The ART Approach

ADAPTING TO RISING TIDES PROGRAM

WHITE PAPER

Overview

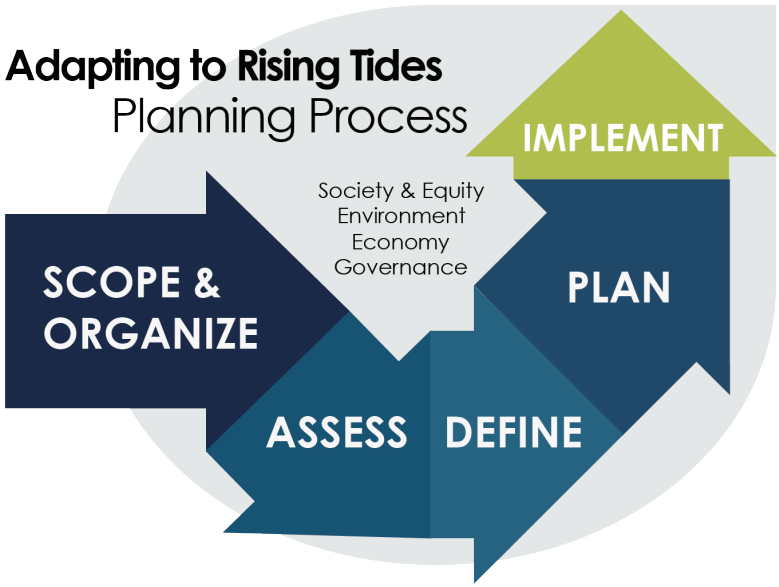
The ART approach is a road-tested, outcome-oriented adaptation planning process. The ART process was built on a traditional planning framework – from scoping to implementation – and developed, tested and refined with the specific challenges of climate adaptation in mind.

The key features of an ART-based planning process are that it:

- Integrates all aspects of sustainability (society and equity, the environment, economy and governance) into each step of the process
- Convenes and engages a working group of staff from agencies and organizations in the project area to build local capacity and ensure the results will be actionable and resonate locally
- Uses assessment questions developed by the ART team that are designed for an effective and efficient evaluation of existing conditions, vulnerability and consequences
- Uses vulnerability and consequence classifications to organize and communicate assessment outcomes in clear terms that are more useful to current and future stakeholders than ranking, scoring or numerically prioritizing issues
- Develops adaptation responses that directly connect actions and implementation options to key planning issues

THE ART PLANNING PROCESS

Each stage of the planning process – project scoping; assessing impacts, vulnerabilities and consequences; defining issues; planning adaptation responses; and implementing responses – informs later stages and builds a clear and transparent case for taking action.



ART Factors for Success

To guide an adaptation planning project to outcomes that build resilience, the ART approach emphasizes a three important factors for success.

COLLABORATIVE BY DESIGN

Adaptation planning requires very active and engaged participants to be successful. Planning for climate change means planning across jurisdictions, geographies, sectors, and time frames. The complex, cross-cutting issues identified are often best addressed by those with diverse values, viewpoints and responsibilities. Because many adaptation planning stakeholders have not worked together in the past, or have only worked together on narrow or specific issues, ART emphasizes convening and closely collaborating with a stakeholder working group throughout a project to achieve project goals and build relationships that lead to future collaborations.

A TRANSPARENT PROCESS

Adhering to transparent decision-making throughout the planning process will result in stronger and more actionable case for adaptation. As in any planning process, there are many decisions that influence the outcomes, and ultimately the success, of the effort. ART tools and resources help maintain transparency at each step in the planning process and support clear communication to stakeholders about the decisions and project outcomes.

SUSTAINABILITY FROM START TO FINISH

A core component of ART is consideration of the relevance and implications of all aspects of sustainability throughout a project. Four sustainability frames are incorporated into each step of the planning process, beginning with the development of the initial working group list, all the way to the selection of criteria to evaluate adaptation responses. ART frames these components of sustainability as:

Society & Equity	Economy	Environment	Governance
Effects on communities and services on which they rely, with specific attention to disproportionate impacts due to inequalities.	Economic values that may be affected such as costs of physical and infrastructure damages or lost revenues during periods of recovery.	Environmental values that may be affected, including ecosystem functions and services, and species biodiversity.	Factors such as organizational structure, ownership, management responsibilities, jurisdiction, mandates, and mechanisms of participation that affect vulnerability to impacts.

