



HAZARD MITIGATION

DRAFT POLICY GUIDE

Draft Policy Guide Review: Directions & Timeline

- Deadline for Chapter & Division comments:
March 25, 2014
Submit via email to govtaffairs@planning.org
- Deadline for Chapter Delegate appointments:
March 31, 2014
Submit via email to LJorgenson@planning.org
- Delegates receive revised policy guides:
April 14, 2014
- Delegate Assembly Preview Webinar:
April 17, 2014 at 2:00 pm ET
- Delegate Assembly:
April 26, 2014 in Atlanta

DECLARATIONS

The American Planning Association (APA) and its Chapters and Divisions support measures and policies to enhance awareness of risks and efforts to improve community preparedness, resilience, and sustainability in the face of both natural and human-caused hazards. Throughout this Policy Guide is discussion of the differences and the tension between adaptation, response and recovery. There is an understandable—and economically and socially rational—basis for wanting to protect community assets in place, protect people, and rebuild in place as quickly as possible, yet this may not be truly in the best long-term interests of individuals, communities, regions or the nation. APA and its Chapters and Divisions are ideally suited to assist with the community, state, and national dialogue on these issues because as planners, ours is the profession that transcends all other hazard mitigation-centered disciplines and also focuses on shared futures.

Planning for hazards before they strike can help answer questions in a more effective and efficient environment that can aid in both preparedness for hazards and coordination before, during and after disasters. It is critical to include government and regulatory agencies, non-governmental entities, educational institutions, private sector organizations including health care providers, and citizens in hazard mitigation planning.

Policy declarations regarding hazard mitigation are closely linked to the policy declarations under Climate Change, Smart Growth, Security, and Sustainability Policy Guides. These are intentionally not repeated in this declaration and are referenced at the end.

A. Best Practices

APA and its Chapters and Divisions encourage planners and decision makers to develop, share, and use best practices and to insist that such practices are based on accepted scientific, engineering, and technological concepts, principles, and processes.

B. Data and Predictive Models

APA and its Chapters and Divisions recognize the importance of easy, consistent, and affordable access to communitywide and regional data as an integral component of planning for the future. Further, APA and its Chapters and Divisions recognize the importance of developing predictive models that incorporate anticipated hazards from changing climatic and built conditions.

C. Resiliency Standards and Damage Resistance

APA and its Chapters and Divisions encourage the development of resiliency standards for materials, construction techniques, siting of critical facilities and infrastructure, and both new development and



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redevelopment to mitigate the adverse impacts of natural and human-caused hazards on land-use, environment, economy, quality of life, and national security. Moreover, APA and its Chapters and Divisions are aware of the importance of continuing research and development of standards and practices that will improve national, community, and individual resilience to all hazards, both natural and human-caused.

D. Incentives

APA and its Chapters and Divisions support the development and expansion of programs such as the National Flood Insurance Program's Community Rating System which provide economic incentives to improve community and individual property resilience to natural and human-caused hazards. However, APA and its Chapters and Divisions strongly oppose programs that incentivize dangerous and irresponsible development patterns and behavior.

E. Public Education and Involvement

APA and its Chapters and Divisions will take a lead role in educating their communities on the interrelated issues of risk reduction to hazards, climate change, adaptation, resiliency, and sustainability. Further, APA and its Chapters and Divisions recognize the importance of involving the public at all levels of planning for and decision-making about structural and non-structural all-hazards mitigation.

F. Preparation

APA and its Chapters and Divisions support legislation, including the Disaster Mitigation Act of 2000, and regulations that require federal, state, and local agencies and entities to develop and implement resiliency and risk reduction measures based on generally accepted understanding of the specific natural and human-caused hazards faced by the agency or entity.

G. Adaptation

APA and its Chapters and Divisions support continued investment in infrastructure improvements and land-use modifications that will assist communities and individuals in reacting responsibly to changing conditions. In making this declaration, APA and its Chapters and Divisions recognize that effective and responsible adaptation over time will necessitate changes in land-use, building techniques, code requirements, locational decisions, and employing risk reduction measures.

