ATTACHMENT 6: RESILIENCY PRIORITIZATION CRITERIA EXPANDED

Colorado Resiliency Prioritization Criteria

The 2015 Colorado Resiliency Framework defines nine resiliency prioritization criteria (see Figure 1) intended to enable State departments and agencies to prioritize resiliency strategies so that limited resources can be leveraged for multiple, triple-bottom-line returns. This attachment to the Resiliency Playbook provides expanded definitions and discussion of the purpose and intent of each criteria. This attachment also includes questions that State departments and agencies can consider in the process of evaluating grant proposals or other proposed project.

Co-Benefits:

Provide solutions that address problems across multiple sectors creating maximum benefit.

Cross-sector Strategy: Develop a statewide guide and online resource on how to assess, analyze, and integrate all hazards data into local government land use planning.

Project Example: Develop model codes.

Innovation:

Advance new approaches and techniques that will encourage continual improvement and advancement of best practices serving as models for others in Colorado and beyond.

Cross-sector Strategy: Explore the use of captured biogas produced in the natural wastewater treatment process from wastewater treatment plants as a continual (though limited) and emergency backup energy supply.

Project Example: Conduct research, then design and build a model plant using biogas as an alternative fuel and backup.

High Risk and Vulnerability:

Ensure that strategies directly address the reduction of risk to human well-being, physical infrastructure, and natural systems.

Cross-sector Strategy: Encourage local governments to develop floodplain standards that prohibit future development in flood plains through a public/private partnership between state agencies and associated private or non-profit partners.

Project Example: Create a statewide risk and vulnerability assessment tool.

Adaptive Capacity:

Include flexible and adaptable measures that consider future unknowns of changing climate, economic, and social conditions.

Cross-sector Strategy: Work with local planners, residents, and builders to incorporate water and energy-efficiency measures into existing and new homes.

Project Example: Adopt performance-based energy and water building codes for all new housing, and provide labeling for all existing housing for renters and buyers.

Economic Benefit-Cost:

Make good financial investments that have the potential for economic benefit to the investor and the broader community both through direct and indirect returns.

Cross-sector Strategy: Incorporate risk and resiliency analyses into funding decisions, including state grant programs.

Project Example: Develop resiliency design standards and incentivize their application in projects utilizing public funds.

Harmonize with Existing Activity:

Expand, enhance, or leverage work being done to build on existing efforts.

Cross-sector Strategy: Continue to engage community stakeholders to determine resiliency needs and priorities in watersheds.

Project Example: Expand on the current watershed-wide collaborative focus of 75 watershed groups to include a focus on all hazards.

Social Equity:

Provide solutions that are inclusive with consideration to populations that are often most fragile and vulnerable to sudden impacts due to their continual state of stress.

Cross-sector Strategy: Promote and educate decision makers and program managers about the value of and the opportunities for using the Community Inclusion mapping project.

Project Example: Integrate Community Inclusion map analysis into planning and funding decisions.

Long-Term and Lasting Impact:

Create long-term gains to the community with solutions that are replicable and sustainable, creating benefit for present and future generations.

Cross-sector Strategy: Establish a new resiliency funding bank to support lapses in current funding opportunities.

Project Example: Create the Colorado Community Resiliency Partnership Fund.

Technical Soundness:

Identify solutions that reflect best practices that have been tested and proven to work in similar regional context.

Cross-sector Strategy: Develop guidance and share best practices to help communities plan for the potential impacts of changing risks and hazards and incorporate this information into policies and actions in comprehensive and other plans.

Project Example: Develop resiliency design and policy guides and a case study database.

Figure 1 Nine State Resiliency Prioritization Criteria

Adaptive Capacity

Definition

Incorporate flexibility, lessons learned, and transparency into and projects so that they can better accommodate both anticipated and unanticipated future events, including changing climatic, economic, and social conditions. Adaptive capacity includes skills, actions, and measures that increase people's ability to make decisions at a variety of levels. It includes building flexibility, modularity, and redundancy into systems and services to ensure continuity under stress or shock.

