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FLOODPLAIN AND STORMWATER MANAGERS ASSOCIATION
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Rethinking the National Flood Insurance Program (NFIP)

The New York State Floodplain and Stormwater Managers Association (NYSFSMA) is a non-profit professional organization dedicated to reducing flood losses in New York State. Association members work on flooding issues in a variety of capacities in both the public and private sectors. They have diverse perspectives and a broad range of experiences with local implementation of the National Flood Insurance Program. These day-to-day experiences have led to a shared conclusion that the NFIP, as it is currently formulated, is falling short of the objective of mitigating and preventing flood damage. Recent events (particularly the release of new flood hazard maps and de-accreditation of levees) have resulted in numerous proposals for revising the NFIP. Although Association members support some of these suggestions, they feel that others are too narrowly-focused or even counter-productive. This position paper was prepared to present a comprehensive set of recommendations for NFIP reform based on the program's successes and shortcomings in New York State.

Although the NFIP has been successful in meeting a number of its original objectives, many Americans continue to build in at-risk locations and collective flood losses for the nation continue to increase. In the first decade of this century, yearly flood losses have increased from $6 billion to $15 billion. The NYSFSMA believes that it is time to take bold action and implement major revisions to the National Flood Insurance Program.

BACKGROUND

The National Flood Insurance Program (NFIP) was established in 1968 to:

- Transfer the costs of private property flood losses from the taxpayers to floodplain property owners through flood insurance premiums.
- Provide floodplain residents and property owners with financial aid after floods, especially smaller floods that do not warrant federal disaster aid.
- Guide development away from flood hazard areas.
- Require that new and substantially improved buildings be constructed in ways that would minimize or prevent damage during a flood.

Implementation of the NFIP is based on a partnership between the federal government and local communities. Federally backed flood insurance is available in those communities that regulate development in their mapped floodplains. If the local jurisdiction does their part to make sure that future floodplain development meets certain criteria, the Federal Emergency Management Agency (FEMA) provides flood insurance for properties in the municipality. The program includes three interconnected and mutually supportive parts: mapping, insurance, and regulations.

Mapping

FEMA has evaluated flood hazards for most communities in the country and developed Flood Insurance Rate Maps (FIRMs) that identify flood prone areas, which are subject to the requirements of the NFIP. Supporting information is often documented in a Flood Insurance Study (FIS). The program is based on

the flood that has a one-percent probability of occurring in any given year, which is referred to as the 1% annual chance flood or the 100-year flood or the base flood.

The land area that is expected to be covered by floodwaters during the base flood is called the Special Flood Hazard Area (SFHA). The SFHA is the area where NFIP floodplain management regulations must be enforced by the community (as a condition of participation in the NFIP) and the area where mandatory flood insurance purchase requirements apply. The SFHA is designated as Zone A, AE, A1-30, AO, AH, V, VE, or V1-30 depending on the amount of flood data available, the severity of the flood hazard, or the age of the flood hazard map. The V Zones are coastal floodplains subject to a velocity hazard due to wave action. Other areas in the SFHA are A Zones. Areas outside of the SFHA are designated as Zone B, C, or X and are not subject to NFIP requirements. Areas between the limits of the 100-year and 500-year floods are mapped as Zone B or shaded Zone X. Areas of minimal flood hazard, above the 500-year flood level, are mapped as Zone C or unshaded Zone X.

In areas where detailed studies were conducted, the FIRM and FIS show the Base Flood Elevation (BFE), which is the water surface elevation for a 1% annual probability (100-year) flood at that location. In many rural areas, detailed studies were not conducted and approximate methods were used to delineate the SFHA. These floodplains (without BFEs) are called Approximate A and V Zones (or unnumbered A and V Zones).

The floodplains along many rivers and streams have been divided into two areas, the floodway and the floodplain fringe. The floodway is the area adjacent to the channel where more restrictive development standards apply.

FEMA is currently in the process of updating the nation's flood hazard maps and preparing Digital Flood Insurance Rate Maps (DFIRMs). This mapping process includes a procedure for "accreditation" of levee systems that meet FEMA's standards for removing the protected area from the SFHA. When levees are de-accredited or other map changes increase the SFHA, the release of new maps often results in significant public backlash. This objection to new maps is generally due to the high costs associated with the mandatory flood insurance requirements.

<u>Insurance</u>

Flood insurance through the National Flood Insurance Program is available for any building located in a community that participates in the NFIP. Contents coverage is also available for removable items inside an insurable building. The cost of insurance premiums is based on the date of construction (before or after the initial FIRM), building type, flood zone, and Base Flood Elevation. This information is documented on an Elevation Certificate, which is typically prepared by a licensed surveyor.

Buildings that were constructed before the FIRM was developed (to document flood hazards) are called "pre-FIRM" and qualify for "grandfathered" rates. Flood insurance premiums for "post-FIRM" buildings (constructed after the effective date of the FIRM) are actuarial, meaning that the cost is based on the building's risk of flooding. Actuarial rates are based on the elevation of the lowest floor (or dry floodproofing of non-residential structures) relative to the Base Flood Elevation (or adjacent grade if no BFE was determined). Lower rates apply outside of the SFHA, including Preferred Risk Policies for buildings with little or no flood loss claims. In areas where the flood zone has changed due to a map change, the rating of NFIP policies is currently very confusing.