H. Response and Recovery

APA and its Chapters and Divisions encourage federal, state, and local governments to plan for recovery in a way which enhances future resilience and does not simply replace what existed with the same thing unless there are overarching national security or economic considerations that necessitate such an approach. Additionally, APA and its Chapters and Divisions support fiscal planning that sets aside funding for future recovery as a regular budgetary expense to build fund balances instead of having each disaster require a separate funding vehicle.

I. State and Local Land-Use Authority

APA and its Chapters and Divisions support the preservation of State and local land-use authority with input from regional stakeholders in review and approval of facilities and infrastructure supportive of



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hazard mitigation, community resilience, and sustainability. APA also supports integration of hazard mitigation policies and principles into local plans, processes, and regulations.

J. Protection of Vulnerable Populations and Assets

APA and its Chapters and Divisions recognize that the federal, state, and local governments have a primary responsibility to identify vulnerable populations and assets, devise strategies with stakeholder input to mitigate the impacts of hazards on them, and ensure full and rigorous implantation in a manner that best protects vulnerable populations and assets.

DEFINITIONS, KEY FACTS, AND RATIONALE

Hazard mitigation is a key element of building resilient communities. We are able to identify hazards and forecast risk today as we never have been able to before in recorded human history, and we have every expectation that these abilities will improve with research, technology, and time. And yet, regardless of the sophistication of our models and the sweep of our knowledge, there is an element of chance in every hazard we face. For example, we may know what is likely to happen during an earthquake, but cannot with certainty predict when it will come or where the epicenter may be. Conversely, we may know to expect the possibility of cyber-attacks or terrorism on certain dates, but not be able to predict what form those attacks will take or where. Thus community resilience requires planning and preparing for multiple hazards—the so-called All-Hazards Plan—and this requires working across agencies and disciplines to break down silos of responsibility.

HAZARD MITIGATION VS. ADAPTATION VS. RESPONSE/RECOVERY

Community resilience is a three-legged stool comprised of Mitigation, Adaptation and Response/Recovery. **Hazard Mitigation** comprises a series of actions that lessen the severity or intensity of the hazard when it strikes. **Adaptation** entails modifying the environment or structure to make it more suited to changed or changing conditions and situations. **Response/Recovery** is the response after an event to return to or restore to the previous condition and in many cases to produce a better state. All of these are necessary components of resilience and a plan that focuses on one to the exclusion of the others will not support true resiliency.

Most hazards planning have, heretofore, focused on mitigation and emergency response. While exceedingly important, in many ways by ignoring adaptation strategies and failing to plan for response and recovery, such a strategy leaves communities vulnerable to even greater risk and costs, and thus less resilient. The Gulf Coast has learned this lesson repeatedly in recent decades; rebuilding coastal communities following hurricane events only to be forced to rebuild them again following subsequent storms.

Hurricanes Katrina in 2005 and Sandy in 2012 crystallize this lesson. In most cases, evacuation, emergency response, mitigation and recovery plans were in either not in place or were inadequate. The affected communities may have thought they were prepared; however, that preparation could not overcome the force of these storms. Decades of land-use and infrastructure construction decisions that often focused on being able to bounce back successfully from a disaster could not cope with the wind and water these storms brought with them. This failure of preparation has led the communities impacted by these storms to begin thinking about adaptation in the face of threats, rather than just mitigating their impact. And while it is good that the thought process has begun, for the most part the mindset continues to be to rebuild in place.



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Certain events tend to have similar impacts from each occurrence and can to some degree be predicted. Coastal flooding for example usually recurs in much the same location and those areas are fairly predictable. Another example is that widespread power outages have most frequently occurred in the Northeast and across the upper Midwest for reasons easily understood by analyzing the power supply grid. Other hazard events are far less predictable though in some cases the ability to provide at least some warning is improving—tornados, earthquakes and tsunamis are examples—but geography and past experience allow us to recognize that certain locations and times of the year are more prone to hazards than other times or locations. And thus, it is no longer acceptable to simply deal with the situation when it occurs. Appropriate all hazards planning and preparedness demands that we ask and answer two additional questions:

- How do we adapt to the reoccurring events?
- How do we recover better, stronger and more resilient from events so that the next and subsequent events are less disruptive and damaging?