Criterion Purpose and Intent

Adaptive capacity strengthens the ability of systems, people, and institutions to deal with changing conditions, either to accommodate negative impacts or to take advantage of positive ones. Building decentralized and responsive projects is critical for ensuring effectiveness and sustainability as things change.

By integrating these measures, projects can ensure that vital programs will continue to be effective regardless of the change that occurs. Measures can target social systems like education and healthcare, ecological systems like rivers and forests, and physical systems like highways and housing. The ultimate goal of this criterion is to ensure that in planning a project, consideration is given to future uncertainty and reducing future risk.

Questions for Consideration

The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will fulfill the Adaptive Capacity criterion and support the implementation of the Colorado Resiliency Framework.

1. What measures are included that prepare for or adapt to uncertainty and changing climate, social and economic conditions?
2. Does the project develop skills, actions, and measures that increase the flexibility of individuals, organizations or communities to respond to unanticipated changes?
3. How have past challenges informed and improved the development of this project so that it can better respond to future uncertainty?
4. What will it take to modify the project or policy in the future?

Resources

- "*After Record-Breaking Rains, a Major Medical Center's Hazard Mitigation Plan Improves Resilience*", U.S. Climate Resilience Toolkit. https://toolkit.climate.gov/case-studies/after-record-breaking-rains-major-medical-centers-hazard-mitigation-plan-improves

- "*Catalyzing Investment and Building Capacity in Las Cruces*", U.S. Climate Resilience Toolkit. https://toolkit.climate.gov/case-studies/catalyzing-investment-and-building-capacity-las-cruces
- "*Health Care Facilities Maintain Indoor Air Quality Through Smoke and Wildfires*", U.S. Climate Resilience Toolkit. https://toolkit.climate.gov/case-studies/health-care-facilities-maintain-indoor-air-quality-through-smoke-and-wildfires
- **Climate Adaptation: The State of Practice in U.S. Communities** (2016). Vogel, J., Carney, K. M., and Smith, J. B. https://kresge.org/sites/default/files/library/climate-adaptation-the-state-of-practice-in-us-communities-full-report.pdf

Co-Benefits

Definition
Provide solutions that address identified problems and create additional benefit beyond the original intended focus. Additional benefits could include mitigation, adaptation, cost-savings, increased equity, natural resource enhancement, etc.

Criterion Purpose and Intent
When planning or selecting projects, give preference to those that deliver not just the intended results, but also produce other desirable outcomes. A team approach to evaluating proposals can be used to bring in a variety of perspectives from a range of stakeholders, helping you identify co-benefits. Considerations could include elements such as timeframe of effects (short, intermediate and long-term), geography (local, regional, national, and global), cost of implementation (cost-benefit), and how the project fits with the local context, broader policies, and local, regional, and state goals. Applying a holistic analysis of the consequences and outcomes of a potential project can help show where you can reap unintended benefits for the same level of effort and/or where you can find natural allies.

Questions for Consideration
The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Co-Benefits criterion and support the implementation of the Colorado Resiliency Framework.

1. What different types of benefits is this project expected to produce? Consider potential social, housing, health, economic development, natural resources, and infrastructure benefits.
2. If you are seeking to achieve goals in a particular area (housing, health, economic development, natural resources, or infrastructure), how does the project positively impact other areas?
3. Are there ways to adapt your proposal to generate co-benefits or avoid potential negative consequences?

Resources
- Jaimie Hicks Masterson, Philip Berke, Matthew Malecha, Siyu Yu, Jaekyung Lee and Jeewasmi Thapa. (2017) Plan Integration for Resilience Scorecard Guidebook. Texas A&M University. Funded by the U.S. Department of Homeland Security, Coastal Resilience Center under Award Number: 00313690.

Economic Benefit-Cost

Definition

Make financial investments that result in direct and indirect benefits to the community greater than the costs of producing them. Note that economic benefit-cost is broader than financial benefit-costs, which measures only the monetary costs and benefits of a project, not the wider effects beyond the project itself. Many programs that build resilience produce benefits beyond just paying for themselves.