Scope & Organize

Adaptation planning begins with scoping and organizing the project to:

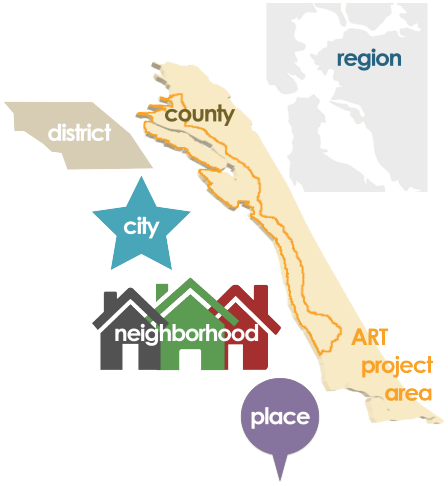
1. Define the project area, assets and climate impacts to be considered
2. Convene a working group and agree on communications practices for the project
3. Set project resilience goals

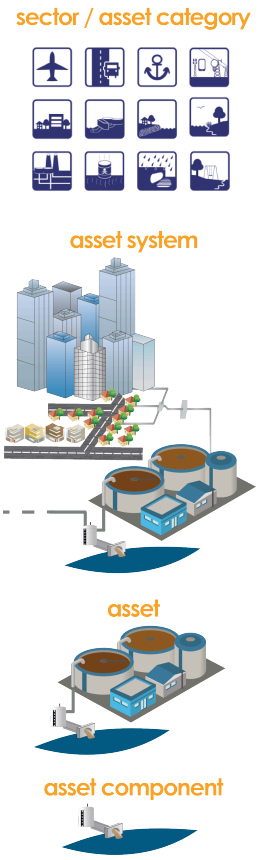
Collectively, these activities set the stage for what will be addressed and who will be involved, and provide an opportunity for working group members and stakeholders to shape the project.

During scoping there is a natural give and take among these efforts, and decisions may be shaped by a number of factors, including the primary intentions of the agencies and organizations involved. If the working group identifies goals that cannot be achieved within the constraints of the project area or selected assets, expanding the project scope can help lead to desired results, however this may need to be balanced with available resources and data. To allow for consideration of all of the issues important to the working group, the project team and working group may need to seek creative ways (e.g. partnerships or leveraging other projects) or a work-around to overcome challenges such as a lack of funding or participation.

THE ISSUE OF SCALE

In developing this approach, the ART program explored the ways in which the scale of an adaptation planning influences the assessment and planning outcomes. The ART findings, summarized the **ART Scope & Scale Issue Paper,** (ART Portfolio: Findings by Issue > Scope and Scale) point to the importance of carefully considering geographic and asset scales when scoping and organizing a project.





Project Area

Geographic boundaries and scale of a project that help to (broadly) set the planning content.

To the extent practical, the project area should include assets, infrastructure, neighborhoods and services that allow for assessing a range of consequences on society and equity, economy and environment. The project area should also be configured in a manner that best represents the goals, objectives and values of the agencies, organizations and communities within it.

Asset List

The assets, sectors and services that will be addressed in the project.

Ideally the asset list should be broad enough to ensure that the consequences of the climate impacts on people where they live, work, access key services and conduct other day-to-day activities can be fully considered. A project that considers a single asset category or sector may overlook important functional relationships that are necessary for that asset. For example, while a seaport itself may not be vulnerable to sea level rise and storm events, the roadways and rail systems that move cargo in and out of the facility may be vulnerable and will directly affect the ability of the seaport to continue functioning.

Climate Impacts

The potential effects that a changing climate could have on society and equity, the economy and environment.

When initiating an adaptation planning project one of the first steps is to select the climate impacts that will be addressed, and to prepare statements that broadly summarize these impacts. For example, for a climate impact of "more frequent flooding":

Extreme high Bay water levels will occur more often, leading to more frequent flooding in flood-prone areas that could disrupt access to power, goods and services, jobs, and emergency response and recovery resources.

The climate impacts statements clearly communicate what will be considered in the planning effort. Project partners, working group members or topical experts all help the project team determine which climate impacts should be considered.

