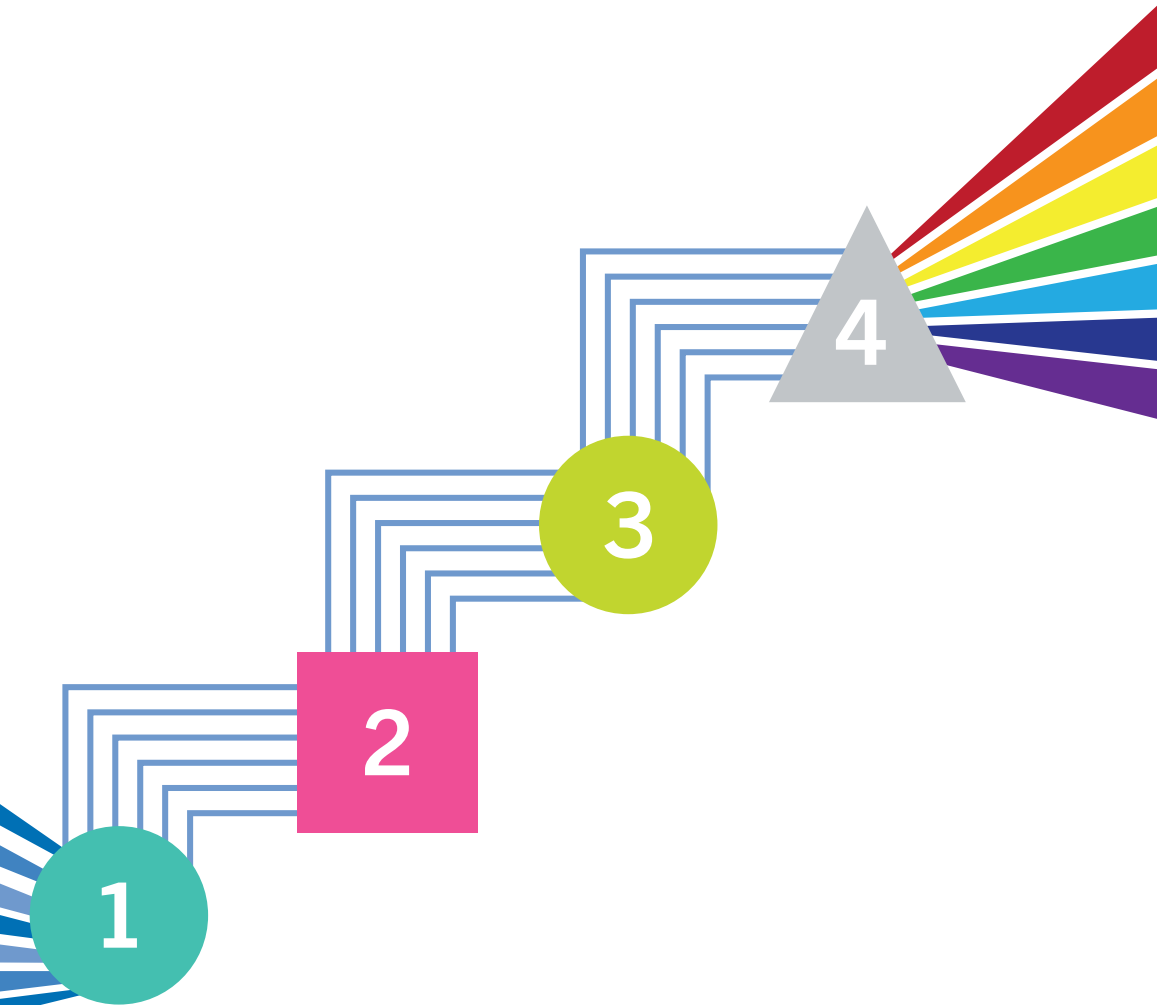


June 2020



4 Steps to a Climate Savvy Community



Rapid Climate Vulnerability
Assessment Tool for
Climate-Informed Equitable
Community Development



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Why we created this Rapid Climate Vulnerability Assessment (RCVA) tool.

Communities are places of family, friends, culture, work and play – and they are under tremendous stress. From record development in some places to disinvestment in others, communities are addressing increased traffic and air pollution, aging infrastructure, a lack of affordable housing while facing increased exposure to climate change in the form of flooding, drought, and extreme temperatures. As climate change and its effects grow, the way communities are structured and built becomes more important in counteracting and preventing those effects – for the health and safety of all residents.

