

City of Rolling Hills Natural Hazards Mitigation Plan

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The City of Rolling Hills Natural Hazards Mitigation Plan includes resources and information to assist City residents, public and private sector organizations, and others interested in participating in planning for natural hazards. The mitigation plan provides a list of activities that may assist City of Rolling Hills in reducing risk and preventing loss from future natural hazard events. The action items address multi-hazard issues, as well as activities for earthquakes, windstorms, wildfires and land movement.

How is the Plan Organized?

The Mitigation Plan contains a Mitigation Actions Matrix, background on the purpose and methodology used to develop the mitigation plan, a profile of City of Rolling Hills, sections on four natural hazards that occur within the City, and a number of appendices. All of the sections are described in detail in Section 1, Introduction.

Who Participated in Developing the Plan?

The City of Rolling Hills Natural Hazards Mitigation Plan is the result of a collaborative planning effort between City of Rolling Hills, Rolling Hills Community Association, Los Angeles County Fire and Sheriff's Departments, Palos Verdes Peninsula Unified School District, citizens, public agencies, non-profit organizations, and regional and state organizations. Public participation played a key role in development of goals and action items. Interviews were conducted with stakeholders across the City, and public outreach activities were conducted to include City of Rolling Hills residents in plan development. A Planning Team guided the process of developing the plan.

The Planning Team was comprised of the following Individuals:

City of Rolling Hills	Craig Nealis, City Manager
	Yolanta Schwartz, Planning Director
	Roger Vink, Rolling Hills Community Supervisor
Los Angeles County	Tony Wright, Fire Department
	Ed Acosta, Engineering Specialist
	Greg Aldredge, Fire Department
	Captain Veronie Steele, Fire Department
	Doug Smith, Fire Department
	David Rozas, Sheriff Department
	Scott Cobble, Southern California Edison Co.
	Ross Moilan, California Water Service Co.

	Cory Johnston, Sheriff Department
	Brandon Epps, Sheriff Department
Utility Companies	Scott Gobble, Southern California Edison Co.
	Ross Moilan, California Water Service Co.
Palos Verdes Peninsula Unified School District	Peter Lyons, Community Services
Emergency Planning Consultants	Carolyn J. Harshman, President

What is the Plan Mission?

The mission of the City of Rolling Hills Natural Hazards Mitigation Plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards. This can be achieved by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide the City towards building a Disaster Resistant Community.

What are the Plan Goals?

The plan goals describe the overall direction that City of Rolling Hills agencies, organizations, and citizens can take to work toward mitigating risk from natural hazards. The goals are stepping-stones between the broad direction of the mission statement and the specific recommendations outlined in the Mitigation Actions Matrix.

Protect Life and Property

Implement activities that assist in protecting lives by making homes, schools, infrastructure, critical facilities, and other property more resistant to losses from natural hazards.

Reduce losses and repetitive damages for chronic hazard events while promoting insurance coverage for catastrophic hazards.

Improve hazard assessment information to make recommendations for new and existing development in high hazard areas and encouraging preventative measures for existing development in areas vulnerable to natural hazards.

Public Awareness

Continue to develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.

Provide information on tools, partnership opportunities, and funding resources to assist in implementing mitigation activities.

Natural Systems

Balance landscape planning, natural resource management and land use planning with natural hazard mitigation to protect life, property, and the environment.

Preserve and enhance natural systems to serve natural hazard mitigation functions.

Partnerships and Implementation

Strengthen communication and participation among and within public agencies, citizens, non-profit organizations, schools, and utility companies to gain a vested interest in implementation.

Encourage leadership within public and private sector organizations to prioritize and implement local hazard mitigation activities.

Emergency Services

Establish policy to ensure mitigation projects for critical facilities, services, and infrastructure.

Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, schools and utility companies.

Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.

How are the Action Items Organized?

The action items are a listing of activities in which City agencies and citizens can be engaged to reduce risk. Each action item includes an estimate of the timeline for implementation (see Executive Summary, Attachment 1: Mitigation Actions Matrix).

The action items are organized within the following matrix, which lists all of the multi-hazard and hazard-specific action items included in the mitigation plan. Data collection and research and the public participation process resulted in the development of these action items (see Appendix B: Public Participation).

The Action Items identified on the Mitigation Actions Matrix will be funded through a variety of sources, possibly including: operating budget, general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), other Grants, private funding, Capital Improvement Program (CIP), and other funding opportunities.

The matrix includes the following information for each action item:

Responsible Agency. The “responsible agency” is the public agency with regulatory responsibility to address natural hazards, or that is willing and able to

organize resources, find appropriate funding, or oversee activity implementation, monitoring, and evaluation. The Responsible Agency may include local, county, or regional agencies that are capable of or responsible for implementing activities and programs. The hierarchies of the assignments vary – some are positions, others departments, and others Committees. No matter, the primary responsibility for implementing the action item falls to the entity shown as the “Responsible Agency”.

Timeline. Each action item includes an estimate of the timeline for implementation.

Plan Goals Addressed. The plan goals addressed by each action item are included as a way to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. The plan goals are organized into the following five areas:

- Protect Life and Property**
- Public Awareness**
- Natural Systems**
- Partnerships and Implementation**
- Emergency Services**

How Will the Plan be Implemented, Monitored, and Evaluated?

The Plan Maintenance Section (Section 2) of this document details the formal process that will ensure that the City of Rolling Hills Natural Hazards Mitigation Plan remains an active and relevant document. The plan maintenance process includes a schedule for monitoring and evaluating the Plan annually and producing a plan revision every five years. This section describes how the City will integrate public participation throughout the plan maintenance process. Finally, this section includes an explanation of how the City of Rolling Hills government intends to incorporate the mitigation strategies outlined in this Plan into existing planning mechanisms such as the City’s General Plan, and Building & Safety Codes.

Plan Adoption

Adoption of the Natural Hazards Mitigation Plan by the local jurisdiction’s governing body is one of the prime requirements for approval of the plan. Once the plan is completed, the City Council will be responsible for adopting the City of Rolling Hills Natural Hazards Mitigation Plan. The local agency governing body has the responsibility and authority to promote sound public policy regarding natural hazards. The City Council will periodically need to re-adopt the plan as it is revised to meet changes in the natural hazard risks and exposures in the community. The approved Natural Hazard Mitigation Plan will be significant in the future growth and development of the community.