The status quo is no longer acceptable. Planners have a significant and direct role in planning for community resilience. Appropriate change in land-uses, densities, development techniques, building codes, utility locations and installation methods, infrastructure investments, and similar considerations are what planners are trained to bring to the forefront of community discussions about how to prepare for and respond to changing conditions. Moreover, discussions of resilience too often focus on the physical aspects of a community – roads, bridges, homes, businesses, community buildings, hospitals, water and wastewater plants, and the like. However, social and economic resilience is perhaps more important and, as such, social and economic vulnerability identification should be a part of mitigation planning. Planners also have an important role in educating elected officials, executive leaders, and a myriad stakeholders of the necessity of implementing these changes.

BENEFITS OF HAZARD MITIGATION PLANNING

Hazard mitigation plans form the foundation for a community's short and long-term strategy to reduce disaster losses and break the cycle of inappropriate building, disaster damage, reconstruction, and repeated damage. They provide benefits in the form of increased capacity to deal with hazards among stakeholders and the public and improved coordination between different levels of government, nongovernmental organizations, and private businesses. Overall, the hazard mitigation planning process can aid governments at all levels in saving lives, property, and money, speeding recovery from disasters, reducing risks and future vulnerability to disasters, expediting the receipt of grant funding, and demonstrating a firm commitment to improving community health, safety, and welfare.

As part of the long-term strategy, the critical infrastructure – that which is essential for the functioning of the economy and society – must be identified and prioritized for protection and adaptation. Critical infrastructure is comprised of both public (e.g. water, wastewater, transportation, etc.) and private (e.g. power, communications, food production, etc.) components and all must be considered. Given that the type and location of infrastructure developed can either hurt or help resilience goals, it is important that resilience goals be considered in every infrastructure investment.

A robust hazard mitigation plan aids in community preparedness. The plan should incorporate specific public and private roles and responsibilities across the community and be exercised with both rigor and regularity to determine what works and what components need more work. It is absolutely essential that the plan be based on realistic and verifiable facts. For example, if the community has several transportation choke points that make evacuation difficult under perfect conditions, the plan needs to consider that a substantial portion of the



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population may be unable to evacuate and that many may be trapped in vehicles without sufficient water, food, blankets, and the like.

The lack of communication and cooperation among various actors in the time before, during, and after disaster is one of the biggest challenges to be addressed in the hazard mitigation planning process. Proper coordination can get infrastructure in place to lessen the impact of potential disasters, it can ensure that resources are in the right locations to respond to disasters, and it can direct aid more quickly to the victims of disasters. Coordination should not just be undertaken among government agencies at the local levels, however. It should instead bring together agencies at the local, state, and federal level, non-governmental organizations, institutions that provide educational and health services, media and any other groups that can assist in preparing for or responding to disasters.

HAZARD MITIGATION PLANNING PROCESS

The hazard mitigation plan is only the end result of a process; the process of creating the plan is as important as the plan itself. The planning process includes several key steps that represent important outcomes of their own, such as organizing community resources and assessing hazard risks.

FEMA outlines the planning process by identifying four steps:

1. **Organizing resources** – focusing on those that are needed to ensure a successful planning process, such as identifying and organizing community stakeholders and technical experts.
2. **Assessing risks** - identifying the characteristics and potential consequences of the various hazards that could impact a community, with a focus on the impact on important community assets.
3. **Developing the hazard mitigation plan** - determining priorities and identifying strategies to avoid or minimize undesired effects, along with a strategy for implementation.
4. **Implementing the plan and monitoring progress** – ranging from implementing specific projects to changes in day-to-day operations, along with a strategy for keeping the plan current through periodic evaluations and revisions.

But hazard mitigation plans should not stop there. Hazards planning should now include adaptation to reduce risks and response/recovery planning so that the post-hazard actions do not merely replicate the conditions that previously existed. The goal of all hazard planning processes is to enhance community resilience in the aftermath of a disaster or hazard event.