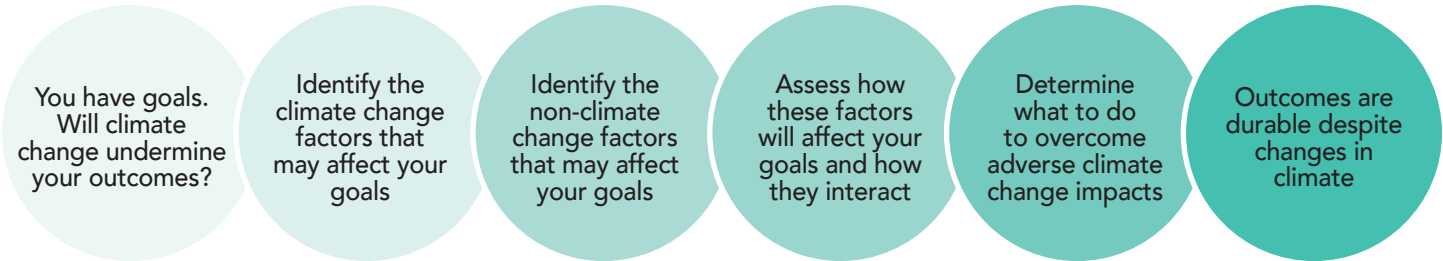
RCVAs enable people to see where community vulnerabilities intersect with climate stressors. Vulnerability assessments aren’t new. Natural resource managers have been using them to document and adapt to climate change events for over a decade. But use of an RCVA by communities for local planning (development, services, resources) is just beginning. This particular tool was developed for the Strong, Prosperous and Resilient Communities Challenge (SPARCC) to create climate-savvy investments that perpetuate inclusive, equitable, sustainable community development practices that also contribute to community health and well-being. Designed and piloted with some SPARCC communities, the RCVA allows users to quickly identify core challenges, immediate interventions, and resources to support climate informed actions going forward.

What is an RCVA?

This RCVA is a simple, four-step process designed to evaluate community vulnerability to climate change while collaboratively finding solutions. The RCVA starts with the community members’ existing local goals and priorities, and helps communities make connects between people and the environment by considering how their activities might be affected by the many impacts of climate change—from hotter summers to rising seas. By considering both existing stressors relating to health, equity or any other community priorities, and the effects of climate change, RCVAs enable people to understand how climate change directly affects their lives. Once those initial links are made, community members collaborate in the workshop (and after) to address

What does an RCVA process look like?

Using readily available climate data, local knowledge and simple worksheets, RCVAs guide you from awareness of the risk from climate change for your work to collaboratively developing durable solutions to reduce that risk, while creating a just, healthy and sustainable future.



vulnerabilities and foster what the community cares about. That leads to decisions about investment and revitalization that support all members of the community, including the most vulnerable, to better withstand the effects of climate change. RCVAs provide a common language so leaders and advocates across the housing, transportation, environmental, health and social justice fields can collaborate.

Who uses an RCVA?

An RCVA is not conducted for a community, but by a community. Anyone can undertake an RCVA, although they are typically initiated by cities or other regional planning authorities. Increasingly, there is a need for community-focused RCVAs as participation and buy-in across diverse stakeholders results in more equitable solutions, which can be critical for community resilience. The perspective of residents and local leaders in community-focused RCVAs to build solutions grounded in community history and local assets often not represented in external assessments.

What are some examples of how RCVAs have worked in a community?

In Atlanta, community organizations and community members used knowledge gained through the RCVA to foster climate resilient community planning in the Lee Street Corridor in the southwest part of the city. They want to ensure that residents have healthier housing with greater energy security, and that new trees planted in the neighborhood will be able to withstand hotter climates with less predictable precipitation patterns.

In Chicago, where temperatures are projected to increase ~1.4°C by 2040, an RCVA identified the need to explore poor air quality hotspots in residential neighborhoods. For those neighborhoods with high rates for asthma, especially in children, more hot days will create even bigger health concerns. Proposed solutions included advocating for requiring clean freight transportation best practices, planting hedges around new developments to improve air quality, requiring clean air stipulations and community benefits for new developments, and encouraging residents to check air quality before going outside.

