PHASE 1

Define, Explore, and Initiate

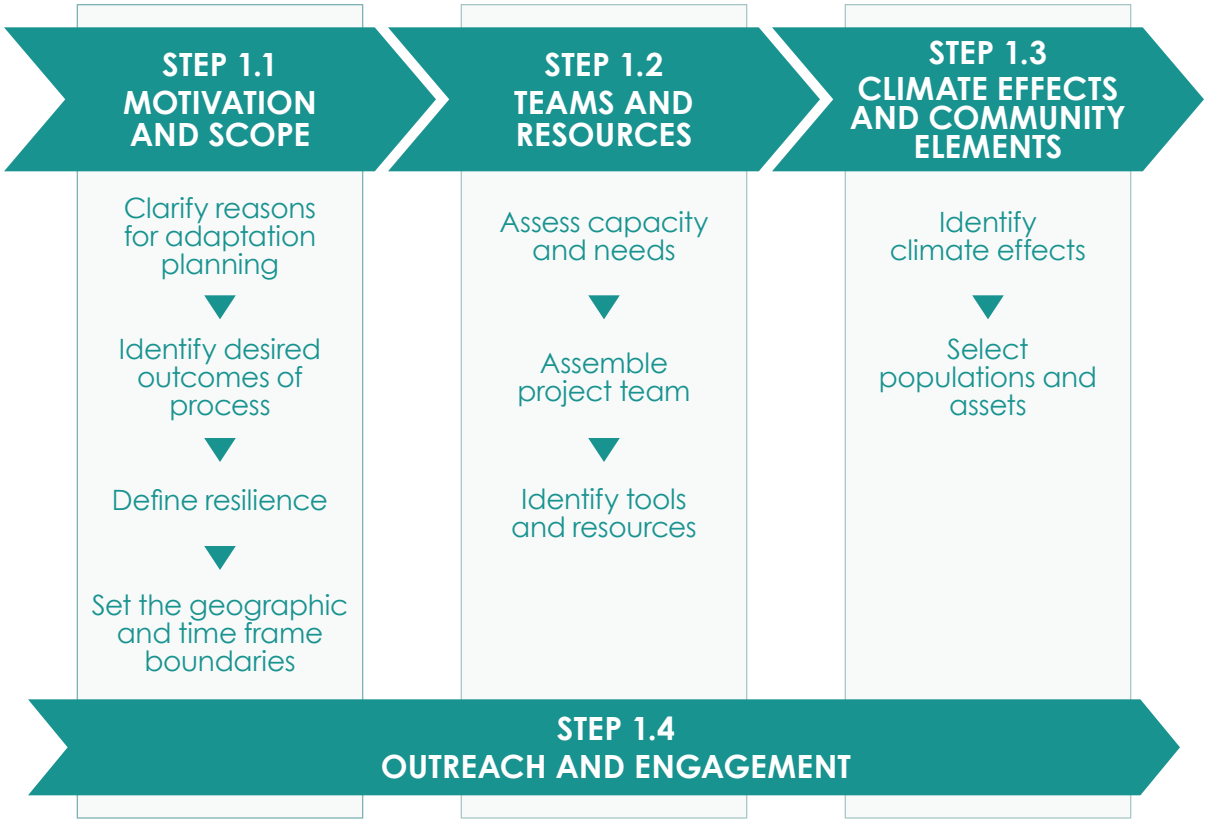
PHASE 1: DEFINE, EXPLORE, AND INITIATE

Adaptation planning efforts should begin with a scoping phase to define, explore, and initiate the planning process. Phase 1 establishes the basic aspects of the planning effort, the issues it will address, and who will be involved. Making these decisions at the beginning of the process helps ensure that it will be thorough, integrated, and equitable. These scoping activities are the foundation of the adaptation planning process—a framework that informs and directs future efforts. Without this foundation, the process may not comprehensively address community need or some important topics, and climate change effects may not be adequately mitigated. The lack of a clear scope may lead to a longer, costlier, and less organized planning process. The scoping phase is essential to ensure an effective and complete adaptation planning effort and can help align the process with existing or future planning documents.

Practitioners who are new to the field may be nervous about taking on an adaptation planning effort. Adaptation planning might seem like a specialized technical analysis that differs from other planning processes in the issues it raises, the time frames involved, and the underlying science and regulations. However, it is fundamentally a planning process that ties into other processes such as general plan updates or local hazard mitigation planning. It should be approached as any other planning process and based on core planning principles. The process should be open to members of the community, with appropriate opportunities for stakeholder engagement and feedback. It should seek to improve the health, safety, and welfare of all people and address current and potential future inequities. Adaptation planning should be grounded in best available science and use established best practices as appropriate. It should comply with all applicable laws and regulations and not conflict with other adopted plans.

Phase 1 outlines steps for exploring, defining, and initiating the adaptation planning process (see Figure 5). The steps in this phase are numbered, although they do not always need to be completed in order. For example, conducting outreach and engagement for residents and community stakeholders (Step 1.4) can occur much earlier in the process to involve interested community members from the very beginning of the planning process. In some instances, it may be helpful to work on multiple steps at the same time.

Figure 5. Steps in Phase 1



Step 1.1: Confirm Motivation and Scope of the Process and Outcome

WHY IS THE COMMUNITY CONDUCTING AN ADAPTATION PLANNING PROCESS?

Communities embark on an adaptation planning process for different reasons, and it is helpful to identify what motivated the process as well as what the process will address and how it will be done. This information is helpful to all participants and stakeholders and provides transparency to the process. Some of the more common motivators are:

- **Recent event or stressor.** The community has recently experienced a climate-related disaster or has concerns about a specific future disaster.
- **Community concern.** The community is aware of long-term changes in climate, such as rising sea levels or temperatures. There is interest from residents, businesses, and other community members to address climate resiliency.
- **Regulatory requirement.** The community must comply with state law about adapting to a changing climate.
- **Opportunity.** Grants or other funding sources are available to support planning and implementation efforts.

There may be multiple reasons for an adaptation planning effort. The motivator may be informally suggested by a community member or it may be formally established by a declaration or resolution (including a declaration of a climate emergency) adopted by the community government such as a city council, board of supervisors, or tribal council. Identifying the motivator early in the process helps to identify potential stakeholders, how the community will view the adaptation planning process and its outcomes, how to implement outcomes, and how to measure success.

WHAT IS THE PLAN OR PROJECT RESULTING FROM THE ADAPTATION PLANNING PROCESS?

Scoping the planning process includes determining how to publish, adopt, and implement the results. Adaptation work typically becomes part of one of three main categories of planning mechanisms: 1) comprehensive plans, 2) focused plans, and 3) implementation programs (see Figure 6).

- The comprehensive plans establish a framework and overarching guidelines for adaptation planning and implementation.
- The focused plans set more-specific objectives based on the framework and guidelines.
- The implementation programs lay out and enact actions to achieve the specific objectives and are generally implemented on an ongoing basis.

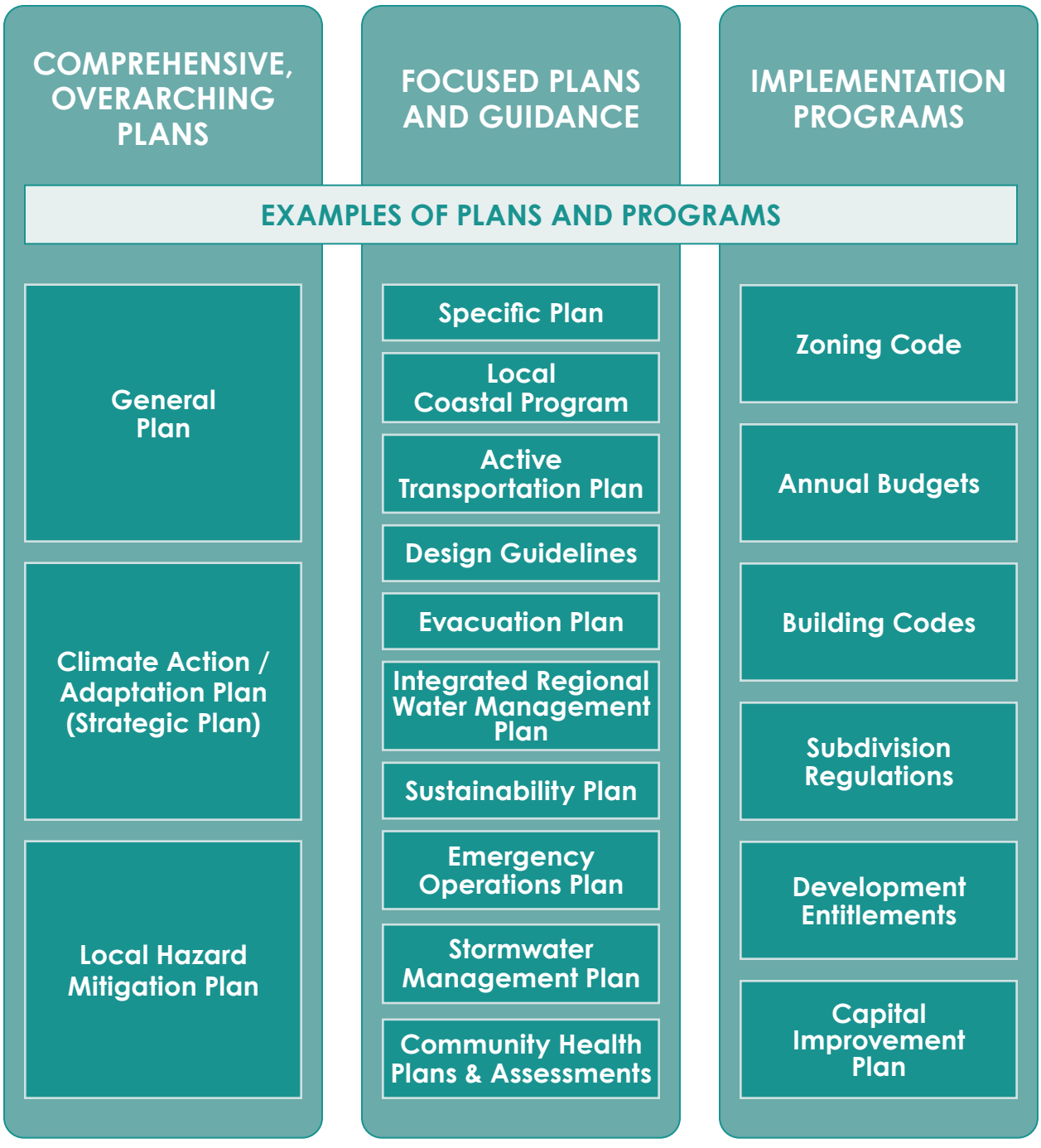
Though adaptation planning can usually be worked into existing planning mechanisms, sometimes communities may want to develop a new mechanism (such as a dedicated climate adaptation plan) in response to the adaptation planning effort. Either way, it is important to ensure consistency across plans and programs.

