POST-DISASTER RECOVERY GUIDE FOR PLANNERS

American Planning Association

Creating Great Communities for All

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Alexsandra Gomez and David Morley, AICP, from the American Planning Association (APA) served as the primary authors.

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USING THIS GUIDE

The purpose of this guide is to help local planners who work for, or provide services to, a city, town, or county that has recently experienced a natural disaster. Our underlying assumption is that planners in these communities are eager to apply their knowledge and expertise to short-term recovery efforts, but often struggle to prioritize their actions or connect those actions to a larger recovery framework.

The guide contains five related, but semi-independent, modules designed to help planners support the development and implementation of an interim recovery strategy in advance of a long-term community recovery plan. Because there is already extensive guidance available on long-term recovery planning and pre-event recovery planning from FEMA, APA, and other sources, these modules provide only a supplementary discussion of considerations for these related planning processes. Those interested in a more holistic discussion of planning issues related to post-disaster recovery should review the Recovery Planning resources referenced in FEMA's Community Recovery Management Toolkit.

While users with limited background in disaster recovery may benefit from reading these modules sequentially, please feel free to skip around, based on your level of experience and the specific needs in your community.

Each module includes numerous references to resources that provide supporting information or more extensive guidance in one or more areas. The guide concludes with a supplemental Glossary to clarify the intended meaning of specialized terms.

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MODULE 1
PREPARING FOR RECOVERY

From a local perspective, a disaster is an extreme event that severely damages property, disrupts community functions, and often causes multiple injuries or deaths.

Disasters are the results of hazardous events, such as a natural hazard, technological accident, or human-caused catastrophe. Disaster risk relates to the interaction between hazardous events and the characteristics that make people and places exposed to disaster impacts, such as social and physical vulnerability.

Recovery from a disaster is the incremental process of repairing or replacing damaged property and restoring community functions. Many commentators describe this process of recovery in the context of a four-phase disaster life cycle, which also includes mitigation, preparedness, and response (Figure 1.1).

In this conceptualization, the mitigation phase includes planned, long-term changes to the built or natural environment to enhance resilience to hazards and reduce hazard risk. In contrast, the preparedness phase includes short-term actions that will minimize the likelihood of damage and disruption from an impending hazard or potential disaster. Finally, the response phase includes actions taken immediately after a disaster to minimize damage, casualties, and disruption.

In practice, there are no bright-line divisions between these phases. Response activities often continue through the early stages of recovery, and ideally, recovery efforts also integrate mitigation (Thomas and Walter 2014). While planners seldom play a major role in preparedness and response, effective mitigation and disaster recovery require planning expertise.

This module explores the different roles planners may play in disaster recovery and explains the importance of understanding the intensity and extent of damage and disruption to successfully planning and implementing recovery efforts.

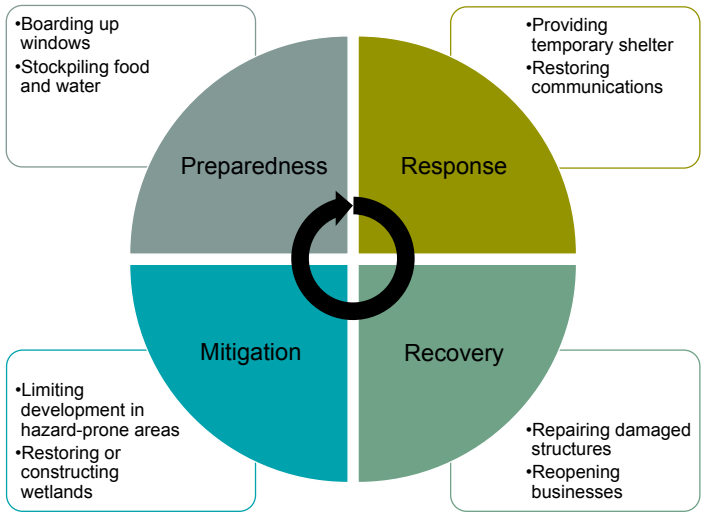


Figure 1-1. The four phases of the disaster life cycle, with examples of activities during each phase

Identifying the Planner's Role in Recovery

Cities, towns, and counties are responsible for planning and managing their own recovery following a disaster (FEMA 2020b). State and federal agencies may provide financial or technical assistance during the process, but local officials make most of the decisions that will guide recovery (FEMA 2020a; 2020d).

Planners seldom lead local recovery efforts. That responsibility typically falls to the city, county, or town manager or—in absence of a chief administrator—to the chief elected official. However, planners have a distinct skillset that aligns well with core goal of recovery: helping the community reach a physical and functional condition that is as good or better than it was pre-disaster (Hokanson and Schwab 2014; Schwab and Topping 2010).

Throughout the recovery process, planners may have opportunities to play various roles. Collectively, these roles cover three broad domains: stewardship, facilitation, and advocacy.

The Planner as Steward

Planners are trained to see the big picture and to think about how short-term actions affect the long-term health and resilience of the communities they serve. They often function as the local authority on the officially adopted local comprehensive plan, other related functional and subarea plans, and the land-use and development regulations designed to help implement those plans. Consequently, planners are frequently the most important stewards of a community's long-term vision for change.

Planners' extensive knowledge about and commitment to upholding the principles and objectives of existing land-use, housing, transportation, and economic development plans is highly valuable during recovery. In the immediate aftermath of a disaster, it's natural for community members and local leaders to fixate on the idea of restoring the community to its pre-disaster condition. However, giving in to this impulse can be a mistake.

Following a disaster, communities may be eligible for resources that create opportunities to rebuild in ways that can reduce disaster risk and make them more resilient to future hazardous events than they were before (see Module 2). In many cases, existing plans have already identified specific policies, programs, or investments that would improve local quality of life and well-being. During recovery, planners have a responsibility to remind community members and local leaders of the valuable work they've already done to articulate a better future.

The Planner as Facilitator

Planners often facilitate conversations about community growth and change with diverse sets of community stakeholders. These conversations may happen in the context of formal plan-making or zoning reform processes. Alternatively, major development proposals can trigger wider discussions that require planners to serve as facilitators or mediators.

Through these planning and decision-making processes, planners help participants define problems and identify potential solutions. Their knowledge of the complex relationships among the built and natural environment and various community systems can inspire local stakeholders to see challenges and opportunities from new perspectives.

Successful recovery requires collaboration to build consensus on goals, strategies, and specific projects. This collaboration depends on extensive and iterative community engagement. Consequently, during recovery, planners may have many opportunities to facilitate community conversations and foster collaboration. In comparison to typical community planning processes, though, the urgency to restore functions and return to daily life compresses the timeline for these conversations and can make the atmosphere even more emotionally charged.

The special challenges of community engagement in recovery planning make skillful facilitation critical. But these challenges do not change the fundamental principles of effective facilitation. Throughout recovery planning engagement activities, planners should seek to maintain the trust of process participants, show respect for diverse perspectives, and stay neutral on matters of substance and procedure (Herd 2019).

The Planner as Advocate

Planners have an ethical responsibility to elevate the perspectives of community members from population groups that community planning and land-use decision-making processes have traditionally excluded or marginalized (APA 2016; 2019). This commonly includes racial and ethnic groups, people with disabilities, renters, low-income households, people experiencing homelessness, and immigrants. Often, these traditionally underrepresented groups are also under-resourced, making them disproportionately vulnerable to hazardous events and exposed to disaster impacts (ATSDR 2020).

Under normal circumstances, planners can serve as advocates by analyzing and spotlighting the likely effects of proposed planning interventions on traditionally underrepresented, and under-resourced, segments of the community (e.g., highlighting increased disaster risk for certain population groups). While these activities are just as relevant during recovery, disasters often shine a light on preexisting inequitable conditions. This can create additional need for planners to design inclusive community engagement processes (see Module 4) and advocate for recovery activities that seem most likely to produce equitable outcomes.

Planners providing frontline customer service have a responsibility to ensure all community members understand the resources available to them for housing or small business assistance (see Module 2). Additionally, many planners will have opportunities to help focus recovery assistance by preparing grant (or subgrant) applications for federal, state, or philanthropic assistance programs.

Characterizing Damage and Disruption

Characterizing the damage and disruption from a disaster provides a frame of reference to help community members and other recovery process participants begin to consider what will need to happen to restore a sense of normalcy (Topping and Schwab 2014). These factors affect the goals, process, timeline, and level of effort and external assistance necessary for recovery.

In some communities, planners may participate directly in assessment by walking or driving through affected areas and documenting obvious damage (FEMA 2020c). Perhaps more commonly, though, planners support or supplement assessment teams by preparing maps and other data visualizations or analyzing raw data.

While there is no universal system for classifying recovery needs, the fundamental characteristics are the severity of damages and disruption on a site or over an area and the geographic extent of those conditions (Topping and Schwab 2014). Beyond this, characterizing the functional extent of damages and disruption can help planners align recovery planning efforts with the Department of Homeland Security's National Disaster Recovery Framework (see Module 2).

Severity of Impacts

Often, the most important factor for determining the physical goal of recovery for a site or area is the severity of damages. Damage to land, buildings, or infrastructure can range from minor cosmetic harm to complete destruction. Furthermore, the severity of property damage frequently corresponds to the number of casualties and the degree to which people's daily activities are disrupted. Emergency management, insurance, and real estate professionals often use a four-level scale to rate the severity of physical or system damage or disruption. It may be negligible, marginal, critical, or catastrophic. Negligible damage or disruption does not merit further consideration in the recovery process. Marginal damage or disruption is substantial but does not require property or system replacement. Critical damage or disruption may require property or system replacement. Catastrophic damage or disruption is irreparable.

When damage is marginal, the minimum goal is to restore the affected site or structure to pre-disaster conditions. When property is destroyed or damaged severely enough to require replacement, the goal is redevelopment (Topping and Schwab 2014).

Restoration-focused recovery activities include debris removal and structural repairs. While restoration does not preclude improvements that mitigate risk or enhance resilience to future hazards, these improvements must be compatible with existing building envelopes and land uses.

Redevelopment-focused recovery activities include building new structures and, in some cases, reconfiguring site plans or land uses. Through redevelopment, communities can implement a wide range of mitigation techniques, such as moving residences and businesses to lower risk locations and building new structures to withstand similar or more

intense hazardous events. However, as alluded to above, even when redevelopment is necessary, there is often a strong urge to build everything back the way it was.

The negative effects of disasters are not limited to physical damage. Disasters can cause or intensify anxiety, depression, post-traumatic stress disorder, and other mental health problems (Makwana 2019). They can also create or add to financial hardship for households, businesses, community-based organizations, and public institutions. While nonphysical impacts are, generally, difficult to observe through a visual survey, their severity can also range from negligible to catastrophic.

Geographic Extent of Impacts

The geographic extent of damages and disruption often has a direct correlation to the amount of external help a community will need to recover. For some disasters, damage and disruption is limited to a single neighborhood or other small area of the community. Other disasters cause widespread damage or disruption throughout the community or across a region.

Clearly, neighborhood-scale disasters are typically less disruptive to community functions than communitywide or regional disasters. Consequently, the amount of time it takes to recover often increases as the geographic extent of damages increases. Recovery from a disaster that causes repairable damages over a small area often takes less than a year, but recovery from a disaster that causes widespread destruction across a region may take decades (Topping and Schwab 2014).

Additionally, the more widespread the damages and disruption the more opportunities there are to use the recovery process to enhance community resilience. Geographically extensive disasters are more likely to be subject to federal or state disaster declarations, which can unlock funding for hazard mitigation activities (Thomas and Walther 2014). When damages are widespread, community members and local leaders may also be more open to reimagining the future of their community.

Functional Extent of Impacts

Disasters seldom affect all community functions equally. Consequently, understanding the extent to which a disaster has damaged or disrupted different community systems is essential to determining the functional goals of recovery and the types of external assistance the community will need to return to normalcy.

Because community systems are interrelated, disasters often have cascading impacts. This means that damage or disruption to one system often causes damage or disruption to one or more other systems (Figure 1-2).

The National Disaster Recovery Framework identifies six Recovery Support Functions:

- Community planning and capacity building
- Housing
- Economic
- Infrastructure systems
- Natural and cultural resources
- Health and social services

Each support function provides a structure for recovery assistance efforts and corresponds to a community system that may be damaged or disrupted by a disaster. The goal for each function is to restore the health of each community system and enhance its resilience to future hazards (FEMA 2020b; 2020d).

The need for planning following a disaster can overwhelm even those communities with a high capacity for planning during normal times. Disasters can disrupt the local planning system by damaging communication infrastructure or local government property, or by injuring local leaders or community planners or displacing them from their homes. Disasters can also disrupt the planning system by stressing fragile coalitions or revealing new tensions among stakeholders.

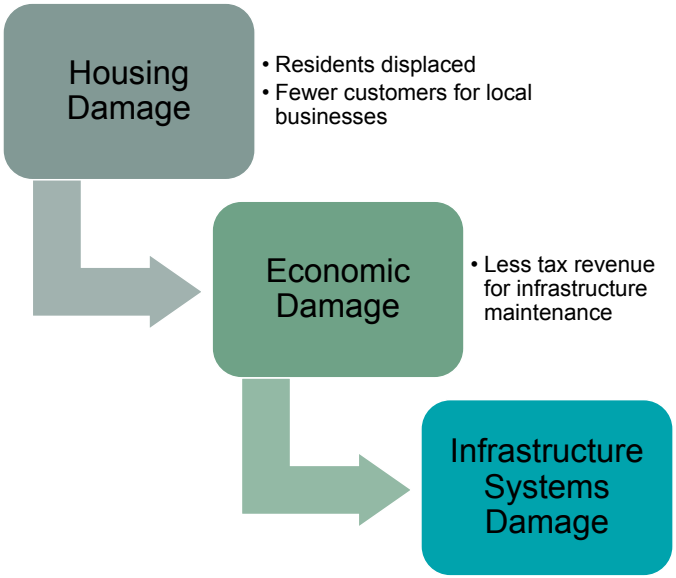


Figure 1-2. Potential cascading impacts from a disaster

Disasters can damage housing and displace residents. Disaster-related job and income losses can further stress the local housing system, as residents struggle to keep up with rents or mortgages.

Disasters can disrupt the local economy by damaging farms, stores, offices, factories, or other places of business. They can also disrupt economic activity by injuring local business owners and workers or displacing them from their homes.

Disasters can damage linear infrastructure, like roads, rail lines, and pipes. They can also damage public facilities,

such as schools, fire stations, and transit hubs. Beyond this, disasters can disrupt public services by injuring workers or displacing them from their homes.

Disasters can damage open spaces, natural features, and historic, or otherwise culturally significant, buildings or sites. This includes damage to passive recreation spaces and wildlands and damage to buildings or sites housing cultural institutions, such as libraries, museums, and performance venues. Disasters can also disrupt these institutions by injuring workers or volunteers or displacing them from their homes.

