



Including Climate Change in the General Plan & Beyond

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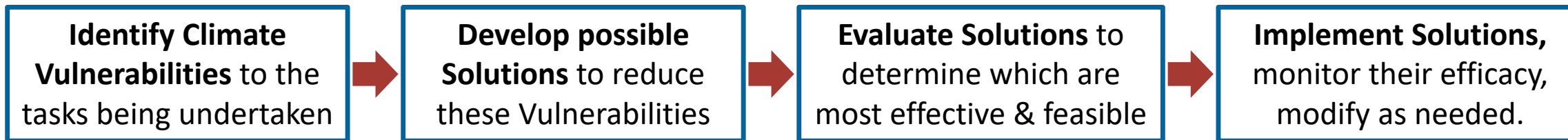
How to use the tools presented in the workshop



Use the Rapid Climate Vulnerability Assessment (RCVA) to:

Evaluate overall vulnerability and develop adaptation options for:

- Plan Element
- Sectors
- Agencies

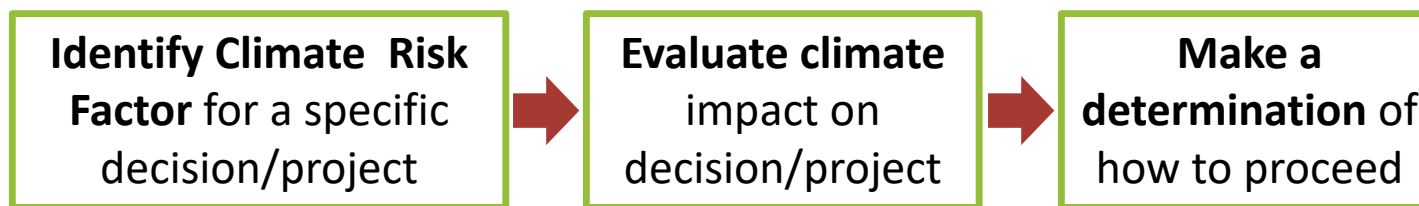


Make an RCVA part of episodic plan update process to create climate-informed guiding documents

Use the Climate Change Adaptation Certification (CCAC) to:

Evaluate an individual decision or compare decisions such as:

- Permits
- Capital Expenditures
- Policy change
- Assets



Make the CCAC part of daily planning processes to mainstream a climate lens in decision making





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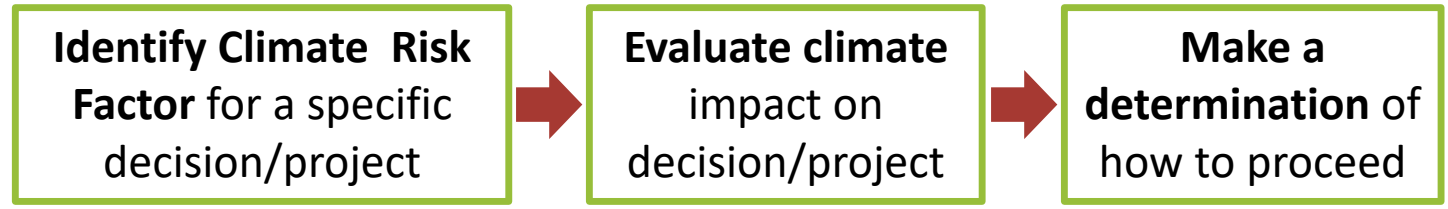
Not just for the City! Anyone, any organization or any coalition can use these to support climate savvy decision making

Make an RCVA as part of the process to create climate-informed guiding documents

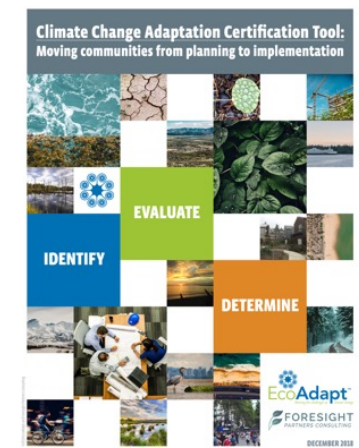
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Make the CCAC part of daily planning processes to mainstream a climate lens in decision making





Update of the General Plan

Use the solutions developed in the RCVA to identify needed changes in the General Plan element language. Examples by element:

Noise & Safety:

Prepare for climate changes

- Participate in regional efforts to prepare for the impacts of climate change

- Engage the community in preparing for climate change through the promotion of Climate Action Plan measures, distribution of information, and through local schools.