The adaptation planning process presented in Phases 1 through 4 of the APG can result in one or more of the above plans or outcomes. The APG focuses on three outcomes of a local adaptation planning process: 1) safety element and/or other elements of a general plan, 2) stand-alone climate action or adaptation plan, and 3) local hazard mitigation plan. Communities are not limited to integrating adaptation planning work into these three mechanisms, and the California Government Code § 65302(g)(4) allows for any plan or document containing this information to meet the state's requirements. However, in practice, the general plan, climate action or adaptation plan, or local hazard mitigation plan are the most commonly used options to ensure that climate adaptation is addressed in a holistic and fully integrated way. The Introduction of this guide provides more information about these local planning efforts.

Coastal Hazard Resilience Planning in California: Crosswalks

Resilience Planning in California[1] ("Coastal Plan Alignment Compass") integration of various local planning initiatives in coastal communities, though the guidance can be helpful to inland communities as well. The guide includes "crosswalks" to help planners identify when local hazard mitigation plans, adaptation plans, general plans, and local coastal programs can complement and support each other and when there is a risk of inconsistency.

Figure 6. Types of Plans and Programs



WHAT DOES ADAPTATION AND RESILIENCE MEAN TO THE COMMUNITY?

The goal of adaptation planning is to improve community resilience in the face of a changing climate. A resilient community is one that is prepared for current and future hazard conditions and experiences less harm when disasters happen. Resilient communities can also recover more quickly and thoroughly. They rebuild in a way that accounts for continuing climate changes, rather than rebuilding the same way as before. Adjusting adaptation planning in response to new information and opportunities through ongoing learning and monitoring is important to resiliency.

Resilience is a process or ideal that a community works toward. There will not be a moment when resiliency is fully achieved and the community can stop working on adaptation. However, a vision of what resilience means for the community can act as a guidepost for adaptation planning. If the community does not have an established vision for climate change adaptation and resilience, it may help to engage all stakeholders to define resiliency, including agency staff (see Step 1.2), any advisory group or groups (see Step 1.2), external stakeholders (see Step 1.4), and decision-makers. Consider these factors when contemplating what resiliency looks like for the community:

- **Equity.** A resilient community is one in which all members of a community are able to effectively prepare for and recover from acute and chronic climate impacts. Ideally, all community members are equally resilient regardless of income, health, identity, education, and other socioeconomic factors. Removing all disparities is an aspirational goal and may be beyond what an individual community can achieve, but a resilient community should strive for confidence that all members of the community are prepared for and able to recover from climate change impacts.
- **Holistic approach.** Ensuring the health and safety of community members is critical to building resiliency, but it is not the only factor. Total community well-being depends on many different systems—built, natural, and sociopolitical. For example, if a wildfire damages a forest, the number of tourists may drop, which may result in economic hardship for communities with tourist-based economies and affect the well-being and adaptive capacity of people who own and work at such businesses. A resilient population is not possible if the systems that people depend on are not themselves resilient. Additionally, a regional approach to climate adaptation can help ensure an efficient and effective process that gets the greatest possible benefit from limited resources.
- **Future needs.** Communities are constantly changing. As buildings are constructed and torn down, people move in and out, businesses open and close, and other systems in a community change, the resiliency needs of the community change as well. For example, many older Americans want to stay in their homes or communities rather than moving to retirement homes or

assisted care facilities, which creates a different set of resiliency needs. When thinking about what resiliency means for the community, consider it from the perspective of community members of all ages and future assets, not only current ones. Additionally, some communities adopt ambitious housing plans to help bridge severe gaps between community needs for affordable housing options and current supply. These housing plans substantially influence the resilience of precariously housed low-income households and individuals currently experiencing homelessness due to lack of housing supply.

ADAPTATION AND THE EMERGENCY MANAGEMENT CYCLE

Traditionally, when planning for disasters or other negative effects, planners think of a process of harmful events and recovery known as the emergency management cycle, which has four phases:

- **Hazard mitigation.** Efforts that take place between disasters to reduce or eliminate the potential for harm caused by the negative event, with an emphasis on ensuring long-term resiliency.
- **Preparation.** Planning to ensure that activities, programs, and resources are in place to support short-term response activities when a disaster occurs.
- **Response.** Steps taken during or immediately after a disaster to minimize harm to people. Response activities often focus on short-term needs, such as ensuring that people have access to sufficient food and water, shelter, and medical care.
- **Recovery.** Actions that occur after a disaster to restore the community to a normal state, ideally more resilient than it was before. Reconstruction activities are part of the recovery phase.

Different planning mechanisms exist to support different phases of the emergency management cycle. For example, hazard mitigation plans (as expected) focus on the mitigation phase, although they will often include some preparation strategies. Emergency operations plans act as guides for the response phase, and may sometimes include directions for the recovery phase, although communities that experience significant disasters may prepare stand-alone recovery plans.

Adaptation planning efforts can address all four phases of the emergency management cycle depending on community needs and characteristics, although for many communities the largest number of strategies will likely fall into the hazard mitigation phase. The types of strategies will also depend in part on the plans and programs that will result from the adaptation planning process. Some strategies may fall into multiple phases. Adaptation planners do not need to use this process as a framework for adaptation planning efforts, but it can be helpful to think about the full spectrum of topics that these efforts can address.

COMMUNITY VISION FOR ADAPTATION AND RESILIENCE

A vision statement captures what community members most value about their community and what they want their community to become. When drafting a vision statement, it is helpful to think about how the community will be similar or different in the future (e.g., in 10, 20, 30, or 50 years or more)—how it will function, what it will be known for, who will be served by the community and its services, what it will look like, what resources will be needed, and more.

Preparation of a vision statement should be as inclusive as possible. Visioning is often the first activity of a community engagement process. The process can include a variety of activities to engage stakeholders in visioning. Ultimately, the ideas and recommendations should be compiled into a single draft vision that is vetted through the adaptation planning process.

Goals should be statements of the desired outcomes from the adaptation planning process based on the vision of a resilient community. A vision statement and goals should reflect the needs, priorities, and values of the community and of the stakeholders involved in the planning effort. Consider visions and goals that help connect local adaptation planning to State efforts, such as the ICARP vision and principles. Establishing goals early creates a common foundation for the future work of everyone involved. Participants can refer back to these goals throughout the planning process to help ensure that they are on the right track. Later in the process, after preparing the vulnerability assessment, participants prepare more-specific goals as a framework for the adaptation policies. Phase 3 of the APG provides additional guidance for drafting goals.

Resilience Defined by the City of San Francisco

Resilience describes the capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt and grow, no matter what kinds of chronic stresses and acute shocks they experience. Approaching challenges through the lens of resilience helps cities better serve their residents today and plan for the longer term. Resilience demands moving beyond reaction through proactive planning. The approach calls for considering problems systematically, seeking out departmental and conceptual relationships from which solutions can be more completely developed, and bridging the practice gaps between social justice, sustainability, disaster recovery and other areas.[2]

Example Vision with Broad Goals

Create a resilient community that can adapt to the effects of climate change.

Goals:

- A community and local economy that continues to function during extreme events and has coordinated and up-to-date preparedness, response, and recovery procedures.
- A water supply that meets the demand of residents, businesses, and visitors in spite of changing precipitation trends.
- A community that can continue to function and thrive with an increase in average temperature and extreme heat days.
- A medical and public health system that proactively addresses human health hazards and inequities in the community.
- Utilities, buildings, and infrastructure that can meet community needs during and after severe weather.
- Sustainably managed forests in coordination with federal, state, and local agencies that will not endanger communities with wildfires.

Example Vision Statement

Make San Francisco a more resilient city in the face of immediate and long-term threats of sea level rise, by taking measures to protect and enhance public and private assets, natural resources, and quality of life for all.[3]

WHAT IS THE GEOGRAPHIC AREA?

The participating jurisdictions usually define the geographic area of the plan or project. For example, a city conducting adaptation planning efforts will focus on building resiliency within its city limits or sphere of influence. Similarly, a county's efforts usually support adaptation in unincorporated areas within its boundaries. Regional governments may also conduct adaptation work for all jurisdictions in their area, and multiple jurisdictions may collaborate on regional adaptation work, creating a geographic area that spans multiple jurisdictions.