A mandatory purchase requirement was added in 1973, requiring flood insurance as a prerequisite for receiving a mortgage from any federally regulated lender (or any other form of federal financial assistance) for a building in the SFHA.

The NFIP was designed to be self-sustaining, bringing in enough in premiums to pay claims. However, the program was unable to cover the catastrophic losses from Hurricane Katrina and is currently $17 billion in debt. Approximately 30% of claims are for "repetitive loss properties," which represent about 1% of insured structures. These repetitive claims can result in insurance payments exceeding the value of the property and constitute a significant expense for the system. More than one quarter of claims are for properties located outside of the mapped SFHA (where mandatory flood insurance purchase requirements and floodplain development standards do not apply).

Regulations

The NFIP underwrites flood insurance coverage only in those communities that adopt and enforce floodplain regulations that meet or exceed NFIP criteria. The local floodplain regulations are designed to ensure that new buildings will be protected from the flood levels shown on the FIRM and that development will not make the flood hazard worse. Buildings built in accordance with these regulations have a lower risk of flooding and can thus be insured at lower rates; conversely insurance on an improperly constructed building may be very expensive. Over time, the exposure to flood damage should be reduced as the older pre-FIRM buildings are replaced by post-FIRM buildings that comply with the regulations.

New buildings in the SFHA are typically protected from flood damage by elevating the lowest floor to or above the Base Flood Elevation. Parts of the structure below the BFE are designed to withstand flooding by using flood damage resistant materials, openings in the walls of enclosed areas (called flood vents), and other techniques. Basements are prohibited and the structure must be anchored. If an existing structure is substantially damaged or substantially improved (with the damage or improvement exceeding 50% of the building's prior value), the entire structure must be brought into compliance with current development standards.

Within the regulatory floodway (shown on the FIRM), any development that could alter flood flows is considered a floodway encroachment and requires certification by a licensed engineer indicating that the proposed project would not cause any rise in the height of the 1% annual probability (100-year) flood (called "no-rise" certification). This review is intended to ensure that the project would not result in increased flood damage to other properties.

The NFIP Community Rating System (CRS) provides an incentive for communities to go beyond the basic NFIP requirements and conduct additional activities that reduce the potential for insurable flood damage. Participating communities are assigned CRS credit points for various public information and floodplain management activities (based on documentation). Flood insurance policies within the jurisdiction receive a premium discount based on the credit points earned by the community, usually 5 or 10%.

INSURANCE COSTS

The cost of flood insurance should correspond to both the risk of flood damage (likelihood and severity) and the flood hazard information that was available at the time of construction (i.e. the

effective FIRM). It should be "affordable" for buildings that were constructed in compliance with existing development standards.

Flood insurance is expensive and subsidized pre-FIRM policies (for buildings constructed before the flood hazards were mapped) are no longer affordable. The solvency of the NFIP cannot be restored by simply increasing premiums without major re-thinking of the price structure. The cost of insurance often does not correspond to the flood risk. Although increased correlation between risk and insurance costs is needed, grandfathered rates are still warranted for buildings that were built in compliance with floodplain development standards for the mapping that was available at the time of construction. Updated mapping can have a significant economic impact on properties newly included in the SFHA and the current pricing scheme is complicated. Rates for new policies depend on whether the insurance was purchased before or after the effective date of the new map. An interruption in coverage can result in a significant increase in cost. In addition, pre-FIRM structures (that pre-dated all flood hazard mapping) are treated differently than post-FIRM structures that are remapped from Zone X to the SFHA.

RECOMMENDATIONS:

