RESILIENCE HUBS

Shifting Power to Communities and
Increasing Community Capacity

Kristin Baja, Urban Sustainability Directors Network (USDN)

In North American cities, a great deal of effort is needed to enhance equity-centered climate resilience.

To date, most community resilience work focuses on identifying and managing vulnerability and risk through top-down approaches that often fail to meaningfully include equity-centered strategies considering the most vulnerable populations. These current approaches also often miss opportunities to reduce vulnerability and greenhouse gas (GHG) pollution at the same time, and fail to robustly engage community members in the process of planning and acting to enhance resilience. The USDN Resilience Hub initiative works at the nexus of climate mitigation, adaptation, and equity to enhance and improve community sustainability and resilience through a bottom-up approach centered on community co-development and leadership.

Summary

Resilience Hubs are community-serving facilities augmented to:

1 support residents and

2 coordinate resource distribution and services before, during, or after a natural hazard event.

They leverage established, trusted, and community-managed facilities that are used year-round as neighborhood centers for community-building activities. Designed well, Resilience Hubs can equitably enhance community resilience while reducing GHG emissions and improving local quality of life. They are a smart local investment with the potential to reduce burden on local emergency response teams, improve access to health improvement initiatives, foster greater community cohesion, and increase the effectiveness of community-centered institutions and programs.

Moreover, Resilience Hubs provide an opportunity to build local community power and leadership. They are focal points for neighborhood revitalization that provide the resources residents need to enhance their own individual capacity while also supporting and strengthening their neighborhood and neighbors. Instead of being led by local government, they are intended to be supported by local government and other partners but led and managed by community members, community-based organizations, and/or faith-based groups.

The purpose of this document is to establish definitions and capture ideas to help community organizations, local governments, and other interested parties implement and support community Resilience Hubs. These ideas are drawn from local experiences in several Urban Sustainability Directors Network (USDN) cities including Washington DC and Baltimore. Certain features of the Resilience Hub concept, such as providing temporary shelter during emergencies, have long been in use within communities. The concept of Resilience Hubs as defined here, however, is intentionally more comprehensive in purpose and scope, focusing on preparedness, adaptation, mitigation, and equity.

This is the first of a set of guidance materials that will be developed and shared by USDN to help USDN members and others to more efficiently consider and take action on local Resilience Hubs.

Defining Resilience Hubs

Sites that make good Resilience Hubs are well-trusted and well-utilized community-serving facilities. To be successful, these facilities need to be enhanced to support residents and coordinate communication and resources before, during, and after disruption. In addition to hosting supplies, communications, and resources in the event of an emergency, they ideally serve community members year-round as a center for community-building and community revitalization.

Key Components

Community Desire and Support:

The most important factor to consider before moving forward with developing a Resilience Hub is whether there is desire and support from members of the community. Ensuring community leaders and community based organizations are involved from the very beginning of the process and have an element of ownership over the site is critical. A Resilience Hub can only be effective if community members actively engage in co-development, understand the resources and services it provides, trust and wish to visit the location and trust the people managing the site, and understand how the Resilience Hub can benefit them before, during, and after a major disruption.

The Building(s):

An existing well-used and well-trusted site (building) is the core of a Resilience Hub. The best sites are those that are in fairly good condition and can support other critical elements such as solar and energy storage systems. There are several elements to consider when identifying a good site. For example: What is the current use of the site? What is the condition of the roof? Can the roof support solar panels? Is there sufficient storage? How many people can the site support? Is the site ADA accessible? Is the site outside of the floodplain? Is the site safe for children? Is there room for pets to be safely stored? USDN has developed a full list of criteria for assessing possible Resilience Hub sites and can advise municipalities interested in learning more about the Hub development process.

Resources to Meet Community Needs During Extreme Events:

In addition to providing shelter and electricity, each Resilience Hub should maintain a supply of and provide access to freshwater and resources such as food, ice, refrigeration, charging stations, basic medical supplies, and other supplies needed in the event of an emergency. Determining the amount of food, water, and supplies to have at each site will depend on neighborhood size and the number of people likely to utilize the site. This information is determined in the co-development process and will involve outreach and engagement with community members.