However, sometimes the planning area is not as clear cut as political boundaries. Adaptation planning for a natural resource or ecosystem—a watershed, for example—may need to cover a broad area that does not follow political boundaries. Even if the planning effort is limited to a specific area with defined boundaries (such as a state park), natural areas outside of these boundaries may need to be included to the extent possible to help ensure resiliency. Specific areas within a community, such as neighborhoods or defined frontline communities, may also be the focus of an adaptation planning effort. Frontline communities are populations that experience the impacts of issues such as environmental pollution, climate change, and the economic crisis first and most severely. They are most often communities of color and/or low-income.[4]

Planning Areas for Local Hazard Mitigation Plans

LHMPs typically follow local government jurisdictional boundaries, such as cities or counties. In some cases, natural features may define planning areas, like watersheds, or include special districts, such as fire and utility districts. Multi-jurisdictional LHMPs are an option to address cross-boundary issues and collaboration. An example is the San Diego County Multi-Jurisdictional Hazard Mitigation Plan, which includes cities, the county, fire protection districts, and water districts and includes climate change in the vulnerability assessment and strategies. If updating an LHMP, decide if previous plan boundaries are still appropriate.

Regional Collaboratives and Adaptation Planning

Although an agency or organization can create and implement adaptation plans on their own, sharing knowledge and practices with other regional practitioners can benefit adaptation planning and implementation. Climate change is a difficult topic and mutual support is often needed.

As of May 2020, multiple local and regional climate collaboratives have formed across nearly every geographic region in California, representing over 80 percent of the state's population, and others are in early stages of formation. Local and regional collaboratives can take a variety of forms but may resemble loose membership networks that can include any mix of local governments; other public agencies, regional authorities, and planning bodies; utilities; universities; nonprofit organizations; and private sector representatives. Some collaboratives formed in the early and late 2000s, such as the North Coast Resource Partnership, the Los Angeles Regional Collaborative for Climate Action and Sustainability, the San Francisco Bay Area Regional Collaborative, and the San Diego Regional Climate Collaborative. Over the last decade, the Sacramento, Sierra Nevada, North Coast, Central Coast, Santa Barbara, Inland Southern California, and other local and regional areas have also established collaboratives. In 2017, a second collaborative formed in the San Francisco Bay region, the Bay Area Climate Adaptation Network, to address the climate planning needs of local governments. The original Bay Area collaborative now focuses on broader regional solutions.

Each collaborative varies in the composition of their membership, scope of their projects, governance structure, and financial management; however, all the collaboratives offer similar types of support, such as

- Helping participants stay current on climate news, laws and policies, resources, funding, tools, and data applicable to each geography.
- Providing or identifying technical assistance and capacity building opportunities.
- Facilitating a networking space for engaging with other professionals to exchange knowledge, share best practices, build adaptation-related skills, and help define shared adaptation priorities.

- Creating opportunities to coordinate on cross-sector and cross-jurisdictional programs and projects.
- Defining regional approaches for adaptation.
- Leveraging cross-sector resources and strengths to achieve shared outcomes.

The Alliance of Regional Collaboratives for Climate Adaptation, organized by the Local Government Commission, is a statewide body representing many of the state's collaboratives and affiliate members and composed of select nonprofit, business, and academic institutions. ARCCA offers a Regional Adaptation Collaborative Formation Toolkit to support local and regional stakeholders in forming a collaborative.

Participation in regional collaboratives and ARCCA can support agencies with limited capacity and staff. For example, in 2016, the National Oceanic and Atmospheric Agency awarded the San Diego Regional Climate Collaborative a Regional Coastal Resilience Grant to help its members plan for sea level rise; develop scientific, legal, and economic resources regarding coastal resiliency; and perform education and outreach. The resources, tools, and support that collaboratives provide can help to streamline many aspects of the planning process, including data collection and research, identification of adaptation strategies, coordination with neighboring jurisdictions, and community engagement, which can deliver cost savings for resource-constrained agencies.

Building the relationships and infrastructure to support regional collaboration on climate change is especially challenging in underresourced communities. To address this disparity, Senate Bill 1072 (Leyva 2018) established the Regional Climate Collaboratives Program (RCC) at the California Strategic Growth Council. RCC will support cross-sector collaboration at the regional scale that leads to climate change mitigation, adaptation, and resilience initiatives.

WHAT IS THE TIME FRAME FOR THE PLANNING PROCESS?

Like all other planning efforts, adaptation planning requires time and effort. Local government agency staff and other stakeholders will need to commit their time, technical and financial resources, and the available knowledge of everyone involved to ensure a successful process.

The time frame for the adaptation planning process may be determined by a grant, budget cycle, direction from elected officials, community priorities, or other factors. The breakdown of the adaptation planning process in Table 4 shows the phases and steps in this guide and estimates the timing of each step. Steps may take more or less time depending on capacity, funding, scope details, and other characteristics. Following all phases could take 12 to 24 months, depending on the level of detail and resources committed to each phase. It is also possible to work on more than one step at the same time.

Considerations that can affect the time frame of the process are:

- Availability of local agency staff and other stakeholders who will lead and/or participate in the planning process.
- Need for external support from consultants, community partners, or other external partners to complete the process.
- Data availability from internal and external providers and whether any new technical studies are needed.
- Commitment to community and stakeholder engagement (beyond those who are leading the process), including types and timing of events and opportunities. As discussed in Step 1.4, providing opportunities for stakeholder engagement can be critical to ensuring the success of an adaptation planning project.
- Requirements for review and participation by external agencies. Some planning mechanisms, such as general plan safety elements or local hazard mitigation plans, require review by external agencies that can take many months.

TABLE 4. ESTIMATED TIME FRAME FOR ALL PHASES OF THE APG		
PHASE	**STEPS**	**APPROXIMATE TIME FRAME**
Phase 1	1.1 Motivation and scope	One week to one month
	1.2 Teams and resources	Two weeks to one month
	1.3 Climate effects and community elements	Two weeks to six weeks
	1.4 Outreach and engagement	One week to eight weeks
Phase 2	2.1 Exposure	Two weeks to one month
	2.2 Sensitivity and potential impacts	One to three months
	2.3 Adaptive capacity	One to three months
	2.4 Vulnerability scoring	Two weeks to one month
	2.5 Outreach and engagement	Two weeks to three months
Phase 3	3.1 Summarize vulnerability	Two weeks to one month
	3.2 Confirm vision and goals	One to two weeks
	3.3 Prepare adaptation strategies	Two to four months
	3.4 Prioritize adaptation strategies	One to two months
	3.5 Outreach and engagement	Two weeks to two months
Phase 4	4.1 Implement	Ongoing after Phase 3
	4.2 Monitor	Ongoing after Phase 3
	4.3 Evaluate	Ongoing after Phase 3
	4.4 Adjust	Ongoing after Phase 3

WHAT IS THE TIME FRAME FOR THE PLAN OR PROJECT?

Figure 6 shows the different types of plans or programs that could incorporate the adaptation planning process. Each type has a time horizon. Adaptation planning efforts should look far enough ahead to evaluate the climate change effects that may affect systems and assets over the course of their lifetimes and contain policies that can adequately protect them. The adaptation planning process's horizon should be long enough to ensure that the effort can build meaningful resiliency. For example, consider that many infrastructure systems and buildings are in use for at least 50 years, often longer.

The plan or program into which the adaptation planning will be integrated determines the time horizon though it does not need to limit or constrain consideration of long-term projections.

- **General plan.** 20 to 40 years. Projections used to inform policies can go out to 2100.
- **Climate action/adaptation plan.** Varies, but usually at least to 2050, and often to 2100.
- **Local hazard mitigation plan.** 5-year minimum, but often includes longer-term strategies.
- **Specific plan.** Varies depending on the project, but often 15 to 30 years.
- **Capital improvement plan.** 1 to 5 years.

Projects created under a plan will most likely exceed the lifetime of the plan itself. For example, imagine a general plan adopted in 2015 that expires in 2040. A subdivision constructed in 2038 will likely still be around in 2070, long after the general plan expired and possibly even longer after the standards, codes, guidelines, and policies governing its construction were written. Adaptation planning efforts should consider the lifespan of projects that will be built or implemented under that plan when deciding on a time horizon.

Step 1.2: Assemble Project Team(s) and Resources

Consider the available resources for the planning process, including financing, technical resources, knowledge, and time, and what can be reasonably accomplished with them. This helps set realistic expectations for the planning effort and identifies any critical gaps that need to be filled.

WHAT KNOWLEDGE AND TECHNICAL RESOURCES ARE AVAILABLE?

Adaptation planning depends on four key resources: time, technical resources, knowledge, and financial resources. Knowing how much of each resource is available and if it is sufficient to achieve the desired goals of the adaptation planning effort is critical to building and maintaining resiliency.

In addition to obtaining the technical resources, it is also necessary that planners and other participants have the knowledge to understand and use these resources. For example, a dataset on local climate-related hazards can be extremely helpful for adaptation planning, but planners will need to know how to analyze the dataset and interpret the results for it to be useful. Similarly, a scientific paper may provide detailed information about a relevant topic but may be written using technical jargon and academic language that is not easily understood by everyone. Determine if those conducting adaptation planning activities have the knowledge to work with the technical resources and prepare a useful end-product. If not, look at expanding the participants to include members with the necessary expertise or consider training opportunities to fill in knowledge gaps.

It can be helpful for communities to use a simple matrix to identify their capacity for adaptation planning. The Adaptation Capability Advancement Toolkit (ADAPT-CA) is one approach.[5] It helps participants to assess their leadership and organizational culture, staffing and technical capability, stakeholder engagement and partnerships, and operations and institutionalized processes. Capacity is measured on a four-point scale, from Initiation (the lowest level of capacity) to Optimization (the highest level). Matrixes such as ADAPT-CA can also help with goal setting for adaptation planning efforts. After communities identify their current capacity for adaptation planning, they can figure out their deficits and draft goals to help them approach or achieve optimal conditions.