- Inundation frequency: The cost of insurance should take into account the frequency of inundation (in addition to the anticipated depth of flooding). In areas with detailed studies, the information required for this rating can be obtained from existing Flood Insurance Studies, which include elevation information for the 10-, 50-, 100-, and 500-year floods (as flood profiles for riverine floodplains and stillwater elevations for lake and coastal floodplains).
- Levee-protected areas: In levee-protected areas, insurance costs should be adjusted based on the level of protection provided by the levee. This would require an elevation analysis of all certified and certifiable levee systems comparing the protection level with the 10-, 50, and 100-year profiles.
- Incentives for retrofitting: Pre-FIRM insurance rates should provide an incentive for implementation of wet floodproofing measures that reduce damage to insurable items, even if the changes are not extensive enough to make a post-FIRM rating feasible. This could be accomplished by documenting flood vents and the lowest elevation of utilities on Elevation Certificates for pre-FIRM structures. The lowest utility elevation relative to BFE (or highest adjacent grade in Approximate A or X zones) could be used to provide a discount from the standard pre-FIRM rates if enclosed areas below this elevation are properly flood-vented and used solely for parking, storage, and building access.
- Map changes: We welcome the recent policy change regarding Preferred Risk and Zone X grandfathering of insurance rates after a map change. However, flood insurance policy requirements following map changes remain extremely confusing, even to insurance agents. We recommend that the grandfathered rate be separated from the effective date of the map, and that the permanent rate be based on the map in place at the time of construction. If there was no map in place at the time of construction and an initial map shows a structure as being outside of the SFHA, but a subsequent map change brings the structure into the SFHA, then the owner should be allowed to purchase a Zone X policy regardless of the time of purchase. The two-year Preferred Risk Policy could still apply, allowing the owner time to investigate mitigation options prior to the rate increase.
- Grandfathered rates: We disagree with the suggestion that grandfathered rates be phased out and replaced with actuarial rating of all flood insurance policies. This could result in severe economic impacts for older communities and areas newly mapped as SFHA. Properties that were built in compliance with floodplain development standards and the map in effect at the time of construction should not be rated actuarially based on the currently mapped hazard zones. We recommend that grandfathered rates be retained for such structures. However, the grandfathering rules should be revised so that premiums correlate more closely with risk.
- Erosion hazards: Erosion hazards should be identified and incorporated into the flood insurance pricing formula. An initial step that can precede federal mapping of Erosion Hazard Zones would be

to increase insurance costs in high-velocity floodways, based on velocity information in the FIS. Consistent mapping of coastal erosion hazards could enable future expansion of erosion hazard ratings into coastal areas (where the Erosion Hazard Zone may extend beyond the limits of the SFHA).

- Preferred Risk Rates: Preferred Risk insurance rates (for properties outside of the SFHA with limited or no flood loss claims or flood disaster relief payments) should be low enough to encourage insurance coverage for structures outside of the mapped SFHA.
- Claim history: We support incorporating the history of NFIP insurance claims and federal disaster assistance into the cost formula (as is done with other types of insurance) in order to better account for flood hazards not identified on the FIRM. For major claims, this factor should be large enough to avoid financial drain on the program from severe repetitive loss structures.

Proposed rating formula: These suggestions could be incorporated into a rating structure that includes the following elements:

- **Basic Insurance Rate** – Based on building characteristics, the effective FIRM at the time of construction (or substantial improvement), and the currently effective FIRM:
  - Actuarial Rate: For structures currently in the SFHA that were in the SFHA at the time of construction, this Basic Rate would be similar to the existing actuarial rate structure based on the effective map at the time of construction or the current effective map (if the BFE is now lower).
  - Grandfathered Rate: A Grandfathered (reduced) Basic Rate should be available for structures in the current SFHA that are either pre-FIRM or were in Zone X at the time of construction (or substantial improvement). An Actuarial Rate based on the current map could be applied to these structures if that provides a favorable rating. However, the availability of a lower insurance rate is warranted for structures with basements and those with lowest floors below the current BFE (because basements were permitted at the time of construction and insurance coverage for basements is very limited). We suggest that an adjustable Grandfathered Rate encourage the installation of flood vents and elevation of utilities in these structures. The Grandfathered Rate could take into account the lowest of the following elevations relative to the current BFE (or grade in Approximate A and X Zones): (1) the lowest floor including basement if there are not flood vents, (2) the next highest floor above a properly flood-vented basement, crawl space, or other enclosed area used solely for parking, storage, or access, or (3) the height of the lowest utility.
  - Zone X Rate: For structures currently located in Zone X, the Basic Rate should be very low.
- **Flood Risk Factor** – Adds to the basic rate based on the probability that the building site (lowest adjacent grade) will be subject to flooding as indicated in the current effective FIS and FIRM:
  - AE and VE Zones: For areas with detailed studies, the Flood Risk Factor categories would include 10-year, 50-year, and 100-year probability zones (based on FIS profiles and stillwater elevations). For areas with levee protection, the Flood Risk Factor would be based on the Levee Protection Level (i.e. the probability of overtopping during a 10- or 50-year flood).
  - Approximate A and V Zones: "Average" values would be assigned to areas mapped as SFHA, where detailed studies have not been conducted.
  - Zone X: Within Zone X, flood risk factors would be applied to the 500-year floodplain (shaded Zone X) and to Levee-Protected Zones (once these areas are mapped). Other Zone X areas (outside of the 500-year floodplain and levee protected areas) would be assigned a flood risk factor of zero (so only the Zone X "basic insurance rate" applies until there is an insurance claim).

- **Erosion Risk Factor** – Adds to the insurance rate in areas with an identified potential for erosion. This factor would be applied in V-Zones, VE-Zones, and floodways. The value of the erosion risk factor for floodway locations would be based on the mean velocity specified in the floodway data table of the FIS. This could be refined in the future based on mapping of erosion hazards in coastal and riverine areas.
- **Claim History Factor** – Increases insurance rates based on prior NFIP-insured losses and disaster assistance payments. In order to promote retrofitting measures, a provision could be included enabling reduction of the Claim History Factor by removing insurable items from locations below the flood heights associated with prior claims.
- **Community Rating System (CRS)** – The Community Rating System adjustment based on local and state flood damage reduction programs should be retained.