What do you need to get started?

1. An existing goal
2. Access to locally relevant projections (Use Climate Explorer or the other resources in **Appendix E**)
3. A cohort of partners who are interested in developing a climate-informed plan for achieving your goals.
The RCVA process can be conducted as an in-house exercise or it can be undertaken with local stakeholders in a workshop. **Appendix D** provides a sample agenda and supporting guidance for undertaking a workshop. Use the Infographics in **Appendix C** to explore some possible risks of climate for your collective goals.

How do I plan for an RCVA Workshop?

RCVA PROCESS PLANNING



Putting the RCVA tool to work: Using the worksheets to guide solutions

The RCVA worksheets were designed to guide you (alone or with a facilitator) through a 4-step process of identifying climate, health, and racial equity stressors in your community, exploring the ways in which they intersect with each other, how they affect your existing goal or project, and evaluating options to reduce the identified vulnerabilities.

For a community-driven assessment, it is important to consider both climate and non-climate stressors. While participants ground themselves in examining climate exposures, non-climate impacts (such as social determinants of health, racial equity stressors and displacement) are explicitly considered, along with the interactions between them all.

ISSUE AREA + CLIMATE IMPACTS + VULNERABILITIES → IDENTIFY ADAPTATION STRATEGIES

The four worksheets (**Appendix A**) support the process and the application of the findings from the process.

STEP 1: CLARIFY A GOAL AND HOW YOU ARE ACHIEVING IT

What is your existing organizational or project goal? What strategies do you use to achieve that goal (e.g., what activities are you undertaking)?

EXAMPLE OF A COMPLETED STEP 1 WORKSHEET

Goal	Development of transit accessible, affordable housing near green space
Strategy 1	Build or acquire new housing units along transit lines
Strategy 2	Secure open space designations in target communities
Strategy 3	Support a coalition of affordable housing advocates

STEP 2: IDENTIFY CLIMATE AND NON-CLIMATE STRESSORS

From the list provided, select the most relevant climate and non-climate stressors from each category (climate, health and equity). If you need more information to do this, explore the resource list in **Appendix E**.

EXAMPLE OF A COMPLETED STEP 2 WORKSHEET

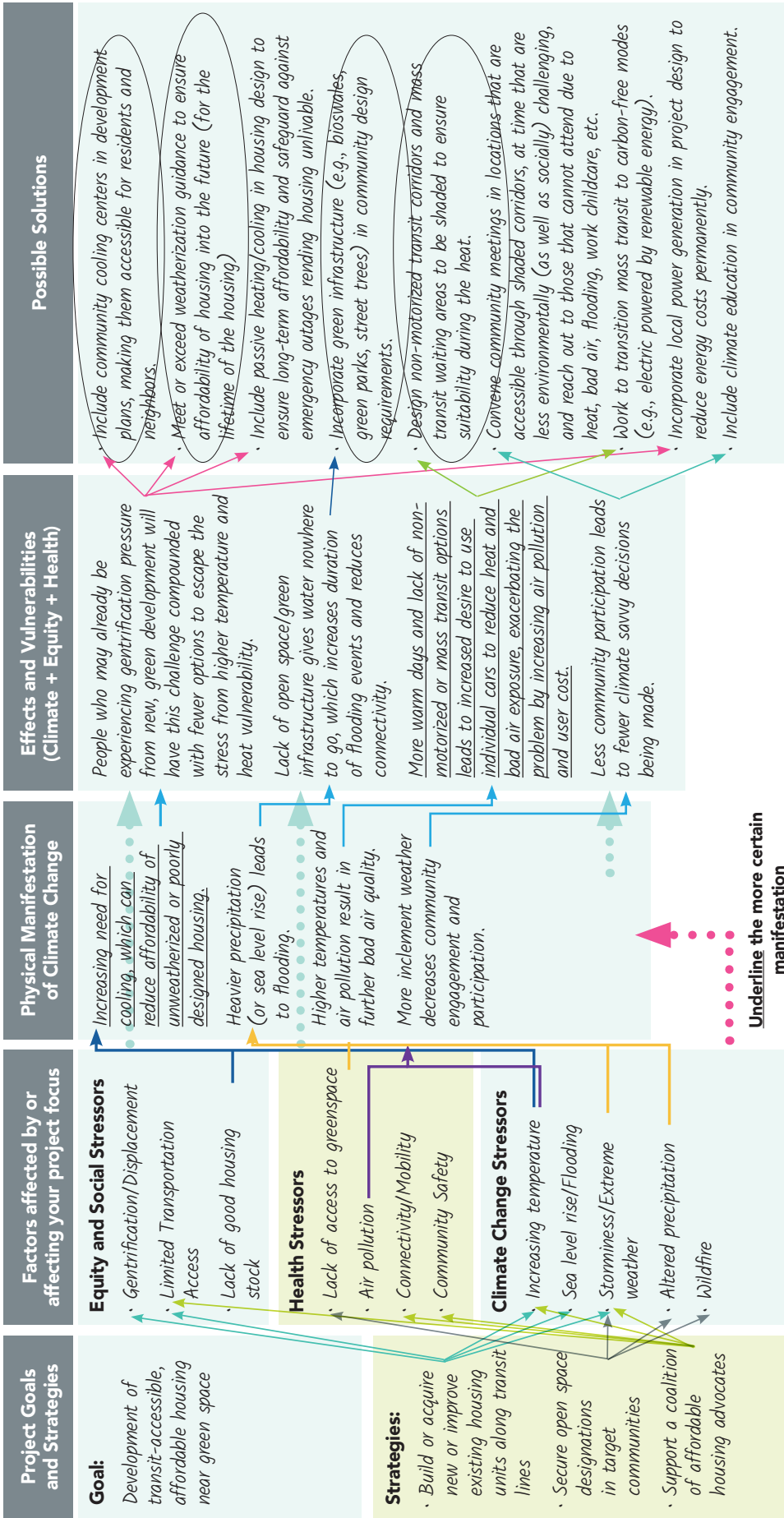
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STEP 3: IDENTIFY VULNERABILITIES AND DEVELOP POSSIBLE SOLUTIONS