Depending on the location, Resilience Hubs can also include elements such as a place to grow fresh and local food, increased tree canopy for shade and cooling, and resources for residents who choose (or are forced) to shelter in place rather than evacuate. Resilience Hubs can also provide critical communication and information functions that help educate community members about hazards; engage residents and businesses on steps they can take to respond before, during, and after hazardous events; connect members of the community to the resources necessary to prepare for and withstand the impacts from any hazard event; provide engagement and educational opportunities to enhance individual adaptive capacity; and increase energy and water efficiency of surrounding businesses and residences.

Key Components (cont)

Energy Systems:

Resilience Hubs need to host cost-effective onsite power systems capable of reliably sustaining operations during an extended power outage. While the nature and duration of power outages will vary from region to region, the system should consider an outage of up to 72 hours. This objective requires more than a one-off solution in each facility. For the Resilience Hub concept to be effective, options for installing appropriate onsite power systems must be clearly understood, scalable, and replicable.

For many reasons, the common strategy of using standby generators as a resilience strategy is not sufficient for Resilience Hubs. Standby generators have an irregular performance record during outage events and become single points of failure reliant on a ready supply of fuel, which may be unavailable during an extreme event. Standby generators can be expensive assets that only provide return in the rare case of an extended power outage. Lastly, standby generators are typically sized to meet life safety requirements or very minimal functionality and not the full functionality required of a Resilience Hub.

To meet the requirements of a Resilience Hub and increase community adaptive capacity, an onsite power system will provide economic and social value to the host facility not simply during outage events but also during normal operating conditions. A more resilient solution is a hybrid system that includes multiple types of generation, energy storage (more than a fuel tank), and advanced controls capable of dispatching the optimal mix of generation and storage. Additionally, to maximize cost-efficiency, the solution should be scalable and fit within the footprint of the setting.

One possible resilience solution is a Hybrid Resilience System (HyRS), which typically incorporates solar photovoltaic generation (PV) with an energy storage system (batteries) and firm generation (diesel or natural gas). The HyRS approach creates generation diversity, offers value during normal operating conditions, and can be more economically sized to meet full operational requirements. This approach also empowers communities with energy choice and helps to contribute to reductions in carbon emissions over time.

Among the critical considerations when fitting out a Resilience Hub is to identify critical electrical loads that must operate during a power outage. Sizing power systems to meet load requirements always involves a trade-off in cost versus capacity. An effective Resilience Hub project will include a detailed audit of the electrical loads (both usage and demand) in each facility and a strategy to maximize energy efficiency in order to avoid unnecessarily oversized systems.

Community Uses:

Resilience Hubs are enhanced community centers that are managed and supported by local residents. They have the usual components of a community center including being gathering places for group activities, sites to access information, and centers where social support services are offered. However, there are a variety of additional roles they can play to enhance community connectivity and enhance benefits, such as providing: translational services, access to health services like flu shots and diabetes screening, job opportunities/centers, locations for growing local food, spaces for before and after school programs, job training programs, and more. Resilience Hubs, defined and led in partnership with members of the community, should meet the unique needs of residents and organizations in that neighborhood. This means that no two Resilience Hubs are likely to be identical.