Criterion Purpose and Intent

Benefit-cost analyses are used to show whether a project is "worth it". Most commonly they are used to compare competing projects: which one delivers the best returns for money spent. Note that there is a difference between economic and financial benefit-cost analyses. A financial benefit-cost analysis is a narrower evaluation. For example, take upgrades to hospital facilities:

- A financial benefit-cost analysis may show that the hospital administration will recoup the costs of the upgrade with reduced maintenance costs and increased revenue from attracting more patients.
- A wider economic benefit-cost analysis could show that even if the hospital upgrade will not pay for itself, improved health outcomes of residents, and attraction of outside businesses to the area, may produce a net economic benefit to residents.

Note also that this is not a social benefit-cost analysis. There may be many criteria beyond economics for accepting or rejecting a project, such as historic preservation, increasing social equity, beautification of a neighborhood or the environment. Economic benefits do not accrue to all social groups equally: it is necessary to go beyond the numbers to ask who benefits and how, and which groups are disadvantaged by a proposed change. Engaging a variety of stakeholders in the analysis can tease out who benefits and how, and to what extent stakeholders value those benefits.

Questions for Consideration

How do we know that a proposed project will meet the intent of the State's resiliency criteria and support implementation of the Colorado Resiliency Framework? The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Economic Benefit-Cost criterion.

1. Will the program/project produce more economic benefits than it costs to implement it?
2. Who will benefit from the changes?
3. Are the benefits sustainable in a wide variety of physical and social conditions?

4. Does the benefit-cost analysis incorporate projections of future climate and social conditions, or just historic conditions?

Resources

- Institute for Sustainable Communities. (2013) Vermont's Roadmap to Resilience: Preparing for Natural Disasters and the Effects of Climate Change in the Green Mountain State.
- ISET Participatory Cost Benefit Assessment

Harmonize with Existing Activity

Definition

Create solutions that consider, expand, and leverage existing activities to reduce potential conflicts, maximize efforts, and best utilize resources. Harmonizing solutions with existing activities relies on the consideration of relevant plans, projects, and local resources that support success. It helps solidify a path forward, reduces redundancy with other efforts, and aligns the activity with a community's goals.

Criterion Purpose and Intent

During the planning phases of a project, it is imperative to consider other plans, policies, or activities that may affect project implementation. This criterion is intended to ensure projects consider the current local efforts that may derail or support implementation. Projects should consider, for instance, a community's Comprehensive Plan and other relevant plans, policies, completed efforts, and upcoming projects. In doing so, projects will be able to better identify a plausible path forward for successful implementation. This understanding also will allow projects to build upon any related efforts and utilize existing resources to more effectively and efficiently maximize outcomes.

In addition, this criterion will help projects remain aligned with a community's goals and aspirations for the future. Aligning projects with a community's values and culture helps create buy-in from local stakeholders. When projects are framed with the local community in mind, community members are more likely to take ownership and ensure continued success throughout the lifetime of the project.

Questions to Consider

How do we know that a proposed project will meet the intent of the State's resiliency criteria and support implementation of the Colorado Resiliency Framework? The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Harmonize with Existing Activities criterion.

1. How does the project build on similar activities underway or recently completed?
2. How have the relevant stakeholders involved been consulted to maximize efforts or reduce potential conflicts in the program?

Resources

- Colorado Department of Local Affairs and University of Colorado Denver. n.d. "Planning for Hazards: Land Use Solutions for Colorado." Available at: https://planningforhazards.com/home

- Colorado Resiliency Office. 2015. “Colorado Resiliency Framework.” Available at: https://sites.google.com/a/state.co.us/coloradounited/resiliency-framework

High Risk and Vulnerability

Definition

Projects and programs recognize areas of high risk and identify vulnerable populations/communities, in particular critical services or populations that are at higher than average risk or would be particularly vulnerable if impacted. Interventions work to directly reduce risk to human well-being, physical infrastructure, and natural systems and address factors that contribute to social vulnerability through fostering development of social, human and financial assets. In assessing high risk and vulnerability, attention should be paid to areas where failure in one aspect of a system can lead to cascading failures, both physical and social, or where hard thresholds separate safety from catastrophic damages, for example overtopping a levee.