Working Group

Project participants that represent the assets, agencies, organizations, communities, public and private interests and values and viewpoints in the project area.

At the start of the project and on an ongoing basis, the project team engages a working group of stakeholders who can responsibly represent the relevant areas of expertise, regulatory oversight, community values and perspectives, planning and management responsibility, as well as issue interests appropriate to the project area, goals, and expected outcomes.

Communicate About Communications

Communications – both internal and external to an adaptation planning effort – can play a significant role in either building or eroding the trust of the participants. Agreeing on communications practices with working group members and other stakeholders during the scoping phase will set the foundation for good project communications. Determining to whom, when and how information about the project findings will be released is critical to ensuring that working group members have time to provide their input and that they can communicate directly with their own stakeholders prior to the release of project findings and outcomes.

Convening and actively engaging a diverse working group provides an opportunity to address all four frames of sustainability and helps to maintain transparency in the project. It is important to remember that participants may have their own stakeholders who are also engaged and interested in the project, but are not working group members. These other stakeholders may be members of the public, board members, commissioners, city council members, partner organizations, customers, or other interested and affected parties.

PROJECT ROLES AND RESPONSIBILITIES IN THE ART APPROACH

The team that leads and manages the project, engages the stakeholder working group, and completes work products including the assessment and development of adaptation responses for the project.

A wide range of organizations and individuals that have interests and perspectives that are related to the project scope, follow the progress of the project, provide feedback on draft materials, and comment on project components and outcome, but are not responsible for providing data and information. These stakeholders are not participating actively in the project.

Project Resilience Goals

Goals that define desired outcomes of a climate change planning effort and provide a foundation upon which future project decisions can be made.

Project resilience goals and supporting objectives are developed with the working group in order to:

- Build transparency into the project at the outset so that all participants and others with an interest in the project know what will be included and what will likely be a priority

- Engage the working group early in deciding what shared desired outcomes they will work cooperatively to achieve, and provide an opportunity for them to ask their stakeholders for input and feedback on the project direction
- Encourage, and facilitate the inclusion of all four sustainability frames throughout the project
- Provide a framework for evaluating outcomes and recommendations at the end of the project, for example how well they will help meet the established resilience goals

Assess

The ART assessment is designed to clearly and efficiently identify the underlying causes and components of vulnerability and consequences. In the Define step that follows, vulnerabilities and consequences are summarized into assessment outcomes that lead directly into developing adaptation responses that are relevant and useful to project participants and others.

The Assess step has three parts:

1. Answer the ART assessment questions that are designed to efficiently gather existing conditions, vulnerability and consequences information; organize and communicate the outcomes; and lead to the identification of the actions to be taken and the implementation options
2. Select climate scenarios and conduct exposure analyses that determine what will be affected by the climate impacts that were identified by the working group in scope and organize
3. Refine the assessment based on working group and stakeholder input, as well as the findings of the exposure analysis

What is Risk?

Conventionally, hazard planning involves assessing the risk as well as the vulnerability of assets, sectors and services in the hazard zone. Risk is the threat posed by a negative impact or hazard event. The level or degree of risk is the product of the likelihood of an impact occurring and the magnitude of societal, economic, environmental and governance consequences should that impact occur. Risk is often depicted as: **Risk = Likelihood x Consequence**

ART focuses on the consequences portion of risk because understanding the effects of a climate impact on the sustainability frames sets the stage for developing, evaluating, and selecting a response that balances benefits and trade-offs. Likelihood is considered in the ART approach in the selection of climate scenarios and in the exposure analysis findings.

Assessment Approach

The assessment questions that should be answered to understand vulnerability and consequences for the assets; the data and information needed to address these questions; and the methods for collection.

ART developed assessment questions that provide a framework for collecting the data and information that lead directly to the identification of vulnerabilities, consequences, and key planning issues. These assessment questions, which have been applied and refined in a number of previous assessments, can be

used for a wide variety of asset categories and sectors. Answers to the questions help build an understanding of the underlying causes and components of vulnerability and the potential consequences of those vulnerabilities on society and equity, environment and economy.