Climate and non-climate stressors are now used to evaluate the vulnerabilities of the stated goals and strategies in order to identify potential solutions to reduce these vulnerabilities and increase long-term success.

1. Collect your answers from Steps 1 and 2.
2. Enter your Step 2 answers into the three appropriately labeled boxes in Column 2.
3. Step 2 answers are entered into the three appropriately labeled boxes in Column 2.
4. In Column 3, briefly consider how climate change interacts with the equity and health issues listed in Column 2.
5. In Column 4, describe how the individual stressors or their interactions may affect your goals and strategies. These are your vulnerabilities.
6. In Column 5, develop a suite of possible solutions to reduce these identified vulnerabilities.
7. Evaluate and prioritize your solutions. Consider evaluating your solutions through this process to ensure they are climate-savvy, healthy and equitable.

EXAMPLE OF A COMPLETED STEP 3 WORKSHEET



Draw lines to show connections from goal/strategy to stressors to manifestations to effects to solutions.

Underline the effects of greatest consequence

Evaluate and prioritize solutions
Circle those that best fit your goal or are most critical

STEP 4: EVALUATE SOLUTIONS TO REDUCE VULNERABILITY

Use this worksheet to determine how you would implement the solutions identified in Step 3.

In Step 4 Column 1, list each circled priority solution from the final column of Step 3.