Criterion Purpose and Intent

Projects should be informed by a comprehensive understanding of how risk and vulnerability will affect human well-being, physical infrastructure, and natural systems. Ensuring that projects and strategies incorporate measures that reduce risk and vulnerability is key to protecting communities, livelihoods, and infrastructure. Programs may be located within one sector or area, but risk and vulnerability are often cross cutting and can occur at multiple levels (local, regional, state, etc.). Projects should include assessments of physical exposure and environmental hazards as well as factors that contribute to social vulnerability. Identifying contextual factors that place communities at risk can inform strategies and ensure that they are addressing relevant areas of risk and vulnerability. There are many factors that contribute to social vulnerability, some of which include income, ethnicity, gender, and age.

Questions for Consideration

The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the High Risk and Vulnerability criterion.

1. What risks and vulnerabilities does the project address (community, economic, health and social, housing, infrastructure, natural resources)?
2. What strategies does the project use to reduce risks and vulnerabilities to the community, economic, health and social, housing, infrastructure, and natural resources sectors?
3. How do those strategies take into account the specific vulnerable populations/communities that will be impacted?

Resources

- Colorado Natural Hazards Mitigation Plan, Colorado Department of Homeland Security and Emergency Management, https://www.colorado.gov/pacific/mars/colorado-natural-hazard-mitigation-plan
- Colorado Mitigation Best Practices, Colorado Department of Homeland Security and Emergency Management, https://www.colorado.gov/pacific/mars/colorado-mitigation-best-practices

Innovation

Definition
Advance new approaches and techniques that will encourage continual improvement serving as models for others in Colorado and beyond. Innovative systems are flexible and able to learn from experience. They allow space for trying out new ways of working, often in a decentralized manner, with variations being tried in different places and times. Innovative systems have few barriers to setting up pilot policies and programs, and existing barriers can be changed following clear procedures.

Criterion Purpose and Intent
In view of the inherent uncertainty and change in the world, programs or policies that do not evolve, or are difficult to change, decrease the ability of people and organizations to respond to changing needs. Resilient systems have the ability to change how they are working in the face of new conditions, rather than being stuck in the same mode. For example, requirements that lock in certain principles – such as tax policy – may work well at first, but can handcuff policy makers when conditions change in the future, and make things worse.

Key to innovation is the ability of an organization to systematically learn from its past experiences, and leverage this learning to inform future decision-making. Innovative organizations facilitate the generation, exchange, and application of new knowledge, and encourage people at all levels to come up with and try out new ideas. Resilient programs modify standards or norms based on emerging evidence, rather than seeking permanent solutions based on the status quo. To successfully accomplish this, rules and procedures should be flexible and modifiable.

Questions for Consideration
How do we know that a proposed project will meet the intent of the State's resiliency criteria and support implementation of the Colorado Resiliency Framework? The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Innovation criterion.

1. How does this project change the way things have been done in the past?
2. Does the project rely on or advance new approaches, techniques, or best practices?

Resources
- Lean Program, State of Colorado, https://www.colorado.gov/pacific/performancemanagement/lean-program
    - Lean Model Tools and Methods, https://drive.google.com/file/d/0B-yDiMcBmTmhdl9jTXlCUGIzVXc/view

Long-term and Lasting Impact

Definition

Provide solutions that address the current needs of the community as well as the future needs of the community. Creating long-term and lasting impact requires projects that not only address existing problems, but also consider how projects will continue to succeed under changing climate conditions, fluctuations in economic vitality, and shifts in the political landscape. It enhances project benefits by providing sustainable improvements for both present and future generations.