Prepare for disasters

- Locate essential public facilities, such as hospitals and clinics, emergency shelters, emergency command centers, and emergency communications facilities, outside of high fire risk area, flood hazard zones, and areas subject to dam inundation.



Update of the General Plan

Noise & Safety:

Prepare for climate changes

Participate in regional efforts to prepare for the impacts of climate change

Engage the community in preparing for climate change through the promotion of Climate Action Plan measures*, distribution of information, and through local schools. (*after developing the adaptation measure in the Climate Action Plan)

Prepare for disasters

Locate essential public facilities outside of high fire risk area, flood hazard zones, and areas subject to dam inundation, and create local renewable energy generation grids to ensure power during rolling blackouts.



Update of the General Plan

Land Use:

Foster a compact rather than a scattered development pattern in order to reduce travel, energy, land, and materials consumption while promoting greenhouse gas emission reductions citywide.

As part of plan implementation – including development review, capital improvements programming, and preparation of detailed area plans – foster close land use/transportation relationships to promote use of alternative transportation modes, and discourage travel by automobile.



Update of the General Plan

Land Use:

Foster a compact rather than a scattered development pattern in order to reduce travel, energy, land, and materials consumption while promoting greenhouse gas emission reductions, **and foster climate change adaptive land use** citywide.

As part of plan implementation – including development review, capital improvements programming, and preparation of detailed area plans – foster close land use/transportation relationships to promote use of alternative transportation modes, discourage travel by automobile, **and apply a climate lens to protect community investments from adverse future conditions.**

How to use the results of this workshop



Update of the General Plan

Housing:

Maintain and rehabilitate, as needed, the existing affordable housing supply.



Update of the General Plan

Housing:

Maintain and **improve** the existing affordable housing supply, **ensuring** it is **affordability over time by ensuring its energy efficiency meets current and future climate conditions and that it is co-located with community services to reduce travel costs to residents.**

How to use the results of this workshop



Update of the General Plan

Transportation:

Provide a safe and sustainable transportation system



Update of the General Plan

Transportation:

Provide a safe and sustainable transportation system that encourages multi-modal transit, and is durable to a changing climate



Update of the General Plan

Public Services:

Ensure that an adequate supply of water is available to serve existing and future needs of the city



Update of the General Plan

Public Services:

Ensure that an adequate supply of water is available to serve existing and future needs of the city **by planning for future conditions in both supply and demand by people and nature.**

How to use the results of this workshop



Update of the General Plan

Open Space:

Maximize the benefits of open space



Update of the General Plan

Open Space:

Maximize the benefits of open space, and its ability to provide those benefits by planning for future environmental conditions in its designation and management.

How to use the results of this workshop



Update of the General Plan

Economic Vitality:

Maintain a positive business climate in the community.

How to use the results of this workshop



Update of the General Plan

Economic Vitality:

Endeavor to sustain existing businesses while planning for emerging businesses as conditions in our region change.



Update of the General Plan

Environmental Justice:

Access to high-quality and well-maintained public (e.g., schools, parks, libraries, transit) and private (e.g., grocery stores, housing, entertainment) needs and services by all community members.



Update of the General Plan

Environmental Justice:

Ensured long-term access to high-quality and well-maintained public (e.g., schools, parks, libraries, transit) and private (e.g., grocery stores, housing, entertainment) needs and services by all community members under current and projected future conditions.