Disasters can disrupt health and social services by damaging hospitals, clinics, offices, food and clothing distribution sites, and temporary shelters. They can also disrupt these services by injuring workers or displacing them from their homes. Furthermore, disaster-related injuries and job, income, or housing losses can further stress local health and social service systems.

Noting the severity and geographic extent of damage or disruption to each community system can help planners begin to identify and prioritize the types and amount of external assistance their community will need to start the recovery process (see Table 1-1 for a sample checklist). Aligning this qualitative community assessment with the National Disaster Recovery Framework's Recovery Support Functions can make it easier for planners to organize their communication with external stakeholders.

Table 1-1. Sample Checklist for Characterizing Post-Disaster Damage and Disruption

Community Function	Geographic Extent of Damage or Disruption	Severity of Damage or Disruption
Community planning and capacity building	❑ Negligible ❑ Neighborhood-scale ❑ Communitywide ❑ Regional	❑ Negligible ❑ Moderate ❑ Critical ❑ Catastrophic
Housing	❑ Negligible ❑ Neighborhood-scale ❑ Communitywide ❑ Regional	❑ Negligible ❑ Moderate ❑ Critical ❑ Catastrophic
Economic activity	❑ Negligible ❑ Neighborhood-scale ❑ Communitywide ❑ Regional	❑ Negligible ❑ Moderate ❑ Critical ❑ Catastrophic
Infrastructure	❑ Negligible ❑ Neighborhood-scale ❑ Communitywide ❑ Regional	❑ Negligible ❑ Moderate ❑ Critical ❑ Catastrophic
Natural and cultural resources	❑ Negligible ❑ Neighborhood-scale ❑ Communitywide ❑ Regional	❑ Negligible ❑ Moderate ❑ Critical ❑ Catastrophic
Health and social services	❑ Negligible ❑ Neighborhood-scale ❑ Communitywide ❑ Regional	❑ Negligible ❑ Moderate ❑ Critical ❑ Catastrophic

Key Takeaways

- Familiarize yourself with Recovery Support Functions and your responsibilities and capabilities within them, according to your community context.
- Understand how your state organizes disaster recovery in order to effectively coordinate with state officials, agencies, and organizations for assistance.
- Set aside time to research funding mechanisms that are relevant to recovery planning and disaster recovery projects.
- Look for opportunities to share knowledge about financial and technical assistance with the public.

References and Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 2020. "CDC Social Vulnerability Index."

American Planning Association (APA). 2016. "AICP Code of Ethics and Professional Conduct."

American Planning Association (APA). 2019. "Planning for Equity Policy Guide."

Federal Emergency Management Agency (FEMA). 2020a. "Community Recovery Management Toolkit."

———. 2020b. "National Disaster Recovery Framework."

———. 2020c. "Preliminary Damage Assessment Guide."

———. 2020d. "Recovery Support Functions."

Hallegatte, Stephane, Jun Rentschler, and Brian Walsh. 2018. *Building Back Better: Achieving Resilience Through Stronger, Faster, and More Inclusive Post-Disaster Reconstruction*. Washington, D.C.: World Bank Group.

Herd, Milton. 2019. *A Planner's Guide to Meeting Facilitation*. Planning Advisory Service Report 595. Chicago: American Planning Association.

Hokanson, J. Barry and James C. Schwab. 2014. "Chapter 2. Anticipating Disruption." In *Planning for Post-Disaster Recovery and Reconstruction: Next Generation*. Planning Advisory Service Report 576. Chicago: American Planning Association.

March, Alan, Maria Kornakova, and John Handmer. 2017. "Chapter 2. Urban Planning and Recovery Governance." In *Urban Planning for Disaster Recover*y. Oxford, United Kingdom: Butterworth-Heinemann.

Makwana, Nikunj. 2019. "Disaster and Its Impact on Mental Health: A Narrative Review." *Journal of Family Medicine and Primary Care* 8(10): 3090–3095.

National Hazard Mitigation Association (NHMA). 2018. "The '10 P's' of Post-Disaster Recovery."

Norton, Perry L. 1996. "The Role of the Professional Planner." *Planning Commissioners Journal*, Fall.

Schwab, James C. and Kenneth C. Topping. 2010. "Chapter 1. Hazard Mitigation: An Essential Role for Planners." In *Hazard Mitigation: Integrating Best Practices into Planning*. Planning Advisory Service Report 560. Chicago: American Planning Association.

Steichenv, Lorah, Jacqueline Patterson, and Katherine Taylor. 2018. "Module 5: Emergency Recovery and Redevelopment." *In in the Eye of the Storm: A People's Guide to Transforming Crisis and Advancing Equity in the Disaster Continuum*. Baltimore: National Association for the Advancement of Colored People.

Thomas, Edward and Lincoln Walther. 2014. "Hazard Mitigation in Disaster Recovery." Planning for Post-Disaster Recovery Briefing Paper 11. Chicago: American Planning Association.

Topping, Kenneth C. and James C. Schwab. 2014. "Chapter 3. Disaster Recovery Planning: Expectations Versus Reality." In *Planning for Post-Disaster Recovery and Reconstruction: Next Generation*. Planning Advisory Service Report 576. Chicago: American Planning Association.

MODULE 2
ACCESSING RECOVERY ASSISTANCE

Few communities can recover from disasters without external assistance. The financial and technical assistance provided by state and federal agencies, as well as nonprofit and private organizations, can build capacity for recovery activities. These resources are critical to community-based recovery planning and a successful recovery.

Many planners have experience with federal, state, and nonprofit financial and technical assistance programs that provide help for local or regional plan-making or plan-implementation activities. Once planners have a sense of the extent and severity of damage and disruption (see Module 1), they can apply their program application skills to the process of securing external assistance for community recovery. Additionally, some planners may be able to take advantage of their position as front-line development services representatives to help individuals access resources to rebuild their homes or restart their businesses.

Nevertheless, navigating the complex network of potential sources of assistance can be difficult, even for the most experienced planners. This module offers a primer on how the federal government organizes its support efforts for major disasters and catalogs common sources of collective and individual assistance for community recovery.

Understanding Recovery Support Functions

The U.S. Department of Homeland Security's National Disaster Recovery Framework (NDRF) outlines a system of six interconnected Recovery Support Functions (RSFs) that can help communities organize and classify recovery activities in key areas. For presidentially-declared disasters, the NDRF establishes a pyramid of local, state, federal, and tribal disaster recovery coordinators in joint field offices. It designates a coordinating agency for each RSF to provide leadership and oversight (Figure 2-1). It also designates primary agencies with significant authority, resources, and capabilities, as well as supporting organizations with subject matter expertise and resources relevant to the recovery support function.

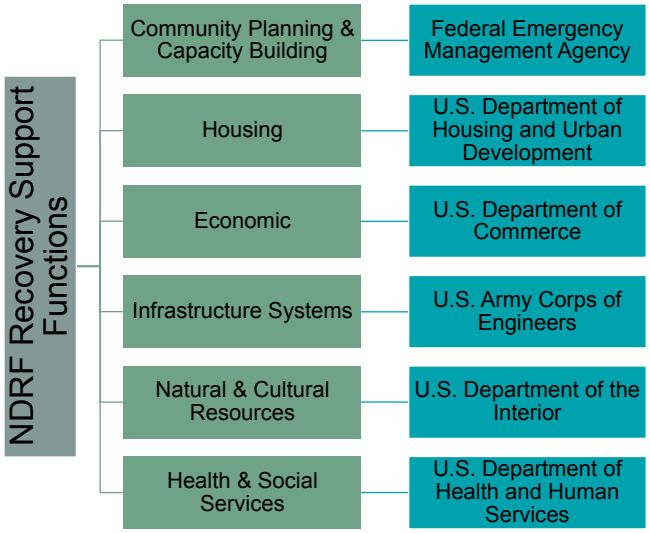


Figure 2-1. Coordinating agencies for the Recovery Support Functions in the National Disaster Recovery Framework

Community Planning & Capacity Building

The Community Planning and Capacity Building Recovery Support Function (CPCB-RSF) helps communities complete effective, efficient, and inclusive recovery planning processes (Table 2-1). In this RSF, governmental and nongovernmental partners collaborate to share information and resources, such as planning technical assistance, program support, or funding for planning and capacity-building initiatives (FEMA 2020a).

The Federal Emergency Management Agency (FEMA) is the coordinating agency for Community Planning and Capacity Building. Some of the functions that FEMA performs in this role are coordination through the National Coordinator and Regional Coordinators, communication with other RSFs, and monitoring the recovery programs that they have helped support or implement.

FEMA also serves as a primary agency, including providing disaster assistance through disaster-specific and hazard mitigation programs. The U.S. Department of Housing and Urban Development (HUD) is the other primary agency for this RSF. HUD is primarily responsible for administering funding through the Community Development Block Grant (CDBG) program and assisting in key recovery areas, such as planning for housing and infrastructure (see Finding Assistance for Recovery Projects).

Supporting organizations in this RSF include the U.S. Department of Agriculture (USDA), which generally provides planning assistance to rural communities, and the Corporation for National and Community Service, which can build capacity by providing volunteers.

Table 2-1. Coordinating, Primary, and Supporting Agencies and Organizations for the Community Planning and Capacity Building Recovery Support Function (USDHS 2016)

Coordinating Agency	Primary Agencies	Supporting Organizations
Federal Emergency Management Agency	Federal Emergency Management Agency U.S. Department of Housing and Urban Development	Corporation for National and Community Service Delta Regional Authority U.S. Department of Agriculture U.S. Department of Commerce U.S. Department of Health and Human Services U.S. Department of Homeland Security U.S. Department of the Interior U.S. Department of Justice U.S. Department of Transportation U.S. Environmental Protection Agency U.S. General Services Administration U.S. Small Business Administration

Housing

The Housing Recovery Support Function helps communities implement housing solutions that meet local needs (FEMA 2020d; Table 2-2).

HUD is the coordinating agency for this RSF. Its primary function is to help identify long-term housing priorities, often through housing assessments. HUD can also provide technical assistance for planning and post-disaster activities for long-term housing recovery, including strategies to strengthen the housing market and ensure adequate and affordable rental housing.

This RSF designates FEMA and USDA as primary agencies. FEMA is the lead agency for the National Housing Task Force, which coordinates post-disaster housing assistance. USDA can help assess USDA-financed housing infrastructure and programs and supports rural housing and farm labor housing assistance.

Supporting organizations include U.S. Department of Energy (DOE), which can help develop strategies for energy efficient housing, and the U.S. Department of Commerce (DOC), which can advise on resilient building design through the National Institute of Standards and Technology (NIST).

Table 2-2. Coordinating, Primary, and Supporting Agencies and Organizations for the Housing Recovery Support Function (USDHS 2016)

Coordinating Agency	Primary Agencies	Supporting Organizations
U.S. Department of Housing and Urban Development	U.S. Department of Agriculture U.S. Department of Justice U.S. Department of Housing and Urban Development Federal Emergency Management Agency	American Red Cross Corporation for National and Community Service U.S. Department of Commerce U.S. Department of Energy U.S. Department of Health and Human Services U.S. Department of Veterans Affairs U.S. Environmental Protection Agency U.S. General Services Administration National Voluntary Organizations Active in Disaster U.S. Small Business Administration U.S. Access Board

Economic

The Economic Recovery Support Function helps restore the economic viability of the community (FEMA 2020b; Table 2-3).

DOC is the coordinating agency for Economic Recovery. One of its primary functions is to coordinate and activate economic development assessment teams and lead technical assistance initiatives. DOC also serves as a primary agency, where its capabilities include preparing data and providing technical assistance, subject matter expertise, and direct funding.

Other primary agencies include the U.S. Department of Labor (DOL) and the U.S. Small Business Administration (SBA). DOL can assist communities with economic damage assessments, specifically sharing information on the local workforce and labor market, and can also provide workforce development opportunities and unemployment assistance. The SBA provides loans and technical assistance to small businesses as well as loans for property damage to non-farm businesses of any size.

Supporting organizations include the U.S. General Services Administration (GSA), which helps local businesses sell products and services to federal agencies and can also provide communities with telecommunication systems, office furniture, or transportation services to support them during recovery.

Table 2-3. Coordinating, Primary, and Supporting Agencies and Organizations for the Economic Recovery Support Function (USDHS 2016)

Coordinating Agency	Primary Agencies	Supporting Organizations
U.S. Department of Commerce	U.S. Department of Commerce U.S. Department of Agriculture U.S. Department of Homeland Security U.S. Department of Labor U.S. Department of the Treasury Federal Emergency Management Agency U.S. Small Business Administration	Corporation for National and Community Service Delta Regional Authority U.S. Department of Health and Human Services U.S. Department of Housing and Urban Development U.S. Department of the Interior U.S. Environmental Protection Agency U.S. General Services Administration U.S. Department of State

Infrastructure Systems

The Infrastructure Systems Recovery Support Function encompasses the restoration of public infrastructure systems, services, and facilities, which are the backbone of an interconnected community (Table 2-4). This RSF helps private and public infrastructure owners and operators identify and assess critical infrastructure systems and facilities; create interagency and inter-jurisdictional recovery planning processes; encourage regional connectivity and resiliency; and leverage new and emerging technologies (FEMA 2020e).

The U.S. Army Corps of Engineers is the coordinating agency for this Infrastructure Systems. Its primary function is to provide direct and technical assistance for civil works projects, particularly flood risk reduction.

U.S. Department of Homeland Security (DHS) is the primary agency in this sector with the widest range of responsibilities and capacities. DHS provides technical expertise and assistance through various centers, such as the National Cybersecurity and Communications Center, the National Infrastructure Coordinating Center, and the National Infrastructure Simulation and Analysis Center. It also leads research and development of resilient infrastructure technologies (see Module 5).

Table 2-4. Coordinating, Primary, and Supporting Agencies and Organizations for the Infrastructure Systems Recovery Support Function (USDHS 2016)

Coordinating Agency	Primary Agencies	Supporting Organizations
U.S. Army Corps of Engineers	U.S. Department of Energy U.S. Department of Homeland Security U.S. Department of Transportation Federal Emergency Management Agency U.S. Army Corps of Engineers	Delta Regional Authority U.S. Department of Agriculture U.S. Department of Commerce U.S. Department of Defense U.S. Department of Education U.S. Department of Health and Human Services U.S. Department of Housing and Urban Development U.S. Department of the Interior U.S. Department of the Treasury U.S. Environmental Protection Agency Federal Communications Commission U.S. General Services Administration Nuclear Regulatory Commission Tennessee Valley Authority

Other primary agencies include DOE, which can provide technical expertise on utilities and energy systems, and the U.S. Department of Transportation (DOT), which administers funds for repairing or recovering transportation systems. DOC can provide building science expertise and remote-sensing and geospatial infrastructure data through NIST and the National Oceanic and Atmospheric Administration (NOAA), respectively.