ADAPTATION AND RECOVERY

The American Planning Association supports the rebuilding of communities that are damaged from disasters to resilient standards that will prevent future disasters. Too often, communities want to rebuild their current structures and homes as they previously existed without taking into consideration a repeat of the disaster. While the damage caused by a disaster can be devastating, communities should use the disaster as an opportunity to rebuild in a more resilient manner, such as Greensburg, KS after their 2007 tornado or in areas along the Gulf Coast after Hurricane Katrina (Bay Saint Louis, MS). Planners should guide cities to rebuild for the future, not the present.



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POLICY OUTCOMES

This section summarizes the American Planning Association’s desired results from the implementation of the policy declarations above.

BEST PRACTICES APPLICABLE TO ALL DISASTERS

Interagency, Regional, and Local Planning Capacity and Cooperation

Sharing resources and ideas before disaster strikes provides for a more expeditious and coordinated response and recovery. Thus, hazard mitigation, adaptation, and recovery are most effective with interagency cooperation. Cooperation between local units of government, regional, state and federal agencies, and the private and nonprofit sectors is needed to best serve the public and to foster resiliency to all hazards.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Expand interagency partnerships and collaboration such the Digital Coast Partnership involving public and private partners at all levels. APA supports greater intergovernmental cooperation and data-sharing in the development of hazard mitigation plans. For example, APA supports the elimination of conflicting mandates or policies from differing state and federal agencies.
- Accurate mapping of hazards for all areas of the country that provides more detailed information on the risk of both current and future hazards. Maps need to be updated on a timely basis and be available in easily usable digital formats (e.g. DFIRMs).
- Involve all federal mapping agencies in hazards mapping and, to the extent practical, document all hazards within a single mapping product. Silos of data and federal interests must be eliminated. Moreover, high priority needs to be given to maintaining currency and applicability of all federal mapping products and data sets and making them easily accessible on multiple platforms.

Inter-relationships Between Plans, Development Codes, and Ordinances

By placing greater emphasis on integrating hazard mitigation into state and local plans, development codes and land-use ordinances, some of the negative impacts of disasters may be avoided or reduced.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Establish and expand federal and state mandates and support for state and local comprehensive plans which address hazard mitigation and the land-use impacts of disaster preparation. Technical assistance and funding support may be necessary for smaller units of government.
- Provide funding and technical assistance to conduct robust risk assessments and risk mapping, and to use these to reassess land-use plans, zoning ordinances, and other codes for areas of identified risk and to develop strategies to mitigate those risks.
- Require that state and local Hazard Mitigation Action Plans are integrated into comprehensive plans and remove policies that hinder such integration.



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- Enhance state and local building and development codes, perhaps through the International Codes Council (ICC) among others, to require greater resilience when constructing in identified areas of hazard. The required resilience must be related to the probable hazards faced.
- Require the development of both hazard mitigation and response/recovery plans that include land-use and environmental planners as part of the team in addition to emergency management personnel.
- Require annual reporting of state and local resiliency and risk reduction planning efforts to States and FEMA for the purpose of identifying best practices that can be shared, subject areas where additional research emphasis is required, and how federal and State resources can best be deployed.

Resiliency Standards

The long term goal of a community is to be able to recover successfully from a disaster. Better resiliency standards are needed to assess federal agency, state, and community resiliency in preparing for and responding to a disaster.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Develop improved resiliency standards appropriate to the hazards faced and incorporate such standards into all federal infrastructure investment programs and disaster recovery efforts.
- Ensure that improved resiliency standards focus on economic, social, and institutional resiliency and not simply physical resilience.
- Establish federal, state, and local land-use planning decision frameworks that avoid locating development, and especially critical infrastructure and vulnerable populations, in areas subject to risks, to the extent practical.
- Develop and adoption building codes that provide greater resiliency toward hazards, including wind, water, wildfire, and seismic damage.
- Continue investing in infrastructure that helps to protect the Nation's communities from hazards, as well as protect vital networks from risk.
- Encourage the use of green infrastructure approaches to hazard protection, where appropriate, and use traditional engineered structural solutions only when necessary to protect life and property.

Incentives

Incentives, properly applied, can modify informed investment decisions in ways that may be more effective than regulation alone. For example, the Biggert-Waters Flood Insurance Reform Act of 2012 makes it more difficult and more expensive to insure buildings that are at greater risk in an effort to correct what previously was an incentive—likely unintentional—to build in risky locations through a significant insurance subsidy.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Reduce or eliminate regulations, policies, and incentives that encourage (either intentionally or unintentionally) development or redevelopment in areas subject to risks.