WHAT IS THE BUDGET FOR THE PLANNING PROCESS?

The budget should consider the needs of each phase, inclusive of the financial resources to support stakeholder engagement. Budgets should include labor costs to complete the work in addition to other costs, including equipment, meeting supplies, materials, production, transportation, training, facility rental, and food for meetings. In some cases, adaptation planning may require minimal additional financial resources if existing staff can do all the work; however, in most cases, additional expertise is needed to conduct all or parts of the process. If existing staff lead a new adaptation planning process, it is important to ensure key staff have dedicated time in their workload over the time frame of the process. If a capacity assessment determines that existing staff resources are not available to lead an adaptation planning process, the budget may need to cover hiring additional staff or external consultants, or developing partnerships with regional collaboratives, university partners, or other community-based or nongovernmental organizations. An inclusive and equitable adaptation planning process includes the participation of community members and stakeholders, and the budget should encompass the financial needs of a robust outreach and engagement process that values community-based contributions. After estimating the budget, determine if existing general funds or other dedicated internal funds are available; if not, identify options for grants or external funding sources or partnerships. Communities may also be able to receive low-cost or free assistance from experts working *pro bono* or from a local university.

WHO WILL BE ON THE PROJECT TEAM?

The climate adaptation planning team provides institutional and technical knowledge and often supports stakeholder outreach and engagement. As with any project, the team should include a mix of people from relevant agencies and organizations with a range of skills and responsibilities, but it should not be so big that management and coordination become difficult. The project team should have a primary point of contact or team leader who coordinates the process and team meetings. The team leader should be empowered to make recommendations and/or have direct access to decision-makers. If resources allow, the project team can be supported by an advisory group with a larger membership to include representatives of partner agencies and community organizations that provide subject matter expertise and credibility to the process. If a consultant team is hired to support the process, it should be involved in the project team as well.

A project team often includes members of other departments under the same organization. For example, if the planning department of a city government conducts the adaptation planning effort, consider including members of the public works, parks and recreation, police, public health, and building departments. If special districts

within the project boundaries play important roles, such as a fire protection district, school district, or water district, consider including a representative from these districts on the project team. Given the scale, pace, complexity, and uncertainty of climate change impacts, adaptation planning necessitates inclusive, collaborative planning. Significant coordination across departments, particularly for larger jurisdictions, should occur when assessing vulnerabilities and developing, vetting, and prioritizing adaptation strategies. Such coordination will not only result in a more meaningful and comprehensive adaptation plan but can also help build staff capacity and buy-in for adaptation initiatives.

Community-based organizations and institutions, such as hospitals and colleges, may be part of a core project team. The core project team should also include organizations representing or departments serving vulnerable populations in the community. It should also be selective to reflect the community and include at least one or more trusted community representatives. In some cases, it can make sense to include representatives from applicable for-profit companies, such as utility companies or major employers.

Remember that the core project team is not everyone who will be involved in the process. A larger group will be involved in other ways, perhaps participating in broad and focused community and stakeholder engagement, such as public meetings, or being on an advisory or focus group. Outreach and engagement are discussed in Step 1.4 of this phase.

When deciding who to include in a core project team, consider these questions:

- Does this person bring important information or skills, especially a person identified as a useful technical or knowledge resource?
- Does this person represent a population group that will be included in the vulnerability assessment or an agency with some responsibility or control over an included asset?
- Can this person be involved over the length of the planning process?
- Is this person empowered to make decisions in support of the process?

Teams integrating adaptation planning into local hazard mitigation planning should include a comprehensive set of stakeholders from government departments, decision-making bodies, and regional or special districts. The following stakeholders should have an opportunity to be part of the process:[6]

- Local and regional agencies involved in hazard mitigation activities.
- Agencies that have the authority to regulation development.
- Neighboring jurisdictions.
- Businesses, academia, and other private and nonprofit interests.

If possible, adaptation planning processes should not be conducted by a single person. Even communities with a dedicated resilience expert should assemble a team to conduct integrated adaptation planning activities.

Community Advisory Groups

Community advisory groups are made up of local and regional stakeholders with local knowledge about social, built, natural, economic, and cultural systems. Community advisory groups provide local expertise and can support outreach and engagement. Community advisory committee members can be ambassadors for the project and ensure that engagement includes a broad representation of interested community members in climate-adaptation planning and decision making.

For example, the Town of Mammoth Lakes created the Climate Change Action Team (CCAT) to inform the Resilient Mammoth Lakes project. The CCAT played an integral part in accurately assessing impacts and adaptive capacity, and in informing the development of adaptation measures.

Another example is the stakeholder working groups for developing the City of Long Beach Climate Action and Adaptation Plan. The City created three distinct working groups—a scientific working group, business working group, and community working group—to validate project methodology and provide input on climate-related concerns and the public engagement approach.

WHAT ARE THE AVAILABLE TOOLS AND RESOURCES?

Adaptation planning can seem overwhelming, especially for participants who have limited experience with the subject. Although it is a very broad and often complex topic, there are numerous resources to make adaptation planning easier to understand and carry out. These resources range from scientific datasets about future climate conditions and associated climate change effects, to example resiliency strategies and considerations for implementation. The Adaptation Clearinghouse is a good starting point for resources.

In recent years, many resources have emerged to help communities conduct adaptation planning activities, including guidance documents like this APG, information about climate change and its effects, support for developing adaptation strategies, and assistance with implementation. These resources may be online or hard-copy documents, data files, software packages, or other formats. Many technical resources are freely available and easy to obtain. Others may be difficult to find, such as studies and reports on very specific topics. When scoping an adaptation planning effort, consider if there are any technical resources that participants do not have access to. If there are missing technical resources, be sure to devote time in the project to locate them. Regional collaboratives, other communities that have successfully completed adaptation planning, staff at the Integrated Climate Adaptation and Resiliency Program, and regional and state experts on adaptation planning may be able to provide assistance. Reviewing neighboring jurisdictions' vulnerability assessments or adopted adaptation and resilience plans, can also help avoid duplication and maximize resources.

This guide is meant to be a "hub" between the different adaptation planning resources that are available. It is not meant to replace these resources, but to inform about how best to use them and how they relate to each other. The resources below are primary resources available to support local adaptation planning in California; however, there are many more reports, guidance documents, and toolkits available from government and nongovernmental agencies. A full description of each resource can be found in Appendix C.

Practitioners conducting adaptation planning activities should feel free to use any resource that is useful, as long as it meets some basic criteria. It should be prepared by a credible person or organization, and the assertions in the document should be clearly cited. Adaptation planning efforts should always use the most recent and best science and other studies, and practitioners should be wary of resources that disagree with the best available science or do not have credible sources.

State of California Resources

- **Cal-Adapt.** Cal-Adapt is an online resource for viewing and downloading data about projected changes in climate conditions and associated natural hazards.
- **California's Climate Change Assessment.** California's Climate Change Assessment is a series of reports looking at future climate conditions throughout the state and the consequences that may result from them.
- **California Adaptation Clearinghouse (resilientca.org).** The Adaptation Clearinghouse is an online resource with links to California-specific climate adaptation and resilience resources.
- **California Building Resilience Against Climate Effects.** CalBRACE is a project of the California Department of Public Health's Climate Change and Health Equity Program, with an online toolkit to help plan for the public health impacts of climate change and a framework for public health adaptation planning.
- **CalEnviroScreen.** CalEnviroScreen 3.0 is an online screening tool that identifies communities most affected by and vulnerable to the effects of many sources of pollution and population-based disparities.
- **California Heat Assessment Tool (CHAT).** CHAT is an online tool (https://www.cal-heat.org/) that provides detailed information about future extreme heat conditions across California.
- **California Office of Environmental Health Hazard Assessment (OEHHA).** OEHHA assesses the health risks caused by environmental hazards throughout California.
- ***California State Hazard Mitigation Plan.*** The *California State Hazard Mitigation Plan (SHMP)*, developed by the California Office of Emergency Services, is a summary of the threat posed by hazardous conditions in the state, strategies to mitigate hazardous events, and information about resources to support hazard mitigation.
- **MyPlan.** MyPlan, developed by the California Office of Emergency Services, is an online tool that allows users to enter a location in California, such as a city or specific address, and view the potential hazards that may affect that location.
- **Ocean Protection Council.** California's Ocean Protection Council's Climate Change Program publishes multiple resources meant to assist coastal communities with adapting to ocean-related climate hazards and building resiliency for oceanic assets. Resources include State of California Sea-Level Rise Guidance, studies and reports on ocean acidification and its effects, and opportunities for grant funding on relevant issues. The Ocean Protection Council also works on issues such as marine pollution and sustainable fisheries, which may relate to climate change resiliency for some communities.

- **California Coastal Commission.** The California Coastal Commission developed *Sea Level Rise Policy Guidance* and *Coastal Adaptation Planning Guidance: Residential Development* to provide an overview of the best available science on sea level rise in California and recommend planning and regulatory actions for adaptation.
- **Building Blocks: A Comprehensive Housing Element Guide**. The Building Blocks guide is a comprehensive resource explaining requirements, state of practice, and useful examples under state housing element law.
- ***Planning and Investing for a Resilient California.*** *Planning and Investing* for a Resilient California, developed by OPR's Technical Advisory Group, is a guidebook for State agencies to integrate climate change considerations into every aspect of government.
- **Sea the Future.** Developed by the Coastal Conservancy, NOAA, and the Sentinel Site Cooperative in the San Francisco Bay Area, the Sea the Future resource provides a platform that highlights all tools available for visualizing sea level rise in California.
- ***From Mountains to Cities: Exploring California's Urban Connections to Sierra Nevada Ecosystems*.** *From Mountain to Cities*, developed by the Alliance of Regional Collaboratives for Climate Adaptation, describes the interconnections between upstream rural communities, and downstream urban areas.
- **Climate Ready Program.** The Climate Ready Program, administered by the California Coastal Conservancy, provides grant funding to multi-benefit projects that use natural systems to assist communities in adapting to the effects of climate change.