Coordinating Body

A City of Rolling Hills City Manager and Planning Director (Planning Team) will be responsible for coordinating implementation of Plan action items and undertaking the formal review process together with the agencies that represented the Hazard Mitigation Planning Team for this report.

Convener

The City Council will adopt the City of Rolling Hills Natural Hazards Mitigation Plan and the Planning Team take responsibility for plan implementation. The City Manager will serve as a convener to facilitate the Planning Teams meetings. Plan implementation and evaluation will be a shared responsibility among the City and the agencies on the Planning Team.

Implementation through Existing Programs

City of Rolling Hills addresses statewide planning goals and legislative requirements through its General Plan, Capital Improvement Plans, and City Building & Safety Codes. The Natural Hazard Mitigation Plan provides a series of recommendations that are closely related to the goals and objectives of these existing planning programs. City of Rolling Hills will have the opportunity to implement recommended mitigation action items through existing programs and procedures.

Economic Analysis of Mitigation Projects

The Federal Emergency Management Agency's approaches to identify costs and benefits associated with natural hazard mitigation strategies or projects fall into two general categories: benefit/cost analysis and cost-effectiveness analysis. Conducting benefit/cost analysis for a mitigation activity can assist communities in determining whether a project is worth undertaking now, in order to avoid disaster-related damages later. Cost-effectiveness analysis evaluates how best to spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating natural hazards can provide decision makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

Formal Review Process

The City of Rolling Hills Natural Hazards Mitigation Plan will be evaluated annually by the Planning staff to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities. Every five years, prior to submitting an updated progress report to the Office of Emergency Services, the Planning staff will be responsible for contacting members of the other agencies constituting the Planning Team to evaluate, make comments and describe the progress of the mitigation strategies in the Plan.

Continued Public Involvement

City of Rolling Hills is dedicated to involving the public directly in the continual review and updates of the Mitigation Plan. Copies of the plan will be catalogued and made available at City Hall and Rolling Hills Community Association Administrative Office. The existence and location of these copies will be publicized in City Newsletters. The City Planning Department will be responsible for keeping track of public comments on the Plan.

Instructions for Using the Plan Review Crosswalk for Review of Local Mitigation Plans

Attached is a Plan Review Crosswalk based on the *Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000*, published by FEMA, dated March 2004. This Plan Review Crosswalk is consistent with the *Disaster Mitigation Act of 2000* (P.L. 106-390), enacted October 30, 2000 and 44 CFR Part 201 – *Mitigation Planning, Interim Final Rule* (the Rule), published February 26, 2002.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.

Example

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan include an overall summary description of the jurisdiction's vulnerability to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		✓
B. Does the plan address the impact of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. Required Revisions: <ul style="list-style-type: none"> • Include a description of the impact of floods and earthquakes on the assets. Recommended Revisions: <ul style="list-style-type: none"> • This information can be presented in terms of dollar value or percentages of damage. 	✓	
SUMMARY SCORE			✓	

Local Mitigation Plan Review and Approval Status

Jurisdiction: City of Rolling Hills	Title of Plan: Natural Hazards Mitigation Plan	Date of Plan: November 22, 2004
Local Point of Contact: Yolanta Schwartz		
Title: City Planner		
Agency: Planning Department		
Phone Number: (310) 377-1521		
E-Mail: ys@cityofrh.net		
Address: 2 Portuguese Bend Road, Rolling Hills, CA 90274		

State Reviewer: _____ **Title:** _____ **Date:** _____

FEMA Reviewer: _____ **Title:** _____ **Date:** _____

Date Received in FEMA Region [Insert #]	
Plan Not Approved	
Plan Approved	
Date Approved	

Jurisdiction:	NFIP Status*			CRS Class
	Y	N	N/A	
1. City of Rolling Hills	Y			

* Notes: Y = Participating N = Not Participating N/A = Not Mapped

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted.

Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a "Needs Improvement" score.

SCORING SYSTEM

Please check one of the following for each requirement.

- N - Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.
- S - Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)

Adoption by the Local Governing Body: \$201.6(c)(5) OR Multi-Jurisdictional Plan Adoption: \$201.6(c)(5) AND Multi-Jurisdictional Planning Participation: \$201.6(a)(3)

	NOT MET	MET

Planning Process

Documentation of the Planning Process: \$201.6(b) and \$201.6(c)(1)
 Local Capabilities Assessment \$201.4(c)(ii) and \$201.6(c)(1)

	N	S

Risk Assessment

Identifying Hazards: \$201.6(c)(2)(i)
 Profiling Hazards: \$201.6(c)(2)(i)
 Assessing Vulnerability: Overview: \$201.6(c)(2)(ii)
 Assessing Vulnerability: Identifying Structures \$201.6(c)(2)(ii)(A)
 Assessing Vulnerability: Estimating Potential Losses: \$201.6(c)(2)(ii)(B)
 Assessing Vulnerability: Analyzing Development Trends: \$201.6(c)(2)(ii)(C)

	N	S

Multi-Jurisdictional Risk Assessment: \$201.6(c)(2)(iii)

N/A

Mitigation Strategy

Local Hazard Mitigation Goals: \$201.6(c)(3)(i)
 Identification and Analysis of Mitigation Actions: \$201.6(c)(3)(ii)
 Implementation of Mitigation Actions: \$201.6(c)(3)(iii)
 Multi-Jurisdictional Mitigation Actions: \$201.6(c)(3)(iv)

	N	S

Plan Maintenance Process

Monitoring, Evaluating, and Updating the Plan: \$201.6(c)(4)(i)
 Incorporation into Existing Planning Mechanisms: \$201.6(c)(4)(ii)
 Continued Public Involvement: \$201.6(c)(4)(iii)

	N	S

Additional State Requirements*

See Planning Process, Local Capabilities Assessment
 Insert State Requirement
 Insert State Requirement

	N	S

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED

PLAN APPROVED

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

See Reviewer's Comments

PREREQUISITE(S)

Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Has the local governing body adopted the plan?	Appendix B-page 3			
B. Is supporting documentation, such as a resolution, included?	Appendix B-Attachment 1			
SUMMARY SCORE				

Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the plan indicate the specific jurisdictions represented in the plan?	N/A			
B. For each jurisdiction, has the local governing body adopted the plan?	N/A			
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?	N/A			
SUMMARY SCORE				N/A

Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the plan describe how each jurisdiction participated in the plan's development?	N/A			
SUMMARY SCORE				N/A

PLANNING PROCESS: §201.6(b): *An open public involvement process is essential to the development of an effective plan.*

Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:
 (1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
 (2) *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
 (3) *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

Requirement §201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan provide a narrative description of the process followed to prepare the plan?	Appendix B- pages 1 & 2			
B. Does the plan indicate who was involved in the planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Development: Executive Summary-page 1 Reviewers: Appendix B- Attachment 3			
C. Does the plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Introduction-page 6, Appendix B pgs. 1, 2, 3			
D. Was there an opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Appendix B- Attachments 2 & 3			
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Plan Maintenance-page 2			
SUMMARY SCORE				

Local Capabilities Assessment (Optional, Additional State OES Requested Information)

Requirement §201.4(c)(3)(ii): – Of the Federal Register Interim Final Rule 44 CFR Parts 201 and 206 states, “[The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan? (These resources are described in Section 2.2 of the OES LHMP Development Guide).	No	<p>Note: This section is optional. A “Needs Improvement” score on this requirement will not preclude the plan from being approved by FEMA.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> Provide a description of the human, technical and financial resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan. 		
B. Does the plan list local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the reporting jurisdiction?	No	<p>Note: This section is optional. A “Needs Improvement” score on this requirement will not preclude the plan from being approved by FEMA.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> List local mitigation funding sources (taxes, fees, assessments or fines) which affect or promote mitigation within the jurisdiction. 		
C. Does the plan list local ordinances which affect or promote disaster mitigation, preparedness, response or recovery within the reporting jurisdiction?	No	<p>Note: This section is optional. A “Needs Improvement” score on this requirement will not preclude the plan from being approved by FEMA.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> List local ordinances which affect or promote mitigation within the jurisdiction. 		
D. Does the plan describe the details of ongoing mitigation projects and programs within the reporting jurisdiction?	No	<p>Note: This section is optional. A “Needs Improvement” score on this requirement will not preclude the plan from being approved by FEMA.</p> <p>Recommended Revisions:</p> <ul style="list-style-type: none"> Describe the details of ongoing mitigation projects within the jurisdiction that is referred to in several areas of the plan, in respective hazard sections. 		

RISK ASSESSMENT: §201.6(c)(2): *The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

Identifying Hazards

Requirement §201.6(c)(2)(f): *[The risk assessment shall include a] description of the type ... of all natural hazards that can affect the jurisdiction.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
<p>A. Does the plan include a description of the types of all natural hazards that affect the jurisdiction? If the hazard identification omits (without explanation) any hazards commonly recognized as threats to the jurisdiction, this part of the plan cannot receive a Satisfactory score. Consult with the State Hazard Mitigation Officer to identify applicable hazards that may occur in the planning area.</p>	<p>Risk Assessment- page 1 and Risk Assessment – Attachments 1& 2</p>			
SUMMARY SCORE				

Profiling Hazards

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the risk assessment identify the location (i.e., geographic area affected) of each natural hazard addressed in the plan?	Risk Assessment – Attachment 2 Maps 5-2 & 5-3, Wildfire – page 9 & Wildfire Maps 7-1 & Table 7-5			
B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the plan?	Risk Assessment – Attachment 2			
C. Does the plan provide information on previous occurrences of each hazard addressed in the plan?	Tables 5-1, 6-2, 6-3, 7-1, 7-2			
D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?	Risk Assessment – Attachment 2			
SUMMARY SCORE				

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan include an overall summary description of the jurisdiction's vulnerability to each hazard?	Risk Assessment- Table 4-2 and Risk Assessment - Attachment 2 (page 7) PLEASE NOTE: THIS IS A GATED ALL RESIDENTIAL COMMUNITY - NOT A TYPICAL "CITY".			
B. Does the plan address the impact of each hazard on the jurisdiction?	Risk Assessment- page 2 and Table 4-2 and Attachment 2			
SUMMARY SCORE				

Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area ...

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?				
B. Does the plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?				
SUMMARY SCORE				

Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate ...

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan estimate potential dollar losses to vulnerable structures?		<p>Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.</p> <p>Recommended Revisions:</p> <ul style="list-style-type: none"> Describe vulnerability in terms of potential dollar losses. <p>Additional Suggestions:</p> <ul style="list-style-type: none"> Provide an estimate for each identified hazard. Include, when resources permit, estimates for structure, contents and function losses to present a full picture of the total loss for each building, infrastructure and critical facility. Select the most likely event for each identified hazard (e.g., 100-yr flood) and estimate the likely losses associated with this event. Include a composite loss map to locate high potential loss areas to help the City focus its mitigation priorities. Note any data limitations for estimating losses and include in the mitigation strategy actions for collecting the data to improve future loss estimate efforts. <p>For a step-by-step method for estimating losses, see <i>Understanding Your Risks (FEMA 386-2), Step 4.</i></p> <p>Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.</p> <p>Recommended Revisions:</p> <ul style="list-style-type: none"> Describe the methodology used to estimate losses. <p>Refer to <i>Understanding your Risks (FEMA 386-2), Step 4.</i></p>		
B. Does the plan describe the methodology used to prepare the estimate?				
SUMMARY SCORE				

Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan describe land uses and development trends?		Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.		
SUMMARY SCORE				

Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	N/A			
SUMMARY SCORE			N/A	

MITIGATION STRATEGY: §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A Does the plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards? (GOALS are long-term; represent what the community wants to achieve, such as "eliminate flood damage"; and are based on the risk assessment findings.)	Executive Summary-page 2			
SUMMARY SCORE				

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Element	Location in the Plan	Reviewer's Comments	SCORE	
			N	S
A. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?	Executive Summary – Attachment 1			
B Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?	Executive Summary – Attachment 1			
C. Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?	Executive Summary – Attachment 1			
SUMMARY SCORE				

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element	Location in the Plan	Reviewer's Comments	SCORE	
			N	S
A. Does the mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)	Plan Maintenance – Attachment 1 (STAPLEE)			
B. Does the mitigation strategy address how the actions will be implemented and administered? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)	Executive Summary – page 3			
C. Does the prioritization process include an emphasis on the use of a cost-benefit review (see page 3-36 of Multi-Hazard Mitigation Planning Guidance) to maximize benefits?	Plan Maintenance – Attachment 1 (STAPLEE)			
SUMMARY SCORE				

Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?	N/A			
SUMMARY SCORE				

PLAN MAINTENANCE PROCESS

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Element	Location in the Plan	Reviewer's Comments	SCORE	
			N	S
A. Does the plan describe the method and schedule for monitoring the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)	Plan Maintenance-page 1			
B. Does the plan describe the method and schedule for evaluating the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)	Plan Maintenance-page 3			
C. Does the plan describe the method and schedule for updating the plan within the five-year cycle?	Plan Maintenance-page 3			
SUMMARY SCORE				

Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Element	Location in the Plan	Reviewer's Comments	SCORE	
			N	S
A. Does the plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?	Plan Maintenance-page 2			
B. Does the plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?	Plan Maintenance-page 2			
SUMMARY SCORE				

Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

	N	S
<p>A. Does the plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)</p>	<p>Plan Maintenance- page 3</p>	
<p>SUMMARY SCORE</p>		

Jurisdiction: City of Rolling Hills

Matrix A: Profiling Hazards

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(f). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(f)		A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes		N	S	N	S	N	S	N	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To check boxes, double click on the box and change the default value to "checked."

- Legend:**
- §201.6(c)(2)(f) Profiling Hazards
 - A. Does the risk assessment identify the location (i.e., geographic area affected) of each hazard addressed in the plan?
 - B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the plan?
 - C. Does the plan provide information on previous occurrences of each natural hazard addressed in the plan?
 - D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?

Matrix B: Assessing Vulnerability

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each requirement. Completing the matrix is not required.

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Note: Receiving an N in the shaded columns will not preclude the plan from passing.



Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)		§201.6(c)(2)(ii) Assessing Vulnerability: Overview		A. Overall Summary Description of Vulnerability		B. Hazard Impact		§201.6(c)(2)(iii) Assessing Vulnerability: Identifying Structures		A. Types and Number of Existing Structures in Hazard Area (Estimate)		B. Types and Number of Future Structures in Hazard Area (Estimate)		§201.6(c)(2)(iii) Assessing Vulnerability: Estimating Potential Losses		A. Loss Estimate		B. Methodology		
	Yes	No	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:

- §201.6(c)(2)(ii) Assessing Vulnerability: Overview
- A. Does the plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- B. Does the plan address the impact of each hazard on the jurisdiction?

- B. Does the plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

Jurisdiction: City of Rolling Hills

§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures

- A. Does the plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- B. Does the plan estimate potential dollar losses to vulnerable structures?
- C. Does the plan describe the methodology used to prepare the estimate?

Matrix C: Identification and Analysis of Mitigation Actions

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.



Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)		A. Comprehensive Range of Actions and Projects		
	Yes	No	N	S	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:

§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions

- A. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?

City of Rolling Hills

Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
Multi-Hazard Action Items								
MH #1-1	Continue policy to ensure mitigation projects are in place to safeguard critical facilities.	City Manager, Planning Department	Ongoing	X				X
MH #1-2	Adoption of Uniform Building Code by municipality	City Manager, Planning Department	Ongoing	X				X
MH #1-3	Develop additional building and reconstruction policies and requirements in the City's building code for post-disaster situations.	City Manager, Planning Department	3-5 years	X				X
MH #1-4	Ensure compliance to rebuilding in conformance with applicable codes, specifications, and standards.	City Manager, Planning Department	Ongoing	X			X	
MH #1-5	Develop training and information program for action to take during hazard.	City Manager, Planning Department	Ongoing	X	X			
MH #1-6	Work with city service providers to develop local Natural Hazards Mitigation Plans that are consistent with the goals and framework of the existing codes.	City Manager, Planning Department	Ongoing	X			X	
MH #1-7	Develop and implement programs to coordinate maintenance and mitigation	City Manager, Planning Department	Ongoing	X	X		X	

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	activities to reduce risk to public infrastructure from severe weather events.							
MH #1-8	Encourage reduction of nonstructural and structural earthquake hazards in homes, school, and government offices.	City Manager, Planning Department	Ongoing	X				
MH #1-9	Underground electric utility lines to reduce risk of arcing line in high wind.	City Manager, Planning Department	Ongoing	X		X		
MH #1-10	Review current building codes and standards to determine adequacy for disaster restoration of properties.	City Manager, Planning Department	Ongoing	X			X	
MH #1-11	Review existing regulations to ensure adequacy in reducing the amount of future development in identified hazard areas.	City Manager, Planning Department	Ongoing	X	X	X		
MH #1-12	Encourage and facilitate the adoption of building codes that provide protection for new construction and substantial renovations from the effects of identified hazards.	City Manager, Planning Department	Ongoing	X			X	
MH #1-13	Provide adequate and consistent enforcement of ordinances and codes within and between	City Manager, Planning Department	Ongoing	X	X		X	

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	jurisdictions.							
MH #1-14	Integrate the goals and action items from the city's Natural Hazard Mitigation Plan into existing regulatory documents and programs, where appropriate.	City Manager, Planning Department	Ongoing	X			X	
MH #1-15	Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures	City Manager, Planning Department	Ongoing	X			X	
MH #1-16	Identify critical facilities at risk from natural hazards events	City Manager, Planning Department	3 years	X	X	x		
MH #1-17	Encourage development and enforcement of wind-resistant building sites and construction codes.	City Manager, Planning Department	Ongoing	X	X	X		
MH #1-18	Enforce construction and subdivision design that can be applied to steep slopes to reduce the potential adverse impacts from development.	City Manager, Planning Department	Ongoing	X		X		
MH #1-19	Develop public and private partnerships to foster natural hazard mitigation program	City Manager, Planning Department	Ongoing	X	X	X	X	

City of Rolling Hills

Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	coordination and collaboration in city.							
MH #1-20	Encourage the development of unifying organizations to ensure communication and dissemination of natural hazard mitigation information.	City Manager, Planning Department	Ongoing	X	X		X	
MH #1-21	Develop strategies to mitigate risk to these facilities, or to utilize alternative facilities should natural hazards events cause damages to the facilities in question	City Manager, Planning Department	Ongoing	X		X	X	
MH #1-22	Provide new home and property buyers with information on quality redevelopment and safe housing development. The information is probably most efficiently dispersed through city bi-weekly newsletter.	City Manager, Planning Department	Ongoing	X	X			
MH #1-23	Minimize the risk of erosion through policy development.	City Manager, Planning Department	Ongoing	X	X	X		
MH #1-24	Install and improve back-up power in critical facilities.	Utility Companies	Ongoing	X			X	
MH #1-25	Develop updates for the Natural Hazards Mitigation Action Plan based on new	City Manager, Planning Department	Ongoing	X				

