addition to protecting human development.

Police powers: Police powers are the fundamental ability of a government to enact laws to coerce its citizenry for the public good, although the term eludes an exact definition. The term does not directly relate to the common connotation of police as officers charged with maintaining public order, but rather to broad governmental regulatory power. *Berman v. Parker*, a 1954 U.S. Supreme Court case, stated that “[p]ublic safety, public health, morality, peace and quiet, law and order. . . are some of the more conspicuous examples of the traditional

⁷ Source: Cornell Law School, Legal Information Institute, <https://www.law.cornell.edu/wex/liability>. Liability is “[t]he quality or state of being legally obligated or responsible.” BLACK’S LAW DICTIONARY: NEW POCKET EDITION (1996).

application of the police power;” while recognizing that “[a]n attempt to define [police power’s] reach or trace its outer limits is fruitless.”⁸

Regulatory floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood (with a 1% annual probability) without cumulatively increasing the water surface elevation more than a designated height.

Resilience: “The ability to prepare for and adapt to changing conditions and withstand and rapidly recover from disruptions,” as defined in [FEMA’s National Disaster Recovery Framework](#).

Riparian buffer: Zone of variable width along the banks of a stream, river, lake, or wetland that provides a protective natural area adjacent to the waterbody.

Sovereign immunity: Sovereign immunity refers to the fact that the government cannot be sued without its consent.⁹

Special Flood Hazard Area (SFHA): An area mapped on the NFIP FIRM that shows the area subject to inundation by the base flood (with a one percent or greater probability of flooding in any given year). SFHAs have been mapped for flooding caused by rivers, lakes, oceans, and other larger sources of flooding.

Standard of care: The watchfulness, attention, caution, and prudence that a reasonable person in the circumstances would exercise. If a person’s actions do not meet this standard of care, then their acts fail to meet the duty of care, which all people (supposedly) have toward others.¹⁰

Substantial damage: Damage of any origin sustained by a structure (building) whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Substantial improvement: Any reconstruction, rehabilitation, addition, or other improvement of a structure (building), the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction for the improvement. This term includes structures that have incurred substantial damage, regardless of the actual repair work performed. NFIP

⁸ Source: Cornell Law School, Legal Information Institute, https://www.law.cornell.edu/wex/police_powers. Police power has also been defined as “1. [a] state’s Tenth Amendment right, subject to due process and other limitations, to establish and enforce laws protecting the public’s health, safety, and general welfare, or to delegate this right to local governments. 2. Loosely, the power of the government to intervene in privately owned property, as by subjecting it to eminent domain.” BLACK’S LAW DICTIONARY: NEW POCKET EDITION (1996).

⁹ Source: Cornell Law School, Legal Information Institute, https://www.law.cornell.edu/wex/sovereign_immunity.

¹⁰ Source: Law.com Dictionary, <https://dictionary.law.com/Default.aspx?selected=2002>.

development standards require that a substantially improved building be regulated as new construction.

Sustainable: Able to “meet the needs of the present without compromising the ability of future generations to meet their own needs,” as defined by the [United Nations](#).

Takings: A taking is when the government seizes private property for public use. A taking can come in two forms. The taking may be physical, meaning the government physically interferes with private property; or the taking may be constructive (also called a regulatory taking), meaning that the government restricts the owner's rights to such an extent that the governmental action becomes the functional equivalent of a physical seizure.¹¹

Tort: A tort is an act or omission that gives rise to injury or harm to another and amounts to a civil wrong for which courts impose liability. In the context of torts, “injury” describes the invasion of any legal right, whereas “harm” describes a loss or detriment in fact that an individual suffers.¹²

Watershed: The land area that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points, such as reservoirs, bays, and the ocean. Also known as a basin or catchment area.

¹¹ Source: Cornell Law School, Legal Information Institute, <https://www.law.cornell.edu/wex/takings>. A taking may also be defined as “[t]he government’s actual or effective acquisition of private property either by ousting the owner and claiming title or by destroying the property or severely impairing its utility.” BLACK’S LAW DICTIONARY: NEW POCKET EDITION (1996).

¹² Source: Cornell Law School, Legal Information Institute, <https://www.law.cornell.edu/wex/tort>.