Federal Resources

- **FEMA's *Local Mitigation Planning Handbook*** is a guidance document to help communities across the country develop hazard mitigation plans.
- **US Census Bureau's data.census.gov.** Data.census.gov is an online database hosted by the US Census Bureau that allows users to view, download, and map results from the decennial census, the annual American Community Survey, and other specialized surveys and analyses carried out by the Census Bureau.
- **US Climate Resilience Toolkit.** The US Climate Resilience Toolkit, a program of the United States Global Research Program, is a set of national resources to assist practitioners in conducting climate adaptation work.
- ***Regional Resilience Toolkit*.** The *Regional Resilience Toolkit*, prepared by FEMA and EPA in partnership with the Metropolitan Transportation Commission/ Association of Bay Area Governments, is a toolkit to help with regional disaster planning across multiple jurisdictions and with non-governmental partners.

- **NOAA's Digital Coast** is a comprehensive platform for data, tools, and training for communities to address coastal issues.
- **Federal Highway Administration Nature-Based Solutions**. The Federal Highway Administration provides resources, pilot studies, webinars, and examples of nature-based solutions that help protect coastal highways from sea level rise, flooding, and coastal erosion.
- ***Guidance for Considering the Use of Living Shorelines***. *Guidance for Considering the Use of Living Shorelines* was developed in 2015 by NOAA to provide insight on implementing a living shoreline along estuarine coasts, bays, and tributaries.

Nongovernmental Resources

- **Climate Adaptation Knowledge Exchange.** The Climate Adaptation Knowledge Exchange (CAKE) was launched in 2010 as a shared knowledge base for managing the natural and built systems in the face of climate change.
- ***Guide to Equitable Community-Driven Climate Preparedness Planning.*** The *Guide to Equitable Community-Driven Climate Preparedness Planning*, prepared for the Urban Sustainability Directors Network in 2017, provides guidance on how to complete an equitable climate adaptation planning process.
- ***Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: A Guidebook.*** This guidebook, developed by the Greenlining Institute, prioritizes the climate adaptation and community resilience needs of frontline communities and offers planning staff a step-by-step process for defining equity in measurable factors in policies and grant programs.
- ***Mapping Resilience: A Blueprint for Thriving in the Face of Climate Disasters.*** *Mapping Resilience*, prepared by the Asian Pacific Environmental Network, aims to raise the public visibility of the needs of frontline communities within statewide climate adaptation and resilience efforts.
- **Healthy Places Index**. The Healthy Places Index, developed by the Public Health Alliance of Southern California, is an interactive mapping tool that combines 25 community characteristics into a weighted score that ranks census tracts across California for conditions that support health.
- ***Community-Driven Climate Resilience Planning Framework***. *Community-Driven Climate Resilience Planning Framework* was developed by the Movement Strategy Center and community-based organizations across the country to strengthen climate adaptation efforts through culturally relevant, democratic processes with meaningful community engagement.
- **Coastal Adaptation Policy Briefs**. The Stanford Center for Ocean Solutions developed a set of Coastal Adaptation Policy Briefs that provide engineering, financial, and legal and regulatory solutions for coastal resources.

- **Tribal Climate Change Adaptation Planning Template**. This toolkit, developed by the Institute for Tribal Environmental Professionals, contains templates and other resources to support tribal climate change efforts.

Step 1.3: Identify Community Climate Effects and Elements

WHAT ARE THE POTENTIAL CLIMATE CHANGE EFFECTS IN THE COMMUNITY?

In this phase, the goal is to compile a preliminary list of potential climate change effects to help support project scoping. The detailed vulnerability assessment is completed in Phase 2, which is when detailed climate data is accessed and analyzed. Not every community will be affected by all potential climate-related hazards and effects, and communities need to select which should be included in the adaptation planning process.

There is no comprehensive list of all climate-related hazards or other effects, but several existing resources provide lists that may be a good starting point (see Table 5). Communities should not be restricted to the lists from these and other resources. Practitioners should consider effects beyond primary climate change consequences, such as the effects on human health hazards or agriculture and forestry pests and diseases. Many consequences of climate change are compound. For example, high wind, hail, lightning, and intense precipitation can all be addressed as a single hazard called "severe weather" or something similar. Similarly, sea level rise, high tides, storm flooding, shoreline and bluff erosion, and storm surge can be collectively called "coastal hazards."

Not all natural hazards are related to climate change. For example, seismic hazards such as earthquakes are not linked to climate change in any meaningful way. However, documents such as general plan safety elements and hazard mitigation plans usually require a discussion of all relevant hazards, not only those related to climate change. If the adaptation planning effort is meant to support one of these documents, hazards that are not climate related should also be included.

Even without non-climatic hazards and secondary consequences linked to climate change, the list of potential effects in climate adaptation planning can be overwhelming, but there are ways to reduce it to a more manageable size. The easiest way to start is to exclude climate change effects that are not expected in the defined planning area. For example, a community in the high desert will probably not need to include coastal hazards. With such a diverse environment throughout California, urban and rural communities respectively face their own unique set of challenges due to climate change.

However, because climate change does not respect geographic boundaries, hazards outside of a defined planning area may still be harmful to that planning

area. For instance, a wildfire can significantly impair regional air quality, block major transportation routes, depress tourism, create refugees, and cause many other impacts that extend beyond the burned area. Communities in the region may be affected even if they have no wildfire-prone areas in their boundaries. It may be worth including hazards that could affect areas of major regional employment or other large economic drivers (such as state or national parks and forests), disrupt key infrastructure (such as roads, rails, and power lines), or affect important resources that a community relies on (such as snowpack that can affect water availability).

If the adaptation planning effort is for a special district, such as a water provider or park district, the number of climate change–related effects may be smaller, depending on the affected buildings, infrastructure, or resources. For example, ocean acidification is likely not a hazard of concern for school districts, even those in coastal communities.

TABLE 5. EXAMPLE LISTS OF CLIMATE-RELATED EFFECTS AND HAZARDS BY SOURCE			
HAZARD	**SAFEGUARDING CALIFORNIA**	**CALIFORNIA FOURTH CLIMATE CHANGE ASSESSMENT**	**CALIFORNIA STATE HAZARD MITIGATION PLAN**
Avalanche			X
Drought	X	X	X
Erosion			X
Extreme cold			X
Extreme heat			X
Flood			X
Fog		X	
Hail			X
Heat waves	X		
Hurricane			
Intense rainstorms		X	
Landslide			X
Lightning			X
Ocean acidification, hypoxia, and warming	X		
Precipitation changes	X	X	
Riverine flooding	X		
Sea level rise	X	X	X
Severe storms and extreme weather	X		
Severe wind		X	X
Severe winter weather			X
Snowpack loss	X	X	
Storm surge			X
Subsidence			X
Warmer temperatures	X	X	
Wildfire	X	X	X

Table 6 presents examples of how some communities and government agencies across California have organized the natural hazards in their climate adaptation efforts.

TABLE 6. EXAMPLES OF LISTS OF CLIMATE HAZARDS IN CLIMATE ADAPTATION EFFORTS

CITY OF SANTA CRUZ	SACRAMENTO MUNICIPAL UTILITY DISTRICT
Sea level rise Flooding Severe storms and weather Coastal erosion Drought Wildfires Ocean acidification Saltwater intrusion Increased temperature Food and fuel/energy availability Coastal habitat loss Altered ecosystems Altered coastal access Altered public trust resources	Ambient temperature rise Drought Wildfires Wind patterns Hydrology Sea level rise and flooding Storm events
TOWN OF MAMMOTH LAKES	**SAN DIEGO COUNTY**
Drought Extreme heat Flooding Forestry pests and diseases Human health hazards Landslides and mudflows Severe weather Severe winter weather Smoke and ash Wildfire	Increased temperatures Precipitation pattern changes Wildfire Flooding Sea level rise

WHAT ARE THE POPULATIONS AND ASSETS IN THE COMMUNITY?

Climate change does not have the same effects in all parts of a community. Some people and physical assets will be affected much more severely than others, and adaptation planning efforts need to evaluate the full range of potential effects. Communities should select the specific populations and assets to assess in order to clearly understand how susceptible different people, places, and systems of the community are to climate change–related hazards and other effects. This allows

the community to develop adaptation policies that respond to specific climate vulnerabilities and build resiliency for the most susceptible people and assets in the community. Similar to identifying climate change effects themselves, the goal here is to compile a preliminary list of potential populations and assets to help support project scoping and the other steps of this phase. The detailed vulnerability assessment, including asset mapping, is completed in Phase 2.

What Is a Physical Asset?

An asset is any feature of a community that is not a person or group of people. Assets include the natural environment as well as the built environment, such as buildings and infrastructure systems.