Natural and Cultural Resources

The Natural and Cultural Resource Recovery Support Function (NCR-RSF) helps communities to conserve and restore natural features and buildings or sites of cultural significance in line with community priorities and federal environmental and historical preservation statutes and regulations (FEMA 2020f; Table 2-5).

The U.S. Department of the Interior (DOI) is the coordinating agency for Natural and Cultural Resources. Its primary function is to coordinate and leverage federal resources for recovery of natural and cultural resources. DOI also performs functions as a primary agency, including technical assistance for assessing the impacts on natural and cultural resources.

The U.S. Environmental Protection Agency (EPA) and FEMA are the other two primary agencies in this RSF. EPA can support long-term cleanup projects by conducting site assessments and assisting with decontamination and the disposal of hazardous materials that pose threats to public health and the environment. FEMA is responsible

Table 2-5. Coordinating, Primary, and Supporting Agencies and Organizations for the Natural and Cultural Resources Recovery Support Function (USDHS 2016)

Coordinating Agency	Primary Agencies	Supporting Organizations
U.S. Department of Interior	U.S. Department of Interior U.S. Environmental Protection Agency Federal Emergency Management Agency	Advisory Council on Historic Preservation Corporation for National and Community Service Council on Environmental Quality Delta Regional Authority U.S. Department of Agriculture U.S. Department of Commerce U.S. Department of Homeland Security U.S. General Services Administration Heritage Emergency National Task Force Institute of Museum and Library Services Library of Congress National Archives and Records Administration National Endowment for the Arts National Endowment for the Humanities U.S. Army Corps of Engineers

for identifying relevant federal programs and incentives relevant to the mission of this RSF, as well as promoting disaster resilience and sustainability.

Supporting organizations include the Advisory Council on Historic Preservation, which can assist with stakeholder engagement and identifying subject matter experts, and the Council on Environmental Quality, which can assist with National Environmental Protection Act (NEPA) reviews.

Health and Social Services

The Health and Social Services RSF helps communities restore public health by providing healthcare facilities and essential social services for community members (Table 2-6). Additionally, it seeks to improve the ability of the health care system and social service networks to support community members (FEMA 2020c).

The U.S. Department of Health and Human Services (DHHS) is the coordinating agency for this RSF. Its primary role is to provide technical assistance to support recovery planning and post-disaster activities for public health and related activities. It can also help conduct health and social services assessments and provide information on program eligibility and assistance with program application processes.

The U.S. Department of Education (DOED) is one of several primary agencies in this RSF. DOED can specifically assist with restoring the learning environment for students and staff, as well as facilitating the delivery of health and social services through educational institutions.

The American Red Cross and the National Voluntary Organizations Active in Disaster (NVOAD) are two of the supporting organizations for the RSF. The American Red Cross can help provide case management to address unmet needs for physical and mental health services. Meanwhile, NVOAD can share information about the services provided by its member organizations and provide guidance on mass care, case management, and management of the influx of volunteers and donated goods that may happen after a disaster.

Table 2-6. Coordinating, Primary, and Supporting Agencies and Organizations for the Health and Social Services Recovery Support Function (USDHS 2016)

Coordinating Agency	Primary Agencies	Supporting Organizations
U.S. Department of Housing and Urban Development	U.S. Department of Agriculture U.S. Department of Justice U.S. Department of Housing and Urban Development Federal Emergency Management Agency	American Red Cross Corporation for National and Community Service U.S. Department of Commerce U.S. Department of Energy U.S. Department of Health and Human Services U.S. Department of Veterans Affairs U.S. Environmental Protection Agency U.S. General Services Administration National Voluntary Organizations Active in Disaster U.S. Small Business Administration U.S. Access Board

Finding Assistance for Recovery Projects

Financial need and limited technical capacity can be major barriers to achieving post-disaster recovery goals and objectives. The following section will present programs for collective assistance, such as funding recovery planning activities or capital and programmatic investments. Then, it will summarize the common technical and data needs experienced by planners during post-disaster recovery and list technical assistance programs that they can use to build local capacity.

Federal Emergency Management Agency

Communities recovering from presidentially declared disasters are eligible for technical and financial assistance from FEMA. It provides technical assistance throughout the recovery process in alignment with the Recovery Support Functions (RSFs) discussed above. FEMA's primary sources of financial assistance for community recovery projects are the Public Assistance Program, the Hazard Mitigation Grant Program, the Community Disaster Loan Program, and the Building Resilient Infrastructure and Communities program (Table 2-7).

Table 2-7. FEMA's Primary Financial Assistance Programs for Community Recovery

Funding Source	Relevant RSFs	Eligible Activities
Public Assistance Program	Infrastructure Systems	Debris removal Emergency protective measures and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain private/nonprofit organizations. Hazard mitigation measures during recovery to protection damaged facilities from future events Up to 100% reimbursement for permanent work, including repairs, restoration, or replacement to the damaged assets (vehicles, capital equipment, or facilities) for transit agencies
Hazard Mitigation Grant Program (HMGP)	Community Planning and Capacity Building Housing Natural and Cultural Resources	Mitigation planning (except climate adaptation and large-scale risk reduction projects) Acquiring and relocation hazard prone structures Retrofitting existing buildings and facilities for hazard protection Elevating flood-prone structures
Community Disaster Loan Program	Community Planning and Capacity Building	Operational funding to provide essential municipal services and perform governmental functions
Building Resilient Infrastructure and Communities (BRIC)	Community Planning and Capacity Building Infrastructure Systems	Funding for innovative approaches to partnerships and capacity building Large infrastructure projects

U.S. Department of Housing and Urban Development

Communities recovering from presidentially declared disasters are eligible for technical and financial assistance from the U.S. Department of Housing and Urban Development (HUD). HUD provides technical assistance throughout the recovery process in alignment with the Recovery Support Functions (RSFs) discussed above. It's primary source of financial assistance for community recovery projects is the Community Development Block Grant-Disaster Recovery (CDBG-DR) program (Table 2-8).

Following a presidential disaster declaration, the U.S. Congress may appropriate funds to HUD for CDBG-DR. Like the regular version of the CDBG program, communities can generally use these funds for a wide variety of housing and community development activities. However, a notice in the Federal Register will specify eligible recovery activities and program requirements. Additionally, communities must prepare an Action Plan before receiving any available funds.

Table 2-8. HUD's Primary Financial Assistance Programs for Community Recovery

Funding Source	Relevant RSF	Eligible Activities
Community Development Block Grant-Disaster Recovery (CDBG-DR)	Community Planning and Capacity Building Housing Economic Infrastructure Systems Natural and Cultural Resources Health and Social Services	Disaster relief Long-term recovery Restoration of infrastructure Housing Economic Revitalization

U.S. Department of Agriculture

Rural communities recovering from presidentially declared disasters are eligible for technical assistance from the U.S. Department of Agriculture (USDA) throughout the recovery process in alignment with the Recovery Support Functions (RSFs) discussed above. USDA may also provide financial assistance for Emergency Watershed Protection projects, subject to available funding (Table 2-9). Eligibility for USDA's Emergency Watershed Protection Program is not tied to a presidential disaster declaration.

Table 2-9. USDA's Primary Financial Assistance Programs for Community Recovery

Funding Source	Relevant RSF	Eligible Activities
Emergency Watershed Protection Program—Recovery Assistance	Natural and Cultural Resources Infrastructure Systems	Debris removal from stream channels, road culverts and bridges Reshape and protect eroded streambanks Correct damaged drainage facilities Establish vegetative cover on critically eroding lands Repair levees and structures Repair conservation practices
Emergency Watershed Protection Floodplain Easement Program	Natural and Cultural Resources	Floodplain easements

U.S. Department of Transportation

Communities recovering from presidentially declared disasters are eligible for technical assistance from the U.S. Department of Transportation (DOT) throughout the recovery process in alignment with the Recovery Support Functions (RSFs) discussed above. DOT may also provide financial assistance for emergency highway and transit projects, subject to available funding (Table 2-10). While the U.S. Congress has historically tied funding for transit projects to presidential disaster declarations, it funds highway projects through an annual allocation, and eligibility is not tied to a disaster declaration.

Table 2-10. DOT's Primary Financial Assistance Programs for Community Recovery

Funding Source	Relevant RSF	Eligible Activities
Federal Highway Administration (FHWA) Emergency Relief Program	Infrastructure Systems	Emergency federal-aid highway repairs to minimize the extent of damage, protect remaining facilities, restore essential traffic, or improve long-term resilience
Federal Transit Administration (FTA) Emergency Relief Program	Infrastructure Systems	Capital projects to protect, repair, or replace public transportation facilities or equipment that are in danger of suffering serious damage, or have suffered serious damage, as a result of an emergency Operating costs of evacuation, rescue operations, temporary public transportation service, or reestablishing, expanding, or relocating service before, during, or after an emergency. Activities related to emergency operations, emergency protective measures, emergency repairs, permanent repairs, actual engineering and construction costs, resiliency projects designed to protect rolling stock, equipment, facilities, and infrastructure from future damage

State Agencies

Communities recovering from presidentially declared disasters will typically need to coordinate with state agencies to access federal funds. Each state coordinates disaster recovery differently, so planners will need to become familiar with their state-specific context. They should particularly take note of relevant state agencies and their roles (Table 2-11).

Specific state agencies responsible for emergency management, housing, or transportation (or other functions) may have additional technical or financial assistance programs for community recovery projects. Consequently, it is important for planners to establish and maintain good working relationships with counterparts in these agencies (see Module 4).

Table 2-11. Common State Agencies With a Role in Recovery

State Agencies and Organizations	Relevant RSF or Potential Activities
State Emergency Management Organization	Coordinate the activation and use of state resources for response and recovery
Department of Public Safety	Mitigation strategies
Department of Transportation	Infrastructure systems
Department of Housing	Housing recovery
Department of Insurance, Commerce, Labor, or Treasury	Economic recovery
Department of Community Affairs	Natural and cultural resources
Department of Forestry	Natural and cultural resources
Department of Agriculture	Natural and cultural resources
Natural Resource Agencies	Natural and cultural resources
Public Health Agencies	Health and social services
State Social Service Agencies	Health and social services
State Disaster Recovery Department	General recovery activities and mitigation strategies
State National Guard	General recovery activities (e.g., resources and equipment)
State Police Department	Mitigation strategies
State Office of Volunteerism	Volunteer recruitment, coordination, tracking, and reporting
State-level Voluntary Organizations Active in Disaster (VOADs)	General recovery activities (e.g., debris removal)

Other Sources

A variety of professional, philanthropic, other private nonprofit organizations may also be able to assist communities through grants, loans, or intensive visits by technical assistance teams (Table 2-12).

Table 2-12. Examples of Nongovernmental Organizations That May Be Available to Assist With Community Recovery

Organization	Relevant RSFs	Program Description and Activities
American Institute of Architects Sustainable Design Assistance Teams (SDAT)	Community Planning and Capacity Building Natural and Cultural Resources	SDAT teams bring together architects, urban designers, landscape architects, planners, and economists to perform a three-day visit and to produce a report for opportunities and challenges for sustainability.
American Institute of Architects Rural-Urban Design Assistance Teams (R/UDAT)	Community Planning and Capacity Building	R/UDAT teams provide technical assistance to communities by analyzing their needs and helping them create a roadmap to reach those needs.
American Planning Association State Chapters	Community Planning and Capacity Building	APA chapters can assist with inter- and intra-state networking of planners and allied recovery professionals.
American Planning Association Divisions	Community Planning and Capacity Building	The Hazard Mitigation and Disaster Recovery Planning Division is one of 22 divisions where planners can seek professional development and specific training to become better equipped to serve local disaster recovery needs.
AmeriCorps Volunteers in Service to America (VISTA) Program	Community Planning and Capacity Building	Through the VISTA program, individuals and teams build the capacity of a public agency, such as a planning department, or nonprofit organization. VISTAs can support grant development, outreach, management of recovery projects, tracking of donors, recruiting volunteers, or development systems to specifically meet the needs of the low-income community.
Urban Land Institute Advisory Services	Community Planning and Capacity Building Housing Infrastructure Systems	This program works with local governments and other community organizations to discuss real estate development, the built environment, and land use planning. Services include multi-day visits, half-day or full-day conversation sessions, technical assistance panels, and project analysis forums.

Connecting Community Members to Assistance

Federal and state programs and philanthropic sources of aid can also assist individuals in a community. Planners often provide frontline customer service for land-use and development permit and business license applicants. Consequently, they are often well positioned to help connect individuals to more information about sources of individual assistance (Table 2-13).

Table 2-13. Federal Sources of Individual Disaster Assistance

Funding Source	Relevant RSFs	Eligible Activities
FEMA Individuals and Households Program	Housing Health and Social Services	Mortgage payments for homeowners, rent payments for tenants, and minor repairs to housing Vouchers for government-provided temporary housing Funds for childcare; damage to an essential vehicle; medical, dental, and funeral costs; personal property; transportation; and limited lodging expense reimbursements
USDA Farm Service Agency Disaster Assistance — Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish (ELAP)	Economic Natural and Cultural Resources	Financial assistance for losses due to disease and certain adverse weather events or loss conditions, including blizzards and wildfires
USDA Farm Service Agency Disaster Assistance — Emergency Forest Restoration Program (EFRP)	Economic Natural and Cultural Resources	Restore forest health damaged by natural disasters
USDA Farm Service Agency Disaster Assistance — Tree Assistance Program (TAP)	Economic Natural and Cultural Resources	Financial assistance to qualifying orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes and vines damaged by natural disasters
HUD Community Development Block Grant-Disaster Recovery (CDBG-DR)	Housing	Relocation assistance Tenant-based rental assistance
SBA Business Physical Disaster Loan	Economic	Replace damaged property of business, charities, churches, and private universities or restore to its pre-disaster condition
SBA Economic Injury Disaster Loan	Economic	Provide the necessary working capital to help small businesses and agricultural cooperatives survive until normal operations resume after a disaster.
SBA Home and Personal Property Loans	Housing	Repair or replace primary home to pre-disaster condition Construct upgrades or other add-ons to a structure as required by local building code Improvements that help prevent the risk of future property damage caused by a similar disaster (up to a 20% loan amount increase above the real estate damage)

Key Takeaways

- Familiarize yourself with Recovery Support Functions and your responsibilities and capabilities within them, according to your community context.
- Understand how your state organizes disaster recovery in order to effectively coordinate with state officials, agencies, and organizations for assistance.
- Set aside time to research funding mechanisms that are relevant to recovery planning and disaster recovery projects.
- Look for opportunities to share knowledge about financial and technical assistance with the public.

References and Resources

Berginnis, Chad. 2014. "Flood Insurance and Design Requirements." Planning for Post-Disaster Recovery Briefing Paper 6. Chicago: American Planning Association.