ART ASSESSMENT QUESTIONS

The ART assessment questions were developed, tested and refined to guide the collection of data and information about existing conditions, vulnerabilities and consequences. The questions are grouped according to existing conditions, the different types of vulnerabilities observed, and consequences. This organization – referred to as the ART classifications –simplifies developing and summarizing the assessment outcomes.

The types of ART questions are listed below with a few examples. Governance is not included under the Consequences questions because, while governance vulnerabilities are common findings in assessments, the ART Program has not identified clear consequences to governance.

EXISTING CONDITIONS

Describes the asset and highlights current conditions or stressors that could affect its vulnerability

Where is the asset located?

What is its function?

Who owns and manages it?

FUNCTIONAL

Considers the function of assets and their relationships or dependence on other assets

What services does the asset rely on?

Is it connect to other assets, such that failure in one part of the system disrupts the entire system?

Does the asset provide functions or services that are limited?

INFORMATION

Determines if data is lacking, incomplete, poorly coordinated, or hard to access

What information sources are publicly available?

What is the quality of available information?

What types of mechanisms exist to share information between owners of connected infrastructure?

PHYSICAL

Identifies conditions or design aspects that make an asset particularly vulnerable

Is the asset co-located with other assets?

Are water or salt-sensitive components of the asset located at- or below-grade?

GOVERNANCE

Identifies challenges with management, regulatory authority or funding options

What systems are in place to manage the assets?

What types of permits are needed to make changes?

What funding sources exist that can be used for adaptation?

CONSEQUENCES

Informs how climate change may affect society & equity, the economy and the environment

Does the asset serve vulnerable communities or critical facilities?

Is it near wetlands, parks or other protected natural resources?

Are there hazardous materials at the site that pose a risk to the environment or public health?

What is the scale of the economic costs if the asset experiences services disruptions or damage?

Climate Scenarios

Climate scenarios describe the future conditions that could result from one or more climate impacts. The scenarios are used to define the parameters of the exposure analysis.

Clear communication of the climate scenarios to working group members, their stakeholders and others is essential to help avoid confusion and unnecessary concern.

The climate scenarios are selected to support an understanding of how often, when and where the climate impacts may occur. The selection of appropriate climate scenarios is shaped by multiple factors: the climate impacts being evaluated; the availability of data and mapping that will inform the exposure analysis; the planning objectives of the project team and working group; and the project resilience goals.

Because the selected scenarios affect what adaptation responses are developed, it is important to avoid certain pitfalls. For example, a sea level rise scenario that only describes a single condition, such as high tide, will not lead to a sufficient understanding of storm-related flooding and, therefore, will not inform the development of adaptation responses that could improve near-term resilience. Furthermore, selecting scenarios directly tied to only one or two timeframes can result in misleading findings, for example, that are too soon (e.g., mid-century) for capital improvement planning or too late (e.g., end of century) for making decisions about operations and maintenance.

The project team and working group members should develop a climate scenarios statement that describes the selected scenarios, the basis for the selection, and how (in non-technical terms) the scenarios will be applied in the exposure analysis.

Exposure Analysis

An analysis of asset exposure to climate impacts based on the selected scenarios. Experts with local knowledge of the project area, the shoreline, flood control and stormwater assets ground truth the exposure analysis findings which are summarized into maps, tables, charts and statements.

The exposure analysis is a stepwise process that begins with reviewing available data and information for each climate impact being addressed. For some impacts, such as inundation from higher high tides due to sea level rise, ready-to-use mapping tools may be available to evaluate asset exposure. For other climate impacts that are not as well-studied or understood (e.g., salinity intrusion due to sea level rise or precipitation patterns) reliable information may not be readily available.

The next step is to use readily available data and information to evaluate exposure – that is: Will the asset in question get wet? If so, under what scenario? And, to what extent or depth?

Then the summarized findings of the exposure analysis need to be reviewed by those with local knowledge and experience. This will help pinpoint the locations where regional or broader mapping has not adequately characterized local conditions and where additional studies, field verification, remapping or reanalysis is needed.

Define

The ART approach includes a step that focuses on determining the issues arising from the assessment that require collaborative planning by the project team and working group members and others to address. This step – the Define step – involves summarizing the assessment findings and identifying key issues and planning priorities. This step aids in the transition from Assess to Plan, and supports the development of adaptation responses that directly respond to specific issues and vulnerabilities both within and across asset categories.