City of Rolling Hills

Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
MH #1-26	information Review observed damage with a view toward revising codes to help mitigate damage from future disasters.	City Manager, Planning Department Los Angeles County Building and Safety Department	3-5 years	X		X	X	
MH #1-27	Bury the utility lines on Crest Road. Fund/Code Regulations, in an effort to spearhead the utility line burial project.	City Manager, Southern California Edison Company	Now	X			X	X
MH #1-28	Minimize suffering and disruption caused by disasters.	City Manager, Planning Department	Ongoing	X	X			
MH #1-29	Provide technical assistance to help the community develop disaster management operations capabilities.	Utility Companies, Los Angeles County Fire, Los Angeles County Area-G	Ongoing	X	X		X	
MH #1-30	Determine temporary protection measures; install plastic sheeting on roofs, cover exterior	City Manager, Planning Department	Ongoing	X				

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	openings such as windows or doors, draining trapped water in ceilings or draining accumulated flood waters, temporary shoring to avoid imminent building collapse or damage.							
MH #1-31	Conduct site plan review to determine new constructions, repair and reconstruction of damaged structures.	City Manager, Planning Department	Ongoing	X				
MH #1-32	Partner with other organizations and agencies in the community to identify grant programs and foundations that may support mitigation activities.	City Manager, Planning Department	Ongoing	X		X	X	
MH #1-33	Allocate county resources and assistance to mitigation projects when possible.	City Manager	1-2 years	X			X	
MH #1-34	Identify and pursue funding opportunities to develop and implement local and county mitigation activities.	City Manager	Ongoing	X			X	
MH #1-35	Determine which costs will be reimbursed to government for the demolition of government	City Manager	2-4 years	X			X	

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	buildings.							
MH #1-36	Ensure repairs or construction funded by Federal disaster assistance conform to applicable codes and standards.	City Manager, Planning Department, Los Angeles County Building and Safety	As Needed	X			X	
MH #1-37	Promote hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population.	City Manager, Planning Department	Ongoing	X	X			
MH #1-38	Identify opportunities for partnering with citizens, private contractors, and other jurisdictions to increase availability of equipment and manpower for efficiency of response efforts.	City Manager	Ongoing	X	X		X	
MH #1-39	Work with Community Planning Organizations (CPO's) and other neighborhood groups to establish community response teams.	City Manager	Ongoing		X		X	X
MH #1-40	Enhance outreach and education programs aimed at mitigating wildfire hazards and	City Manager	Ongoing	X			X	

City of Rolling Hills

Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed					
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	
	reducing or preventing the exposure of citizens, public agencies, private property owners, and businesses to natural hazards.								
MH #1-41	Encourage implementation wildfire mitigation activities in a manner consistent with the goals of promoting sustainable ecological management and community stability.	City Manager, Planning Department	Ongoing	X		X			
MH #1-42	Conduct a full review of the Natural Hazards Mitigation Action Plan every 5 years by evaluating mitigation successes, failures, and areas that were not addressed.	City Manager, Planning Department	5 years	X					
MH #1-43	Establish a committee representative of all areas of the City that will include vets, pet store owners, the Humane Society, animal shelters, and other interested parties to work on animal-specific evacuation and sheltering needs.		5 years				X	X	
MH #1-44	Assess availability of backup power resources (generators) of hospitals, nursing homes, and	City Manager, City Contracted Service	Ongoing	X					X

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	fire, police, rescue, and emergency management personnel; upgrade resources as necessary.	Providers						
MH #1-45	Coordinate public education to increase awareness of hazards and opportunities for mitigation.	City Manager, Planning Department	2-3 years		X			
MH #1-46	Encourage interested individuals to participate in hazard mitigation planning and training activities.	City Manager, Planning Department	Ongoing		X			
MH #1-47	Educate the public about procedures for reporting human-caused incidents.	City Manager, Planning Department, And City Service Providers	Ongoing		X		X	
MH #1-48	Educate the public about emergency sheltering and evacuation procedures.	City Manager, Planning Department, And City Service Providers	Ongoing		X		X	
MH	Educate the public about hazards prevalent to their area.	City Manager, Planning Department,	Ongoing		X		X	

City of Rolling Hills

Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
#1-49		And City Service Providers						
MH #1-50	Hold a city-sponsored hazard mitigation seminar for the community residents.	City Manager, Planning Department, And City Service Providers	5 years	X			X	
MH #1-51	Publicize the documents associated with emergency response and mitigation.	City Manager, Planning Department, And City Service Providers	5 years	X			X	
MH #1-53	Develop informational literature on animal disaster plans and supply kits and have them available in veterinary clinics and pet stores.	City Manager, Area G Coordinator	Ongoing	X			X	
MH #1-54	Develop informational literature on disaster plans for livestock and make them available to the public.	City Manager, Area G Coordinator	Ongoing	X			X	
MH #1-55	Continue to distribute packets of information to all property owners of the city. The content of the packets include the following	City Manager	Ongoing	X				

City of Rolling Hills

Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	information of property protection measures. Maintenance for Fire and Watershed Safety, Do It Yourself Planning for Emergency Supplies, Emergency Numbers, List of Roofers, and List of Retail/Wholesale Supply Vendors.							
MH #1-56	Distribution of wildfire safety and prevention information to residents and businesses residing within identified forested land.	City Manager City Service Providers	Ongoing	X	X		X	
MH #1-57	Maintain materials at City Hall on disaster supplies kits and plans, etc.	City Manager City Service Providers	Ongoing	X	X		X	
MH #1-58	Work with the County Office of Emergency Services, the American Red Cross, the Board of Education, County Fire Department, churches and Social Services to hold work session to share information about local shelters. Information to include the site	City Manager City Service Providers	Ongoing	X	X		X	