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- Provide tax credits at federal, state, and local levels for work done to improve the resiliency of structures in hazard-prone areas.
- Include within disaster assistance funding 100% of the cost of meeting enhanced resiliency standards.
- Offer one-time buy-out bonuses at greater than the full cost of relocating away from high-hazard areas to encourage property owners to not rebuild, elevate, or repair damaged structures but rather in safer locations. Consider tying the availability of federal and state casualty insurance to such offers.
- Support programs and policies that maintain the stability and long-term viability of hazards insurance programs (such as flood and wind insurance). As premiums rise to reflect their true risk, APA supports research into options or methods that may reduce the financial impact on low to moderate income residents, and to communities, who may be significantly affected by the more appropriate premiums.

Stakeholder Involvement

Stakeholder involvement brings varying viewpoints, concerns, and skills to hazard mitigation plans and infrastructure projects. The resulting plans and investments are more comprehensive, more successful in implementation and less likely to succumb to the vagaries of shifting political winds.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Fully incorporate planners and other community partners in the hazard mitigation planning process, not just emergency managers and engineers.
- Consistently engage citizens, business professionals, public and private healthcare and social-serving agencies, religious and community leaders, educational institutions, and other similar stakeholders in the planning process in order to incorporate economic, fiscal and social resiliency into mitigation plans.
- Develop regional partnerships and civic engagement in mitigation and adaptation planning.

Public Education & Engagement

For hazard mitigation efforts to be successful, the public must understand the need to change where we build, what we build, and how we build. People continue to base reactions to disasters on personal experiences; thus it is necessary to have available data (including historical data) and resources to convey the potential for one or more hazardous events and provide alternatives and options for how the community can best prepare. Engagement is a continuing endeavor, not a one-time event.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Increase federal support for research and dissemination of data on the magnitude, frequency, vulnerability risk, and location of natural and human-caused hazards and risks.
- Encourage and support the development of web-enabled data and “apps” to reach the connected generation.



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- Continue the development of robust hazard notification systems that reflect the current diversity of communication devices used by citizens, remembering that not all persons affected by a disaster will have access to the latest technology nor will they necessarily have extensive local knowledge.
- Educate the public before disasters on individual/family hazard preparedness and essential community responses planned for water, ice and food distribution, and special needs populations.
- Educate the public of the risks associated with building and living in hazard-prone areas and require all real estate transactions to disclose to the buyers both the history of hazards and the mapped or predicted hazards for the property being purchased.

Environmental Considerations

Green infrastructure and planning for multiple objectives, when properly used, can be a cost-effective method for mitigating the effects of natural hazards while also supporting other benefits to the community. Communities that can integrate environmental considerations with hazard mitigation planning will be successful in effective planning for both objectives.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Increase federal and state research into green infrastructure techniques appropriate to specific regions and hazards faced.
- Support federal, state, and local tax incentives to utilize environmentally-sensitive building and development techniques.
- Enhance federal, state, and local tax credits for conservation easement donations based on the ecological values protected and preserved through the easement and the ability to reduce the severity of hazards faced.
- Establish a national catalogue of green infrastructure best practices and successful case studies of mitigation and adaptation, including benefit-cost analyses to assist planners, floodplain managers, hazard mitigation specialists, and others considering local plans and policies.

Response/Recovery Efforts

It is critical that in the rebuilding of communities that are damaged from disasters, it be done in a manner that will reduce the severity of future hazard events. Too often, communities want to rebuild their current structures and homes “as they were” without taking into consideration a repeat of the disaster or the effects of long-term trends (such as beach erosion). While the damage caused by a disaster can be devastating, communities should use the lessons learned from the disaster as an opportunity to rebuild in a more resilient manner; planners should guide communities to rebuild for the future, not the present.

APA and its Chapters and Divisions support the following Policy Outcomes:

- Champion federal and state action to make response/recovery plans developed with extensive stakeholder and public input a mandatory component of community hazard mitigation plans. It is far better to do such “blue sky” planning well before disaster strikes so that recovery is more quickly implemented and dovetails with other community plans.