Center for Disaster Philanthropy. 2019. "Collaborating with FEMA, HUD, State and Local Governments."

Crater, Dana, Tye Libby, Matt Mullin, and Brian Overington. 2014. "Case Studies in Small Business Finance Following a Disaster." Washington, D.C.: International Economic Development Council.

Federal Emergency Management Agency (FEMA). 2003. "Unit 2: How Communities and States Deal with Emergencies and Disasters." In *A Citizen's Guide to Disaster Assistance*.

———. 2016. *Recovery Federal Interagency Operational Plan*.

———. 2020a. "Community Planning and Capacity Building Recovery Support Function."

———. 2020b. "Economic Recovery Support Function."

———. 2020c. "Health and Social Services Recovery Support Function."

———. 2020d. "Housing Recovery Support Function."

———. 2020e. "Infrastructure Systems Recovery Support Function."

———. 2020f. "Natural and Cultural Resources Recovery Support Function."

———. 2020. "Community Recovery Management Toolkit: Managing Grants and Financing."

———. 2021b. "Get Assistance After a Disaster."

———. 2021b. *Local Government Solutions for COVID-19 and Beyond: Grants Management Capacity*.

Gutschow, Sarah. 2014. "Economic Recovery for Manufacturing." Planning for Post-Disaster Recovery Briefing Paper 5. Chicago: American Planning Association.

Johnson, Laurie A. 2014. "Financial Recovery." Planning for Post-Disaster Recovery Briefing Paper 9. Chicago: American Planning Association.

Kalla, Hari and Gloria Shepherd. 2019. "Integration of Resilient Infrastructure in the Emergency Relief Program." Washington, D.C.: Federal Highway Administration.

Mickelson, Sarah S., Noah Patton, Adam Gordon, and David Rammler. 2019. Fixing America's Broken Disaster Housing Recovery System, Part 1: Barriers to a Complete and Equitable Recovery. Washington, D.C.: Disaster Housing Recovery Coalition.

Mulcaire, Carrie and Brian Overington. 2013. *Federal Disaster Recovery Funding: Minimizing Roadblocks to Maximize Resources*. Washington, D.C.: International Economic Development Council.

Rouse, David. 2014 "Green Infrastructure and Post-Disaster Recovery." Planning for Post-Disaster Recovery Briefing Paper 10. Chicago: American Planning Association.

Topping, Kenneth C. and James C. Schwab. 2014. "Chapter 4. The Federal Framework for Disaster Recovery." In *Planning for Post-Disaster Recovery and Reconstruction: Next Generation*. Planning Advisory Service Report 576. Chicago: American Planning Association.

U.S. Global Change Research Program. 2020. "Climate Resilience Toolkit: Funding Opportunities."

U.S. Department of Housing and Urban Development. 2021. "CDBG-DR Toolkit."

U.S. Department of Housing and Urban Development. 2021. "Disaster Recovery Homelessness Toolkit."

White House Office of Intergovernmental Affairs. 2018. "Recovery Through Federal-State-Local Partnership."

MODULE 3
USING EXISTING PLANS TO GUIDE RECOVERY

Local leaders feel pressure to act swiftly and decisively after a disaster. While a pre-event plan for post-disaster recovery can make many of these decisions easier (see Module 5) no pre-event plan can perfectly predict the outcomes of a specific disaster. Consequently, it is important for communities to prepare an interim recovery strategy, as soon as possible, to guide decision-making until the community has a chance to complete a long-term recovery plan (Topping 2014a; 2014b).

An interim recovery strategy (also known as an interim recovery plan) identifies short-term goals and objectives for recovery and describes critical action priorities that respond to urgent recovery needs. In some communities, planners may lead the development of this interim strategy, but it is, perhaps, more common for planners to serve as advisors.

The good news, for most communities, is that existing plans often contain valuable information about the local vision and goals for the future that can inform the interim recovery strategy. Therefore, planners can use their familiarity with these plans to help local leaders craft an interim recovery strategy.

This module offers considerations and recommendations to help planners identify and apply relevant portions of existing plans to the task of developing an interim recovery strategy.

Reviewing Existing Plans

Many communities will have multiple existing plans that present strategies for community change (Figure 3-1). Collectively, these documents constitute the local network of plans. A local network of plans contains a snapshot of community aspirations prior to disaster.

Generally, planners should look for assumptions about the future and policy recommendations in these plans that relate (directly or indirectly) to the areas, systems, and functions of the community damaged or disrupted by the disaster. Then, they must evaluate whether each related assumption and recommendation remains valid considering post-disaster conditions. Finally, planners should note points of agreement among those remaining valid recommendations in different plans.

Perhaps the two most common plans with clear relevance to recovery are the local comprehensive plan and the local hazard mitigation plan. However, some communities will have other plans—containing more detailed information on specific community (or regional) systems or functions or defining strategies for particular neighborhoods, districts, or corridors—that also merit review.

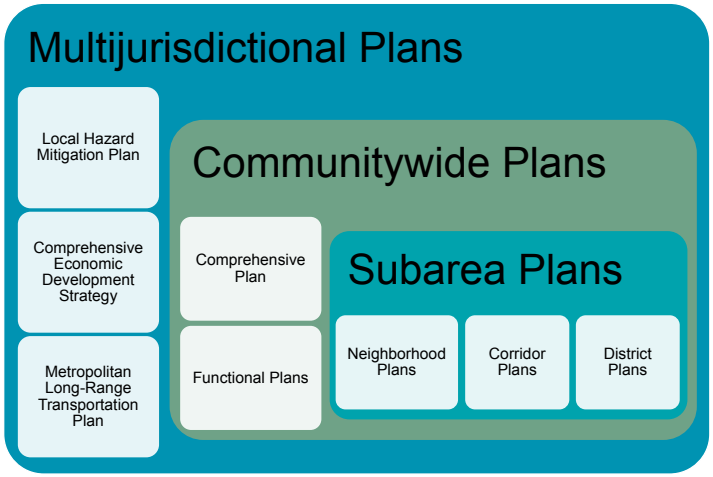


Figure 3-1. Existing plans that can guide recovery

Local Comprehensive Plan

Planners should start with the local comprehensive plan, as it is likely the most familiar to them. They should begin by noting the year the community adopted the plan, contributors to the plan (such as internal and external project leads, working group members, and consultants), and any amendments. Then, they can review which elements comprise the plan and their relevance to disaster recovery. They can also identify if any elements use a lens specifically relevant to post-disaster recovery (such as No Adverse Impacts, All-Hazards, or Whole Community; see Glossary) or if the plan addresses more generally relevant goals, like resilience or sustainability.

The land-use element of a comprehensive plan typically outlines desired future uses, such as residential, commercial, industrial, or agricultural land uses. Planners should make note of any policies or goals that actively increase risk by encouraging development in hazard-prone, disaster-affected, or repetitive damage areas. They should highlight and document policies or actions that can reduce risk, such as preserving or expanding open space in hazard-prone or disaster-affected areas.

The housing element of a comprehensive plan usually reports existing housing conditions. These housing policies can guide buyouts, retrofitting, and mitigation activities.

The conservation or natural resources element might discourage development in environmentally sensitive areas, such as coastal or riparian areas, forests, as well as other areas that serve ecological functions, such as floodplains. Similarly, the parks or open space element might identify goals to expand and preserve open space.

After reviewing the comprehensive plan, planners should conduct a similar review of the other relevant and related plans. These often contain specific technical and policy information, such as capital improvements priorities, resilience measures, or local economic development strategies.

Hazard Mitigation Plan

The local hazard mitigation plan presents a mitigation strategy for a jurisdiction. Hazard mitigation plans must meet minimum requirements for FEMA and state approval. If approved, they unlock post-disaster funding and grants from FEMA (see Module 2). These minimum requirements do not include tailored goals and policies for individual communities, but the plans do need to include recommended policy changes or capital and programmatic investments by jurisdictions.

The main focus of a hazard mitigation plan is to define local hazards and a jurisdiction's vulnerability to them, as well as action items specific to the jurisdiction. Therefore, they contain valuable information on hazards and their predicted impacts. If emergency managers and planners have aligned and integrated the local hazard mitigation plan and the local comprehensive plan, then both plans might go one step further and make recommendations on how the local government can reduce vulnerability to hazards.

But a hazard mitigation plan that only meets minimum requirements is usually not future-focused, nor does it factor in the impacts of climate change on increasing the frequency, severity, and magnitude of hazard events.

A hazard mitigation plan may only highlight and recommend mitigation projects that are eligible for FEMA mitigation grants. Because of this, they might not offer recommendations for land-use policies, public information projects, or ordinance revisions, which are important tools for planners during post-disaster recovery.

Other Local Plans

Other relevant plans might include functional or subarea plans. Common functional plans that are relevant to recovery include disaster-specific, transportation, open space, resilience, capital improvements, and emergency operations plans. Relevant subarea plan might include a downtown plan, neighborhood plans, or plans for a waterfront or hazard zone (e.g., the wildland-urban interface).

Disaster-specific plans include pre- and post-disaster plans, which are becoming more popular in communities that often experience major hazard events. Pre-disaster plans can focus on operations or policy, the latter of which can guide post-disaster decisions by presenting a pre-approved vision and rationale for strategies, policies, and programs (see Module 5). Pre- and post-disaster recovery plans are not as standardized, or common, as local comprehensive plans and hazard mitigation plans. They are also usually not hazard-specific. But they often contain specific information for the post-disaster recovery process, including potential roles and responsibilities, as well as key tasks and milestones.

Other Regional Plans

The comprehensive economic development strategy (CEDS) is a regional plan that brings together the public sector and other economic actors (such as individuals, firms, and industries) to support regional economic prosperity. To be eligible for general assistance from the U.S. Economic Development Administration (EDA), regions must update their CEDS at least every five years. This plan is a cornerstone to regional and local economic recovery and can serve as a foundation for pre- and post-disaster capacity building activities.

The metropolitan long-range transportation plan (LRTP) (also known as the regional transportation plan) is another important document that can inform disaster recovery activities, particularly for infrastructure services. Each state-designated metropolitan planning organization (MPO) must prepare an LRTP and update it on either a four- or five-year schedule, depending on air quality attainment in the MPO planning area, to be eligible for federal highway and public transportation formula funding. These plans typically have a 20-year planning horizon and include short- and long-term strategies to improve multimodal passenger and freight transportation.

Setting Interim Goals and Objectives

After reviewing existing plans to establish the local recovery planning framework, planners can collaborate with other recovery leaders and community stakeholders to set clear goals and objectives for the interim recovery strategy. Planners should specifically recommend goals and objectives that are in line with the community's previously identified goals and objectives.

Most planners will play a supporting role in the process of formulating and adopting interim goals and objectives. To be champions of thoughtful reconstruction, they will need to gain the support of local leaders and build trust with community members. Planners might also have opportunities to remind local leaders that hazardous events will occur again and might increase in intensity, and that the community needs to take action to reduce disaster risk.

The NDRF's Recovery Support Functions are one way to break down the complexity of recovery into core sectors. Each recovery sector has various recovery leaders and community stakeholders that planners can collaborate with to formulate interim goals and objectives.

Community Planning and Capacity Building

The capacity of the local planning department and the community's existing network of plans influence the interim goals and objectives for community planning and capacity building (Table 3-1).

Residents will be anxious to rebuild and return to normal. Local planning staff and recovery leaders, too, might be dealing with personal recovery. And in addition to dealing with new disaster-specific responsibilities, local and state officials and staff will have to maintain regular operations. Because of this, asking for patience will require clear, transparent reasoning from the local government. It might take multiple weeks or even a month

Table 3-1. Illustrative Goals and Objectives for Community Planning and Capacity Building

Goals	Objectives
Higher capacity to respond, recover, and build back better	More redundancy in staff and agency responsibilities Increased technical capabilities to undertake assessment and analysis
Community-based vision and priorities	Conditions and needs reflect post-disaster context Accurate and well-documented damage assessments Intentional and inclusive community engagement in the planning process
Reference to existing community plans	Harmonious policies and plans Up-to-date and relevant policies and plans that consider disaster and hazard risk

or two to facilitate conversations about recovery-specific and new goals and objectives.

The first partnership that planners should initiate is with local government leaders and public officials who can understand and express to community members the fact that planners need time to review existing plans, collect data, create a list of options, and refine final recommendations.

Housing Recovery

Interim goals and objectives for housing recovery should consider the pre-disaster housing context, specifically reviewing if there the housing stock was sufficient and diverse and if there were affordable and accessible housing options prior to the disaster (Table 3-2).

Housing recovery efforts present an opportunity for planners to implement permanent solutions, which they can draw from the existing comprehensive plan, with disaster-specific funding that would not have been otherwise available (FHC 2018).

Table 3-2. Illustrative Goals and Objectives for Housing Recovery

Goals	Objectives
Safe housing	Safe growth Less reconstruction in hazard-prone or repetitive damage areas Voluntary buyouts Healthy housing
Affordable and secure housing	Temporary housing assistance Financial assistance for housing security costs Strong housing market
Adequate housing	Fair and accurate damage/ housing assessments Diverse housing options/housing choice
Resilient housing	Less risk of property damage and loss Higher building standards Retrofitting
Inclusive and fair housing	Prevent long-term displacement Restore community networks harmed by segregation and other exclusionary policies

Economic Recovery

Planners can assist in assessing disaster impacts across planning subareas, such as commercial, agricultural, industrial, or central business districts. They can also volunteer to participate in economic recovery teams and advise based on the economic development element of the local comprehensive plan (Table 3-3).

Table 3-3. Illustrative Goals and Objectives for Economic Recovery

Goals	Objectives
Restoration of economy	Support existing businesses, owners, and employees Revitalize existing commercial and industrial corridors
Innovation	Welcome new industries (e.g., green economy) Encourage new business development
Workforce development, training, and education	Reduce unemployment Settlement of displaced workers Local job creation Diversity of job types and economic opportunities

Infrastructure Systems

Planners will need to collaborate with public works and transportation departments to set interim recovery goals and objectives (Table 3-4). Transportation planners, utility planners, and engineers all have valuable insight on infrastructure priorities before disaster, as well as critical needs after recovery.

Table 3-4. Illustrative Goals and Objectives for Infrastructure Systems Recovery

Goals	Objectives
Protected critical facilities	Strategic siting of infrastructure Multifunctional community gathering spaces or hubs
Regional resilience	Hazard mitigation and risk reduction Physical and social connectivity Sustainable development
Reliable utilities	Grid resilience and renewable energy Digital infrastructure and internet service
Technological innovation	Green technologies Efficiency
Safe, affordable, and accessible transportation systems	Affordable and reliable mass transit Road connectivity Alternative routes for emergency access

Natural and Cultural Resources

Planners can advocate for climate adaptation and large-scale risk reduction projects through communication and collaboration with natural resource agencies, conservation districts, and historic preservation organizations (Table 3-5).