Tasks in the Define step are:

1. Summarize answers to the assessment questions into clear, outcome-oriented vulnerability and consequence statements
2. Write asset-specific issue statements
3. Define key planning issues with the working group using a transparent process

Assessment Findings

Statements that summarize the vulnerabilities and their consequences. Each statement describes functional, physical, governance and/or information characteristics that lead to a vulnerability and the related consequences on people (where they live, work, commute and recreate), the environment and the economy.

The Define step begins with summarizing the information and data collected for the assessment questions, using the ART classifications as a guide. ART identified a number of actionable characteristics of vulnerability and consequences, and then refined these into simple classifications that describe the range of issues observed during the assessment. The ART classifications help the project team and working group summarize the assessment, and provide a standard approach for organizing and communicating assessment findings that is meaningful to a broad range of current and future stakeholders including community members, project financers and grant funders, decision-makers and asset managers.

The Extra Step in ART

While leading a pilot project in Alameda County, the ART team and working group struggled with the transition from the Assess to the Plan step. Ranking or scoring vulnerabilities and risks is often used to reduce the number of issues to be carried forward, or to prioritize the issues numerically. ART found that these methods had unintended results of leaving important vulnerabilities behind, masking interdependencies, creating unproductive conflicts, and reducing the transparency of the overall planning process.

To better navigate this transition, ART developed the Define step to summarize and organize vulnerabilities and consequences based on simple classifications, and then identify key planning issues for the working group to take up together in the Plan step. This approach is transparent and better supports informed discussions and decisions about the priority issues and adaptation responses. It also helps to translate the assessment outcomes into clear, summarized statements that can be understood by current and future stakeholders.

CHARACTERISTICS OF VULNERABILTY AND CONSEQUENCE: THE ART CLASSIFICATIONS

VULNERABILITY

Information – Challenges in obtaining information necessary to understand or resolve issues

Governance – Challenges with management, regulatory authority or funding options that create barriers to adaptation

Physical – Conditions or design aspects of an asset that make it very sensitive to impacts

Functional – Aspects of an asset's function, relationships and/or dependencies on other assets that limit its adaptive capacity

CONSEQUENCE

People – Effects on people where they live, work, access key services and conduct other day-to-day activities; includes consideration of equity in disproportionate impacts to community members

Ecosystem Services – Consequences on services provided by the environment, including biodiversity, flood and erosion control, water quality and carbon sequestration

Economy – Consequences on important drivers of economic health, impacts to goods movement, commuting, employment centers and business sectors.

Profile Sheet

A one or two-page summary, or profile, of the asset, sector or service (collectively referred to as asset) assessed. It provides a description of the asset; a graphic (i.e., map, picture and/or diagram); an issue statement; and the assessment findings presented as vulnerability and consequence statements. As appropriate, adaptation responses for asset-specific issues and vulnerabilities are added by the project team in the Plan step.

ART uses profile sheets to enable the project team, working group and other stakeholders to easily review and provide input on the assessment outcomes for each asset evaluated. Profile sheets can be time intensive to prepare, but the process of summarizing the assessment findings into a clear, well-organized format will deepen the project team's and stakeholders' understanding of the issues, making them better prepared to facilitate the working group's efforts to identify key issues.

Profile sheets also serve as a helpful communication tool by providing current and future stakeholders a detailed overview of the important components of the assessment for a particular asset. Well-written profile sheets can replace lengthy reports. The brief and simple presentation of the profile sheet makes the information easier and quicker to understand, and therefore, they are much more likely to be useful to the working group members and other stakeholders.

Issue Statement

> *A statement that clearly and succinctly describes how the climate impacts affect the asset, sector or service (collectively referred to as asset) including the primary reason for the vulnerabilities and what the likely consequences would be. It should synthesize assessment findings as opposed to simply restating them. The issue statement is essentially the "story" of the asset's climate impacts vulnerability and consequences.*

These statements are included on the asset profile sheets, and are helpful in quickly communicating the issues identified for each asset. Additionally, the process of summarizing these asset-specific issues helps the project team begin to identify bigger, key planning issues that, together, the project team and working group will need to address in the Plan stage of the project.