Criterion Purpose and Intent

At its most basic level, this criterion is meant to ensure that projects and strategies with short-term impacts that may shortly become obsolete are not funded. Planning for future benefits as well as present benefits is an important mindset to adopt when considering a project's long-term and lasting impact. Creating long-term and lasting impact for projects ensures that resources are allocated responsibly. It creates resiliency by building a plan or system that adapts well to change. Changes in the current landscape could result from climate conditions, man-made or natural disasters, economic downturn, or shifting political priorities. Projects should make an effort to predict or forecast future events and community needs. To create long-term and lasting impact, projects must go beyond simply creating plans and systems that remain steadfast in these scenarios. Instead, projects should be designed such that they not only survive but also continue to thrive, enabling future generations to reap benefits as well.

Questions to Consider

How do we know that a proposed project will meet the intent of the State's resiliency criteria and support implementation of the Colorado Resiliency Framework? The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Long-Term and Lasting Impact criterion.

1. How will needs of the community change in the future?
2. How might the project/program be adapted to address both current and future climate, social, and economic priorities?

Resources

- Colorado Department of Local Affairs and University of Colorado Denver. n.d. "Planning for Hazards: Land Use Solutions for Colorado." Available at: https://planningforhazards.com/home
- Colorado Resiliency Office. 2015. "Colorado Resiliency Framework." Available at: https://sites.google.com/a/state.co.us/coloradounited/resiliency-framework

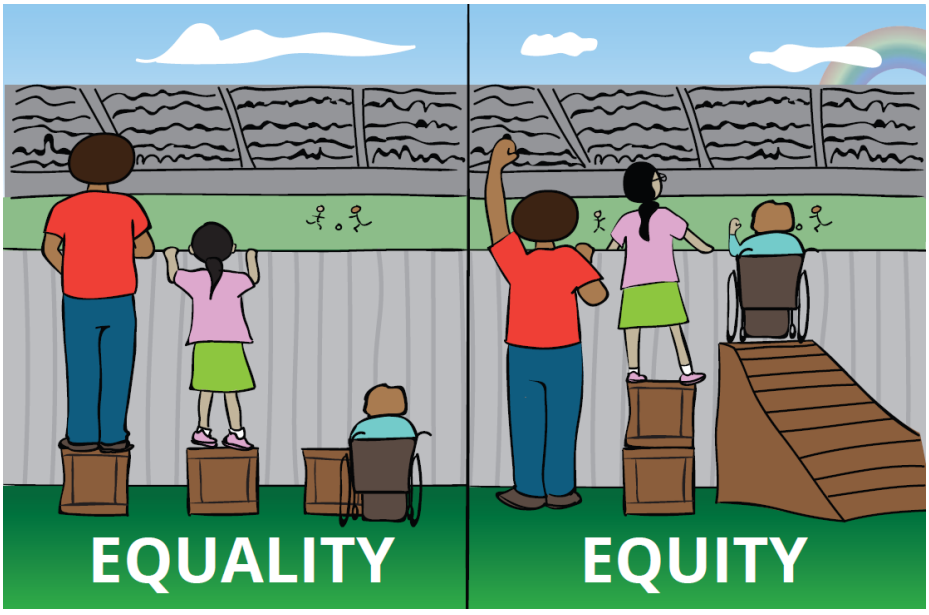
Social Equity

Definition

Provide inclusive processes and solutions that create opportunities for everyone, regardless of who they are or where they come from, to thrive through eliminating barriers, considering historical injustices, and engaging community leaders in decision-making. - *Adapted from the Colorado Office of Health Equity definition of equity (https://www.colorado.gov/pacific/cdphe/ohe)*

Figure 2 "To understand equity, it is important to distinguish it from equality. Equality implies that each individual or unit should receive the same...Equity focuses on eliminating differences between groups, when those differences can be addressed." (Source: http://www.equitytool.org/equity/)

Criterion Purpose and Intent



As defined by the Colorado Office of Health Equity, equity is about environmental justice, creating systems where everyone can thrive, health, and transforming the built environment, as well as our institutions and systems. More equitable outcomes are not just a desired result of a project, but something that should be considered throughout the planning process, and this criterion is intended to support engagement of the community at key project milestones. Oftentimes members of communities that have been traditionally under-represented in project development are the same community members that could be disproportionately impacted by the project. Addressing equity in the planning, design, and implementation phases of a project supports checking our assumptions, framing data in the context of the community's lived experience, fostering authentic community engagement, and supporting performance measurement and long-term evaluation of equity outcomes.