Key Components

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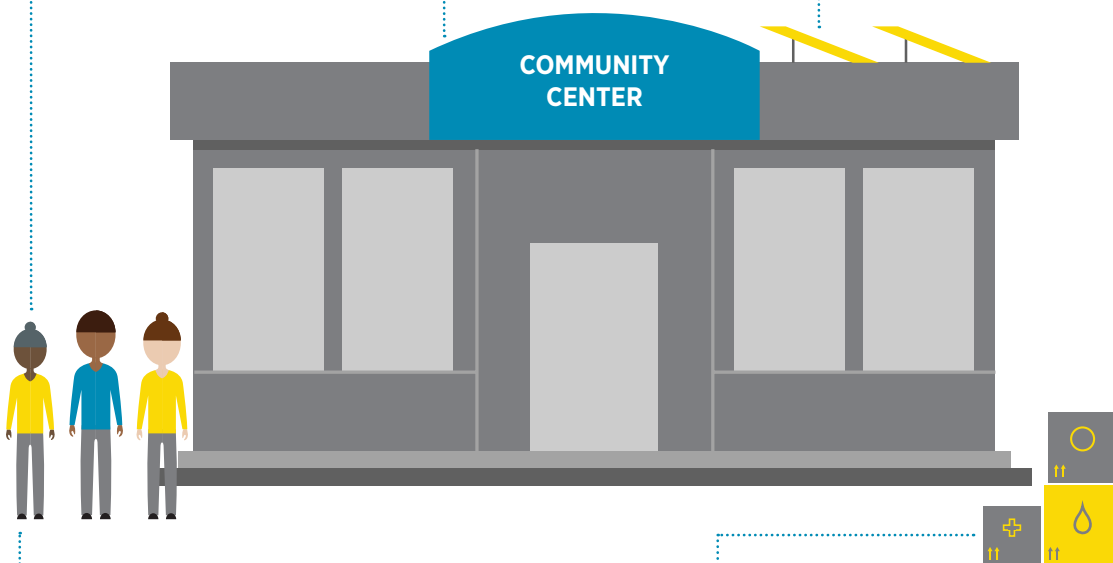
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COMMUNITY CENTER

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Background and Context

In all U.S. cities, massive disparities exist between people and neighborhoods. Communities of color and lower income communities suffer disproportionate impacts of climate change and yet are often the last communities supported in the event of an emergency. These communities also generally have less access to resources to respond and recover. Achieving community resilience requires equitably supporting all members of the community, and prioritizing those who experience greater risk to their homes, their jobs, their communities, and their health.

Defining Resilience

Resilience Hubs offer a mechanism to help enhance community resilience: the ability to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions, while enhancing quality of life, reliable systems, economic vitality, and conservation of resources. Resilience requires community capacity to plan for, respond to, and recover from stressors and shocks. Shocks are major disruptions such as storms, heat waves, derechos, or other extreme weather events - often intensified by climate change - that can disrupt a variety of critical systems. Stressors refer to the everyday issues that make people and communities more vulnerable to those shocks, including epidemic drug use, poverty, aging infrastructure and unemployment - all of which are exacerbated by shocks and make it more difficult to respond and recover. Community resilience can be enhanced through greater social cohesion, strong partnerships, and greater access to resources such as food, transportation, shelter, and other services. A more resilient community also includes consideration of foundational elements of community quality of life, such as greater access to jobs, more affordable housing, strengthening infrastructure, and stronger social support systems.

An Opportunity at the Nexus of Resilience, Carbon Reduction, and Equity

Municipalities around the world are seeking opportunities to advance projects that reduce GHG emissions while also reducing risk and vulnerability, and enhancing equity. Too often, municipalities approach these three priority areas separately, missing out on chances to prioritize and enact changes that can solve multiple problems and create more powerful community benefits. Resilience Hubs offer a unique and proactive opportunity to advance local goals related to equity, GHG reductions, and adaptation in a manner that meets other important community needs. Moreover, Resilience Hubs can help to shift power to communities and enable them to plan, react, and recover without reliance on local government. Community-driven climate resilience is a process where community members most impacted by racism, classism, pollution, and political disenfranchisement hold power in the planning and implementation processes to ensure their priorities and concerns are integrated, prioritized, and addressed.

Concept Development

Resilience Hubs were born out of an individual preparedness initiative developed and managed by USDN's Climate Resilience Officer, Kristin Baja, when working for the City of Baltimore. The initiative centered on helping residents develop emergency plans and build their own emergency kits, while also identifying their neighborhood assets and shortcomings. The individual preparedness efforts were concentrated in neighborhoods most vulnerable to the impacts of climate change which, unsurprisingly, had the highest percentage of low income residents and people of color. Through nearly 40 in-depth engagement sessions, the following concerns and shortcomings were identified by residents in the City's most vulnerable neighborhoods: (1) lack of access to resources to react and respond in a hazard event; (2) lack of financial means to purchase backup food and water supplies; (3) little or no access to a vehicle to evacuate and dependence on unreliable transit systems; and (4) no out of area contacts of family members.