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	of each shelter, how many people it can house and feed, if it has back-up power available on site, completed site survey forms and types of resources that they have or that they need. This will benefit all areas of the City in the need to open shelters.							
MH #1-59	Establish a CERT Program in coordination with the County of Los Angeles.	City Manager, County of Los Angeles	Ongoing					
MH #1-61	Conduct occasional tabletop disaster exercises with local law enforcement, emergency managers, town and county officials, the LEPC and other disaster response agencies.	City Manager, City Service Providers	Ongoing		X		X	
MH #1-62	Periodically review City's regulations to make sure that adequate zoning regulations are in place to reduce future development in high hazard areas.	Planning Department	Ongoing	X				
Earthquake Action Items								
EQ	Adopt County of Los Angeles earthquake	City Manager	Ongoing					

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
#2-1	Building Codes.	Planning Department						
EQ #2-2	Minimize earthquake damage risk by retrofitting critical facilities.	Utility Companies	Ongoing	X				
EQ #2-3	Integrate new earthquake hazard mapping data for the city and improve technical analysis of earthquake hazards as they become available.	City Manager Planning Department	Ongoing	X	X			
EQ #2-4	Allocate City resources and assistance to mitigation projects when possible.	City Manager	1-2 years	X			X	
Wildfire Action Items								
WF #4-1	Continue to require Class A roofing standards and pool survey for additional water source.	City Manager Planning Department	Ongoing	X	X		X	
WF #4-2	Improve water systems to assist with Wildfire and Drought conditions.	California Water Service Company	3-5 years	X		X		
WF #4-4	Inventory alternative firefighting water sources and encourage the development of additional sources.	City Manager Planning Department	3-5 years	X	X			
WF #4-5	Enhance emergency services to increase the efficiency of wildfire response and recovery activities.	City Manager	Ongoing	X			X	

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
WF #4-6	Increase communication, coordination, and collaboration between wildland/urban interface property owners, local and county planners, and fire prevention crews and officials to address risks, existing mitigation measures, and federal assistance programs.	City Manager Los Angeles County Fire Department	Ongoing	X	X		X	
Land Movement Mitigation Actions Items								
LM #5-1	Improve knowledge of landslide hazard areas and understanding of vulnerability and risk to life and property in hazard-prone areas.	City Manager Planning Department	Ongoing	X	X			
LM #5-2	Identify safe evacuation routes in high-risk debris flow and landslide areas.	City Manager Los Angeles County Fire Department	Ongoing	X			X	
LM #5-3	Limit activities in identified potential and historical landslide areas through regulation and public outreach.	City Manager Planning Department	Ongoing	X				X
Windstorm Action Items								
WS #6-1	Monitor trees and branches in public areas at risk of breaking or falling in wind and sand	Rolling Hills Community Association	Ongoing	X				X

City of Rolling Hills Mitigation Actions Matrix

Natural Hazard	Action Item	Coordinating Organization	Timeline	Plan Goals Addressed				
				Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services
	storms. Prune or thin trees or branches when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the Community.							
WS #6-2	Encourage development and enforcement of wind-resistant building sites and construction codes.	City Manager Planning Department	Ongoing	X	X	X		
WS #6-3	Support/encourage electrical utilities to use underground construction methods where possible to reduce power outages from windstorms.	City Manager Planning Department	Ongoing	X		X		
WS #6-4	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during windstorm events.	City Manager Planning Department	Ongoing	X				

Section 1: Introduction

Section 1

Introduction

Throughout history, the residents of City of Rolling Hills have dealt with the various natural hazards affecting the area. Photos, journal entries, and newspapers show that the residents of the area dealt with earthquake, windstorm, wildfire, and land movement.

Although there were fewer people in the area, the natural hazards adversely affected the lives of those who depended on the land and climate conditions for food and welfare. As the population of the City continues to increase, the exposure to natural hazards creates an even higher risk than previously experienced.

The City of Rolling Hills is located near the coast in Los Angeles County, and offers the benefits of living in a Mediterranean type of climate. The 3 square mile City is an entirely residential private gated community. The City is characterized by the unique and attractive landscape that makes the area so popular. However, the potential impacts of natural hazards associated with the terrain make the environment and population vulnerable to natural disasters.

The City is subject to earthquakes, windstorms, wildfires, and land movement. It is impossible to predict exactly when these disasters will occur, or the extent to which they will affect the City. However, with careful planning and collaboration among public agencies, private sector organizations, and citizens within the community, it is possible to minimize the losses that can result from these natural disasters.

The Flying Triangle Area was determined to be in a landslide area when in 1948 the County of Los Angeles performed soil and geology studies for potential development below this area. At the time the area was vacant. However, due to lack of restrictions and building codes, and lack of technology, the County of Los Angeles allowed this area to be developed. The City of Rolling Hills incorporated in 1957 and since has adopted the County of Los Angeles Building Codes. The City of Rolling Hills continued to allow construction under the Los Angeles County Codes.

In 1973, there was a large fire in the Flying Triangle which burnt all of the vegetation, ten homes, five stables and other structures. All of the homes were built back, with a signed waiver that the owners are aware that this is a slide area and indemnifying the City and County from any liability. Most homes have leach fields lines, which was permitted then, but is not allowed now.

Why Develop a Mitigation Plan?

As the cost of damage from natural disasters continues to increase, the community realizes the importance of identifying effective ways to reduce vulnerability to disasters. Natural hazard mitigation plans assist communities in reducing risk from natural hazards by identifying resources, information, and strategies for risk reduction, while helping to

guide and coordinate mitigation activities throughout the City.

The plan provides a set of action items to reduce risk from natural hazards through education and outreach programs and to foster the development of partnerships, and implementation of preventative activities such as land use programs that restrict and control development in areas subject to damage from natural hazards.