Key Planning Issues

> *Key planning issues require collaborative planning by the project team and working group members and others to develop adaptation responses. Key planning issues are often caused by vulnerabilities that cut across multiple assets, geographies and/or jurisdictions; have significant and/or early consequences; require coordinated decision making or funding; require changes in laws, regulations, policies or other processes that will that have significant consequences on people, the economy and/or environment.*

Identifying key planning issues that arise from the assessment is an effort that requires the thoughtful participation of the project team and working group. Looking forward in the planning process, these are the issues that will require the focused and collaborative efforts of the project team and working group to develop adaptation responses. it is important that the process used to select them is both clear and transparent, and has buy-in from the working group, and, potentially, their stakeholders. In the ART approach this step begins with the project team identifying potential key issues based on the types the vulnerabilities that often underpin to these issues (see the definition, above). Next the working group – as a whole – reviews, discusses and refines the decision criteria and the key planning issues themselves. Lastly, the project team needs to document the criteria used and decision made in this step.

This approach helps the working group decide what to prioritize or carry forward as a whole based on the assessment findings and project resilience goals. Compared with methods that rely on scoring or ranking (e.g. 1-5 or high/medium/low) issues based on qualitative determinations and judgments, the ART approach is more transparent and the results are more straightforward to communicate to working group members or stakeholders who did not directly participate in the decision-making.

Other Vulnerabilities

Most adaptation planning assessments will lead to the identification of a multitude of vulnerabilities for the various assets, sectors and services addressed in the project. It is also likely that a majority of these will not lead to or fall within the scope of a key planning issue. So, how does ART handle these "other" vulnerabilities? It depends.

In general, the vulnerabilities that are not advanced as (part of) a key planning issue for the entire working group tend to be single-asset concerns that individual asset managers or owners would need to resolve independently within their own agencies or organizations. For these types of vulnerabilities, the ART Program staff has found that asset managers and owners appreciate having potential adaptation responses for these vulnerabilities identified on the profile sheets for their specific assets. These vulnerabilities tend to be similar from project to project, and the ART Program has compiled a "source" set of adaptation responses to make it easier for other projects to pull together potential responses for asset managers and owners to consider.

Occasionally, an issue fits many of the criteria for being a key planning issue, but is not taken up by the working group in the Plan step. It may be that the issue, complex though it is, must be resolved by a single agency, and it would be a waste of the working group's time to try to address it. This was the case with adaptation of wastewater infrastructure in one of the ART projects in Alameda County. Alternatively, it may be that the issue does require collaborative effort by multiple agencies, organizations and other interests to develop adaptation responses, but that these interests are not represented on the working group. In these cases, the ART project team has documented these issues and recommended to other agencies and organizations further actions (outside the scope of the project) for developing adaptation responses.

Plan

In adaptation planning, the Plan step is when the actions to respond to key planning issues are determined, and the options for implementing them are identified. The tasks in the ART approach to the Plan step are:

1. In light of the assessment outcomes, review and, if needed, refine the project resilience goals
2. Develop adaptation responses that include the three important building blocks (see box, right) – a vulnerability or key issue, one or more actions, and implementation options
3. Develop and apply evaluation criteria to identify benefits and trade-offs of different adaptation responses

ART has made important refinements to the Plan step to ensure that the ART factors for success – robust stakeholder engagement, transparent decision-making, and sustainability – are integrated into each task.

Adaptation Response

> *An adaptation response consists of a vulnerability and/or key issue, one or more adaptation actions to address the vulnerability(s) underlying this issue, and information about partners, process, and timeframes and sequencing for implementing the actions.*

Instead of a list of adaptation strategies, the ART approach involves developing comprehensive "packages" of adaptation information – referred to as an adaptation response. Responses help to:

- Present a number of possible stand-alone or sequenced actions
- Connect actions to the assessment outcomes (i.e. the vulnerabilities and key issues)

The Three Components of an ART Adaptation Response

1 The **vulnerability** being addressed by the adaptation response. Including this provides a direct link to the outcomes of the assessment and ensures that the most critical issues are addressed. Identifying the key vulnerability that is addressed is a transparent way to ensure that each adaptation action is connected to a planning issue.

2 **Adaptation actions** (one or more). While some vulnerabilities can be addressed by a single action, most require multiple, often coordinated actions. Some actions can be taken at the same time, while others require a series of sequential steps that incrementally build towards resilience.