Table 3-5. Illustrative Goals and Objectives for Natural and Cultural Resources Recovery

Goals	Objectives
Preservation	Open space preservation Recognize historic and cultural sites and their stewards Protect productive lands and diverse uses of lands
Conservation	Resource management Restoration of habitats and native ecosystems
Stewardship	Community engagement and outreach Community control and authority to make decisions
Public access	Fair and easy access to natural features and spaces

Health and Social Services

Nongovernmental and community-based organizations commonly meet health and social recovery needs, so planners can collaborate with these groups to aid recovery in this sector (Table 3-6). Planners are often well positioned to advocate, in cooperation with public health and human service officials, on behalf of vulnerable population groups and neighborhoods.

Table 3-6. Illustrative Goals and Objectives for Health and Social Services Recovery

Goals	Objectives
Accessible facilities and programs	Physical and social access to services and facilities Reduce disparities in service access Prioritize at-risk or historically disadvantaged populations
Responsive emergency operations	Timely response to health and well-being issues by emergency staff and departments Culturally-relevant, restorative, and affordable healthcare programs
Higher quality-of-life	Continuity of education Economic self-reliance Housing, economic, recreational, and social opportunities and options

Identifying Critical Action Priorities

A critical action priority is an immediate need that recovery professionals should address promptly and strategically. Planners can recommend concrete actions the community can take that align with interim recovery goals and objectives. They can specifically help identify and recommend critical action priorities through their roles as stewards, facilitators, and advocates.

By acting as stewards of existing plans, planners can gather potential critical action priorities that the community has previously identified prior to disaster. Planners are also equipped to facilitate community conversations about potential new actions based on the post-disaster conditions and emerging needs. They can also advocate on behalf of underrepresented community members to collect potential actions that reflect their specific and urgent needs.

As with setting interim goals and objectives, planners should collaborate with other recovery leaders and community stakeholders to identify critical action priorities (see Module 4).

The questions in Table 3-7 can help planners begin to develop a list of critical action priorities. Each critical action priority should be related to one or more objectives. Relevant information for each critical action priority includes the level of urgency, the individuals and organizations affected by the action, potential funding sources and technical needs, one or more departments responsible for implementation, and the likely duration to the action.

Temporary regulations are, perhaps, the most common type of critical action priority. These actions require recovery professionals with authority to temporarily modify provisions of the municipal or county code (or equiva-

Table 3-7. Identification and Screening Questions for Critical Action Priorities

Issues	Questions
Identifying priorities	What are some immediate actions for each interim recovery goal and objective? Is this action, or a similar action, included in a pre-event community plan? If so, is this action still appropriate in the post-disaster context? What are the current priorities of other departments and agencies? Do residents and community members currently have an avenue to share potential critical action priorities with local leaders and staff?
Urgency	Does this potential action protect or restore a critical facility or otherwise essential infrastructure? If unaddressed, does this critical action priority pose an immediate threat to people's health, livelihoods, or well-being?
Affected Individuals and organizations	What actions are necessary to support the most vulnerable populations in this community? Who and what will be affected if this action is unaddressed? Will action (or lack of action) disproportionately impact at-risk groups or areas?
Funding and technical needs	Does the community have access to adequate financial resources to complete this action? Does the community have adequate technical capabilities to properly assess, analyze, and implement this action?
Responsibility	Which departments or agencies have authority to implement this action?

lent) if it will reasonably lead to the protection of life and property, mitigation of hazardous conditions, prevention of undue displacement of households or businesses, or prompt restoration of public infrastructure (Topping 2014a; 2014b).

These temporary regulations may address any of the following topics:

- Emergency debris clearance and hazard abatement
- Damage assessment
- Development moratorium
- Temporary use permits
- Temporary waiver of repair permit requirements for emergency repairs
- Deferral of fees for repair and rebuilding permits
- Nonconforming buildings and uses

Of these, a development moratorium may be the most beneficial for short-term recovery planning. A development moratorium temporarily suspends permitting for reconstruction or redevelopment activities. This gives planners time to create recommendations for a decision-making process for basic reconstruction and redevelopment activities, such as who can rebuild, who must mitigate, and who needs to make repairs before reoccupying.

Planners and local leaders will need to stress the temporary nature of the moratorium to residents. They should also communicate the status of data collection for building conditions and other factors that influence decisions. A Moratorium does not need to restrict activities that can bring safety and peace of mind to residents, such as debris removal, clean up, collection of valuables, and elimination of health and safety hazards. Local officials should enforce moratoria fairly, be empathetic to residents, and set up accountability mechanisms that ensure the equitable enforcement of rules and the protection of property.

Key Takeaways

- Planners can jumpstart the interim recovery planning process by using existing plans as a foundation for post-disaster projects, programs, and policies.
- Recovery is complex; be sure to address each recovery sector when setting recovery goals and objectives and make sure they are all feasible in the interim recovery period.
- Collaborate with recovery leaders and stakeholders during the interim recovery period to set goals and objectives and to determine critical action priorities.
- Time is limited, so full-fledged public participation and plan updates are almost always impossible and unnecessary in the interim recovery period. Planners can make up for this by tying decisions and recommendations to past plans and participation processes, as well as by providing transparent and clear justification for them.

References and Resources

Association of Floodplain Managers. 2014. *NAI How-To Guide for Planning*.

Colorado Department of Local Affairs. 2020. *Planning for Hazards: Land Use Solutions for Colorado*.

DeAngelis, Joseph, Johamary Peña, Alexsandra Gomez, Philip Berke, and Jaime Masterson. 2021. "Building Resilience Through Plan Integration." *PAS Memo*, January/February.

Federal Emergency Management Agency. 2015. *Plan Integration: Linking Local Planning Efforts*.

Florida Housing Coalition (FHC). 2018. *Florida Disaster Management Guide for Housing*.

Johnson, Laurie A. 2014. "Chapter 6. Long-Term Recovery Planning: The Process of Planning." In *Planning for Post-Disaster Recovery and Reconstruction: Next Generation*. Planning Advisory Service Report 576. Chicago: American Planning Association.

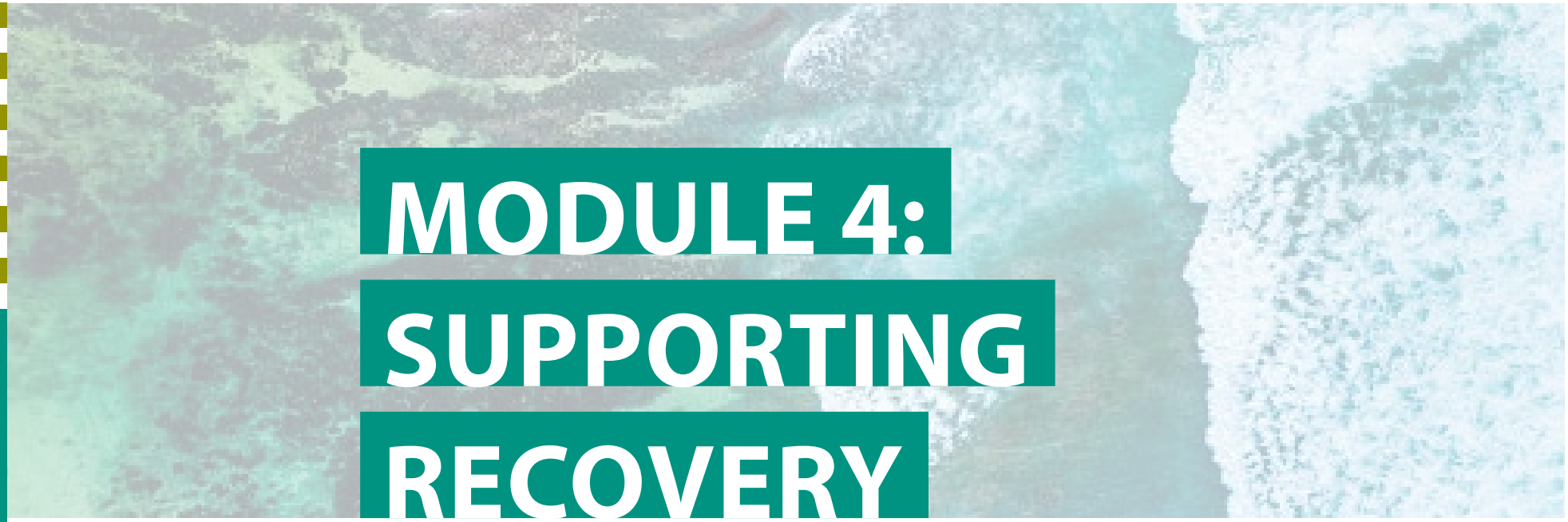
Malecha, M., Masterson, J.H., Yu, S. & Berke, P. (2019). *Plan Integration for Resilience Scorecard Guidebook: Spatially Evaluating Networks of Plans to Reduce Hazard Vulnerability – Version 2.0*. College Station, Tex.: Institute for Sustainable Communities, College of Architecture, Texas A&M University.

Topping, Kenneth. 2014a. "Adopt a Pre-Event Recovery Ordinance." Planning for Post-Disaster Recovery Briefing Papers 08. Chicago: American Planning Association.

Topping, Kenneth. 2014b. "Appendix A. Model Pre-Event Recovery Ordinance." In *Planning for Post-Disaster Recovery and Reconstruction: Next Generation*. Planning Advisory Service Report 576. Chicago: American Planning Association.

U.S. Department of Transportation Federal Highway Administration. 2018. "Metropolitan Planning."

U.S. Economic Development Administration. 2020. "Comprehensive Economic Development Strategy (CEDS) Overview."



MODULE 4: SUPPORTING RECOVERY MANAGMENT

The core of recovery management is determining who will make recovery-related decisions and how those decisions will be made (Johnson 2014b). The local legislative body often appoints the local chief administrative officer, or chief elected official, as the local disaster recovery manager. However, the local recovery manager relies on planners, other local staff members, and external recovery partners for support.

In some communities, a pre-event disaster recovery plan (see Module 5) may define the specific responsibilities of planners, but more commonly, the roles planners routinely play in normal times determine how they will participate in recovery management. As discussed in Module 1, planners support recovery by acting as stewards of the local vision for change, facilitating key conversations about community change, and advocating on behalf of traditionally underrepresented and under-resourced segments of the community.

In practice, many planners will need to divide their time between ad-hoc development services requests and more strategic recovery management tasks. Once the community has established interim goals and objectives and determined critical action priorities (see Module 3), the focus of recovery management shifts to implementing the interim recovery strategy. This module explores how planners can support implementation by sustaining collaborative relationships, developing a community engagement strategy, and evaluating proposed projects.

Sustaining Collaborative Relationships

Healthy collaborative relationships are essential to successful recovery management. Disasters typically affect multiple community functions; consequently, recovery efforts involve multiple local government departments or agencies. Furthermore, disasters frequently create conditions that exceed local government capacity (see Module 1). This creates a need for both intergovernmental and cross-sectoral collaboration.

The good news for planners is that they often already have extensive experience building and sustaining internal and external relationships (Johnson 2014a). The challenge, then, is for planners to adapt approaches they've learned through conventional plan-making and development-review processes to the task of recovery management. In many cases, this will also require planners to operate from within, or in support of, a new recovery organization structure.

Recovery Organization Models

In addition to appointing a local recovery manager, many communities also establish a local recovery organization to guide decision-making processes and coordinate recovery initiatives. Local leaders may have defined the structure of this organization in a pre-event disaster recovery plan or through previous recovery management experiences, or they may need to create a new structure to respond to current recovery needs. Three common models for recovery organization structure are the recovery support functions model, the recovery commission model, and the task force model (FEMA 2015).

The recovery support functions (RSF) model brings together representatives from public agencies and nongovernmental organizations that have expertise in different community functions. As mentioned in Module 1, the National Disaster Recovery Framework establishes six RSFs to provide a coordinating structure for federal disaster assistance. Local leaders who choose this model may take advantage of existing departmental or agency structures, or they may establish a new structure to better align with the federal RSFs.

In an RSF organization, one or more planners are likely to participate directly to help coordinate recovery activities related to long-range recovery planning, land-use and development, and transportation infrastructure. Furthermore, planners will often be able to build on preexisting relationships with counterparts in other local departments or agencies.

The recovery commission model convenes local public, private, and nonprofit leaders to identify strategic objectives and provide oversight for the recovery process. This

model prioritizes community knowledge over subject matter or professional expertise.

In communities with a recovery commission, planners are less likely to be direct participants in the deliberative processes of the recovery organization. They can, however, support these processes by reaching out to commissioners to help them understand the potential relevance of previous planning efforts and the programs they manage or administer to meeting recovery objectives.

The task force model brings together subject matter experts to address a specific recovery need. Consequently, task forces typically supplement an overarching RSF or recovery commission organization.

Planners are likely to serve on task forces related to hazard mitigation, housing, infrastructure, and other issues that require their expertise in community planning or local policy or program design. When planners from the same department or agency are members of multiple task forces, they may be able to identify and build awareness of connections between otherwise independent initiatives.

Stewardship, Facilitation, and Advocacy

Module 1 introduced the idea that planners may, at different points in the recovery process, act as stewards of the community's vision for change, facilitators of community conversations about change, and advocates on behalf of under-resourced and marginalized segments of the community. Regardless of the type of recovery organization planners are serving, they will need to rapidly switch between all three roles to build and sustain collaborative relationships to support recovery management.

Recovery organization members may call on planners to summarize the relevance of previous planning work to post-disaster conditions or explain the rationale behind current land-use and development regulations. By being prepared to provide this information, planners can help discussions progress efficiently.

Additionally, the recovery manager may ask planners to facilitate organization meetings that focus on planning-related topics. They may also tap planners to facilitate interdepartmental review processes for land-use applications related to interim housing and space for businesses or other recovery initiatives that overlap with established land-use and development decision-making processes.

Finally, planners should be mindful of opportunities to highlight the potential effects of recovery activities on under-resourced areas of the community and socially vulnerable populations. Planners are trained to use a systems-thinking approach that emphasizes interconnections, which can help them spot potential problems early in the recovery process.

Staff Capacity

During periods of normalcy, some of the biggest barriers to effective interdepartmental or inter-agency collaboration are a lack of a shared sense of purpose, a culture of self-sufficiency, or a tendency toward territoriality (Lank 2006; Nicol 1998; Norris-Tirrell and Clay 2010). While disasters often provide a shared sense of purpose and expose the limitations of self-sufficiency, they may also create new barriers to internal collaboration. For example, staff members may be dealing with losses or disruption in their personal lives, which can make it difficult to prioritize collaborative work.