Update of the General Plan

Create a Climate Guiding Principle

Reduce greenhouse gas emissions and increase community climate resilience

- Mitigation: Participate with state, regional and local partners to reduce greenhouse gas emissions consistent with the 1990 benchmark and future year targets set forth in state law, educate the public about climate change and incentivize local activities including land use patterns and building practices that reduce greenhouse gas emissions.
- Adaptation: Minimize or ameliorate the impacts of climate change on our community and associated ecosystems through climate-informed policies, programs and development regulations.
- Evaluate the climate vulnerabilities and implications of City actions and identify policies that alleviate those vulnerabilities. Consider the effects of shifting conditions (changing rainfall patterns, increasing temperatures, increasing fire frequency and more extreme weather events) and the effects they cause (altered vegetation, changing water demands, economic and population shifts).

A sampling of CCAC homework



Convert surplused CalTrans property into a Greenway/Green Infrastructure Spine

Microgrid development in Coddington Shopping Center

Urban soil health improvement for carbon sequestration and agriculture

Pedestrian/bike crossing of SMART train tracks

School facilities management

A sampling of CCAC homework



Convert surplused CalTrans property into a Greenway/Green Infrastructure Spine

- think about climate ready trees and plants for "*restoration*" component

Microgrid development in Coddington Shopping Center

Urban soil health improvement for carbon sequestration and agriculture

- how will increasing temperature, Δ precipitation & Δ vegetation affect sequestration potential? Will plant species need to change over time?

Pedestrian/bike crossing of SMART train tracks

- nice site assessment. Consider adding solar to power signals.

School facilities management

- great idea to use the tool to inform facilities consolidation decisions. work with partner agencies to ameliorate vulnerabilities (utilities, access)



Urban soil health improvement for carbon sequestration and agriculture

Climate change risk factors:

Precipitation, temperature, vegetation changes, population changes, greenhouse gas emissions

Evaluation of Climate Impacts: The project has some risks around climate change.

Precipitation: Project's use of native perennial plants may mitigate the need for a predictable, reliable external water supply. If external water is necessary, water trucks could be utilized. **Will it ever get too warm and dry for these natives? Can you use other species?**

Temperature : Project is located in a city vulnerable to wildfire, however to date there has been no wildfire within site. Not clear on the risk associated with maintenance, staff hours for maintenance (fence repair, damage to site, etc) at the site.

Habitat creation, restoration, or enhancement: Project improves soil health by establishing a habitat using practices recommended for urban soil health. Excessive # of extreme heat days could damage perennial plants and other planting.

Vegetation changes: "Infiltration of undesirable plants" could affect desired plant growth. Loss or addition of nearby trees could impact results by changing site shadiness or water availability. **How can you achieve results with these changes?**

Population changes: Climate migration could result in people living on the site temporarily.

Greenhouse Gas Emissions: Reduces net GHG emissions through greater soil carbon sequestration. **Will this still happen if conditions are warmer and drier?**

CCAC Determinations:

Project approved as proposed: The risks associated with future climate conditions impacting this project are low and have been accounted for in its planning. **How can you protect continued sequestration function under changing conditions?**

A sampling of CCAC homework



School site location assessments

Climate Risk Factors:

Precipitation, Temperature, Vegetation Changes, Population Changes, Greenhouse Gas, Emissions

Evaluation of Climate Impact:

A: School sites may experience nuisance flooding. Access corridors are impacted by localized flooding.

Result: Climate change risk could be minimized at sites. Access corridors out of District control. **Work with partners?**

C: Stormwater at school sites can be managed. Access corridors out of District control.

Result: Climate change risk could be minimized at sites. Access corridors out of District control. **Work with partners?**

E: Schools don't function without water, and sewer.

Result: Climate change risk cannot be avoided. **What can be done to manage for impact to water or sewer?**

F: Increased costs due to wildfires for HVAC (use & maintenance). School considering solar (could reduce power cost)

Results: Climate change risk cannot be avoided. **How might budgets, remodeling or class management help solve?**

G: School supports walking/biking, some school bus service. Many private autos. Potential to increase of walking/biking. Students from out of town can't walk, bike and have limited bus service.

Result: Project facilitates multimodal transportation

H: Schools not in WUI. CalAdapt Wildfire-low.