EXAMPLE OF A COMPLETED STEP 4 WORKSHEET

Solution	Solution Description	How to implement (including policy needed)	Partners and Resources Required	Potential for Success (L,M,H)	How do you measure success? (data needed and source)	Timeframe (e.g., immediate, 5 years, long-term)
Cooling centers	Include community cooling centers in development plans, making them accessible to residents & neighbors	<ul style="list-style-type: none">Make an RFP requirementImprove local code standards	<ul style="list-style-type: none">Community centersEmergency preparednessPlanning officeDevelopersFinancers	H	<ul style="list-style-type: none">Creation of cooling centersFewer heat related illnesses or mortalities	5-10 years
Meet or exceed weatherization guidance	Meet or exceed weatherized guidance to ensure affordability into the future for the lifetime of housing	<ul style="list-style-type: none">Improve state utility programs, especially for low-income and apartment housing	<ul style="list-style-type: none">Planning officeDevelopersFinancersEnergy efficiency orgs	M	<ul style="list-style-type: none">Better weatherizationLower energy bills, more comfortable interior temperatures for occupants	1-5 years
Include green infrastructure in design	Incorporate green infrastructure (e.g., bioswales, green parks, street trees) in community design requirements	<ul style="list-style-type: none">Offer green workforce trainingImplement local hiring standards	<ul style="list-style-type: none">Planning officeDevelopersSewer departmentsWater quality groups	H	<ul style="list-style-type: none">Green infrastructure projects implementedFewer flooding events	1-10 years
Design shaded non-motorized transit corridors & mass transit stops	Design shaded non-motorized transit corridors & mass transit waiting areas to ensure usability during heat events	<ul style="list-style-type: none">Make an RFP requirementMap transit route temperatures	<ul style="list-style-type: none">Planning officeTransit departmentTransit advocacy groupsHealth organizationsSchools	M	<ul style="list-style-type: none">Installation of shade at transit stopsCreation of shaded non-motorized transit corridorsShaded sites are cooler than unshaded locations	Immediate & 5-10 years

Potential Outputs from an RCVA Process

- The Tables. A set of completed tables is not only good for remembering how you developed your ideas, but they can be useful training others.
- An Assessment Summary. Sometimes it is helpful to have a more formal summary of the outcome of the RCVA process. Such a summary can be brief (**Appendix B**) or it can be a longer document that includes references to all supporting materials.
- Inclusion in other Plans and Processes. The best way to ensure the RCVA outcomes are applied is to include the solutions developed in a workplan or planning document that is part of already required work and management activities.

Tips and Lessons from communities that applied the tool

- The process can be applied as a thought exercise with information on hand or it can include a rigorous data and mapping analysis. A full analysis provides significant useful information, however applying the tool with even local experience can be valuable and may encourage more communities to undertake an RCVA process. In either case the RCVA has led to greater inclusion of climate in local planning.
- Identify a local point of contact on the project team to organize workshop activities, and just as importantly, to lead post-workshop follow-up to ensure that outcomes and next steps become implemented actions.
- Encourage participants to stay present for the full workshop. The tool provides a step-by-step process for understanding and addressing vulnerability. Leaving early or joining late loses the continuity and direction that the RCVA process provides.
- Facilitators and participants recognize the unique value that each person brings to the table. Leave time for all participants to share their expertise, personal, and professional stories and experience with climate vulnerability in their community.
- Remind participants to keep sensitive information confidential.

APPENDIX A: WORKSHEETS

STEP 1 WORKSHEET: CLARIFY A GOAL AND HOW YOU ARE ACHIEVING IT:

What is your existing organizational or project goal? What strategies do you use to achieve that goal (e.g., what activities are you undertaking)?

Goal	
Strategy 1	
Strategy 2	
Strategy 3	

STEP 2 WORKSHEET: IDENTIFY EMERGING CLIMATE AND PRE-EXISTING NON-CLIMATE STRESSORS:

From the list provided, select the most relevant climate stressors and pre-existing non-climate stressors from each category (climate, health and equity).

GOAL	STRESSOR	STRESSOR	STRESSOR	CLIMATE STRESSORS	GOAL	STRESSOR	STRESSOR	STRESSOR	PRE-EXISTING CONDITIONS: NON-CLIMATE HEALTH STRESSORS	GOAL	STRESSOR	STRESSOR	STRESSOR	PRE-EXISTING CONDITIONS: NON-CLIMATE EQUITY STRESSORS
				Increasing temperture					Air pollution					Gentrification/Displacement
				Altered precipitation					Water pollution					Homelessness, Poverty, wage theft, declining social safety net
				Sea level rise/Flooding					Food access					Economic Insecurity/Un/underemployment
				Storminess/Extreme weather					Connectivity/Mobility					Limited utility access (electric, internet, phone)
				Wildfire					Limited mental/healthcare access					Limited goods and services access
				Other (e.g., ocean acidification):					Lack of greenspace (access, condition)					Limited transportation access
									Emerging disease/pervasive disease					Unmaintained/constrained/missing infrastructure
									Community safety					Lack of good housing stock
									Other (e.g., language access, pandemic):					Insufficient neighborhood quality
														Other (e.g., ICE raids):

STEP 3: IDENTIFY VULNERABILITIES AND DEVELOP POSSIBLE SOLUTIONS:

Insert answers from STEP 1 and 2 in Columns 1 and 2, respectively. In Column 3, briefly consider how climate change will interact with health and equity. In Column 4, describe how the individual stressors or their interactions may affect your goals and strategies. These are your vulnerabilities. In Column 5, develop your possible solutions to reduce those vulnerabilities.