Once there is clear sense of the severity and extent of damage and disruption in the community, planning managers should assess the existing planning staff capacity to support recovery activities (Shafer et al. 2014). The primary questions managers need to answer are how many staffers are available, what are the skill sets of each person, and what percentage of each staffer's time can be spent on recovery work. In seeking answers to these questions, they should be mindful of the physical and mental toll of collaborative management in a time-compressed, politically charged environment.

In cases where there are clear planning-related staffing gaps, planning managers can explore opportunities to secure additional personnel (see Module 2). They may be able to fill gaps by hiring new staff, contracting with private planners, establishing a mutual-aid agreement with neighboring jurisdictions, or soliciting qualified volunteers.

Developing a Community Engagement Strategy

The goal of community engagement in recovery planning is to foster authentic public participation to improve decision-making. An authentic public participation process actively involves all segments of the community in analyzing issues, generating visions, developing plans, and monitoring outcomes (Godschalk and Rouse 2015). While authentic public participation is often infeasible in the immediate aftermath of a disaster, it is essential to successfully planning for long-term recovery (Burby 2003; Horney et al. 2016; Hamideh 2020).

In some communities, certain aspects of the community engagement strategy may be defined by pre-disaster planning work. For example, communities that have developed a pre-event disaster recovery plan (see Module 5) may have already established an advisory body of stakeholders to guide engagement efforts. However, in many other communities, planners will take a leading role in designing inclusive planning processes that bring together key stakeholder groups to plan collaboratively.

Process Design

An inclusive planning process is one in which all community members feel welcome to participate and are confident that their participation can positively affect outcomes (Morley 2019). Designing inclusive planning processes is challenging, even in the best of times. In the post-disaster recovery period, the challenges can be even greater.

Traditional approaches to public participation, such as mandatory public hearings and town-hall-style forums, often exclude or undervalue the perspectives of renters, lower-income households, people experiencing homelessness, people of color, non-English speakers, youths, single-parent families, and other marginalized populations. Following a disaster, a sense of urgency about rebuilding can reinforce this tendency, and it is perhaps most difficult to overcome if the disaster has displaced marginalized members of the community.

In many communities, exclusionary planning processes, in combination with a legacy of segregation and inequality, have prevented or eroded trust in local government (García, Garfinkel-Castro, and Pfeiffer 2019). On top of this, disasters often exacerbate preexisting patterns of inequality (Howell and Elliott 2019). For these reasons, planners must be intentional about designing an engagement strategy that builds trust and works to overcome social and physical barriers to participation (Hamideh 2020).

There are four broad categories of public participation in policymaking: standardized representative policymaking, referenda, nonbinding direct involvement, and binding direct policymaking by nongovernmental representatives (Steelman and Ascher 1997). The first category includes all routine decision-making processes by elected and appointed officials, where the primary means of public participation are elections and statutorily required public hearings. The second category refers to instances where residents take binding votes on policies through election ballot measures. Most community engagement strategies for disaster recovery focus primarily on the third or fourth categories (Eadie at al. 2001).

Recovery planning processes that use nonbinding direct involvement solicit ideas and feedback from community members on recovery policies and implementation mechanisms. Because local officials make all final decisions independently, participants do not need to reach consensus on any specific issue. In contrast, planners designing processes that use direct policymaking by nongovernmental representatives must specify when and how participants will control decisions.

Fundamentally, the goals and objectives of the community engagement process should determine the broad approach as well as the specific methods of participation (Butterfield 2014; MEDC 2021; Miskowiak 2004). When designing the process, planners should ensure that the time participants spend in planning activities is proportional to their influence over the plan and plan implementation mechanisms (Hamideh 2020).

Stakeholder Identification

A community engagement strategy for recovery planning should identify key stakeholders and explain how process leaders will engage those stakeholders in planning activities. These stakeholders include groups directly affected by the disaster and groups that, absent meaningful participation, may be more likely to bear disproportionate social, environmental, or economic costs during recovery. They also include groups with specialized knowledge about hazard mitigation, disaster recovery, redevelopment, or other issues relevant to the community. Table 4-1 lists potential key stakeholder groups.

Representatives from key stakeholder groups should reflect the reality of people who live, work, and interact in the community, particularly representing the shared values that different age groups, ethnicities or races, gender identities, religions, and socio-economic classes can have. FEMA has created a Communications Mapping Tool to help planners and local officials identify key stakeholder groups and improve communication with these groups (2012). This tool proposes a five-step process that starts with identifying a core group of stakeholders and concludes with strengthening relationships (Figure 4-1).

Table 4-1. Potential Key Stakeholder Groups to Engage in Recovery Planning

Stakeholder Groups	Connection to Recovery Planning
Resident organizations (e.g., owners' or tenants' associations, block clubs)	Represent the shared interests of subsets of community residents
Community-based housing and service organizations (e.g., community development corporations, health or social service providers)	Can be key partners in rebuilding or redeveloping housing and restoring or enhancing health care or social services
Business owner associations (e.g., chambers of commerce)	Represent the shared interests of subsets of business owners
Environmental organizations (e.g., environmental advocacy organizations, land conservation organizations)	Can be key partners in mitigating future hazards with nature-based solutions
Population-based advocates (e.g., disability advocacy organizations)	Represent the shared interests of specific populations
Real property professionals (e.g., real estate developers, realtors)	Can be key partners in rebuilding or redevelopment
Representatives of neighboring jurisdictions (e.g., elected or appointed officials)	Represent the shared interests of neighboring jurisdictions
State and federal agencies (e.g., emergency management, environmental protection, housing, or planning agencies)	Can be technical or financial assistance providers
Educational institutions (e.g., colleges and universities)	Can be technical assistance providers
Philanthropic organizations (e.g., foundations)	Can be technical or financial assistance providers
Design professional associations (e.g., architect associations, engineer associations, chapters or divisions of the American Planning Association)	Can be technical assistance providers

Planners can start to identify key stakeholder groups by networking through existing partners and active community-based organizations. It is also helpful to think beyond intra- and inter-community and geographic boundaries. Beginning with a few notable "connector" organizations and asking for recommendations from them can lead to other potential groups. Gathering existing lists of stakeholder groups from previous planning efforts is another option.

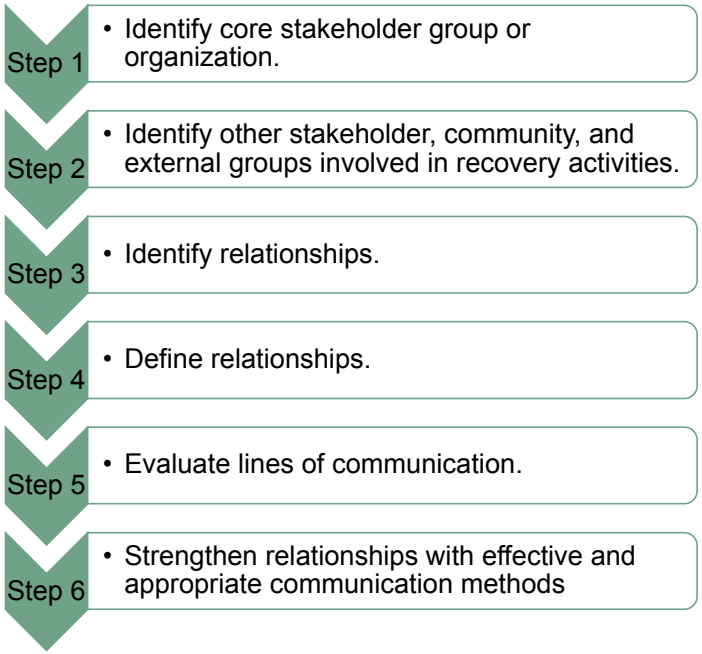


Figure 4-1. Stakeholder identification steps (FEMA 2012)

Collaboration Approaches and Principles

There are three broad approaches to collaborative planning for disaster recovery: participatory action research, collaborative learning, and multi-objective planning and management (Eadie et al. 2001). In participatory action research, community members generate solutions for a problem based on their lived experiences and shared priorities, rather than their technical expertise. In contrast, collaborative learning emphasizes information sharing and incremental progress over all-encompassing solutions. Finally, multi-objective planning and management aims to build consensus on multiple issues simultaneously (often with the aid of participatory action research).

In practice, collaborative planning processes often use all three approaches. The challenge for planners designing community engagement strategies then is to structure and sequence public participation opportunities in a way that helps process leaders identify issues where consensus on a preferred action is likely and issues where the goal is a better understanding of the benefits and tradeoffs of alternative actions.

Regardless of the approach, planners should design engagement opportunities to promote mutual gains, rather than to simply meet minimum legal requirements. Processes rooted in mutual gains employ eight core principles, as summarized below (Nolon et al. 2013).

Engage early. Community engagement should start as early as possible. All key stakeholders should be engaged in the process before deliberating on any recovery proposals.

Listen and learn first. Process leaders must understand the interests and concerns of all key stakeholders before focusing on potential solutions. This includes formal and

informal assessment and learning activities with both groups and individuals.

Build on interests, not positions. A position is an outcome that a person believes will satisfy an interest. An interest is the underlying reason for a stated position. It is easier to identify solutions rooted in shared interests than it is to build consensus on established positions.

Design and build an effective process. Collaborative planning methods or tactics should be tied to the purpose of the process. Ultimately, every activity should produce a result that advances recovery goals and objectives and must be compatible with the community's decision-making process.

Involve many, not just a few. Engaging stakeholders from across the community typically creates a wider range of potential mutually beneficial solutions.

Learn jointly. Recovery is a complex process. Technical expertise and community knowledge are both important to generate and evaluate potential solutions.

Use a skilled facilitator. Recovery is an emotionally charged process. A skilled facilitator is necessary to keep participants focused on identifying and evaluating mutually beneficial solutions.

Build relationships for the long term. Recovery is a long-term process, with longstanding implications. Process leaders can build and maintain healthy relationships with participants by ensuring that all decisions are transparent and consistent.

Evaluating Proposed Projects

An interim recovery strategy provides goals, objectives, and critical action priorities to guide short-term recovery activities (see Module 3). This strategy may list a small number of urgent recovery projects. Additionally, the recovery management organization may propose other short-term recovery projects that fall outside of the explicit guidance of the interim recovery strategy.

Some of these projects will serve as a helpful bridge between the short-term recovery period and the development of a long-term community recovery plan. Others may, ultimately, conflict with the future vision of the community. Consequently, planners should be prepared to evaluate the consistency of these projects with existing community plans.

Project Types

There are at least four distinct types of short-term recovery projects that recovery leaders may propose before the community prepares a long-term recovery plan: capital projects and changes to policies, programs, and plans.

A capital project is any physical change to a site, neighborhood, district, or corridor as well as the purchase of vehicles or large equipment. Capital projects for short-term recovery include the repair, reconstruction, or redevelopment of buildings, roads, public spaces, and any other element of gray or green infrastructure.

In this context, a policy is a course or method of action to accomplish a specific public objective. Policy projects for short-term recovery include new or updated zoning and business regulations, administrative rules or procedures, and funding priorities.

In contrast, a program is a means of delivering a public good or service. Programmatic projects for short-term recovery include new or updated financial and technical assistance programs.

Finally, a plan is a strategy for organizational or community change. Planning projects for short-term recovery include updates to comprehensive, subarea, and functional plans to incorporate new background information, maps, or recommendations to acknowledge current conditions or establish a policy foundation for subsequent capital projects, policies, or programs.

Plan Consistency

Short-term recovery projects often have either an explicit or implicit connection to pre-existing community plans. That is, a comprehensive, subarea, or functional plan may include the project (or a closely related project) as an implementation action. Or one or more plans may include goals or objectives that align or conflict with the objectives of the proposed project.

One of the most important steps planners can take to improve recovery outcomes is to evaluate the consistency of each proposed short-term recovery project with existing community plans. Typically, the most relevant plans are the local comprehensive plan and the local hazard mitigation plan (see Module 3). Depending on the project, though, other plans may be even more relevant. For example, a

Table 4-2. Basic Consistency Questions for the Local Comprehensive and Hazard Mitigation Plans

Plan	Questions
Comprehensive Plan	Is it consistent with the long-term vision for the community? Is it consistent with land-use category descriptions and the future land use map? Is it consistent with all goals, objectives, and recommendations?
Hazard Mitigation Plan	Is it consistent with mitigation goals and objectives? Is it listed as a mitigation action or otherwise complementary to listed actions?

neighborhood, corridor, or district plan may be relevant to any capital project proposed for that subarea.

Table 4-2 lists fundamental consistency questions for the local comprehensive and hazard mitigation plans. If the answer to any of these questions is "no," the project merits further consideration before implementation.

Key Takeaways

- Look for opportunities to adapt collaborative approaches you've learned through conventional plan-making and development-review processes to the task of recovery management.
- Be prepared to switch frequently between the roles of steward, facilitator, and advocate to build and sustain collaborative relationships.
- Be intentional about designing an engagement strategy that builds trust and works to overcome social and physical barriers to participation.
- Begin identifying key stakeholder groups by networking through existing partners and active community-based organizations.
- Design community engagement opportunities to promote mutual gains, rather than to simply meet minimum legal requirements.
- Evaluate the consistency of proposed short-term recovery projects with the goals, objectives, and recommendations of existing community plans.

References and Resources

Biggs, Dave, Stephen Stansbery, and Michelle Nance. 2018. *100 Great Community Engagement Ideas: Tips, Tricks, and Best Practices to Help Guide Planners to Better Results!*" Vancouver, British Columbia: MetroQuest.

Bryson, John M., Kathryn S. Quick, Carissa Schively Slotterback, Barbara C. Crosby. 2012. "Designing Public Participation Processes." *Public Administration Review* 73(1): 23–34.

Burby, Raymond J. 2003. "Making Plans That Matter: Citizen involvement and Government Action." *Journal of the American Planning Association*, 69(1): 33–49.

Butterfield, Christine. 2014. "Public Engagement in Recovery Planning." Planning for Post-Disaster Recovery Briefing Papers 01. Chicago: American Planning Association.

Eadie, Charles, Rod E. Emmer, Ann-Margaret Esnard, Sarah Michaels, Jacquelyn Monday, Clancy Philipsborn, Brenda Phillips, David Salvesen. 2001. "Chapter 3: Participatory Processes in Disaster Recovery". In *Holistic Disaster Recovery: Ideas for Building Local Sustainability After a Natural Disaster*. Boulder, Colo.: Natural Hazards Research and Applications Information Center.

Federal Emergency Management Agency (FEMA). 2005. "Step 5. Reaching Consensus." In *Long-Term Community Recovery Planning Process: A Self-Help Guide*.

———. 2012. *Long-Term Community Recovery Toolbox*.

———. 2015. *Effective Coordination of Recovery Resources for State, Tribal, Territorial and Local Incidents*.