The resources and information within the Mitigation Plan:

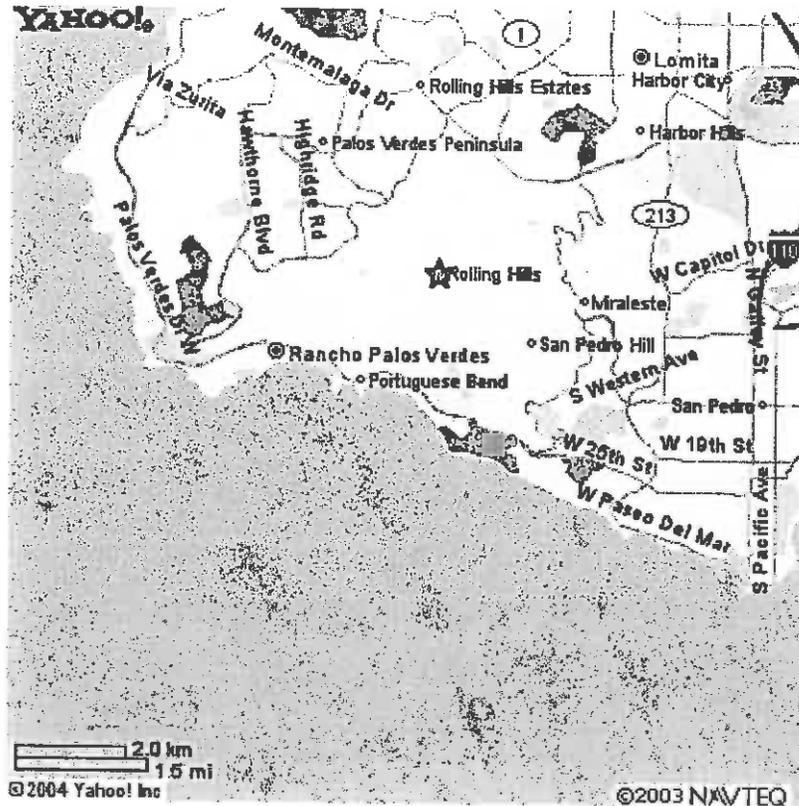
- 1) Establish a basis for coordination and collaboration among agencies and the public in City of Rolling Hills;
- 2) Identify and prioritize future mitigation projects; and
- 3) Assist in meeting the requirements of federal assistance programs.

The mitigation plan works in conjunction with other City plans, including the City's General Plan and Multi-Hazard Functional Plan.

Whom Does the Mitigation Plan Affect?

The City of Rolling Hills Natural Hazards Mitigation Plan affects the entire city. Map 1-1 shows major roads in the City of Rolling Hills. This plan provides a framework for planning for natural hazards. The resources and background information in the plan is applicable City-wide, and the goals and recommendations can lay groundwork for other local mitigation plans and partnerships.

**Map 1-1: Base Map of City of Rolling Hills
(Source: Yahoo Internet Browser)**



Natural Hazard Land Use Policy in California

Planning for natural hazards should be an integral element of any city's land use planning program. All California cities and counties have General Plans and the implementing ordinances that are required to comply with the statewide planning regulations.

The continuing challenge faced by local officials and state government is to keep the network of local plans effective in responding to the changing conditions and needs of California's diverse communities, particularly in light of the very active seismic region in which we live.

This is particularly true in the case of planning for natural hazards where communities must balance development pressures with detailed information on the nature and extent of hazards.

Planning for natural hazards, calls for local plans to include inventories, policies, and ordinances to guide development in hazard areas. These inventories should include the compendium of hazards facing the community, the built environment at risk, the personal

property that may be damaged by hazard events and most of all, the people who live in the shadow of these hazards.

Support for Natural Hazard Mitigation

All mitigation is local, and the primary responsibility for development and implementation of risk reduction strategies and policies lies with local jurisdictions. Local jurisdictions, however, are not alone. Partners and resources exist at the regional, state and federal levels. Numerous California state agencies have a role in natural hazards and natural hazard mitigation. Some of the key agencies include:

- The Governor's Office of Emergency Services (OES) is responsible for disaster mitigation, preparedness, response, recovery, and the administration of federal funds after a major disaster declaration;
- The Southern California Earthquake Center (SCEC), gathers information about earthquakes, integrates this information on earthquake phenomena, and communicates this to end-users and the general public to increase earthquake awareness, reduce economic losses, and save lives.
- The California Division of Forestry (CDF) is responsible for all aspects of wildland fire protection on private, state, and administers forest practices regulations, including landslide mitigation, on non-federal lands.
- The California Division of Mines and Geology (DMG) is responsible for geologic hazard characterization, public education, the development of partnerships aimed at reducing risk, and exceptions (based on science-based refinement of tsunami inundation zone delineation) to state mandated tsunami zone restrictions; and
- The California Division of Water Resources (DWR) plans, designs, constructs, operates, and maintains the State Water Project; regulates dams; provides flood protection and assists in emergency management. It also educates the public, serves local water needs by providing technical assistance.

Plan Methodology

Information in the Mitigation Plan is based on research from a variety of sources. Staff from the City of Rolling Hills conducted data research and analysis, participated at Planning Team meetings, facilitated public outreach activities, and developed the final mitigation plan. The research methods and various contributions to the plan included:

Input from the Planning Team:

The Planning Team convened two times to guide development of the Mitigation Plan. The Team played an integral role in developing the mission, goals, and action items for the Mitigation Plan. The Planning Team consisted of representatives of ten local

government agencies, including:

City of Rolling Hills City Manager's Office
City of Rolling Hills Planning Department
Rolling Hills Community Association, a private corporation
County of Los Angeles Building and Safety
County of Los Angeles Sheriff's Department
County of Los Angeles Fire Department
Palos Verdes Peninsula Unified School District
Southern California Edison Company
California Water Service Company

Plan Reviewers:

The Planning Team identified common concerns related to natural hazards and identified key activities to reduce risk from natural hazards. The data and support gained from the review process was very valuable to the overall planning effort. A complete listing of all plan reviewers is located in Appendix B- Attachment 1.

State and federal guidelines and requirements for mitigation plans:

Following are the Federal requirements for approval of a Natural Hazards Mitigation Plan:

- Open public involvement, with public meetings that introduce the process and project requirements.
- The public must be afforded opportunities for involvement in: identifying and assessing risk, drafting a plan, and public involvement in approval stages of the plan.
- Community cooperation, with opportunity for other local government agencies, the business community, educational institutions, and non-profits to participate in the process.
- Incorporation of local documents, including the local General Plan, the Zoning Ordinance, the Building Codes, and other pertinent documents.

The following components must be part of the planning process:

- Complete documentation of the planning process
- A detailed risk assessment on hazard exposures in the community
- A comprehensive mitigation strategy, which describes the goals & objectives, including proposed strategies, programs & actions to avoid long-term vulnerabilities.
- A plan maintenance process, which describes the method and schedule of monitoring, evaluating and updating the plan and integration of the Natural Hazards Mitigation Plan into other planning mechanisms.
- Formal adoption by the City Council.
- Plan Review by both State OES and FEMA

These requirements are spelled out in greater detail in the following plan sections and supporting documentation.