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- Support federal and state action to provide adequate funding resources to build to higher standards or to relocate structures based on reasonable assumptions about current costs. APA supports research into other financial options for such assistance, such as low interest loans.
- Encourage federal and state agencies to adopt policies that will speed and streamline response/recovery efforts that allow for innovative and resilient rebuilding efforts. In other words, make “better” the preferred alternative and “same” the more difficult path to follow.
- Encourage communities to plan for community reconstruction to higher standards before allowing reconstruction following a disaster to occur, including use of temporary moratoria when appropriate.

NATURAL DISASTERS

Disease/Pandemic

APA and its Chapters and Divisions support the following Policy Outcomes:

- Support the development of interdisciplinary teams of public health experts, physicians, scientists, media, and communications professionals help build local capacity to recognize and manage critical public health and safety issues, including disease/pandemic outbreaks in the immediate aftermath of discovery before state and federal resources can be mobilized.
- Develop a national communications plan for consistent and timely public health information on the appropriate responses to disease outbreaks and pandemic events.
- Strengthen the ability of the Center for Disease Control to conduct surveillance of human and animal influenza viruses and risk assessments of influenza viruses with pandemic potential.
- Continue federal, state, and local investments in infrastructure and regulation to protect water and food sources from contamination and effectively remove disease-carrying vectors to the extent practical.
- Ensure that federal, state, and local plans exist for managing pandemics and the associated increase in fatalities from pandemic.
- Support the protection of waterways and other conduits of disease or contamination from causing future exposure.

Drought

APA and its Chapters and Divisions support the following Policy Outcomes:

- Ensure that all states and communities have the regulatory authority to require inclusion of water conservation into the planning and development of structures and communities including such initiatives as banning spray irrigation other than for agriculture activities intended for direct human consumption and limiting or modifying development based on assumed availability of water.
- Support federal, state, and local tax credits for the installation of water-conserving plumbing and other devices as retrofits.



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- Require that states and local or regional jurisdictions develop water conservation plans, preferably on a watershed basis, that includes emergency conservation measures or directives and the triggers for implementation of each measure or directive.
- Consider a stronger federal role in the development of integrated, full-watershed water management plans.

Earthquakes

APA and its Chapters and Divisions support the following Policy Outcomes:

- Support federal, state, and local mapping of fault zones and liquefaction areas as a part of larger all-hazards mapping efforts.
- Expand funding for seismic research, and investment in the next generation of seismic activity detection and prediction monitors.
- Continue research into location and building standards for structures located in seismically-active areas, including strengthening building codes by requiring that shaking intensity be taken into account.
- Support state and local retrofit programs that use best engineering standards for structures located in seismic zones.
- Recognize the potential of earthquake-induced landslides in land-use and development plans.
- Require that local plans and codes in seismically-active areas include identification of fault zones, fault setbacks and seismic construction standards that are specific to the seismic risks faced (e.g. liquefaction vs. bedrock movement.)
- Provide grant funding and tax incentives to encourage the appropriate buy-out or retrofit of unprotected structures in seismically-active areas.

Extreme Heat/Cold

APA and its Chapters and Divisions support the following Policy Outcomes:

- Ensure that state and local plans are in place to manage extreme heat/cold events, especially should power outages accompany the extreme temperature event. All such plans must include the emergency healthcare providers within a community and region.
- Encourage the use of landscape and hardscape design in combination with building placement and green buildings to create spaces and communities that mitigate the impacts of extreme heat events.
- Ensure that local communities have adequate shelter facilities directed at at-risk populations such as the elderly and homeless.
- Ensure that local communities have an adequate monitoring system for house-bound at-risk populations.