Garcia, Ivis, Andrea Garinkel-Castro, and Deirdre Pfeiffer. 2019. *Planning With Diverse Communities*. Planning Advisory Service Report 593. Chicago: American Planning Association.

Hamideh, Sarah. 2020. "Opportunities and Challenges of Public Participation in Post-Disaster Recovery Planning: Lessons From Galveston." *Natural Hazards Review* 21(4): 0502009.

Horney, Jennifer, Danielle Spurlock, Shannon Grabich, and Philip Berke. 2016. "Capacity for Stakeholder Participation in Recovery Planning." *Planning Practice & Research* 31(1): 65–79.

Howell, Junia and James R. Elliott. 2019. "Damages Done: The Longitudinal Impacts of Natural Hazards on Wealth Inequality in the United States." *Social Problems* 66(3): 448–467.

Johnson, Laurie A. 2014. "Developing a Local Recovery Management Framework: Report on the Post-Disaster Strategies and Approaches Taken by Three Local Governments in the U.S. Following Major Disasters." *International Journal of Mass Emergencies and Disasters* 32(2): 242–274.

———. 2014a. "Long-Term Recovery Planning: The Process of Planning." In *Planning for Post-Disaster Recovery and Reconstruction: Next Generation*. Planning Advisory Service Report 567. Chicago: American Planning Association.

———. 2014b. "Planning for Recovery Management." Planning for Post-Disaster Recovery Briefing Paper 7. Chicago: American Planning Association.

Lank, Elizabeth. 2006. "Internal Collaboration." In *Collaborative Advantage*. London: Palgrave Macmillan.

Michigan Economic Development Corporation (MEDC). 2019. "Six-Step Guide to Public Participation: An Outline for How a Community May Organize Its Public Participation Strategy."

Miskowiak, Douglas. 2004. "Crafting an Effective Plan for Public Participation." Stevens Point, Wis.: Center for Land Use Education.

Morley, David. 2019. "Inclusive Planning Processes." *PAS QuickNotes* 82.

Nicol, Chris. 1998. "Collaboration and Co-ordination in Local Government: Lessons From Practice in Housing and Planning Departments." *Local Government Studies* 24(3): 51–66.

Nolon, Sean, Ona Ferguson, and Pat Field. 2013. *Land in Conflict: Managing and Resolving Land Use Disputes*. Cambridge, Mass.: Lincoln Institute of Land Policy.

Norris-Tirrell, Dorothy and Joy A. Clay. 2010. *Strategic Collaboration in Public and Nonprofit Administration*. Boca Raton, Fla.: Routledge.

Shafer, Jennifer J., Matthew R. Peterson, Philip R. Baylor, and Kerry R. McCarthy. 2014. "Local Disaster Recovery Staffing Guide." Tysons, Va.: LMI Research Institute.

Steelman, Toddi A. and William Ascher. 1997. "Public Involvement Methods in Natural Resource Policy Making: Advantages, Disadvantages, and Trade-offs." *Policy Sciences* 30: 71–90.

Trujillo, Monica. 2020. *Guidelines for Community Participation in Disaster Recovery*. New York: United Nations Development Program.

MODULE 5
REDUCING FUTURE RISK

While Module 1 introduced the idea that mitigation is a discrete phase in the disaster life cycle, hazard mitigation should, ideally, be a continuous process (Schwab 2010). During recovery, communities often have distinct opportunities to reduce risks associated with future hazardous events (Thomas and Walther 2014). The experience of a disaster can generate support for mitigation activities that may not be politically possible in times where risk feels less immediate. Additionally, disasters often unlock access to funding sources and technical assistance that communities can use to mitigate future risk (see Module 2).

A community's interim recovery strategy will likely include goals, objectives, and critical actions that aim to reduce risk and increase resilience by changing the conditions that make people and places exposed and vulnerable to disasters (see Module 3). However, communities often use long-term recovery planning processes to identify and evaluate more complex and resource-intensive mitigation activities.

As stated in the preface, there are several existing resources that provide extensive guidance for long-term community recovery planning (FEMA 2021). Rather than replicating or replacing those resources, the following sections offer supplemental considerations and recommendations for planners as they transition from short-term to long-term recovery activities and begin preparing for the next disaster.

This module describes emerging themes that planners can spotlight during long-term recovery planning activities, highlights the importance of updating plans and plan-implementation mechanisms to respond to changed conditions and priorities following a disaster, and briefly explains the value of pre-event recovery planning.

Understanding Emerging Themes in Recovery

There are four key emerging, and interrelated, themes that intersect with the goal of long-term community recovery: disaster risk reduction, climate change adaptation, resilient infrastructure, and outcome-driven recovery (Figure 5-1). Each of these themes emphasizes the importance of planning and is closely related to other concepts familiar to many planners, including hazard mitigation, community resilience, and sustainable development.

These themes are especially relevant for planners as they facilitate community conversations about recovery. Once they are familiar with them, planners can use each theme to help planning process participants see recovery issues from a different perspective.

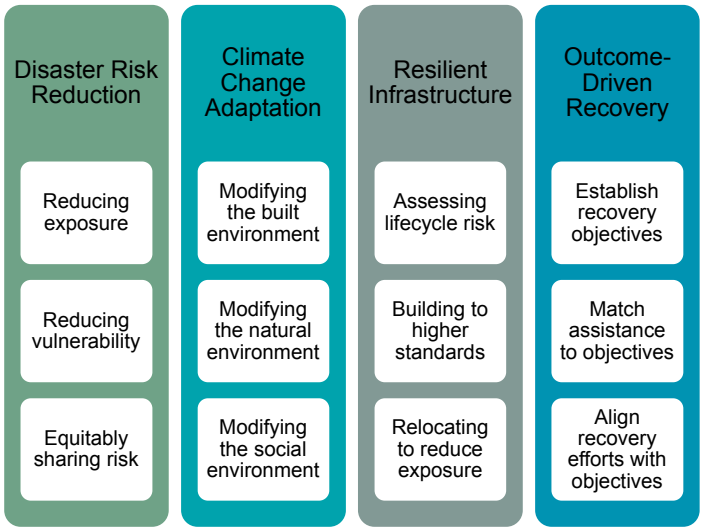


Figure 5-1. Key features of emerging themes in disaster recovery

Disaster Risk Reduction

Disaster risk reduction (DRR) is rooted in the idea that disasters are not the inevitable outcomes of hazardous events (PreventionWeb 2020; UNODRR 2015). Rather, disasters happen when communities (and societies) fail to adequately reduce and manage their exposure and vulnerability to hazards. To improve their resilience to hazardous events, communities must avoid creating new risks, reduce existing risks, and equitably distribute remaining risks.

A core aspect of DRR is the community-based identification of drivers of disaster risk that prevent local resilience and increase vulnerability. DRR seeks to manage these drivers of disaster risk in a consistent and equitable way. Successful DRR considers the wider social, political, environmental, and economic context of a community (e.g., social exclusion and poverty) when identifying the factors that contribute to risk in specific geographies and populations (Mercer 2010).

The DRR approach is increasingly popular for hazard mitigation and disaster recovery planning. FEMA encourages communities to establish risk reduction priorities in their local hazard mitigation plans to guide post-disaster recovery and redevelopment (FEMA 2017). Although DRR has relevance to every phase of the disaster life cycle, it may be easiest for planners to introduce during recovery planning activities since most participants will have fresh memories of the consequences of disaster risk.

The Natural Hazard Mitigation Association has prepared the Disaster Risk Reduction Ambassador Curriculum for planners, local leaders, and technical experts to help them share DRR concepts and strategies with the communities they serve (2018).

Climate Change Adaptation

Climate change adaptation is the modification of the built, natural, or social environment to make it better suited to a changing climate (APA 2020a; 2020b). As the global average temperature continues to rise, the frequency and severity of extreme weather and other hazardous events is likely to continue increasing (USGCRP 2018). Consequently, climate change adaptation is a core component of disaster risk reduction.

The first step in adapting to climate change is conducting a climate vulnerability assessment. These assessments use scientific data and community input to communicate how climate change may affect the natural hazards that threaten a community and how the natural, built, and social environment affects vulnerability to those hazards (APA et al. 2019).

While climate change adaptation is relevant to almost any local planning process, the political support for actions to enhance climate resilience may be highest following a disaster. The U.S. Climate Resilience Toolkit outlines a step-by-step process and provides case studies and tools to help planners, local officials, and other community stakeholders build resilience to climate hazards through local planning processes (USGCRP 2021).

Resilient Infrastructure

Disasters often reveal vulnerabilities in physical infrastructure systems, such as road and rail, water and sewer, power, and telecommunications systems. In some cases, these vulnerabilities are the result of poor initial design or deferred maintenance. In other cases, they may indicate that current infrastructure design standards are insufficient to withstand the stresses associated with increasingly severe and frequent hazardous events (DeAngelis, Briel, and Lauer 2019; NIST 2020).

One of the biggest challenges in enhancing infrastructure resilience is the mixed ownership of infrastructure systems (Crouch et al. 2014). In most communities, a mix of public and private entities own and operate infrastructure systems, and each entity typically pursues maintenance and replacement projects based on its own schedule and priorities. This challenge is, perhaps, most easily overcome following a disaster that affects multiple systems, which often highlights system interdependencies. During recovery, infrastructure owners and operators may be more willing to collaborate with each other and with other community stakeholders on complimentary projects to enhance infrastructure resilience.

The National Institute of Standards and Technology's Community Resilience Planning Guide describes a step-by-step process to help planners, local officials, and other community stakeholders assess infrastructure vulnerability and enhance infrastructure resilience through local planning activities (2020).

Outcome-Driven Recovery

Outcome-driven recovery is a problem-solving approach that recognizes that each community and disaster event is unique and, therefore, each community should have greater control over their unique recovery journey (FEMA 2020). In some cases, communities have already defined some of their recovery outcomes through pre-disaster planning efforts. In other cases, they begin defining desirable recovery outcomes as they prepare an interim recovery strategy and further refine or expand on these outcomes during a long-term community recovery planning process.

Outcome-driven recovery improves disaster financial management practices. It requires the community to identify clear and specific recovery outcomes related to its anticipated or actual recovery needs and its existing vision and goals for the future. This allows the community, its vision, and its goals to guide which funding and technical assistance is appropriate to pursue to achieve its recovery outcomes—instead of seeking funding programs first and identifying needs afterwards.

Another benefit of outcome-driven recovery is that it can align recovery efforts across different levels of government toward particular objectives. Outcome-driven recovery can be the starting point for a collaborative partnership between governments, the private sector, and residents.

Updating Plans, Regulations, and Programs

Disasters can reveal problems with existing plans and plan-implementation mechanisms. For example, they may highlight false assumptions about future conditions, an outdated fact base, or contradictory policy goals or strategies. Additionally, new community priorities and objectives often emerge during long-term recovery planning processes, and these new priorities and objectives may either complement or conflict with existing plans, regulations, or programs.

Conflicting or outdated policy goals or strategies across the local planning system can be especially problematic when a community is attempting to reduce exposure and vulnerability to disaster risk and build climate resilience. There are several tools and methods planners can use to identify policy conflicts and opportunities to incorporate or enhance resilience strategies throughout a network of plans and plan-implementation mechanisms.

Assessment Tools

Some assessment tools highlight opportunities to integrate hazard mitigation, disaster risk reduction, or climate resilience strategies across a system of plans and plan-implementation mechanisms. Other tools focus on the content of specific plans.

The Safe Growth Audit is an assessment tool designed to help planners and other community stakeholders analyze the degree to which a community's plans and plan-implementation mechanisms are protecting future development from natural hazard risks (Godschalk 2009). The tool consists of a set of questions about the hazard-related content of a local comprehensive plan, zoning ordinance, subdivision regulations, capital improvement program and infrastructure policies, and other planning interventions.

APA's Multihazard Planning Framework for Communities in the Wildland-Urban Interface includes a Planning System Audit assessment tool designed to help communities in the wildland-urban interface analyze the degree to which their plans and plan-implementation mechanisms are reducing risks associated with multiple types of hazards (2018). Like the Safe Growth Audit, the tool consists of a set of questions about the hazard-related content of local comprehensive, subarea, and functional plans; land-use and development regulations; and public investments.

FEMA's Local Mitigation Planning Handbook includes a Plan Update Evaluation Worksheet (Worksheet 7.2) assessment tool designed to help planners, local leaders, and other community stakeholders identify necessary updates to the local hazard mitigation plan (2013). The tool lists considerations for each major section of the plan:

planning process, capability assessment, risk assessment, mitigation strategy, and plan maintenance procedures.

APA's Sustaining Places: Best Practices for Comprehensive Plans (PAS Report 578) presents Comprehensive Plan Standards for Sustaining Places, a framework for improving the quality of local comprehensive plans. It describes six normative principles, two normative process characteristics, and two normative plan attributes, and it lists and defines practices for each principle, characteristic, and attribute. Several practices relate to reducing disaster and climate risks, and part of the evidence of each practice would, typically, be policy recommendations in the local comprehensive plan. The report includes a Plan Scoring Matrix assessment tool designed to help planners and other comprehensive planning process participants evaluate the consistency of an existing plan with the comprehensive plan standards.

Integration Methods

There are two closely related plan integration methods that planners can use to guide efforts to harmonize disaster risk reduction and climate resilience strategies across a network of local plans and plan-implementation mechanisms. One of these methods emphasizes spatial analysis, while the other stresses the importance of interdepartmental and interagency coordination.

The Plan Integration for Resilience Scorecard Guidebook presents a method to help planners evaluate internal plan consistency and consistency across a community's network of local plans, with respect to policy recommendations that directly affect community resilience to natural hazards (Malecha et al. 2019). Through this method, participants use plan content and spatial analysis to generate a scorecard that highlights the likely effects of individual policies—as well as the aggregate effects of policies spread across all relevant local plans—on vulnerability to natural hazards within each constituent planning district of the community.

FEMA's Plan Integration: Linking Local Planning Efforts describes a three-part method to help planners integrate strategies from the local hazard mitigation plan into other plans and plan-implementation mechanisms (2015). The first part focuses on opportunities to support hazard mitigation through various functional and subarea plans, land-use and development regulations, and the capital improvements program. The second part identifies opportunities to integrate hazard mitigation strategies throughout the local comprehensive plan. And the third part identifies opportunities to improve interdepartmental and interagency coordination to implement necessary updates.

Developing a Pre-Event Recovery Plan

While updating existing plans is an important step for communities as they transition from recovery back to a sense of normality, existing plans often say nothing about how the community will respond to the next disaster. While disaster risk reduction and climate adaptation measures can save property and lives, these measures cannot make a community immune to all disasters. Consequently, FEMA and APA (and many others) have stressed the importance of pre-event planning for post-disaster recovery.