Information required: Most of this proposed rate structure could be applied based on information currently available from the applicable FIRM and FIS. This information can be solicited by modifying the Elevation Certificate (EC) to document additional site and building information and utilizing the revised EC to rate policies. However, additional information is needed to document the flood hazard in levee-protected areas (Levee Protection Levels for systems that provide less than 100-year protection and delineation of Levee-Protected Zones for systems that are certified as providing 100-year protection). In addition, the incorporation of erosion hazards can be improved by mapping of Erosion Hazard Zones.

OTHER INSURANCE ISSUES

Sweeping flood insurance reform is needed to enable long-term solvency of the program and provide affordable flood insurance coverage for everyone who needs it.

There are many un-insured and under-insured flood losses, both in and outside of the mapped SFHA. This could be addressed, in part, by expanding the mandatory purchase requirements and increasing coverage limits. However, the cost issues (discussed above) must also be addressed so that flood insurance is seen as a valuable product. There are many instances in which insurance purchase requirements are not accurately applied due to inaccurate flood zone determinations. The potential benefits of the Community Rating System (which provides flood insurance policy discounts in communities that undertake additional measures to reduce flood risk) are limited by the program's complexity, which results in low participation rates by small municipalities and communities with small policy bases (who may not consider it to be worth the effort).

RECOMMENDATIONS:

- Increased coverage: In order to reduce the financial impacts of uninsured flood losses (and improve the solvency of the program), the number of properties covered by flood insurance should be expanded significantly. The pricing structure outlined above could result in very low insurance costs for Zone X properties that have no prior claim history. This basic coverage for low risk areas could become a standard component of most or all insurance policies. The suitability of a broader definition of "flood" could be considered to increase the value of this coverage in hillside areas that can be damaged by overland flow and eliminate any gap between water damage covered by standard home owner policies and water damage covered by flood insurance.
- Levee-protected areas: Flood insurance coverage requirements (for structures that secure loans from federally regulated lenders) should be expanded to include areas that are mapped as Zone X, but

would be inundated if the levee system failed during a 1% probability flood (Levee-Protected Zones).

- Recipients of disaster assistance: Flood insurance coverage requirements should be expanded to include structures that have at any time received federal disaster assistance, regardless of the flood zone in which they are located. This would require publication of a list of buildings for which disaster aid was disbursed (by location and construction date), which could be queried as part of the flood zone determination process.
- Erosion Hazard Zones: Mapping of erosion hazards would enable establishment of an insurance requirement for all structures (that secure loans from federally regulated lenders) located in coastal and riverine Erosion Hazard Zones. This would result in increased coverage of flood-related erosion losses, particularly in coastal areas where erosion hazards occur outside of the SFHA.
- Coverage limits: The maximum flood insurance coverage amounts should be increased to better reflect current property values. These limits should be tied to inflation so that future increases can be accommodated automatically.
- Conversion of enclosed areas below the lowest floor: We suggest that an insurance penalty be established for conversion of floodproofed enclosed areas to uses that do not comply with floodplain development standards (which require unobstructed flood vents, flood damage resistant building materials, and use solely for parking, storage, and building access). Claims adjusters could verify that building characteristics and use are consistent with those documented on the elevation certificate and impose a penalty for any non-compliant alterations that are identified when a claim is processed.
- Flood zone determinations: Flood zone determination companies should be regulated to reduce the error in determination of flood hazards for structures. Many such companies do extremely conservative determinations, which results in structures being unfairly rated and property owners spending hundreds of dollars for Letters of Map Amendment. We recommend that there be a professional certification process for flood zone determination companies and that companies failing to meet a determined accuracy rate be prevented from providing flood zone determination services.
- Community Rating System: The complicated application and recertification process for participation in the Community Rating System (CRS) should be simplified to promote greater participation, and thus increased implementation of voluntary flood risk reduction efforts. We recommend that a CRS evaluation be conducted for all communities without an application process (as is done for fire rating). This could be streamlined by developing a checklist of recommended measures that could be implemented to achieve a rating of 9.
- Privatization: FEMA should engage the insurance industry in discussions about how flood insurance can be provided by private insurance companies (to federal standards) based on federally-produced flood hazard information. Federal standards for floodplain management could be maintained as a pre-condition for disaster assistance.

FLOOD HAZARD MAPPING

Flood Insurance Rate Maps must provide an accurate assessment of flood hazards, which are more complex than what is represented on the current maps.

Because flood hazard maps provide the technical basis for a variety of purposes (managing floodplain development, flood insurance purchase requirements, pricing of flood insurance policies, mitigation planning, etc.), they can be invaluable tools for improving local resilience to flooding. However, if they do not accurately represent the local hazards, they are instead seen as the instruments of unreasonable federal policies.