Questions for Consideration

How do we know that a proposed project will meet the intent of the State's resiliency criteria and support implementation of the Colorado Resiliency Framework? The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Social Equity criterion.

1. Was an equity impact assessment conducted or an equity lens applied to this project to assess how the action might impact groups of people most likely to suffer preventable adverse consequences?
2. To what extent was community wisdom/experience included in design and decision-making for this effort? How does the project incorporate the voice of communities facing inequities?
3. Does the project include resources to build community capacity?

Resources

- Equity Action Guide, Colorado Department of Public Health & Environment, https://www.colorado.gov/pacific/cdphe/equity-action-guide
- Sweet Tools to Advance Equity, Colorado Department of Public Health & Environment
    - Checking Assumptions to Advance Equity, https://drive.google.com/file/d/13lGpyKMMoxxIdXEn4pnrRJ0jvfO1UFEV/view
    - Authentic Community Engagement to Advance Equity, https://drive.google.com/file/d/1d9g0NUzoytiZdtSPDK7Y0DMQUIIHUpFA/view
    - Framing Data to Advance Equity, https://drive.google.com/file/d/1ToIm5W5lp1w3zSQRvoOpwn4is1_smQdL/view
    - Measuring Performance to Advance Equity, https://drive.google.com/file/d/1NggNvgF_b3Cr41woQuFPbkOS7_o5Fpfg/view
    - Designing Program Evaluation to Advance Equity, https://drive.google.com/file/d/1Vv4UtvxwSMd67aEUpytCJRiZYFvn9w4L/view
- Equity and Empowerment Lens, Multnomah County, Oregon, https://multco.us/diversity-equity/equity-and-empowerment-lens
- Spectrum of Public Participation, International Association of Public Participation (IAP2), https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

- Community Resilience + Equity, Public Health – Seattle and King County, https://kingcounty.gov/depts/health/emergency-preparedness/Community-Resilience-Equity.aspx

Technical Soundness

Definition
Provide solutions that rely on verified research, reflect best practices, and have proven successful in similar context. Technical soundness elevates the integrity of the plan or project and increases the likelihood of achieving the desired outcome.

Criterion Purpose and Intent
When planning or selecting projects it is important to rely on solutions and methods that have been tested and have proven to work in similar regional context. Technical soundness lends validity to a plan or project. It provides valuable lessons learned and highlights best practices employed by other regional parties with similar climatic, economic, and social challenges.

Technical soundness provides evidence that enables decision-makers to establish a clear plan, assess indicators of success, and avoid potential mishaps. Project teams who employ technical soundness throughout planning will be better equipped to identify opportunities and assign resources accordingly to maximize benefits. In practice, it ensures that project resources are dedicated to the most effective and efficient activities and guarantees that each task clearly aligns with the overall project goals.

Questions to Consider
How do we know that a proposed project will meet the intent of the State's resiliency criteria and support implementation of the Colorado Resiliency Framework? The questions below are examples of questions that could be included in applications for grant funding to demonstrate that a proposed project will achieve the Technical Soundness criterion.

1. Does the approach rely on current best practices in the field?
2. If the project is an innovative one where best-practice has not yet been established, is the approach based on case studies that provide a road map for success?
3. Do you have measurable indicators to assess performance and success that are directly connected to the desired outcomes (i.e., metric and timeline benchmarks)?

Resources

- Colorado Department of Local Affairs and University of Colorado Denver. n.d. "Planning for Hazards: Land Use Solutions for Colorado." Available at: https://planningforhazards.com/home
- Colorado Resiliency Office. 2015. "Colorado Resiliency Framework." Available at: https://sites.google.com/a/state.co.us/coloradounited/resiliency-framework

- Gothberg, June and Brian Molina. 2017. “Planning for Results: Technical Soundness Feedback.” National Technical Assistance Center on Transition. Available through the Colorado Department of Education at: https://www.cde.state.co.us/cdesped/powerpoint_ntact_webinar_2017-10-11