Pre-event plans for post-disaster recovery present a framework for how a community will organize its recovery effort in the instance of a disaster. Many contemporary pre-event recovery plans also include policy recommendations to guide reconstruction and redevelopment (Schwab 2014). Depending on the organizational culture and capacity of the local government, planners may play either a leading or supporting role in developing pre-event recovery plans. In either case, it is important for planners to have a sense of specific benefits of pre-event planning as well as existing guidance to help communities prepare pre-event recovery plans.

Benefits of Pre-Event Planning

A pre-event planning process is one of the best ways to sustain a local culture of disaster awareness after disaster recovery (Schwab 2014; FEMA 2017). It allows communities to begin considering the issues that will likely occur when a disaster happens, saving precious time and resources in the long run.

Pre-event planning can complement preparedness exercises, which are currently more common. Many communities bring together emergency management and public safety personnel to practice how they would respond to different emergency situations. When communities extend this approach to recovery, planning, public works, and other key departments can establish lines of communication and responsibility that can set a precedent for resolving disputes and conflicts during the recovery process and shorten the learning curve following an actual disaster (Schwab 2014; FEMA 2017).

Additionally, pre-event planning can help communities build familiarity with sources of recovery assistance (see Module 2), and the processes for accessing assistance, without the extreme pressure of the immediate post-disaster period (Schwab 2014; FEMA 2017). It is much easier to establish recordkeeping and financial management practices before a disaster happens.

Finally, without pressure to act rapidly, planners may have an easier time designing implementing inclusive community engagement processes (see Module 4).

Pre-Event Planning Guidance

There is a growing body of resources that provide extensive guidance to communities interested in pre-event planning for post-disaster recovery. Some of these resources are aimed at a national audience, while others target communities in specific states.

FEMA's Pre-Disaster Recovery Planning Guide for Local Governments is designed to help communities prepare pre-event recovery plans that align with the Recovery Support Functions in the National Disaster Recovery Framework (2017). It highlights principles that should inform pre-event planning efforts and presents a six-step process for developing a new pre-event plan.

APA's Planning for Post-Disaster Recovery: Next Generation (PAS Report 576) takes a more holistic approach to building and sustaining capacity for local recovery planning (Schwab 2014). While it addresses both pre- and post-event recovery planning, it treats pre-event planning as the preferred approach. The report provides recommendations for developing recovery goals and policies, designing recovery planning processes, and implementing recovery plans. And it includes a model pre-event recovery ordinance as an appendix (see also Topping 2014).

The Florida Department of Community Affairs and Division of Emergency Management's Post-Disaster Redevelopment Planning: Addressing Adaptation During Long-Term Recovery is designed to help cities and counties in Florida develop pre-event plans for post-disaster recovery (2018). It presents recommendations for process design, potential strategies for different plan topics, and considerations for plan implementation. While the guide is rooted in Florida's legal framework for recovery planning, much of the guidance is broadly relevant to communities across the country.

The Hawaii Sea Grant College Program and Department of Land and Natural Resources' Guidance for Disaster Recovery Preparedness in Hawaii is designed to help counties in Hawaii prepare pre-event recovery plans that emphasize resilience and environmental protection (2019). It presents recommendations for recovery preparedness activities and builds off of guidance in the FEMA and APA resources referenced above.

The Oregon Partnership for Disaster Resilience's Post-Disaster Recovery Planning Forum: How-to Guide is designed to help communities prepare for a pre-event planning activity (2007). It stresses the importance of convening a broad and diverse set of community stakeholders before a disaster happens to better incorporate local knowledge, values, and experiences into disaster risk assessments and recovery strategies.

Key Takeaways

- Being aware of emerging themes in disaster recovery can help planners create stronger, future-proofed community plans.
- Integrating emerging themes into a community's network of plans and regulations gives planners the chance to resolve existing or potential policy conflicts that increase risk.
- Updating plans and regulations to increase disaster resilience and reduce risk reduction can protect communities from major damage and disruption.
- Having planning tools that consider future disaster needs will prepare planners to act quickly and strategically after the next disaster.
- Creating pre-event recovery plans is the first step in ensuring a smoother, more effective post-disaster recovery.

References and Resources

American Planning Association (APA). 2020a. "Climate Change Policy Guide."

———. 2020b. "Hazard Mitigation Policy Guide."

American Planning Association (APA), Chicago Metropolitan Agency for Planning, and Midwestern Regional Climate Center. 2019. *Using Climate Information in Local Planning: A Guide for Communities in the Great Lakes*. Chicago: American Planning Association.

Association of Bay Area Governments. 2021. "Pre-Disaster Recovery Planning Toolkit for Local Governments."

Association of State Floodplain Managers (ASFPM). 2014. *No Adverse Impact How-to Guide for Planning*.

Brechwald, Dana, Arrietta Chakos, Abby Hall, Suzanne Marr, Mindy Craig, and Kris Meek. 2019. *Regional Resilience Toolkit*. Washington, D.C.: Environmental Protection Agency.

Burgess, Katharine, Leah Sheppard, and Erica T. Ellis. 2018. *Ten Principles for Building Resilience*. Washington, D.C.: Urban Land Institute.

Colorado Department of Local Affairs. 2018. "Pre-Disaster Recovery Planning." In *Planning for Hazards: Land Use Solutions for Colorado*.

Courtney, C.A; Gelino, K; Romine, B.M.; Hintzen, K.D.; Addonizio-Bianco, C.; Owens, T.M.; Lander, M.; and Buika, J. 2019. *Guidance for Disaster Recovery Preparedness in Hawaii*. Honolulu, Hawaii: University of Hawai'i Sea Grant College Program and State of Hawai'i Department of Land and Natural Resources and Office of Planning.

Crouch, Sherry, Manuel Perotin, and William Cesanek. 2014. "Planning Resilient Infrastructure." Planning for Post-Disaster Recovery Briefing Papers 03. Chicago: American Planning Association.

DeAngelis, Joseph, Haley Briel, and Michael Lauer. 2019. *Planning for Infrastructure Resilience*. Planning Advisory Service Report 596. Chicago: American Planning Association.

DeAngelis, Joseph, Johamary Pena, Alexsandra Gomez, Jaimie Masterson, and Philip Berke. 2021. "Building Resilience Through Plan Integration." *PAS Memo*. January/February.

Federal Emergency Management Agency (FEMA). 2005. *Long-Term Community Recovery Planning Process: A Self-Help Guide*.

———. 2013. *Local Mitigation Planning Handbook*.

———. 2015. *Plan Integration: Linking Local Planning Efforts*.

———. 2017. *Pre-Disaster Recovery Planning Guide for Local Governments*.

———. 2019. *Pre-Disaster Recovery Planning Guide for Tribal Governments*.

———. 2020. *Disaster Financial Management Guide Guidance for State, Local, Tribal & Territorial Partners*.

———. 2020. *Building Codes Save: A Nationwide Study*.

———. 2021. "Part 2. Recovery Planning." In Community Recovery Management Toolkit.

Finn, Donovan. 2021. "Zoning and Disaster Recovery." *Zoning Practice*, July.

Florida Department of Community Affairs and Division of Emergency Management. 2010. *Post-Disaster Redevelopment Planning: A Guide for Florida Communities*.

Godschalk, David. 2009. "Safe Growth Audits." *Zoning Practice*. October.

Godschalk, David and David Rouse. 2015. *Sustaining Places: Best Practices for Comprehensive Plans*. Planning Advisory Service Report 578. Chicago: American Planning Association.

Hagerty Consulting, Inc. 2014. *Post-Disaster Recovery Planning and Redevelopment. A Guide for Georgia Communities*. Brunswick, Georgia: Georgia Department of Natural Resources, Coastal Resources Division.

Hallegatte, Stephane, Jun Erik Rentschler and Brian James Walsh. 2018. "Building Back Better: Achieving Resilience Through Stronger, Faster, and More Inclusive Post-Disaster Reconstruction." Washington, DC: World Bank Group

International Economic Development Council. 2015. "Leadership in Times of Crisis: A Toolkit for Economic Recovery and Resiliency."

Island Press. 2021. "Urban Resilience Project: Resilience Matters Download."

Johnson, Laurie, Laura Dwelley Samant, and Suzanne Frew. 2005. *Planning for the Unexpected: Land-Use Development and Risk*. Planning Advisory Service Report 531. Chicago: American Planning Association.

Malecha, M., Masterson, J.H., Yu, S. & Berke, P. (2019). *Plan Integration for Resilience Scorecard Guidebook: Spatially Evaluating Networks of Plans to Reduce Hazard Vulnerability – Version 2.0*. College Station, Tex.: Institute for Sustainable Communities, College of Architecture, Texas A&M University.

Mercer, Jessica. 2010. "Disaster Risk Reduction or Climate Change Adaptation: Are We Reinventing the Wheel?" *Journal of International Development* 22(2): 247–264.

McDonnell, Simon, Swati Desai, Daniel Berkovits, Pooya Ghorbani, Maria Jessa Cruz, Renata Silberblatt, Alexander Breinin, and Xavier Williams. 2016. *A Managed Participatory Approach to Community Resiliency: A Case Study of New York State's Response to Extreme Weather Events*. Albany, N.Y.: The Nelson A. Rockefeller Institute of Government, State University of New York.

National Hazard Mitigation Association. 2017. *Building Your Roadmap to a Disaster Resilient Future*.

National Hazard Mitigation Association. 2018. "Welcome to the Ambassador Curriculum."

Natural Hazards Research and Applications Information Center. 2001. "Chapter 8: Incorporation Disaster Resilience into Disaster Recovery." In *Holistic Disaster Recovery: Ideas for Building Local Sustainability after a Natural Disaster*. Boulder, Colo.: University of Colorado.

National Institute of Standards and Technology (NIST). 2020. "Community Resilience Planning Guide."

Oregon Partnership for Disaster Resilience. 2007. *Post-Disaster Recovery Planning Forum: How-to Guide.*

Patterson, Jacqui. 2012. "Equity in Building Resilience in Adaptation Planning." Washington, D.C.: NAACP.

PreventionWeb. 2020. "Understanding Disaster Risk: Disaster Risk Reduction & Disaster Management."

Schwab, James C., ed. 2010. *Hazard Mitigation: Integrating Best Practices into Planning*. Planning Advisory Service Report 560. Chicago: American Planning Association.

Schwab, James C., ed. 2014. *Planning for Post-Disaster Recovery: Next Generation*. PAS Report 576. Chicago: American Planning Association.

Thomas, Edward and Lincoln Walther. 2014. "Hazard Mitigation in Disaster Recovery." Planning for Post-Disaster Recovery Briefing Papers 11. Chicago: American Planning Association.

Topping, Kenneth. 2014. "Adopt a Pre-Event Recovery Ordinance." Planning for Post-Disaster Recovery Briefing Papers 08. Chicago: American Planning Association.

United Nations Office for Disaster Risk Reduction (UNODRR). 2015. "Sendai Framework for Disaster Risk Reduction 2015-2030."

U.S. Department of Housing and Urban Development. 2021. "Disaster Recovery Homelessness Toolkit."

U.S. Global Change Research Program (USGCRP). 2018. "Fourth National Climate Assessment."

———. 2021. "U.S. Climate Resilience Toolkit."


GLOSSARY

All-Hazards Approach: An integrated approach to planning that focuses on capacities and capabilities that are critical to preparedness, mitigation, and recovery for a full spectrum of emergencies or disasters. (Adapted from 81 FR 63859)

Capacity: The combination of all the strengths, attributes, and resources available within an organization, community, or society to manage and reduce disaster risks and strengthen resilience. (United Nations Office for Disaster Risk Reduction)

Cascading Impacts: A "domino effect" risk phenomenon related to increasingly interconnected systems, in which a disruption or failure of one system causes impacts that lead to additional disruptions or failures in other, dependent systems. (2020 National Preparedness Report)

Community: A network of individuals and families, businesses, governmental and nongovernmental organizations, and other civic organizations that reside or operate within a shared geographical boundary and may be represented by a common political leadership at a regional, county, municipal, or neighborhood level. (Pre-Disaster Recovery Planning Guide for Local Governments)

Disaster: A sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. (International Federation of Red Cross and Red Crescent Societies)

Hazard: A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption, or environmental degradation. (United Nations Office for Disaster Risk Reduction)

Hazardous Event: The manifestation of a hazard in a particular place during a particular period of time. (United Nations Office for Disaster Risk Reduction)

Inclusive: Including partners from various government, nongovernment, private-sector groups, and community leaders. Includes people with disabilities and others with access and functional needs, Limited English Proficiency, cultural groups, faith-based groups, and other citizens. See Whole Community. (Pre-Disaster Recovery Planning Guide for Local Governments)

Exposure: The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas. (United Nations Office for Disaster Risk Reduction)

Major Disaster: Any natural catastrophe, which in the determination of the President of the Unites States causes damage of sufficient severity and magnitude to warrant major disaster assistance under this chapter to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby. (42 U.S.C. §5122)

Mitigation: The actions necessary to reduce loss of life and property by lessening the impact of disasters. Mitigation can include, for example, community-wide risk reduction projects, improving the resilience of critical infrastructure and key resource lifelines, projects that reduce risks from specific vulnerabilities from natural hazards or acts of terrorism, and initiatives to reduce future risks after a disaster has occurred. (Pre-Disaster Recovery Planning Guide for Local Governments)

No Adverse Impact: Tools and techniques that ensure that private development, public infrastructure, and planning activities do not have direct or indirect negative consequences on the surrounding natural resource areas, private property, or other communities. (Adapted from No Adverse Impact: A Toolkit for Common Sense Floodplain Management)

Preparedness: The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters. (United Nations Office for Disaster Risk Reduction)

Recovery: The state of normalcy achieved after a disaster by planning ahead of time and making the best use of community resources. (Pre-Disaster Recovery Planning Guide for Local Governments)

Resilience: The ability of a community to anticipate, resist, absorb, respond to, adapt to, and recover from a disturbance. (Pre-Disaster Recovery Planning Guide for Local Governments)

Response: The actions taken to save lives, protect property and the environment, and meet basic human needs after a disaster has occurred. (Pre-Disaster Recovery Planning Guide for Local Governments)

Risk: The potential for an unwanted outcome as determined by its likelihood and the consequences. (Pre-Disaster Recovery Planning Guide for Local Governments)

Stakeholders: People or organizations who may be affected by a policy or action. (Pre-Disaster Recovery Planning Guide for Local Governments)

Sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their own needs. (Pre-Disaster Recovery Planning Guide for Local Governments)

Vulnerability: A physical feature or operational attribute that renders an entity open to exploitation or susceptible to a given hazard. (Pre-Disaster Recovery Planning Guide for Local Governments)

Whole Community Approach: A process that engages all members of a society (without discrimination) to achieve a shared understanding of community risks, needs, and capabilities and develops strategies that organize and strengthen communities' assets, capacities, and interests; also optimizes resources. (Pre-Disaster Recovery Planning Guide for Local Governments