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Flooding

APA and its Chapters and Divisions support the following Policy Outcomes:

- Adopt mandatory federal and state flood regulations that apply to the 500-year (0.02 percent annual chance) floodplain.
- Ensure that flood insurance standards eliminate incentives for rebuilding in hazardous areas and focus on relocating away from high hazard locations.
- Support the update of out-of-date flood insurance maps.
- Support federal action to develop and disseminate maps that show flood hazards under future conditions such as increased impervious area upstream and potential effects of climate change. To the extent practicable, maps should predict the extent of flooding at least 50 years into the future.
- Encourage communities to map and regulate flooding hazards at higher standards than required by FEMA, and encourage the use of Cooperating Technical Partners to enhance flood mapping.
- Advocate for federal and state action to provide adequate funding resources to build to higher flood resiliency standards or to relocate structures based on reasonable assumptions about current costs. For example, FEMA's current Increased Cost of Compliance (ICC) allowance in the National Flood Insurance Program is often insufficient to cover the costs of elevating a residence. This should include research into other financial options for such assistance, such as low interest loans.
- For communities subject to coastal flooding, plans should include the potential change in sea level as a factor for future risk.
- Support the recommendations of the "Sandy Recovery Task Force".
- Advocate for watershed-wide plans that cross jurisdictional lines and interagency cooperation, at all levels of private and public sectors, in data sharing.
- Ensure adequate funding for stream gages, especially in communities with repetitive flood events or repetitive (flood) loss structures.

Hurricanes, Tropical Cyclones and other Tropical Storms

APA and its Chapters and Divisions support the following Policy Outcomes:

- Ensure continued funding for next generation weather satellites and terrestrial National Weather Service infrastructure to improve detection and prediction capabilities of tropical cyclones.
- Increase technical and fiscal assistance to coastal communities and adjacent inland communities in planning for and implementing measures to mitigate the impacts of tropical storms.
- Strengthen protection for coastal primary dunes including permitting acquisition through condemnation.



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- Encourage at-risk communities to develop and adopt evacuation plans and then perform large-scale drills to test the plans and to inform and prepare the public; ensure that coordination with receiving communities on shelter needs is part of the evacuation plan development process.
- Expand funding for research into the effectiveness and benefit-cost ratios of various adaptation and mitigation strategies including both natural areas preservation and man-made interventions (e.g. beach nourishment, vegetation maintenance, and engineered structures).

Landslides/Avalanches

APA and its Chapters and Divisions support the following Policy Outcomes:

- Support federal, state, and local mapping of landslide prone areas including mine waste areas.
- Develop building codes for landslide prone areas, including for public and private infrastructure and building foundations.
- Require engineered (and sealed) drainage and building foundation plans in areas subject to landslides.

Sea Level Rise and Land Subsidence

APA and its Chapters and Divisions support the following Policy Outcomes:

- Expand funding at the federal and state level for research to determine the most likely scenarios—including worst-case analysis—for sea level rise and land subsidence on coastlines over the next 100+ years.
- Require through federal action that the research data be used in community plans and that the worst-case analysis is used in decisions about locating critical infrastructure and land-uses.

Tornadoes, High Winds, and Severe Thunderstorms

APA and its Chapters and Divisions support the following Policy Outcomes:

- Continue funding the next generation weather satellites and terrestrial National Weather Service infrastructure to improve severe weather and tornado activity detection and prediction capabilities.
- Support continued development of robust hazard notification systems that are device-neutral or do not require a personal device to receive warnings.
- Champion increased funding (or continued funding) for stand-alone safe rooms, safe rooms linked to schools and communities facilities, and community shelters to prevent the future loss of life.
- Advance the technology that links safe rooms and community shelters to warning sirens and opens doors, activates cameras, and operates ventilation systems.



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Tsunamis and Seiches

APA and its Chapters and Divisions support the following policy outcomes:

- Develop land-use plans in coastal areas that mitigate risks from tsunamis.
- Support federal, state, and local mapping of tsunami risk areas, and lakes and reservoirs at risk of seiches.
- Increase technical and fiscal assistance to coastal communities in planning for implementing measures to mitigate the impacts of tsunamis.
- Encourage the development of building and land-use standards for areas at risk of seiches.
- Mandate that land-use plans in coastal areas consider the risk of tsunamis and mitigate potential hazards arising from that risk.

Volcanic Eruptions

APA and its Chapters and Divisions support the following Policy Outcomes:

- Expand funding for volcanic research, and invest in the next generation of volcanic activity detection and prediction monitors.
- Increase public awareness of volcano hazards, especially in geologically-active areas with historically low volcanic activity.