Possible Solutions	
Effects and Vulnerabilities (Climate + Equity + Health)	
Physical Manifestation of Climate Change	
Factors affected by or affecting your project focus	
Project Goals and Strategies	

Equity and Social Stressors

Health Stressors

Climate Change Stressors

Goal:

Strategies:

Underline the effects of greatest consequence

Underline the more certain manifestation

Evaluate and prioritize solutions

Circle those that best fit your goal or are most critical

Draw lines to show connections from goal/strategy to stressors to manifestations to effects to solutions.

STEP 4: EVALUATE SOLUTIONS TO REDUCE VULNERABILITY

List each circled priority solution from the final column of STEP 3 in Column 1 of STEP 4. Use this worksheet to determine how you would implement each solution.

Timeframe (e.g., immediate, 5 years, long-term)				
How do you measure success? (data needed and source)				
Potential for Success (L,M,H)				
Partners and Resources Required				
How to implement (including policy needed)				
Solution Description				
Solution				

APPENDIX B: ASSESSMENT SUMMARY

There are many ways to summarize your assessment. This form provides a simple option. You may choose another.

The [_____]
City, Neighborhood, or Group Name] assessed the vulnerability of [_____]
location due to climate change stressors including [_____].
climate change stressors selected in Step 2

Our ability to [_____]
goal or strategy listed in Step 1] will be affected by [_____
projected or observed effect from Step 3]. Existing non-climate health and equity stressors affecting this project include [_____
non-climate health and equity stressors from Step 2]. They currently [_____
effects of these non-climate health and equity stressors from Step 3

Climate change may interact with these non-climate health and equity stressors by [_____
examples of interactions from Step 3]. The vulnerability identified as being of greatest concern was [_____
underlined effects of greatest consequence from Step 3

.....

☐ This project will not be affected by these vulnerabilities because _____.

☐ These vulnerabilities are of concern, particularly [_____
include example of an effect of the climate stress on the location or project, could]. Adaptation strategies that can be implemented to
include an interaction with a non-climate stressor. reduce this vulnerability, include [_____
adaptation strategy from Step 4

In order to implement this strategy, we will need [_____
partners, funds, mandate or other features identified in Step 4].
needed to bring about implementation, or indicate that it could be done internally with resources already on hand

To make this happen, we are [_____
next steps being taken to implement this strategy, including possible opportunities associated with upcoming].
planning cycles or refinement of current work plan activities

ANTI-DISPLACEMENT



Current Goals



Climate Vulnerability



Adaptation

Avoid loss of housing stock	Locations become unsuitable or preferred = less affordable stock	Neighborhoods are a mixture of housing of various sizes and costs
Maintain or increase affordability	Housing stock becomes unsuitable for new conditions = can't cool, decreased air quality	Housing stock well suited for environment with minimal energy use and cost
Create new affordable housing stock	Suitable locations becoming too expensive for affordable housing projects	Affordable housing becomes a design element of zoning
Maintain services: transport, health, education, food, jobs, and open space	Affordability no longer map to existing transportation corridors (public or non-motorized)	Affordable housing co-located with multimodal transit access
	Open space either lacking or degraded by climate change	Open/green space protected, maintained, and restored

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HOUSING



Current Goals



Climate Vulnerability



Adaptation

Affordability	Undermined by energy costs or location	Build/preserve in less vulnerable locations
Energy efficiency	Insufficient to meet new climate	Design energy efficiency standards for changing conditions
Transit connected	Transit undermined; increased costs; not designed for new land use patterns	Design transit to match other climate responses and to withstand climate stresses
Greenspace/landscaping	No longer suited for current climate or new climate challenges; lost to pests/disease	Protect less vulnerable greenspace; replant as needed with climate appropriate species