Concept Development (cont)

Additionally, many community members also expressed a deep distrust of city government and thus were uninterested in utilizing existing community shelters in the event of an emergency.

Based on this input, it became clear that residents wanted and needed a way to plan for, respond to and recover from extreme events on their own and without having to rely on government intervention and/or support.

Community Revitalization through Resilience-Building

Resilience Hubs providing year-round community services can serve as focal points for neighborhood revitalization. Historically, the focus of community revitalization has been the development of new economic centers and housing opportunities. That method often emphasizes partnerships between city government and developers and leads to unintended outcomes like gentrification. Centering community revitalization around the core concept of resilience can move power into the hands of residents, local businesses, and community-based organizations without leading to displacement.

Designing and Supporting Resilience Hubs

Resilience Hubs can help shift power from city government to residents and community-based organizations within a specific neighborhood or set of neighborhoods. Local government may play a role, but Hubs should be co-developed and managed by trusted community organizations and residents. Hubs can increase community adaptive capacity and resilience by providing residents with direct management and access to resources at sites they identify as well-trusted and well-utilized in their community (e.g. community centers, faith-based organizations, recreation centers). They provide trusted locations for residents to gather and gain access to resources year-round while also providing opportunities for local governments and partners to coordinate adaptation, GHG reduction, community-building, communication, and public service efforts through one neighborhood input point.

Partners

In order for hubs to be most effective, they require a number of implementation partners and supporting partners to continue functioning properly year-round.

Community Members and Community-Based Organizations:
Community members and Community-Based Organizations (CBOs) are critical to the success of any Resilience Hub. Hubs provide city governments with an opportunity to partner with CBOs in a more meaningful way. The model relies on community leaders and CBOs to identify potential locations, manage sites, support the sites in an event of an emergency, and continue to work with local partners and the city to enhance site function. Additionally, community partners can lead the project through active guidance on gaps and needs and by collaborating with city staff and external partners on all aspects of the project.

Examples of CBO's that can play a role in Resilience Hubs include:

- **Urban Leadership Groups:** Organizations that already play a role in before and after-school programs and summer programs for youth while also supporting stronger families and social cohesion.

- **Resource & Service Providers:** Organizations that help lower income residents gain access to food, clothing, medical care, and social services within their neighborhoods. They focus on the material resources needed to survive and grow.

- **Organizing and Policy Change Advocates:** Community organizing and advocacy groups that manage programs intended to change policies, practices, and attitudes while creating models for coordinated advocacy work.

- **Faith-based Groups:** Organizations that work with faith communities to address concerns and needs while strengthening surrounding communities and the congregation.

Local Government

Strong relationships and trust between community leaders and local government can greatly increase the likelihood of community buy-in and support. A number of city agencies work hard to develop and sustain relationships throughout their city.

Typical city agencies that are important to involve in Resilience Hub development include:

- **Health Department:** Health officials can connect Resilience Hubs to health preparedness initiatives, public health programs and initiatives, and existing efforts in focus neighborhoods.

- **Emergency Management:** Hubs are likely to reduce the burden on emergency response teams and non-emergency calls since residents will have a place to go to access resources in the event of an emergency. Emergency Management can provide connection to police, fire and other community support services such as Community Emergency Response Teams (CERT). Emergency Management can also support portions of the resilient energy systems.

- **Planning Department:** Community Planners often have strong ties to community leaders and CBOs within certain sections of a city or throughout the entire municipality. Utilizing their relationships and expertise will help enhance Hub functions.

- **Public Works:** Public Works often includes energy and water services. Public Works officials are critical to include for renewable energy opportunities, enhanced water system support, and stormwater/surface water management in and around the sites.

- **Housing Department:** Housing provides a connection to renewable energy projects and programs, as well as ideas for potential sites including senior housing, public housing, or other potential locations.

