

3.1 Develop Initial Problem Statements

Purpose

This worksheet should be used by the project team, as well as by the advisory group, to develop the initial problem statements that will become the basis of the strategies.

Approach

Follow the narrative in Section 3 of the Toolkit to write problem statements describing the vulnerabilities and consequences that have been identified for each asset. This should build on the exercises in the previous section. A problem statement summarizes the particular issue that occurs when a hazard impacts an asset. This impact in combination with the potential level of importance should help to define a specific problem that must be addressed.

Outcome

- ✓ Detailed and specific problem statements for priority assets.

3.1 Develop Initial Problem Statements

Asset:

Hazard:

Summarize impact:

Level of urgency/importance:

Problem statement:

3.2 Strategy Idea Sources

Purpose

This handout presents a number of sources for strategies that address common hazards and asset classes. The sources can be used to provide ideas and language for local strategies that are responsive to the individual problem statements. This guide is geared towards the Bay Area in California, but many of the strategies can be applicable in other areas that have similar hazards.

Approach

Reference the following sources for initial strategies that can be customized for community assets and hazards.

Smart Growth Fixes for Climate Adaptation and Resilience

www.epa.gov/smartgrowth/smart-growth-fixes-climate-adaptation-and-resilience

Planning Framework for a Climate-Resilient Economy

www.epa.gov/smartgrowth/planning-framework-climate-resilient-economy

Flood Resilience www.epa.gov/smartgrowth/flood-resilience-checklist

Enhancing Sustainable Communities with Green Infrastructure

www.epa.gov/smartgrowth/enhancing-sustainable-communities-green-infrastructure

2011 ABAG Bay Area Regional Hazard Mitigation Plan

Hazards Addressed	Asset Classes Addressed	Source
Earthquake Landslide Wildfire Flood Security Dam failure Levee Failure Tsunami Drought Agriculture Pandemic flu	Infrastructure Health Housing Economy Government Education Environment Land Use	ABAG

Comprehensive list of strategies developed for previous Regional Hazard Mitigation Plan. Wide range of strategies, but little detail on implementation. Covers many hazard types and asset types. Some jurisdictions may be familiar with these strategies and have them included in their previous hazard mitigation plans.

resilience.abag.ca.gov/2011mitigation/ (see Appendix G)

3.2 Strategy Idea Sources

Bay Area Regional Resilience Initiative

Hazards Addressed	Asset Classes Addressed	Source
Earthquake	Governance Housing Infrastructure Economy and business	ABAG

This 2013 report identifies an action plan for the region to improve regional capacity for disaster resilience in four sectors. Many of the actions are regional in implementation, but there are several local strategies as well. Actions align with identified regional priorities adopted by ABAG's Regional Planning Committee.

resilience.abag.ca.gov/projects/resilience_initiative/

Stronger Housing, Safer Communities: Strategies for Seismic and Flood Risks

Hazards Addressed	Asset Classes Addressed	Source
Ground shaking Liquefaction Current and future flooding	Housing Community members	ABAG and BCDC, developed in coordination with AECOM

Contains 40 strategies for state, regional, and local governments to address seismic and flood hazards for current and future development. Strategies are responsive to risk statements based on vulnerability analysis of housing and community capacity. Each strategy contains 2-3 pages of implementation guidance. Also includes a table designed to guide jurisdictions towards financing options to implement the strategies.

resilience.abag.ca.gov/projects/stronger_housing_safer_communities_2015/

Adapting to Rising Tides (ART) Project

Hazards Addressed	Asset Classes Addressed	Source
Current flooding Future flooding	Community land use, facilities and Services Transportation Utilities Shorelines	BCDC

Dozens of adaptation responses that describe actions and implementation options to address flooding vulnerability. Responses are organized by category: Overarching; Community Land Use, Facilities and Services; Transportation; Utilities; and Shorelines. Also includes a guide to orient the reader to the types of information provided on the cards, and a glossary to define terms and acronyms used in the responses.

www.adaptingtorisingtides.org/wp-content/uploads/2015/04/Adaptation_Responses_Intro-All.pdf

3.2 Strategy Idea Sources

State of California Multi-Hazard Mitigation Plan

Hazards Addressed	Asset Classes Addressed	Source
Earthquake Floods Wildfire Levee failure Landslides and other earth movements Tsunami hazards Climate related hazards Volcanoes Other hazards (natural & manmade)		California Governor's Office of Emergency Services

The plan does not contain a list of strategy action but identifies several possible goals and mitigation actions that can be implemented at a local level. Each hazard section includes possible mitigation actions that can be adapted locally and developed into a strategy.