RECOMMENDATIONS:

- Support improved insurance rating: Although most of the insurance suggestions presented above can be implemented based on the currently available information, some additional map information would be required. High priority should be given to mapping the following information so that revised flood insurance pricing can be phased in as soon as possible:
    - **Levee Protection Levels** – Determine and document the level of protection provided by levees that do not remove the protected areas from the SFHA (i.e. 10-year or 50-year flood protection).
    - **Levee-Protected Zones** – Delineate those areas currently mapped as Zone X, which are protected by levee systems and would be inundated by a 1% probability flood if the levee fails (sometimes called levee residual risk areas).
- Need for accurate mapping: An annual investment of funds is needed to close the significant gap between the available map products and the need for reliable flood hazard information. Priority must be given to completing the task of providing the entire nation with high quality FIRMs. Many areas do not yet have DFIRMs and many of the DFIRMs that have been developed fall short of the objective of presenting reliable flood data that reflect current conditions and an accurate representation of the topography. An independent analysis has shown that the accuracy of the topography used in flood hazard mapping creates the greatest variation on the accuracy of the mapping. The scope of each mapping project should, at the very least, include (1) topographical data that meets current FEMA mapping standards and was recently acquired (no older than about 10 years), (2) any analyses required to correct significant discrepancies between existing maps and current conditions (new bridges, significant development, mapping errors, etc.) and (3) any analyses required to incorporate updated engineering assessments from other agencies. Re-studies are needed for effective DFIRMs that fall short of this standard. And new mapping is needed for areas that were not mapped during the Map Mod program (with new detailed studies as warranted), regardless of whether there are local resources to leverage.
- Additional risk zones: New mapping should support a shift away from the use of only one flood zone (the 1% probability floodplain) for insurance and floodplain management purposes. The range of flood hazards can be depicted by mapping multiple risk zones (for different probability events), as well as Levee-Protected Zones and Erosion Hazard Zones. Additional risk information can be added in the future, as resources permit.
- Limits to Moderate Wave Action: Mapping of coastal areas subject to wave action should be completed to support more restrictive development standards in areas with moderate wave action (Coastal A Zones).
- Engineering standards: FEMA's modeling and mapping procedures should be reconciled with the tools and techniques used by other federal agencies, state agencies, and private sector engineers. Analyses using recognized engineering procedures (particularly when done by transportation departments, the Natural Resources Conservation Service (NRCS), or other state and federal agencies) should be readily incorporated into DFIRMs.
- Berms and embankments: We support the current FEMA levee mapping policy, which precludes certification of levee-like high ground that was not designed and constructed to engineering standards for withstanding hydrostatic and hydrodynamic forces. Such structures are berms or highway embankments and should not be represented on flood hazard maps. Conversely, co-location of a highway on an engineered levee does not preclude it's classification as a levee.
- Engineered levees: There is currently a lack of consistency between FEMA regions regarding the amount of information required for levee certification. In addition, the certification process raises liability concerns because of the implied safety guarantee (despite the disclaimer in the Federal Code). We propose that accreditation of engineered levees should not require "certification." Levees within the federal system that are not rated as unsatisfactory by the U.S. Army Corps of Engineers

(based on routine inspection) should be accredited for the appropriate level of protection, provided that design drawings meet engineering standards. Comparable evaluation procedures should be applied to engineered structures that are not currently in the federal system.

- Levee protection levels: We support FEMA's freeboard standards for determining if a levee system provides adequate protection from the 100-year flood to remove the protected area from the SFHA. However, levees that do not meet these freeboard standards but do meet the engineering standards specified above should still be "certified" with a flood insurance rating based on the level of protection that does exist (i.e. 10-year or 50-year).
- Erosion Hazard Zones: Future mapping efforts could delineate Erosion Hazard Zones in coastal, lake-shore, and riverine areas so that erosion hazards can be included in the risk factor rating for insurance pricing and in floodplain management requirements.
- Paper maps: FEMA has made a decision to discontinue publishing paper FIRMs, except for one set per community, when new maps are released. Although the less costly computer-based tools are fine for many larger communities, small municipalities (such as those in northeastern states) often lack the technology and sophistication needed to effectively utilize digital map products. Paper maps are less easily forgotten and can be taken into the field or displayed for the public. In order to support effective use of these maps for floodplain management, municipalities should, at their request, be able to obtain additional sets of paper maps (within a limit) at no cost to them.

MAP REVISIONS

Flood hazard maps should be revised and updated as needed to accurately represent current flood hazards.

Changes that impact floodplains are often not incorporated into the effective FIRMs. The cost of developing the required engineering information leads to decisions not to submit map change information for development projects (including those by state and federal agencies), particularly when there is no floodway obstruction and developed areas are not impacted.