Populations and assets are usually organized into a handful of categories or sectors. For consistency with Safeguarding California and the California Adaptation Clearinghouse, the APG organizes by 11 sectors:

- Agriculture
- Biodiversity and Habitat
- Emergency Services
- Energy
- Forestry
- Land Use and Community Development
- Ocean and Coast Resources
- Parks and Recreation
- Public Health
- Transportation
- Water

Communities are free to use an organizing approach that better meets local needs. For example, Placer County used the following categories in its adaptation planning efforts for identifying populations and assets:[7]

- Populations
- Infrastructure
- Buildings and Facilities
- Economic Assets
- Ecosystems
- Services

Regardless of how they are organized, virtually all people and assets in a community will be affected by climate change in some way. However, it is not usually feasible to assess the vulnerability of every population group or every asset in the community. At the same time, adaptation planners should ensure that their assessment does not exclude populations and assets that face greater harm or are critical to the community's well-being. When deciding which populations and assets to include, consider these questions:

- Is the population or asset likely to face substantive harm from climate-related effects?
- Is the population or asset likely susceptible to climate-related effects in a unique way, different from most other populations or assets in the community?
- If the population or asset is substantially harmed, are there significant negative consequences to the community? Consider both direct and indirect consequences and remember that consequences may not be evident until well after the harm occurs.
- Is the population or asset important to the community or other stakeholders?
- Is the population or asset necessary to achieve overarching resiliency goals?

If the answer to any of these questions is "yes," the population or asset in question should likely be included.

People

To help decide which groups of people to evaluate for climate-related susceptibility, focus on populations who are likely to face the most harm from climate change. These persons are sometimes said to be "socially vulnerable" or to have "social vulnerability." This does not mean that they lack resilient qualities. A person may be vulnerable to climate-related consequences but have very strong social networks and community involvement, which improve individual resiliency. It also does not mean that they are

responsible for their vulnerability or that they could have made different choices that would have improved their resiliency. Many socially vulnerable people have historically faced, and continue to face, systemic social, economic, and political marginalization and injustice. By identifying groups that are socially vulnerable, communities acknowledge the systemic discrimination that many such persons have faced and seek to correct these wrongs and build resiliency in a manner that is equitable and just.

There are many reasons why some groups of people are more susceptible to climate-related hazards—limited access to financial resources, health challenges or disabilities (physical, cognitive, behavioral, and all other forms), living or working conditions that result in greater exposure to hazard events, physical or social isolation, historical and current marginalization or deprivation of resources, and reduced agency or ability to make decisions. These are all factors that can lead to a greater potential for harm, and many people fall into more than one category.

When selecting populations for an adaptation planning effort, consider the underlying factors that contribute to a group being potentially susceptible. It may help to combine populations that have similar root issues, are likely to face similar levels of vulnerability and may benefit from similar adaptation solutions. For example, it might make more sense for a community to assess low-income households (<80 percent of area median income), very low-income households (<50 percent), and extremely low-income households (<30 percent) in one category. Other communities might benefit from evaluating these three groups separately. A group of potentially susceptible people should not be excluded simply because it represents a small percentage of the total population. However, it may not be possible to accurately assess the vulnerability of a very small number of people. If there are extremely small groups who should be included in the adaptation planning efforts, consider combining them with another group, as appropriate.

Examples of potential populations to include are:[8]

- Chronically ill persons, including those with compromised immune systems
- Foster children
- Incarcerated persons
- Linguistically isolated persons
- Low-income persons
- Persons experiencing homelessness
- Persons in designated disadvantaged communities
- Persons in overcrowded households
- Persons with disabilities

- Persons without access to lifelines
- Persons working outdoors, including farmworkers
- Persons working in industries that may be subject to transition or elimination as a result of climate change
- Renters
- Senior citizens, especially those living alone
- Single female heads of households
- Students
- Tribal communities
- Undocumented persons
- Visitors and seasonal residents
- Young children

For more guidance on selecting populations for climate adaptation planning, and to foster equity in implementation, see the Vulnerable Populations and Equity Checklist appendices of *Planning and Investing for a Resilient California* and the ICARP guide, "Defining Vulnerable Communities in the Context of Climate Adaptation."

Built Assets

There are many reasons to include built assets (buildings, infrastructure systems, developed land uses, important economic drivers, etc.) in an adaptation planning effort. Some built assets are used daily by a large percentage of the population and their damage or loss would significantly disrupt community members. Some built assets provide important services, such as delivering water or electricity. Some employ many people in the community or attract large numbers of visitors, and the community would face economic hardship if the asset had to limit its operations or close. Other built assets, such as local landmarks or historically/culturally significant locations, may not provide tangible benefits but are a source of community pride. Also, consider built assets not only for their day-to-day performance, but for their value during or after a major emergency. For example, people may not think of their local community hall or recreation center as a critical asset, but during emergency events, these buildings can be assembly points, shelters, and bases of operations for response and recovery operations.

When developing the individual categories of built assets, consider whether similar assets should be grouped together or evaluated separately. It may make sense to evaluate separately very important assets or those whose loss would be highly disruptive. For example, communities can generally group roadways into one category, but it may make sense to evaluate each major roadway or highway individually. If a handful of similar built assets face different potential harms (for

example, multiple hospitals or wastewater treatment plants in different parts of the community that are exposed to different climate-related hazards), it might also be helpful to evaluate these separately.

Consider whether it is helpful to evaluate the service a built asset provides separately from the buildings or infrastructure that provide the service. Although they seem related, the two could experience different degrees of vulnerability to natural hazards and require different adaptation solutions. For example, a drought can significantly affect water deliveries in the community, even if it causes no physical damage to the water infrastructure. A hospital might survive a severe storm event with no damage or loss of capacity, but emergency medical response service can be harmed by blocked or damaged roadways.

Examples of potential built asset categories are:

- Airports
- Bridges and tunnels
- Communication systems and service
- Community facilities (recreation centers, libraries, senior centers, etc.)
- Power lines, natural gas pipes, water lines, and related services
- Flood control infrastructure
- Goods movement
- Government offices and government continuity
- Grocery stores
- Major employers and economic sectors
- Major roads and highways, especially evacuation routes
- Medical facilities
- Parks
- Power plants
- Public safety service
- Rail lines
- Schools, including colleges and universities
- Transit stops

Natural and Managed Resource Assets

These assets include natural ecosystems as well as assets that seem natural but are closely controlled by humans, such as agricultural lands and managed timberlands. They can include the land or water itself, the plant and animal communities that

live there, and less tangible benefits such as healthy biodiversity. Paleontological or geological resources could also be included in this category, including those that are extracted for economic benefits.

There are many reasons to include natural and managed resource assets. First and foremost, many of these assets are defining characteristics of the community and the region and are considered invaluable to the people who live there. In a state with such diverse and prized natural systems, natural and managed resource assets can have tremendous symbolic value and be an enormous source of pride. In many communities, these assets directly or indirectly employ large numbers of people in recreation, tourist-serving activities, agriculture and food processing, and other economic sectors. Natural and managed resource assets can also provide critical ecosystem services, such as dunes and wetlands that help buffer coastal communities from storm surges and high tides.

Examples of potential natural and managed resource assets are:

- Beaches
- Chaparral
- Endangered, threatened, and sensitive species
- Farms, orchards, and vineyards
- Forests
- Greenbelts
- Hiking and biking trails
- Historic and cultural resource areas
- Keystone species
- Lakes and rivers
- Livestock
- Meadows and grasslands
- Metal, stone, petroleum, and other extracted resources
- Pastures
- Scenic views or ridgelines
- State and national parks, forests, wilderness areas, and other protected locations
- Timber resources
- Wetlands
- Wildlife corridors

For guidance on engaging the community in identifying assets and participatory mapping exercises, see Phase 2, Step 2.5, Outreach and Engagement.

FEMA LHMP Guidance for Identification of Community Elements

The list of example community element categories to consider in the vulnerability assessment is based on FEMA's LHMP Guidance.[9] Identification of community categories should consider both existing and planned community developments.

- **Essential Facilities.** Hospitals and other medical facilities, police and fire stations, emergency operations centers and evacuation shelters, resilience hubs and cooling centers, and schools. These facilities are essential to the health and welfare of the whole population and are especially important following climate-influenced hazard events.
- **Transportation Systems.** Airways (airports, heliports, highways), bridges, tunnels, roadbeds, overpasses, transfer centers, railways (tracks, tunnels, bridges, rail yards, depots), and waterways (canals, locks, seaports, ferries, harbors, drydocks, piers).
- **Lifeline Utility Systems.** Water, wastewater, transportation fuels, natural gas, electric power, solid waste, and telecommunication systems.
- **High-Potential-Loss Facilities.** Nuclear power plants, dams, and military installations, where damage would have large environmental, economic, or public safety consequences.
- **Hazardous Material Facilities.** Facilities housing industrial/hazardous materials such as corrosives, explosives, flammable materials, radioactive materials, and toxins.
- **Vulnerable Populations.** Non-English-speaking people or elderly people who may require special response assistance or special medical care after a climate-influenced disaster.
- **Economic Elements.** Major employers and financial centers that could affect the local or regional economy if disrupted.
- **Areas of Special Consideration.** Areas of high-density residential or commercial development where damage could result in high death tolls and injury rates.

- **Historic, Cultural, and Natural Resource Areas.** Areas that may be identified and protected under state or federal law.
- **Other Important Facilities.** Facilities that help ensure a full recovery from or adjustment to changed climate conditions. These would include government functions, major employers, banks, and certain commercial establishments such as grocery stores, hardware stores, and gas stations.

Step 1.4: Prepare an Equitable Outreach and Engagement Approach

The APG recommends integrating community outreach and engagement into all phases of the adaptation planning process. This will build trust between the core planning team and community stakeholders and develop a plan that has collective support. Outreach and engagement should be considered carefully and budgeted appropriately. The approach should include stakeholders within the organization or agency leading the adaptation planning process, and those external to the organization or agency.