Result: Project unaffected by wildfire risk. **Site itself will not burn but impacted by smoke and impacting population.**

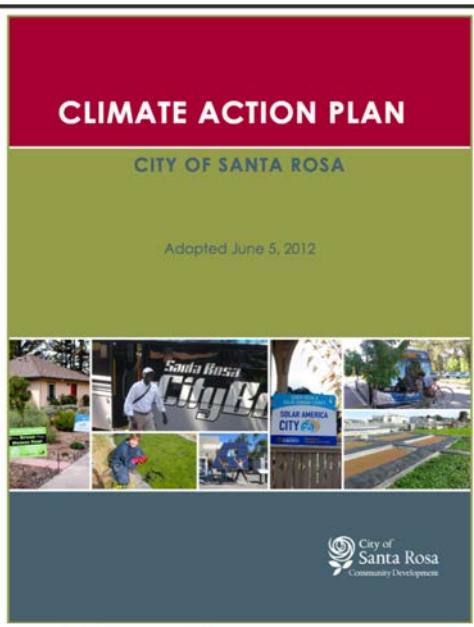
J: District is already experiencing declining enrollment. Has been exacerbated by wildfires.

Result: climate change risk cannot be avoided. **Proponent indicates may be opportunity to consolidate and avoid high risk sites.**

**MUNICIPAL OPERATIONS
CLIMATE ACTION PLAN**



CITY OF SANTA ROSA
August 6, 2013



Chapter 5: Adaptation

Local Action

Currently listed measures:

1. Regional coordination
 - Action 1.1. Join regional adaptation task forces BCDC & JPC
 - Action 1.2. Appoint staff liaison to participate in regional adaptation meetings
2. Preparedness
 - Action 2.1. Climate risk & hazards exchange w/ Fire & Police departments
 - Action 2.2. Revise City Hazard Mitigation Plans, Capital Improvement plans, etc to include climate as updates and funding permit
 - Action 2.3. Monitor climate change science & policy and inform stakeholders as new information arises.
3. Adaptation Mainstreaming into planning processes
 - Action 3.1. Consider climate impacts during development review processes.
 - Action 3.2. Include adaptation in zoning & building code, General Plan & Urban Water Management Plan, etc.
4. Community Engagement
 - Action 4.1. Use City website and local media for outreach
 - Action 4.2. Distribute climate information to school
 - Action 4.3. Promote sustainability education in schools

**Greenhouse Gas
Reduction
(Mitigation)
Focus, rather
than Adaptation**

San Francisco Planning
and Urban Research
Association's Adaptation
Report

Responsible Agency	Action
Public Works Department	Reduce urban heat island effect through three principal "no-regrets" strategies: expanding the urban forest, promoting white roofs, and using light-colored pavement materials.
Public Works/Building Departments	Evaluate alternatives and phase in the use of light-colored concrete, paving, and roofing materials on municipal properties.
Building Departments	Cities should begin to require lighter materials or white roofs in private development by amending existing building codes for new buildings and major retrofits.
PG&E Local Governments	Evaluate existing energy-efficiency and demand response programs for their effectiveness at shaving peak electricity demand in more frequent and prolonged hot weather.
Building Departments	Replace or retrofit the building stock over time with resource-efficient, climate-adaptive buildings.
Water Utilities	Develop water-supply scenarios for mid-century and beyond that include assumptions about changes (especially decreases) in precipitation amounts and timing.
Water Utilities	Evaluate alternative water-supply opportunities and demand-management strategies such as water conservation, water recycling and desalination, and prioritize investment in these strategies according to cost, reliability, and environmental benefits.
Water/Stormwater Utilities	Expand investments in "green infrastructure" or low-impact development.
Wastewater Utilities	Evaluate the vulnerability of wastewater collection and treatment systems to severe storms, sea level rise, and storm surge.



Climate Resilient Sonoma County

Address the economic, social, and environmental impacts of future wildfires, floods, extreme heat, drought, sea level rise, and other climate change risks.

- Implement priority recommendations from the Urban Land Institute Resilience Advisory Services Panel. Scheduled for Spring 2021
- Support launch of a local vegetation/forest management and fire prevention corps.
- Support implementation of local hazard mitigation plans.