RECOMMENDATIONS:

- Simplify data requirements for map revisions: FEMA should evaluate the possibility of reducing and/or simplifying the data requirements for Letters of Map Revision (LOMR). A protocol could be developed to allow accumulation of information applicable to flood studies (by any level of government and private engineers) so that available information can be more readily incorporated into DFIRMs. Targeted training in FEMA's map change process might also improve the efficiency with which map change requests can be developed and submitted.
- State and federal projects: State and federal agencies should be required to submit map change information directly to FEMA for any project that impacts the floodplain (bridges, flood control projects, etc.) The expectation that municipalities will submit this information for projects over which they have no regulatory authority is unreasonable.
- Cost of map changes: FEMA should review the fee schedule for Letters of Map Change (LOMC), and consider lowering the fees in order to encourage submittal of map change information. In particular, fees could be waived for government projects (local, state, and federal).
- LOMR-F: Letters of Map Revision based on Fill (LOMR-F) should be eliminated. In many cases, the availability of LOMR-F's encourages development in the floodplain fringe. Fill in the fringe does impact the floodplain and structures built on that fill still have flood risks and erosion risks. Elimination of the LOMR-F provision would ensure that basements are prohibited in filled areas and that property owners are subject to the same insurance requirements as structures elevated by other

means. It would also reduce the increase in flood elevations and flood velocities that occur when floodway fringe is filled.

REQUIREMENTS FOR FLOODPLAIN MANAGEMENT

NFIP standards for floodplain development should be expanded based on the recognition that floodplains are not suitable sites for human development.

The floodplain management program currently condones building in a floodplain by giving instructions on compliance for new construction. However, this has not prevented an escalation in flood damages, both within and outside of the mapped SFHA. We recommend that the floodplain management component of the NFIP be expanded into a program that embraces a broader approach to reducing flood damage by: retrofitting or removing existing buildings in the floodplain, protecting and restoring floodplain functions, preventing new floodplain development, promoting flood safety, etc. Because significant damages occur outside of the mapped SFHA, the program should not be limited to the mapped 1% probability floodplain.

RECOMMENDATIONS:

- Protect existing floodplain development: Retrofitting of existing floodplain development should be promoted by establishing standards and incentives for renovation and repair projects that do not constitute substantial improvements. This should include the use of flood resistant building materials below the flood protection level. Flood venting standards should be developed for floodplain structures with below-grade basements.
- Discourage or prevent new floodplain development: Extreme Hazard Zones should be identified in which new development is prohibited. These zones could include the 10% probability floodplain, areas subject to flash flooding, high velocity areas, erosion hazard areas, etc. One way to accomplish this would be to simplify and expand floodways. Development in other parts of the SFHA should be strongly discouraged by establishing high standards, ineligibility for government subsidies, etc.
- Protect floodplain functions: FEMA should explore methods for preserving and restoring the biologic, hydrologic, and geomorphic functions of floodplains. Projects that reconnect stream channels with the floodplain should be encouraged. Possible requirements include:
    - **Fill** – Only permit fill in the floodplain when the loss of flood storage and conveyance capacity is mitigated.
    - **Forests** – Clear cutting of trees could be explicitly included in the definition of "development" and only permitted when the impact on energy dissipation is mitigated.
    - **High value floodplain areas** – Communities should be encouraged to identify and protect areas that provide valuable floodplain functions, such as riparian wetlands and riparian forest buffers. The Community Rating System could be a tool for accomplishing this.
- Higher standards within the SFHA: When development does occur in the SFHA, it should be subject to higher standards:
    - **Freeboard** – The flood protection level for all development should be at least 2 feet above the Base Flood Elevation (BFE). When the BFE has not been determined, the minimum standard should be 3 feet above the highest adjacent grade, with a recommended level 2 or more feet above historic high water levels (where known).
    - **Moderate Wave Action Zones** – V-Zone construction standards should be required for floodplains subject to one to three foot waves (above the stillwater flood elevation) during coastal storms (Coastal A Zones).

- **Critical facilities** – The location of critical facilities in the SFHA should be prohibited. "Critical facility" could be defined as "any facility for which flood damage would result in serious danger to life and health, or widespread social or economic dislocation: (1) facilities designed for bulk storage of chemicals, petrochemicals, hazardous or toxic substances, or floatable materials; (2) hospitals, rest homes, correctional facilities, dormitories, patient care facilities; (3) major power generation, transmission or substation facilities, except for hydroelectric facilities; (4) major communications centers, such as civil defense centers, cell towers, or supporting equipment; or (5) emergency service facilities, such as fire and police stations."
- **Non-building development** – Clearer standards are needed for non-building development, which should be protected from flood damage and prevented from causing damage to other properties. For example: Placement of floatable items (such as picnic tables, scrap lumber, etc.) that can block culverts or cause other damage should be prevented. Development that blocks flow, such as elevated roads or fences with the potential to catch debris, should require an analysis of upstream impacts. Temporary storage of equipment, such as construction or drilling equipment, should require an emergency plan that enables timely removal in the event of a flood.