- **General Services Department:** General Services may play a role in supporting facilities that are government-owned or -managed such as city recreation centers.

- **Transportation Department:** It is important to connect with transportation teams who can identify priority roads for clearing snow and/or debris around Resilience Hub locations so that external partners can easily access and support the sites in the event of an emergency.

- **Sustainability Department:** Sustainability Departments typically play a connector role for city agencies as well as partners and neighborhoods. They are also typically the lead for initiatives around local food, green infrastructure, and climate change.

Developing an Advisory Committee that includes many of the key city agencies listed above will provide stronger support for the development of a Resilience Hub and aid in identification of how Hubs can better coordinate mitigation and adaptation efforts in a way that increases the resiliency of neighborhoods and residents and reduces the burden on city agencies.

Private Partners

Private partners can provide much needed capacity and support for Resilience Hubs. Many of the best community centers and capacity building organizations are owned and managed by non-profits or institutions that focus on developing more equitable and sustainable communities. In most communities, a strong private partner can provide potential sites, supplies, staffing support, job creation and training support, funding support, or act as the primary implementation partner. Often, private partners can facilitate development of a Resilience Hub more quickly than local government, which can help facilitate stronger community support.

Example partners can include:

- **Job Training and Skill Development Centers:** Centers can provide apprenticeships pre-professional training opportunities, special skill development opportunities, and skill development for formerly incarcerated individuals with a specific focus on preparing community members for part and full-time positions within their neighborhood or municipality.

- **Energy and Weatherization Organizations:** These groups can provide direct support to schools, churches, community centers, small businesses and residents interested in retrofitting their buildings to become more energy efficient. These organizations can help with education, outreach, and often with simple measures to make a Resilience Hub more efficient and effective.

- **Institutions:** Institutions often play a key role in supporting communities and neighborhoods. They often provide additional capacity, expertise, and efficiency in community resilience-building. Institutions can include hospitals, large businesses, and military groups.

Design Process

Community-based organizations and local governments interested in launching a local Resilience Hub should utilize the USDN Resilience Hub business plan when getting started. The business plan will be available to cities and partners in late 2018 and will provide an extensive list of site criteria, a detailed timeline, a list of suggested partners, finance tools and strategies, suggested neighborhoods or areas based on vulnerability and risk, and additional details for scoping out the entire project with an equity lens.

Cities and partners interested in getting started sooner can begin by bringing together an advisory committee/planning team and consulting with members of the community most directly impacted by disruptions and extreme weather events, if they are not already a part of the team. This begins the process of establishing relationships, starts conversations to determine there is need for a Resilience Hub in the community, and ensures community members have interest in supporting and using a Resilience Hub. This also shows that leaders are designing the process to ensure community members' voices will be heard and to address their concerns, desires, and future needs.

Next Steps

The purpose of this document is to establish definitions and capture ideas to help community organizations, local governments, and other interested parties consider opportunities to design and support local Resilience Hubs. These ideas are drawn from local experiences in several cities, all in different phases of project implementation.

This is the first of a set of guidance materials that will be developed and shared by USDN to help members and others more efficiently consider and take action on local Resilience Hubs.

USDN plans to roll out the following support documents in 2018:

- Resilience Hub business plan template which includes guidance on finance, training, management, operations, and workshop co-development.

- Case studies on existing Resilience Hubs.

- An assessment of solar and storage hybrid solutions that best fit the type of buildings that are typically utilized for community hubs. USDN is working with a solar project manager and battery backup team to evaluate options and identify an optimal onsite power system that is operationally effective, cost-efficient, and scalable for deployment in multiple municipalities.

- Guidance to help any local government or community partner assess the needs and feasibility of moving forward with an appropriate onsite power system.

USDN helps a wide range of cities and partners to implement pilot projects in communities throughout the United States and Canada. If your organization or municipality is interested in working with USDN on the Resilience Hub initiative, please contact Kristin Baja, USDN Climate Resilience Officer, at kristinbaja@usdn.org.