3 **Implementation options** for each action.. These provide alternatives for initiating adaptation actions such as incorporating them into existing planning or processes or creating new initiatives. The options also should identify agencies and organizations – public and private – that have a role in implementing the actions.

- Characterize actions by type, priority, and implementation scale
- Identify possible implementation partners and processes
- Provide greater transparency to project decision making overall
- Ensure that responses address sustainability

The process of developing adaptation responses helps the project team and working group gain a nuanced understanding of adaptation. It also helps working group members' make the case for taking action within their agencies and organizations, and with other stakeholders. Adaptation responses developed in this way facilitate richer communication about the issues and possible solutions with a wide range of stakeholders such as elected officials, grant funders, project financers, community members and other interested and affected parties.

Adaptation Response Card Information

Vulnerability: One or two sentence description of the key issue and vulnerability(s) being addressed by the response

Actions	Action Characterizations	Implementation Options	
		Processes	Actors / Partners
The action or actions to address the identified vulnerability. Some responses include a series of related actions that could or should be taken together.	Local, Regional, State, Federal: Scale(s) of implementation. Unlocking: Necessary to enable other actions. Dependent: Requires other actions first Do it Yourself: Land owner or manager could implement within existing laws/policies & existing funding sources. Multi-Benefit: Confers benefits beyond sea level rise and storm event resilience. Long Lead Time: Urgent due to long implementation timeframe, near-term impacts, complex planning process, or many actors.	Mechanism(s) through which the action could be implemented. Some processes exist and are possibly ongoing, while others will be new initiatives. There can be more than one process by which to implement any given action.	Actors: Agencies and organizations that could be involved in implementing the action. Actors include lead agencies (often asset owners or operators), as well as regulators, funders, and other potential partners. Partners include neighbors, regulators and other interested parties that may not implement the action but would have a role.

Evaluation Criteria

A tool that agencies, organizations and communities can use to select and prioritize adaptation actions for implementation. Evaluation criteria help decision-makers understand tradeoffs and consequences of individual and multiple actions that form adaptation responses.

The development of criteria for evaluating possible adaptation responses plays a central role in ensuring transparent decision-making in adaptation planning. Using well-documented evaluation criteria creates a clear acknowledgment of the issues and trade-offs being considered to weigh different adaptation actions. To help working group members and their stakeholders, including elected officials, grant funders, project financers, the broader community and other interested and affected parties, identify actions and responses that will increase the resilience of communities and the assets and services on which they rely, evaluation criteria should consider all four sustainability frames: society and equity, the environment, economy and governance.

Photo: Torre.

Implement

It is important to recognize that implementing adaptation actions to increase resilience can take many forms and includes more than physical interventions such as reengineering/redesigning infrastructure or building levees. Implementation can also include improving coordination among agencies, increasing the emergency preparedness and response capacity of community members, developing public education around issues such as storm events and flooding, developing a database that ensure the reliability of data and information about the region's assets, or changing regulations related to future construction, funding or permitting for interventions that will be necessary.

In the ART approach to adaptation planning, the purpose of this final step is to support the working group in implementing adaptation responses. This includes identifying resources to assist with implementation, conducting feasibility studies as needed for specific actions, and continuing to convene the appropriate actors in collaborative planning.

After the Plan step was complete a number of ART pilot project working group members continued to pursue adaptation both individually within their agencies and collaboratively with other working group members. Agencies including Capitol Corridor Joint Powers Authority, the Bay Area Rapid Transit, East Bay Discharges Authority, and East Bay Municipal Utilities District, and the Cities of Oakland, Alameda, and Hayward have been working with ART and other working group members to use the outcomes of the completed ART pilot project to advance climate resilience planning.

Specific tasks in the step include:

1. Developing recommendations for advancing high priority adaptation responses that require shared, coordinated action.
2. Communicating project outcomes to working group member's stakeholders, including boards, commissions, committees and other decision-making bodies (e.g., presentations can made by project team and/or working group members).
3. Implementing adaptation responses identified by the project, including actions such as initiating further studies, advancing physical interventions, making legislative changes and improving the information necessary to increase resilience.
4. Integrating sustainability into governance, capital investment and management.