- Extend flood damage prevention standards beyond the mapped SFHA: Consideration of the flood hazard should be incorporated into the approval process for every development project, regardless of the flood zone in which it is located:
  - **Reasonably safe from flooding** – Standards for communities without flood hazard maps (44 CFR Section 60.3) should apply to all areas not mapped as SFHA. In most cases, a Zone X designation provides evidence that the site is "reasonably safe from flooding." However, communities often have historic evidence to the contrary and should be able to regulate development based on that information without undertaking the engineering expense of a map change request.
  - **Flood protection level beyond SFHA boundaries** – The flood protection level based on an established BFE plus freeboard should apply to adjacent areas outside of the SFHA. Projects located just outside of the SFHA would need to be protected to the same elevation as those within the mapped flood zone. Basements (below grade on all sides) could be permitted in these areas, but only if the floor is at or above the flood protection level.
- Emergency planning: A Flood Emergency Plan should be required as a permit condition for any development project in the SFHA. This would include an indication of how occupants would be notified of flood conditions, what steps are required to secure the property (i.e. removal of valuables stored in enclosed areas below the lowest floor), and identification of evacuation routes. The plan should be filed with the municipality and provided to new owners/occupants. Requiring that a notice of hazard be filed with the deed would alert future owners. Emergency plans would be required for existing development when repairs or other projects are undertaken. In areas subject to flash flooding, overnight occupancy should be discouraged or prohibited. This requirement is particularly important for recreational vehicle or trailer parks, where anchoring and elevation is not required for temporary occupancy and licensed vehicles.
- Improve enforcement: Additional technical support is needed to promote fully-compliant floodplain development, particularly in municipalities where such development only occurs infrequently. Increased compliance might be achieved by requiring that all floodplain development projects be reviewed by someone outside of the local community (as is done for projects in historic districts). In addition to providing additional technical expertise, this could also reduce the potential for local political pressure.

EMERGENCY RESPONSE

The costs of private property flood losses should be transferred from the taxpayers to floodplain property owners (through flood insurance premiums).

American taxpayers, most of whom do not live in flood-prone areas, should not be expected to continue paying for the escalating cost of disaster assistance after major floods. People who choose to develop in identified high-risk locations need to be accountable for the consequences of those decisions. (Those who experience a fire or other calamity don't receive federal assistance – They either have insurance or they don't.)

RECOMMENDATIONS:

- Disaster relief: Effective reform of the insurance and floodplain management functions of NFIP should enable a significant reduction in the need for federal disaster aid for floods. Flood damage to buildings should be covered by flood insurance, eliminating the need for Individual Assistance and Public Assistance for building damage.
- Appropriate FEMA response: Following a flood, FEMA's response should include:
    - **Insurance** – Training for insurance agents and assistance with insurance claim procedures.
    - **Floodplain management assistance** – Training, funding, and technical assistance to help local officials with substantial damage determinations and enforcement of re-building requirements. Local costs (including the cost of inter-municipal aid) associated with determining substantial damage should be reimbursable from FEMA as part of Public Assistance.
    - **Technical assistance with floodproofing** – Training and assistance for building officials, engineers, contractors, and the public on evaluating floodproofing (retrofitting) options and implementing appropriate protective measures during reconstruction. This assistance would facilitate a reduction in future flood damage. If the above insurance price recommendations are implemented, floodproofing could also reduce the cost of insurance coverage. This assistance must be provided immediately, before recovery and reconstruction begin.
    - **Financial assistance with floodproofing** – Financial aid to assist property owners with implementation of wet and dry floodproofing projects during reconstruction. This assistance must be available immediately after the flood. It should be available directly to property owners, with minimal paperwork.
    - **Flood hazard mapping** – Flood hazard areas should be evaluated and re-mapped (if warranted) as quickly as possible following major flood events.
    - **Public education** - Following a flood disaster, FEMA should undertake a targeted public education campaign designed to promote personal responsibility, sound re-building decisions, and restoration of natural floodplain functions.
    - **Planning** – Following a flood, FEMA should assist local communities with long term planning so that re-building is done in a manner that reduces future vulnerability. This planning process should be locally-led, with technical assistance/support from FEMA and/or state partners.

FLOOD MITIGATION

The NFIP should support and promote a broader range of non-structural flood damage prevention activities.

Most of the existing floodplain development is not substantially damaged by floods and thus is not removed or brought into compliance with floodplain development standards. Although federal buyout programs are an excellent way to remove development from the most severe flood hazard areas, additional tools are needed to reduce risk in the many other areas where damage levels are not sufficient for cost-effective buyouts. There is often little information or incentive for owners to implement damage reduction measures.