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HEALTH



Current Goals



Climate Vulnerability



Adaptation

Access	Increased demand due to increased illness; medical sites vulnerable	Design and locate facilities in less vulnerable locations
Cost	Energy costs increased; increased costs due to repair, retrofitting, relocation and decreased air quality	Improve energy efficiency in less vulnerable locations
Respiratory illness	Increased due to increased transit, temperature, smog formation, and exposure to bad air	Improve air quality regulation to meet needs under new conditions
Cardiac illness	Increased due to increased temperature, transit, exposure to heat, and less access to cooling.	Ameliorate local temperature with increased canopy coverage and less absorptive surfaces

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OPEN SPACE



Current Goals



Climate Vulnerability



Adaptation

Vegetation	Vegetation no longer suited for climate; lost to pests	Restoration/replanting with resilient or new species
Connectivity	Insufficient for new climate challenges	Part of stormwater/flood abatement
Recreation	Inaccessible due to flooding, high temperature, and poor air quality	Vegetation to filter air
Non-motorized transit		Creates cooler microhabitat
Health	Reduced environmental quality causes reduced health benefit	Safe, appealing non-motorized transit corridors that also reduce greenhouse gas emissions

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BROWNFIELDS



Current Goals



Climate Vulnerability



Adaptation

Remediation	Mobilization of contaminants	Design remediation to consider altered hydrology, precipitation, and temperature
Containment	Increased toxicity	
	Increased exposure	
Isolation	Increased remediation energy demand	Use renewable energy for site infrastructure, including back-up power
	Decreased effectiveness of remediation	

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TRANSIT



Current Goals



Climate Vulnerability



Adaptation

Access	Sites closed during flooding, storms, heat	Design transit infrastructure for future conditions (elevated, flexible)
Cost	Increased maintenance and development costs	Consider changing long-term costs in design and budgeting
Health	Too hot (hot bus stops), poor air quality	Increase canopy on transit corridors, built protection
Convenience/ User experience		
Reliability/safety	Service disruption	Design routes and infrastructure to avoid hazard

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4 STEPS TO A CLIMATE SAVVY COMMUNITY

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4 STEPS TO A CLIMATE SAVVY COMMUNITY

12

SAMPLE AGENDA:

8:30 AM	Breakfast
9:00 AM	Welcome and Orientation to the Day <i>Introduction to the overall goal of process and the day</i> <i>Introductions around the room or table—consider doing this as part of an energizer activity</i>
9:30 AM	How Climate Savvy are you? <i>Interactive presentation to understand the opportunities created by considering climate in your work, includes example actions</i>
10:00 AM	Pre-work Presentation <i>Create agreement and common understanding of topics to be covered based on results from RCVA STEP 1 and 2. Review pre-work results for all present</i>
10:30 AM	Resource Pool <i>Offer examples of the types of data resources available to advise the RCVA process. Invite those present to share additional resources. Demonstrate how to use the most relevant.</i>
11:00 AM	Rapid Climate Vulnerability Assessment (Breakout Groups) <i>Evaluate your vulnerability by completing the first four columns of RCVA STEP 3 in breakout groups with common goals.</i>
12:30 AM	LUNCH <i>This can be a working lunch if the Assessment step is still underway.</i>
1:30 PM	Identifying Adaptation Actions to Reduce Vulnerability (Breakout groups) <i>In the same breakout groups, discuss local actions (in the context of your existing goals and activities) that can be taken to reduce the identified vulnerabilities.</i>
2:30 PM	Prioritization of Actions (Plenary) <i>Breakout teams report back on their list of potential adaptation actions to reduce the vulnerability of their work to climate change. Look for opportunities to collaborate across solutions and discuss how to prioritize actions.</i>
3:00 PM	BREAK
3:15 PM	Next Steps (as Breakout Groups or Plenary) <i>Determine what needs to happen to accomplish your priority actions with the help of the STEP 4 table.</i>
4:00 PM	Group Exchange (Plenary) <i>Agree on priority actions and how they will be implemented.</i>
4:45 PM	Thanks and Appreciation <i>Explicitly thank all who attended and will make the work happen going forward.</i>
5:00 PM	Adjourn

Materials needed for workshop:

- Venue: plenary space and at least tables for breakout groups (one room can be sufficient)
- Food: breakfast, lunch and snacks (It's a full day)
- Audio/Visual: Projector, screen, computer, wifi
- RCVA worksheet packets (**comprised of Appendices A and B**) - one per participant
- Copies to share (one per breakout group) of key resources and supporting documents
 - Maps and local data
 - Climate infographics (**Appendix C**)
- Markers and highlighters in at least two different colors
- Flip charts (one per breakout group)
- Sign-in sheet so you can stay connected after the event and check in on progress

CLIMATE DATA

- Climate Explorer <https://crt-climate-explorer.nemac.org/>
Access county level climate data to help you evaluate what change will look like in your community. This includes temperature and precipitation projections.
- NOAA Sea Level Rise Viewer <https://coast.noaa.gov/slr/>
A web mapping tool to visualize community-level impacts from coastal flooding or sea level rise.
- Climate Central Surging Seas Risk Finder <https://riskfinder.climatecentral.org/>
Provides local information to help you understand and respond to the risks of sea level rise and coastal flooding, includes social vulnerability data and contaminated sites in some regions.

ADAPTATION AND VULNERABILITY

- Climate Adaptation Knowledge Exchange <https://www.CAKEx.org>
An online database and networking resource for the adaptation community, with vulnerability assessments, adaptation plans and case studies from communities with challenges similar to yours.
- Communities and Resilience: A New Way to Measure Vulnerability <http://www.sparcchub.org/2018/12/21/rcva/>
This article gives perspective on using the RCVA.
- Georgetown Climate Center Adaptation Clearinghouse <https://www.adaptationclearinghouse.org/>
An online database and networking site that serves policymakers and others who are working to help communities adapt to climate change.
- NRDC Guide to Community Climate Vulnerability Assessments
A primer for communities and community partners on how to complete a climate vulnerability assessment, including developing a vulnerability index, which allows for visualization of potential vulnerabilities in a map.

EQUITY AND CLIMATE

- NAACP Equity and Resilience <https://bit.ly/2PvGRXb>
A sample list of indicators/measures of vulnerability and resilience to foster equitable adaptation, relating to infrastructure, community, policies, services, protocols, governance, and decision making.
- Guide to Equitable, Community Climate Preparedness <https://bit.ly/39i1fmR>
Guidance to local governments in designing and implementing a more inclusive, equitable planning process.
- Climate Justice Alliance <https://climatejusticealliance.org/>
Building local alternatives that center traditional ecological and cultural knowledge, and create a pathway for a regenerative future.

- Thriving Earth Exchange <http://thrivingearthexchange.org/>
Thriving Earth Exchange is a platform with tools, resources and opportunities that help projects from collaborative idea formulation to implementing co-designed solutions.
- Planning for an Equitable Los Angeles: A Guide to Shaping LA's New Community Plans <https://bit.ly/3a7FnKA>
A guide for community-based organizations and residents to advance equitable development through active engagement of community plan update processes. Created for Los Angeles but applicable broadly.
- Climate Adaptation Knowledge Exchange Equity Resource Page <https://www.cakex.org/resources/sector/climate-justice-481>
A consolidated search of all of CAKE's climate and justice related content, including case study examples of adaptation that includes climate justice, as well as guidance, tools and relevant experts.
- Georgetown Climate Center Clearinghouse Adaptation Equity Portal <https://www.adaptationclearinghouse.org/networks/adaptation-equity-portal/>
A membership portal to support policy focused on the physical impacts of climate change and how they can support rather than further harm frontline communities.

HEALTH AND CLIMATE

- CDC Climate and Health Resources <https://www.cdc.gov/climateandhealth/default.htm>
Outlines effects of climate change on health and the CDC Building Resilience Against Climate Effects framework.
- Center for Climate Change and Health <http://climatehealthconnect.org/>
Provides resources such as an action framework; climate change, health, and equity guides for health departments and physicians; and climate and health posters.
- Climate Adaptation Knowledge Exchange Public Health Resource Page <https://www.cakex.org/resources/sector/public-health-492>
A consolidated search of all of CAKE's climate and health related content, including case study examples of health-related adaptation, guidance, reports on public health impacts, tools and relevant experts.
- Georgetown Climate Center Adaptation Clearinghouse Health Resource Page: <https://www.adaptationclearinghouse.org/sectors/public-health/>
Resources to help policymakers understand, plan, and prepare for the impacts of climate change on public health systems, including planning guides, reports on public health impacts, and best practices for public health response.