Outreach for Local Hazard Mitigation Plans

LHMPs are required to include an opportunity for the public to comment on a plan during the drafting stage and prior to plan approval. A necessary characteristic of a diligent public process is inviting community stakeholders to provide input throughout the planning process and allowing for adequate time and resources to incorporate their comments.

Many resources are available to support preparation of an outreach and engagement approach.

- The *Regional Resilience Toolkit* provides guidance on principles for successful engagement and tactical tools that are applicable to the APG's adaptation planning process.
- *California's Fourth Climate Change Assessment Summary Report from Tribal and Indigenous Communities* details how to better partnership with tribal communities, provides case studies, and recognizes traditional ecological knowledge. All local agencies should conduct intentional outreach to engage or partner with tribal communities. The Governor's Tribal Advisor Office has links to numerous state agencies' policies or procedures and some additional helpful resources.
- The Government Alliance on Race and Equity has resources available to local governments to help staff to address race, equity, and justice.[10]
- The Urban Sustainability Directors Network has also developed guidance related specifically to climate risk and vulnerable populations. See Figure 7 for an example.[11]
- The Local Government Commission's guidebook *Participation Tools for Better Community Planning* provides an overview of public participation tools that can help communities plan for health-promoting land use and transportation, with a focus on lower-income, underserved communities, along with an examination of the value of resident involvement and the key principles for successful community planning.[12]
- The Institute for Local Government offers an Inclusive Public Engagement toolkit that includes tipsheets and resources to effectively plan and implement inclusive engagement strategies.
- The California Environmental Justice Alliance (CEJA) and PlaceWorks' *SB 1000 Implementation Toolkit* provides best practices for promoting meaningful community engagement throughout environmental justice planning processes, and guidance on how to develop environmental justice objectives and policies in general plans. Many of the practices presented are applicable to engaging communities on climate adaptation.
- From Community Engagement to Ownership, a project of the Urban Sustainability Directors Network, offers case studies and best practices for collaborative governance, including an expanded spectrum of community engagement to ownership prepared by the Facilitating Power and Movement Strategy Center.

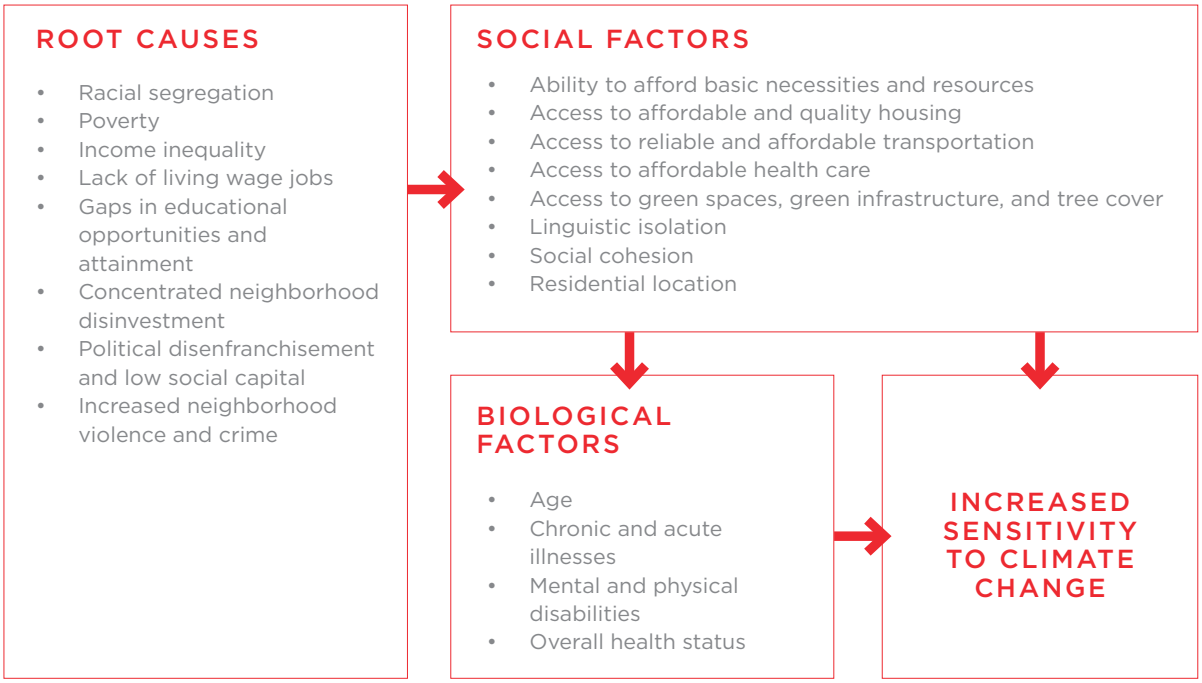
As mentioned in Step 1.2, Assemble Project Team(s) and Resources, it can be beneficial to assemble a core project team with a mix of representatives from various government departments, community-based organizations, public institutions, hospitals, colleges, utility companies, and/or major employers. Team members play

a critical role in the process, providing institutional and technical knowledge and supporting external stakeholder outreach and engagement.

Additionally, it is helpful if all members of the core planning team are trained in outreach before engaging stakeholders. Topics such as cultural humility, racism, and systems of injustice are issues that some may not be used to addressing in relation to climate risk, but it is critical to understand those power dynamics when working with vulnerable populations. For example, Figure 7 shows how populations deal with underlying structural root causes, social factors, and biological factors that could contribute to increased sensitivity to climate change. Understanding these causes and factors before the outreach process helps create avenues of communication and builds trust between the project team and the community.

The Government Alliance on Race and Equity is one organization that has resources available to local governments to help staff understand race, equity, and justice and to integrate it into their work.[13]

Figure 7. Root Causes and Factors Affecting Sensitivity to Climate Change



Source: Tina Yuen, Eric Yurkovich, Lauren Grabowski, and Beth Altshuler, Guide to Equitable Community-Driven Climate Preparedness Planning, prepared for Urban Sustainability Directors Network, May 2017, page 12, accessed November 2019.

After assembling the core planning team, it is essential to enlist residents, businesses, students, and other community groups because they have knowledge, information, and ideas that local governments may not know or anticipate. Community members most affected by climate issues can collaborate on solutions, which can result in more effective implementation. It is key to empower community member that they have a sense of co-ownership in the planning process.

The project team and/or consultant should prepare an approach or plan for community and stakeholder engagement, with support from the advisory group if one is assembled. The plan can be simple, brief, and flexible to adapt over time. Ideally, as noted in the *Regional Resilience Toolkit*, the outreach and engagement plan should:

- Identify stakeholders (stakeholder mapping is one method).
- Determine culturally specific outreach needs and strategies.
- Link planning and outreach messages to community values and needs.
- Develop outreach goals for each stakeholder group and the broader community.
- Establish how to engage individuals and groups best and specify objectives and roles.
- Define the specific methods to most effectively engage each group: in a meeting, via digital communications, one-on-one, or through partners or other groups.
- Detail how these activities will integrate with other planning efforts.
- Determine need, objectives, and composition for an advisory group.
- Determine the focus and purpose of each event, meeting, and input opportunity.
- Provide a schedule with objectives and roles for each activity.[14]

The *Regional Resilience Toolkit* includes a sample outline for outreach and engagement plan and tools and worksheets to support outreach tools, materials, activities, and meetings.

Institute for Local Government's Principles of Outreach and Engagement[15]

- **Inclusive.** The planning and design of the engagement process includes input from appropriate local officials as well as from members of the community.
- **Transparency.** There is clarity and transparency about public engagement process sponsorship, purpose, design, and how decision makers will use the process results.
- **Authentic intent.** The process generates public views and ideas to help shape local government action or policy, rather than persuade residents to accept a decision that has already been made.
- **Breadth of participation.** The public engagement process includes people and viewpoints that reflect the local agency's population of affected residents.
- **Informed.** Participants in the public engagement process have information consistent with the work that local governments are being asked to do.
- **Accessible.** Public engagement processes are broadly accessible in terms of location, time, translation, childcare, food, and ADA compliance.
- **Appropriate.** The public engagement process uses one or more discussion formats that are responsive to the needs of identified participant groups, and encourages full, equitable participation.
- **Feedback.** Local officials communicate ultimate decisions back to process participants and the broader public, with a description of how the public input was considered and used.
- **Evaluation.** Planners and participants evaluate each public engagement process and activity so that the process is iterative and shared lessons are applied to future engagement efforts.

PUBLIC-PRIVATE PARTNERSHIPS

Local agencies can engage with the business community to support adaptation planning and implementation. Protecting a healthy local economy is a critical part of maintaining a community's long-term resilience, and many businesses recognize the threat that climate change may pose to their activities and financial health. Businesses also can provide increased investments and other resources that may not always be available to individual communities. This creates opportunities for businesses and local governments to join or create public-private partnership to address resilience issues. Opportunities for public-private partnerships include creating an economic working group or advisory body, establishing training and capacity-building opportunities such as resilience or continuity planning workshops, and setting adaptation standards for permitting new private developments. Communities can join with local businesses as well as larger companies that may be able to meaningfully contribute to local efforts. Local governments should consider how best to use public-private partnerships to support comprehensive community adaptation efforts, because businesses may be able to bolster resilience for other stakeholders and members of the community. Local governments can consider how best to weigh the needs of businesses along with the requirements of other community members.