RECOMMENDATIONS:

- Project Impact: Project Impact should be restored as a community-based planning approach that leads to increased resilience to flooding and other disasters. This program was much more effective (for those few communities who were able to participate) than the current Hazard Mitigation Planning requirements (which tend to discourage local involvement and local initiative).
- Increased Cost of Compliance: The Increased Cost of Compliance (ICC) coverage in flood insurance policies is not widely utilized and most municipalities do not adopt a repetitive loss definition for substantial damage (which would trigger additional ICC claims) due to the burden on local building officials. In order to promote additional retrofitting of flood-damaged properties, ICC coverage could be expanded to structures that are not substantially damaged, provided that the project brings the structure into full compliance with current floodplain development standards (including any higher standards adopted locally). This coverage could be available when one or more flood insurance claim has exceeded a specified percent of the structure's value (lower than 50%), regardless of whether the damage met the community's substantial damage definition. ICC coverage for structures that are not substantially damaged could be voluntary (to encourage mitigation) or mandatory (in combination with FEMA's severe repetitive loss program to provide the full cost of elevating or demolishing the structure). ICC could thus provide a means for cost-sharing elevation and relocation projects without the lengthy application process and requirements for hazard mitigation grant funding.
- Wet floodproofing: The use of wet floodproofing and other retrofit measures that reduce flood damage, but do not bring structures into compliance with floodplain development standards, should be promoted. This would require additional information and training. It could be supported by a revised insurance pricing scheme (as outlined above). Mitigation grant funding could also be used to support wet floodproofing of pre-FIRM structures.
- Community Rating System: The Community Rating System should continue to be used to promote local and state implementation of voluntary flood safety and flood damage reduction programs. However, major changes are needed to improve the utilization and effectiveness of this program. In particular, better methods should be developed for assigning credit for improved educational programs, protection/restoration of floodplain functions, and No Adverse Impact requirements.

COORDINATION OF AGENCIES AND POLICIES

A consistent policy for reducing flood risks should be implemented by all federal agencies (as well as state and local governments) in a coordinated manner that is integrated with other water resource and land use objectives.

Federally funded projects do not consistently adhere to principles of sound floodplain management. This lack of cohesion between the various federal agencies makes property owners bitter about complying with requirements or paying into a system that seems to be so bent or broken. Current inconsistencies in engineering practices and/or lack of coordination also result in situations in which

flood control projects developed with federal funding are not represented appropriately on FEMA flood hazard maps.

RECOMMENDATIONS:

- Coordination among all federal agencies: Floodplain management and flood safety must become a priority for all federal agencies, so that flood policies can be implemented in a consistent manner. This applies to programs supporting development objectives and agriculture, as well as water resource programs. For example, funding for infrastructure and economic development should not promote new development in the floodplain.
- Floodplain management standards: Projects with government funding (federal, state, or local) should be subject to high standards for floodplain development, protection of floodplain functions, and preventing adverse impacts. School renovations, fire departments, and other projects should not receive public funding or other support without complying with floodplain development standards, including any locally-enacted higher standards.
- Levee policy: National levee policy requires greater coordination and consistency between the US Army Corps of Engineers and the FEMA mapping program.
- Engineering standards: There should be compatible science for the engineering analyses related to flood modeling and floodplain delineation. For example, the NRCS PL-566 Small Watershed program and FEMA mapping program should use a consistent methodology for mapping flood hazard areas.

PUBLIC EDUCATION

The public needs to understand that floodplains are not suitable sites for human development and that individuals who choose to occupy flood-prone areas are responsible for the consequences of those decisions.

Flood damage and degradation of floodplain functions are inevitable byproducts of floodplain development. The NFIP and other programs should thus promote the understanding that floodplains are dangerous and inappropriate places for development. Those who chose to develop in flood-prone locations need to recognize that they are responsible, not only for any damage to their own property, but also for adverse impacts on natural systems and other property. The current practice of referring to flood hazard zones by the anticipated frequency of inundation (i.e. 100-year floodplain) gives the impression that severe flooding is unlikely, and thus not an important concern. Probabilities are also not well understood (i.e. the 1% annual chance floodplain). This use of confusing terminology limits public understanding of flood risks and diminishes public support for the National Flood Insurance Program.

RECOMMENDATIONS:

- Revised NFIP objectives: The emphasis of the NFIP should shift toward the recognition that the best way to prevent flood damage is to keep human development out flood-prone locations (rather than promoting flood insurance and "safe" techniques for new development). Policy changes should be implemented in conjunction with a public education campaign to promote support for this revised strategy.
- Improved terminology: FEMA needs to work with floodplain management professionals to develop better terminology for labeling flood hazard zones and then transition to the agreed-upon terminology as quickly as possible.
- Inclusion of hazards on survey maps: Standards for instrument survey mapping of real property should require designation of mapped flood and erosion hazard areas and floodways. Because these

maps support many land use decisions, this would increase local knowledge of high risk areas. This requirement could be implemented at the state level and encouraged nationwide by providing statewide CRS credits.

CONCLUSION

The escalating cost of flood damage in the U.S. demonstrates that the current approach to managing flood risks is not adequate.

Our nation needs to devise and enact policy changes that will reduce the number of people and structures at risk of flooding. The remaining flood risks should be covered by an insurance program that is fair and affordable, as well as financially solvent. Accurate mapping of the nation's flood hazards is needed to implement effective development standards and reasonable insurance rating. Those who occupy flood hazard areas must assume more responsibility for their risks (rather than relying on taxpayer-financed disaster assistance). The NYS Floodplain and Stormwater Managers Association proposes sweeping reform of our nation's flood policy and presents these recommendations for reforming the National Flood Insurance Program as an important part of that policy change.