hazardmitigation.calema.ca.gov/docs/SHMP_Final_2013.pdf

Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards

Hazards Addressed	Asset Classes Addressed	Source
Drought Earthquake Erosion Extreme temperatures Flood Hail Landslide Lightning Sea level rise Severe wind Severe winter weather Storm surge Subsidence Tornado Tsunami Wildfire	Structure and infrastructure Natural systems	FEMA

Comprehensive resource that communities can use to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters. Many of the strategies are fairly generic and serve as a starting point for local innovation and planning projects.

www.fema.gov/media-library-data/20130726-1904-25045-0186/fema_mitigation_ideas_final508.pdf

Appendix B Step 3. ACT Worksheets and Tools

3.2 Strategy Idea Sources

Resilient City Initiative

Hazards Addressed	Asset Classes Addressed	Source
Earthquakes	Existing buildings New buildings Lifelines infrastructure	SPUR

San Francisco-based initiative to improve the resilience of the built environment. Topic specific reports provide strategy recommendations for mitigating existing buildings, improving the seismic performance of new buildings, upgrading infrastructure, helping residents shelter in place, improving preparedness, and planning for disaster recovery.

www.spur.org/featured-project/resilient-city

Center for Climate Strategies Adaptation Guidebook

Hazards Addressed	Asset Classes Addressed	Source
Climate change	Infrastructure built environment Natural systems Health and society Economic activities	Center for Climate Strategies

Comprehensive compendium of strategies that address a wide variety of climate change issues, including sea level rise, drought, extreme heat, and changing ecosystems. Strategies are not very robust but can serve as a starting point for locally developed strategies.

www.climatestrategies.us/library/library/download/908

Getting Climate Smart Strategy Toolbox

Hazards Addressed	Asset Classes Addressed	Source
Climate change	Water management Agriculture Energy, transportation and urban Infrastructure Tourism and recreation Public health and safety Oceans and coastal resources Fisheries and aquatic ecosystems	National Resources Defense Council

Similar to the previous resource, contains a comprehensive compendium of strategies that address a wide variety of climate change issues. Can serve as a starting point for locally developed strategies.

www.nrdc.org/water/climate-smart/files/getting-climate-smart-strategy-toolbox.pdf

3.4 Strategy Development and Implementation Handout

Purpose

This handout provides two tools to help to fill out a Strategy Development and Implementation Worksheet: a description of what to include in each field, and an example from a real life strategy. Review this handout with the project team prior to developing a worksheet for each strategy to ensure that worksheets are filled out consistently and that everyone understands the key pieces of information that are needed to effectively develop an appropriate and responsive strategy and plan for its implementation.

STRATEGY DEVELOPMENT INFORMATION							
Problem statement	<i>This is the problem statement that the strategy is responding to. This should come out of the vulnerability assessment and should include community goals.</i>						
Strategy name	<i>This is the name of the strategy – try to keep it to a few words.</i>						
Strategy summary	<i>This is a short description of what the strategy does.</i>						
Hazard(s) addressed	<i>Identify which hazard this strategy responds to.</i>						
Strategy type	Operational <i>(Strategies to enact operational and governance related improvements)</i>	Programmatic <i>(Strategies to expand or create new programs, activities, and initiatives)</i>	Plans, Regulations, and Policy Development <i>(Strategies to develop or revise policies, plans, regulations, and guidelines)</i>		Capital Improvement/ Infrastructure Projects <i>(Strategies designed to address physical and functional deficiencies and needs in the built environment)</i>	Education/ Outreach/ Coordination <i>(Strategies related to initiating or expanding partnerships and relationships, communicating and sharing information, and building awareness)</i>	Evaluation <i>(Strategies to improve feedback, input, data and information or conduct further or new analysis)</i>
Process/ implementation mechanism	Long Range Planning <i>(e.g., master plans, climate action plans)</i>	Land Use Planning <i>(e.g., general plan, specific plan)</i>	Capital Planning <i>(e.g., capital improvement plan)</i>	Operations <i>(e.g., annual budgeting)</i>	Emergency & Hazards Planning <i>(e.g., hazard mitigation plans)</i>	Project Planning and Design <i>(e.g., private and public development projects)</i>	New Initiatives <i>(e.g., legislation, ballot measure)</i>
Responsible agency	<i>Which department has the proper authority, capacity, and knowledge to implement the strategy.</i>						
Partners	<i>Internal or external stakeholders who have some decision making authority, political influence, policy or regulation authority, or who can assist with implementation.</i>						