Investing in Our Future

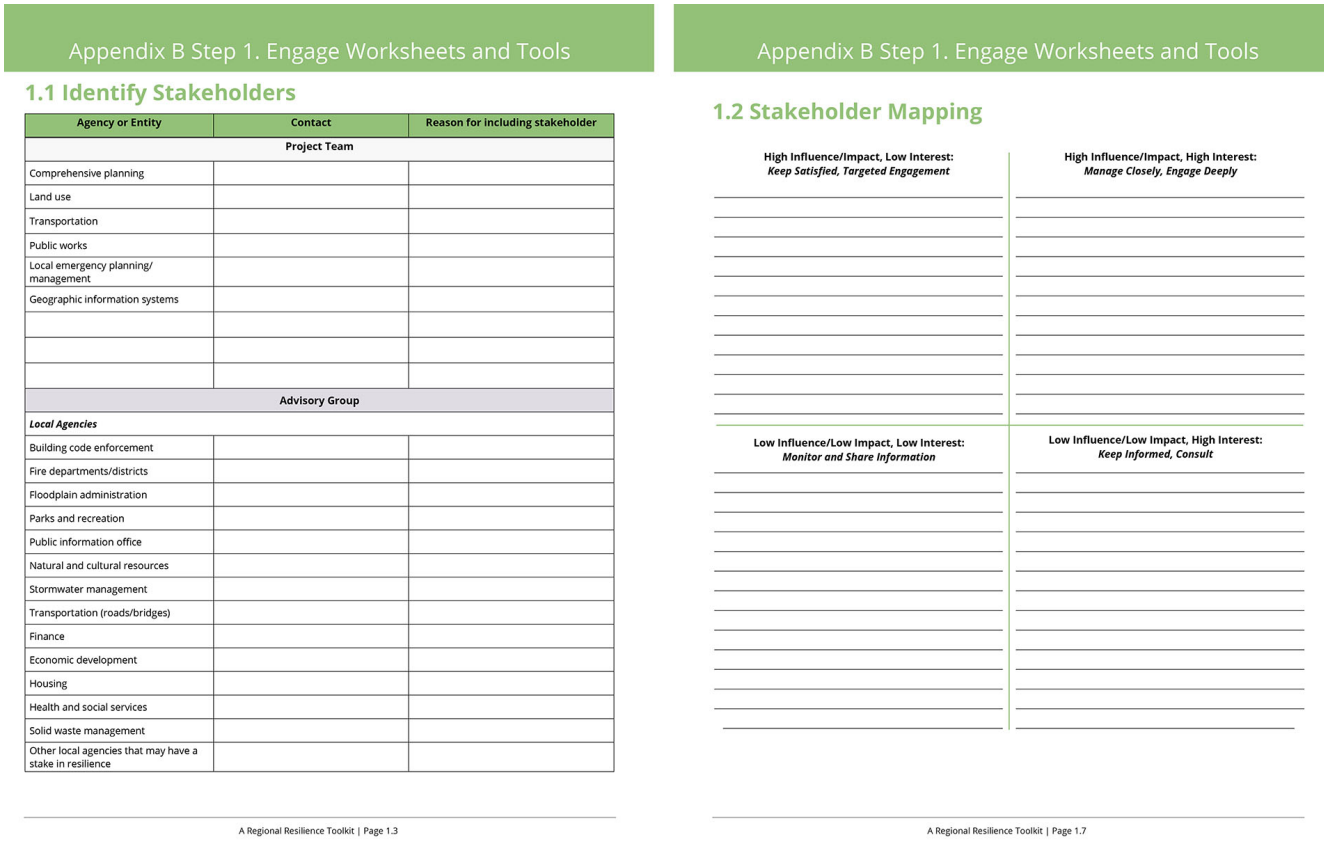
The Capital Regional Climate Readiness Collaborative is exploring strategies to bring economic sectors such as agriculture, manufacturing, government, professional services, and technology into climate resilience planning efforts. Working with these businesses is essential to preserve economic vitality of the region in the face of water scarcity, heat waves, extreme weather, and other climate change hazards. The Capital Regional Climate Readiness Collaborative coordinates with local and regional businesses to plan and prepare for disasters, invest in climate-smart strategies, promote green jobs, and encourage diversity in supply chains to increase economic resilience.

STAKEHOLDER MAPPING

The engagement process should be inclusive and multidisciplinary. It should include people at varying levels of authority, including those empowered to make recommendations and decisions and representatives of governmental and nongovernmental organizations. Stakeholder identification and mapping supports an equitable outreach and engagement approach. Stakeholder mapping is the process of visualizing relationships and prioritizing engagement efforts through understanding perspectives and interests in the community. The *Regional Resilience Toolkit* includes template worksheets to do this.[16] For each stakeholder, the project team should decide who should be involved; what their role will be in the process and the plan implementation; and how, when, and how often they should be engaged (see Figure 8).

Furthermore, stakeholder mapping should list vulnerable populations to assess how they will be involved. As mentioned in Step 1.3, vulnerable populations can include chronically ill persons, foster children, incarcerated persons, linguistically isolated persons, low-income persons, persons experiencing homelessness, persons in designated disadvantaged communities, persons in overcrowded households, persons with disabilities, persons without access to lifelines, renters, senior citizens, single female heads of households, students, tribal communities, undocumented persons, visitors and seasonal residents, and young children.

Figure 8. Regional Resilience Toolkit's Identity Stakeholder and Stakeholder Mapping



Appendix B Step 1. Engage Worksheets and Tools

1.1 Identify Stakeholders

Agency or Entity	Contact	Reason for including stakeholder
Project Team		
Comprehensive planning		
Land use		
Transportation		
Public works		
Local emergency planning/ management		
Geographic information systems		
Advisory Group		
Local Agencies		
Building code enforcement		
Fire departments/districts		
Floodplain administration		
Parks and recreation		
Public information office		
Natural and cultural resources		
Stormwater management		
Transportation (roads/bridges)		
Finance		
Economic development		
Housing		
Health and social services		
Solid waste management		
Other local agencies that may have a stake in resilience		

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Appendix B Step 1. Engage Worksheets and Tools

1.2 Stakeholder Mapping

High Influence/Impact, Low Interest:
Keep Satisfied, Targeted Engagement

High Influence/Impact, High Interest:
Manage Closely, Engage Deeply

Low Influence/Low Impact, Low Interest:
Monitor and Share Information

Low Influence/Low Impact, High Interest:
Keep Informed, Consult

A Regional Resilience Toolkit | Page 1.7

Source: U.S. Department of Homeland Security, U.S. Environmental Protection Agency, and Association of Bay Area Governments, Regional Resilience Toolkit, July 2019.

CREATING OUTREACH ACTIVITIES

Keeping stakeholder mapping in mind is important for each outreach and engagement activity. Moreover, the core planning team should determine what they are trying to achieve and help manage what the public should expect. It is helpful to think of each outreach and engagement activity as part of a spectrum. See Table 7 for the International Association of Public Participation (IAP2) Spectrum.[17, 18]

The IAP2 spectrum is a theoretical model for varying levels of participation and engagement and is not a specific recommendation for any one set of activities or goals. Local agencies and communities need to decide what level of engagement is appropriate to facilitate community participation in decision-making.

Core activities and characteristics necessary to building a diligent and robust public engagement process include:

- Providing educational opportunities.
- Soliciting community input.
- Maintaining a direct method of communication with the community specifically for the climate adaptation planning effort.

Outreach can include, but is not limited to, meetings for specific topics or geographic areas, online engagement, roundtables, forums, community festivals, workshops, or pop-up events.

TABLE 7. IAP2 PUBLIC PARTICIPATION SPECTRUM					
	INFORM	**CONSULT**	**INVOLVE**	**COLLABORATE**	**EMPOWER**
Public Participation Goal	To provide the public with balanced and objective information to assist them in understanding the problems, alternatives, and/or solutions.	To obtain public feedback on analysis, alternatives, and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
Promise to the Public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Source: IAP2, Public Participation Spectrum, 2018.
Note: Also see From Community Engagement to Ownership: Tools for the Field with Case Studies of Four Municipal Community-Driven Environmental and Racial Equity Committees.

Reaching All Populations

- Understand the local capacity of residents and use their networks and expertise to make information relevant to them.
- Communicate in easy-to-follow phrases, not technical jargon.
- Use relevant publicity like ads in local radio, TV channels, social media platforms, community calendars, e-newsletters, and newspapers.
- Have various options for meeting times during the day, evening, or weekend.
- Plan meetings in places that are familiar, such as libraries, community centers, farmers markets, churches, and schools.
- Host meetings in locations that easily accessible by all modes of transportation.
- Provide childcare, kids' activities, and youth engagement as part of all outreach activities.
- Provide multilingual translation in all materials and meetings.
- Offer travel stipends, if possible, for attendees of the meeting.
- Host participatory issue forums linking relevant issues, such as the connection between affordable housing and climate resilience.
- Be mindful of the mental health effects, including anxiety and distress about the implications of climate change. Identify healing and creative practices, such as meditation and art, to interweave throughout the process to support healthy participation among community members.
- Partner with and offer a stipend to local community-based organizations to raise awareness and do grassroots organizing in their communities.
- Partner with businesses or business associations on outreach events and coordination to expand community reach, decrease outreach costs, and increase business owner and staff participation.
- Offer alternatives to in-person meetings, especially when in-person meetings increase risk of exposure to harm. Alternatives include online engagement via webinars, virtual or remote workshops, and social media, among others.

Phase 1 Wrap-Up

This initial phase of the adaptation planning effort helps establish what the adaptation work involves and why communities are conducting it. This phase also includes figuring out who will be part of the work, the tools and resources available, and the types of analyses that the community will conduct. Making these decisions at the beginning of the process helps make the rest of the work more efficient and puts all participants on the same page. With the scoping work out of the way, communities can move on to the next phase of adaptation planning, which is assessing vulnerability, as discussed in the following chapter.