Wildfires

APA and its Chapters and Divisions support the following Policy Outcomes:

- Undertake a national conversation on how or if to manage wildfire.
- Continue to develop and require standards for homes and other structures in the wildland-urban interface—that emphasizes fire-safe construction.
- Recognize the importance and value of vegetation management (“defensible space”) in the wildland-urban interface in rural and urbanizing areas and encourage the development of incentives for creating and maintaining defensible spaces around at-risk structures.
- Require that planning include multiple and adequate ingress and egress routes to vulnerable areas.

Winter Storms/Ice

APA and its Chapters and Divisions support the following Policy Outcomes:

- Ensure that federal, state and local hazard mitigation plans include preparation for and management of the response to winter storm events and especially long-term disruption of power supplies and transportation infrastructure.



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- Provide enhanced funding to ensure that vulnerable residents have shelter, heat, and food for the duration of winter storm or ice events.
- Develop protocols for maintaining transportation systems, including air, roadway, rail, and mass transit during and in the immediate aftermath of winter storm events.
- To the extent practical, utilities should be designed and built to resist damage and loss of service during winter storm events, such as placing line underground where appropriate.

HUMAN-CAUSED DISASTERS

Biological, Chemical, or Radiological Agents

APA and its Chapters and Divisions support the following Policy Outcomes:

- Change the legal framework to place the burden of proof for chemical safety on companies versus requiring the government to prove particular chemicals are not safe, similar to European law on chemical safety.
- Review and strengthen the standards associated with the transportation of biological, chemical, or radiological materials, including advance notification of state and local first-responder agencies along the routes used.
- Develop new or strengthen existing federal requirements for the storage and disposal of biological, chemical, or radiological materials and, in particular, when such materials are stored in risk-prone areas.
- Ensure that all levels of government have the appropriate regulatory authority and capacity to require that chemical, biological or radiological materials are located and handled in ways that protect health and safety.

Dam Failures

APA and its Chapters and Divisions support the following Policy Outcomes:

- Develop standards, such as those in the Commonwealth of Virginia, where dam classification is based on hazard potential (loss of life and economic damage) and mandates that development occurring downstream from a dam (within an inundation zone) accepts financial responsibility for the elevated safety standards of the dam.
- Repair or remove obsolete dams depending on a case-by-case lifecycle costing analysis of which course of action is most appropriate.
- Remove policies that restrict the availability of data on dam safety, including federal and privately-owned dams, to local hazard mitigation planners.
- Regulate areas downstream of high risk dams as Special Flood Hazard Areas.



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Hazardous Material Incidents

APA and its Chapters and Divisions support the following Policy Outcomes:

- Strengthen federal and university research on the risks and location of human-caused hazards, including chemical storage, chemical transportation (including pipelines, rail, truck transport, shipping), and chemical disposal (e.g. potential seismic activity associated with deep well injection).
- Expand partnerships with programs, such as Transport Canada, for safer transportation of hazardous materials through better regulations and new standards (including thicker steel requirements and additional fitting and shield protection for new tank cars; retrofitting and retiring unsafe tank cars.)
- Require the development of contingency plans for waterway contamination events within each watershed with potable water withdrawals.

Terrorism

APA and its Chapters and Divisions support the following Policy Outcomes:

- Improve the terrorism threat assessment public warning system.
- Increase coordination between law enforcement and homeland security planners and local hazard mitigation and land-use planners in the planning of future development.
- Increase the use of Crime Prevention Through Environmental Design (CPTED) approaches for developments that may have a high threat risk.
- Expand investments in cyber-security systems to protect critical infrastructure.

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RELATIONSHIP TO OTHER POLICY GUIDES OF THE AMERICAN PLANNING ASSOCIATION

This Policy Guide is related to other Policy Guides adopted by the American Planning Association in recent years, including:

1. Climate Change (adopted in 2011)
2. Planning for Sustainability (adopted in 2000)
3. Security (adopted in 2005)
4. Smart Growth (adopted in 2012)

Please refer directly to these closely allied policy guides for additional policy reference on those topics: <http://planning.org/policy/guides/>.

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