Appendix B Step 3. ACT Worksheets and Tools

STRATEGY IMPLEMENTATION INFORMATION	
Priority (Evaluation score)	<i>Evaluation score and priority level. Priority levels may vary by jurisdiction for different scores (for example, a score of 10 may be high priority in one jurisdiction and medium priority in another).</i>
Actions/ activities	<i>Steps that need to be taken to implement the strategy.</i>
Staff lead	<i>Who has responsibility for overseeing the project and ensuring that the actions are taken.</i>
Cost estimate	<i>General estimate of the cost of implementation. This can be quantitative or qualitative (no cost, low, medium, high).</i>
Benefits (losses avoided)	<i>General estimate of the impact of the strategy. Can be quantitative (lives, homes, or dollars saved), or qualitative (low, medium, high benefit).</i>
Potential funding sources	<i>How the implementation of the strategy might be funded. This may include general operation funds, grants, fees, or other financing tools.</i>
Timeline	<i>How long it will take to implement the strategy? Choose a date by which the action should be implemented, or use a qualitative timeline estimate (near term, long term).</i>
Related policies	<i>Goals or policies already in place that support or assist the strategy. This may be in the general plan, climate action plan, housing element, climate adaptation plan, or sustainability plan.</i>

Appendix B Step 3. ACT Worksheets and Tools

Example Strategy: ABAG/BCDC Stronger Housing, Safer Communities										
STRATEGY DEVELOPMENT INFORMATION										
Problem statement	The City of East Palo Alto experiences coastal flooding during extreme storms. One-quarter of the city and many single family homes are within the coastal watershed that experiences flooding now. These storms are anticipated to increase in the future causing more frequent and extensive flooding.									
Strategy name	Reduce flood risk through integrated watershed management									
Strategy summary	Identify appropriate projects that sustain or enhance watershed functions while protecting development from shoreline flooding and riverine flooding.									
Hazard(s) addressed	Current Flooding Future Flooding									
Strategy type	Operational		Programmatic		Plans, Regulations, and Policy Development		Capital Improvement/ Infrastructure Project		Education/ Outreach/ Coordination	
Process/ implementation mechanism	Long Range Planning	Land Use Planning	Capital Planning	Operations	Emergency and Hazards Planning	Project Planning and Design		New Initiatives		
Responsible agency	Planning and Building Department									
Partners	FEMA, developers									
STRATEGY IMPLEMENTATION INFORMATION										
Priority (evaluation score)	13									
Actions/ activities	Conduct additional analysis of appropriate watershed projects, partner with FEMA for guidance and assistance, incorporate projects into long term city plans, and pursue implementation of identified projects									
Staff lead	Jane Doe									
Cost estimate	\$50,000 planning, \$300,000 - \$1 million implementation									
Benefits (losses avoided)	Improves habitats and biodiversity, improves water quality, protects vulnerable residents and recreational uses, protects built environment									
Potential funding sources	FEMA									
Timeline	18 months planning, 3-5 additional years for implementation									
Related policies	Existing policies for management of estuaries along shoreline to enhance bay shoreline flooding protection capacity									

3.5 Strategy Development and Implementation

Purpose

This blank worksheet is a template for recording key information about a strategy that can assist in fleshing out the ideas put forth in the strategy as well as key information needed to move into implementation of the strategy.

Approach

The project team should fill out this worksheet for every strategy the team is considering including in the project. First, as the team selects possible strategies, work through the top half of the worksheet. Use this information to evaluate each strategy. After going through the evaluation step, move to the bottom half of the worksheet only for those strategies that will be implemented.

Outcome

After completing the top half of the worksheet, there will be adequate information on the strategy to evaluate and prioritize strategies. After completing the bottom half of the worksheet for the strategies, the team will have a basic roadmap for how to implement the strategy. Together, the table provides a succinct summary of each strategy adequate for the Hazard Mitigation Plan or the other plan under development, as well as a document that creates ownership and accountability for implementation.

3.5 Strategy Development and Implementation

STRATEGY DEVELOPMENT INFORMATION							
Problem statement							
Strategy name							
Strategy summary							
Hazard(s) addressed							
Strategy type	Operational	Programmatic	Plans, Regulations, and Policy Development	Capital Improvement/ Infrastructure Project	Education/ Outreach/ Coordination	Evaluation	
Process/ implementation mechanism	Long Range Planning	Land Use Planning	Capital Planning	Operations	Emergency and Hazards Planning	Project Planning and Design	New Initiatives
Responsible agency							
Partners							
STRATEGY IMPLEMENTATION INFORMATION							
Priority (evaluation score)							
Actions/ activities							
Staff lead							
Cost estimate							
Benefits (losses avoided)							
Potential funding sources							
Timeline							
Related policies							