

Community Resilience Assessments & Action Guides

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Executive Summary

Introduction

This capstone is an independent community resiliency assessment tool created for the Colorado Resiliency Office, or the CRO. The office, part of the Colorado Division of Labor and Affairs, is a state agency dedicated to promoting resiliency, or “the ability to adapt to changing conditions and rapidly recovery from disruptions due to emergencies.” The assessment tool should function as a community-level survey that can be completed by cities of any size and by officials with no particular expertise in planning.

This assessment tool is part of a larger effort by the CRO to map Colorado’s statewide and regional risks, to include natural hazards and social vulnerabilities. In particular, the CRO hopes that a large-scale analysis of risks will help the office target rural, underserved and less well-resourced communities for its work. Research suggests that local resiliency assessments are crucial assets for communities that

lack the planning staff or expertise to run a resiliency planning process. Ideally, a resiliency assessment provides communities with a roadmap to incorporating resiliency into their existing or future plans.

This tool aligns with the CRO’s 2020 framework update, which identified six areas of resiliency: Future-Ready Economy and Workforce; Climate Change and Natural Hazards; Building and Infrastructure; Agriculture and Food Security; Housing Attainability; and Community Capacity. This capstone has three parts: research of existing assessment tools and recommendation of a tool; creation of the assessment tool; and a pilot program with a local community to get feedback on the tool.

Research

As the world grapples with a worsening climate crisis and increased severity and frequency of natural disasters, resiliency has emerged as a key concept for sustainability and disaster

recovery. Resiliency's reach is broad, touching economics, public health, food security, housing access and employment, among other indicators. Resilient communities, therefore, anticipate weaknesses in any of these areas and resolve them. Internationally, community assessment tools have emerged a popular method of introducing communities to the concepts of resilience.

Figure 1: CRO Framework Priorities



For this capstone, I researched a series of community assessment tools to help identify the best model for the CRO's own resiliency toolkit. The results of this research were presented to

the CRO in a spreadsheet and presentation. My research found that assessment tools can follow one of two typical formats: scorecard or planning processes. Scorecard formats use a series of questions to guide communities through an understanding of resilience; each question typically ranks the answer on a scale, giving the community a resiliency score. Planning processes, on the other hand, guide communities through a series of workshops that introduce them to resiliency concepts and encourage the incorporation of resiliency into existing or future plans. These two tools rely on important similarities -- both share similar goals and a thematic structure for organizing their questions or workshops. Both types of tools also organize their resilience indicators -- both qualitative and quantitative -- into theme groups that reflect community values. This aligns well with the CRO's existing six framework priorities.

Reflecting academic research and suggestions from Colorado's State Demography Office, I determined that a planning process tool would suit the CRO's goals. The scorecard version,

research suggests, can leave communities with a number that does not translate easily into actionable steps. A planning process, on the other hand, would achieve the CRO's goal of teaching resiliency thinking.

Methodology

My work was divided into three phases: research; assessment tool building; pilot of the assessment tool. My preliminary work on this capstone was to research existing types of assessment tools and do a survey of research on the effectiveness of these various tools.

Figure 2: Community Assessment Themes



Based on the outcome of this research, I selected a planning process tool. I organized the tool into guides, one for each of the CRO's six framework priorities. I relied on the indicators and data compiled by Brendle, a consulting firm, for the CRO. I designed each guide to introduce communities to the indicators, their relationship to resiliency and actions and examples for each indicator. Finally, I participated a community feedback session for the tool. Due to deadline constraints, much of this feedback was received after my capstone was due. The CRO, however, plans to incorporate this feedback into the guides.

Project Content

For this capstone, I completed six guides, each of which aligned with one of the CRO's framework priorities.

Future-Ready Economy and Workforce

This priority focuses on supporting communities and industries through change and increasing economic diversification through expanded access to technology, putting the economy to work in mitigating risks from natural hazards, and building community capabili

ties to address local needs.

For this tool, I grouped indicators provided by Brendle into tables that reflected the priorities of Household Internet Accessibility and Affordability; Employment and Income; Business Formation and Health; Government Revenue; and Education and Job Pathways.

Climate Change and Natural Hazards

This priority seeks to expand knowledge and data-driven decision-making to help communities identify, plan for, and mitigate natural hazards and climate risk at local and regional scale. While much progress has been made, more can be done to proactively reduce hazard vulnerability and mitigate risk.

For this tool, I grouped indicators provided by Brendle into tables that reflected the priorities of Exposure to High Hazard Risks; Flood and Wildfire Hazard; Recovery Funds Distributed; Energy Sources and Impacts; and Water Scarcity and Drought.

Building and Infrastructure

This priority aims to update the infrastructure decision-making paradigm to elevate responsible, proactive, and multi-benefit infrastruc-

ture investments that: mitigate risk, enhance resiliency and adaptability, improve efficiency, reduce environmental and social impacts, and make long-term economic sense. This priority recognizes that most investments and choices regarding infrastructure and the built environment today will last for generations.

For this tool, I group indicators provided by Brendle into tables that reflected the priorities of Commuting and Transit; Energy Sources and Impact; and Exposure to High Hazard Risks.

Agriculture and Food Security

This priority focuses on providing flexibility and tools to analyze and adapt to local needs and conditions (in the context of the greater state and national food systems).

For this tool, I grouped indicators provided by Brendle into tables that reflected the priorities of Protected lands; Farm Operations Capacity; Food Security; Water Scarcity and Drought.

Housing Attainability

This priority focuses on expanding housing supply and opportunities for all Coloradans, with a focus on underserved communities. The priority emphasizes reducing barriers to

developing affordable housing, championing statewide housing policies and resources, and addressing each community's unique housing needs.

For this tool, I grouped indicators provided by Brendle into tables that reflected the priorities of Housing Availability; Population in Need of Housing; Housing Affordability.

Community Capacity

This priority stresses building local capacity, social connectivity, civic participation, and equitable and authentic community involvement to enhance resiliency and community capacity.

For this tool, I grouped indicators provided by Brendle into tables that reflected the priorities of Vulnerable Populations; Emergency Readiness Measures; Food Security; Household Internet Accessibility & Affordability.

Conclusion

As resiliency becomes a crucial goal for communities worldwide, a reliable resiliency assessment tool can be a key resource to steering communities through aspects of this important, yet relatively new, concept. The Colorado Resiliency Office's guide provides communities

with data indicators to track, an explanation of how to use them, lists of suggested actions to address these indicators and examples of community initiatives from around the world and United States. The guide will be a customized experience that allows local leaders to pick the area of resiliency that fits best with their community. It is important to note that my work on the client considers this guide foundational and the guides remain works in progress. I fully expect the CRO to continue to edit, test and adapt this guide until it is ultimately published by the agency.

Summary Graphic of Assessments