Public participation opportunities were created through use of local media, the City's website, distribution of a natural hazards questionnaire, and the City Council public hearing. In addition, the makeup of the Planning Team insured a constant exchange of data and input from outside organizations.

Through its consultant, Emergency Planning Consultants, the City had access to numerous existing mitigation plans from around the country, as well as current FEMA hazard mitigation planning standards (386 series).

Other reference materials consisted of county and city mitigation plans, including:

- Clackamas County (Oregon) Natural Hazards Mitigation Plan
- Six County (Utah) Association of Governments
- Upper Arkansas Area Risk Assessment and Hazard Mitigation Plan
- Urbandale-Polk County, Iowa Plan
- Hamilton County, Ohio Plan
- Natural Hazard Planning Guidebook from Butler County, Ohio

Hazard specific research: City of Rolling Hills staff collected data and compiled research on four hazards: earthquakes, windstorms, wildfires, and land movement. Research materials came from the City General Plan, the City's Threat Assessment contained in the Multi-Hazard Functional Plan, and state agencies including OES and CDF.

The City of Rolling Hills staff identified current mitigation activities, resources and programs, and potential action items from research materials and the plan review process.

Public Input

The City of Rolling Hills encouraged public participation and input in the Natural Hazards Mitigation Plan by publishing articles in the City's bi-monthly Newsletter. During the review period for the Plan Draft ten copies of the Plan were distributed to interested parties. Public copies of the Plan Draft were available at City Hall and the public was encouraged to participate in the City Council meeting which was held on November 22, 2004. During that public meeting the City Council praised the efforts of the Planning Team and voted unanimously to adopt the Plan. Public comments were solicited during the meeting, but no comments were offered.

The resources and information cited in the mitigation plan provide a strong local perspective and help identify strategies and activities to make City of Rolling Hills more disaster resistant.

How Is the Plan Used?

Each section of the mitigation plan provides information and resources to assist people in understanding the City and the hazard-related issues facing citizens, businesses, and the environment. Combined, the sections of the plan work together to create a document that guides the mission to reduce risk and prevent loss from future natural hazard events.

The structure of the plan enables people to use a section of interest to them. It also allows City government to review and update sections when new data becomes available. The ability to update individual sections of the mitigation plan places less of a financial burden on the City. Decision-makers can allocate funding and staff resources to selected pieces in need of review, thereby avoiding a full update, which can be costly and time-consuming. New data can be easily incorporated, resulting in a natural hazards mitigation plan that remains current and relevant to City of Rolling Hills.

The mitigation plan is organized into three parts. Part I contains an executive summary, Mitigation Actions Matrix, introduction, and plan maintenance. Part II contains a city profile, risk assessment, and hazard-specific sections. Part III includes the appendices. Each section of the plan is described below.

Part I: Mitigation Actions

Executive Summary: Hazard Mitigation Action Plan

The Hazard Mitigation Action Plan provides an overview of the mitigation plan mission, goals, and action items.

Attachment 1: Mitigation Actions Matrix

The plan action items are included in this section, and address multi-hazard issues, as well as hazard-specific activities that can be implemented to reduce risk and prevent loss from future natural hazard events.

Section 1: Introduction

The Introduction describes the background and purpose of developing the mitigation plan for City of Rolling Hills.

Section 2: Plan Maintenance

This section provides information on plan implementation, monitoring and evaluation.

Section 3: Community Profile

This section presents the history, geography, demographics, and socioeconomics

of the City of Rolling Hills. It serves as a tool to provide an historical perspective of natural hazards in the City.

Section 4: Risk Assessment

This section provides information on hazard identification, vulnerability and risk associated with natural hazards in City of Rolling Hills.

Part II: Hazard Analysis

This section provides information on the process used to develop goals and action items that cut across the four natural hazards addressed in the mitigation plan.

Sections 5-8: Hazard-Specific Sections

Hazard-Specific Sections on the four chronic hazards is addressed in this plan. Chronic hazards occur with some regularity and may be predicted through historic evidence and scientific methods. The chronic hazards addressed in the plan include:

- Section 5: Earthquake
- Section 6: Windstorm
- Section 7: Wildfire
- Section 8: Land Movement

Each of the hazard-specific sections includes information on the history, hazard causes, characteristics, and hazard assessment.

Part III: Resources

The plan appendices are designed to provide users of the City of Rolling Hills Natural Hazards Mitigation Plan with additional information to assist them in understanding the contents of the mitigation plan, and potential resources to assist them with implementation.

Appendix A: Plan Resource Directory

The resource directory includes City, regional, state, and national resources and programs that may be of technical and/or financial assistance to City of Rolling Hills during plan implementation.

Appendix B: Public Participation

This appendix includes specific information on the various public processes used during development of the plan.

Appendix C: Benefit/Cost Analysis

This section describes FEMA's requirements for benefit cost analysis in natural hazards mitigation, as well as various approaches for conducting economic analysis of proposed mitigation activities.

Appendix D: List of Acronyms

This section provides a list of acronyms for City, regional, state, and federal agencies and organizations that may be referred to within the City of Rolling Hills Natural Hazards Mitigation Plan.

Appendix E: Glossary

This section provides a glossary of terms used throughout the plan.

**Section 2:
Plan Maintenance
in the City of Rolling
Hills**

Section 2:

Plan Maintenance

The Plan Maintenance Section of this document details the formal process that will ensure that the Natural Hazards Mitigation Plan remains an active and relevant document. The plan maintenance process includes a schedule for monitoring and evaluating the Plan annually and producing a plan revision every five years. This section describes how the City will integrate public participation throughout the plan maintenance process. Finally, this Section includes an explanation of how the City of Rolling Hills government intends to incorporate the mitigation strategies outlined in this Plan into existing planning mechanisms such as the City's General Plan, and Building and Safety Codes.

Monitoring and Implementing the Plan

Plan Adoption

The City Council will be responsible for adopting the Natural Hazards Mitigation Plan. This governing body has the authority to promote sound public policy regarding natural hazards. Once the plan has been adopted, the City's Planning Director will be responsible for submitting it to the State Hazard Mitigation Officer at The Governor's Office of Emergency Services. The Governor's Office of Emergency Services will then submit the plan to the Federal Emergency Management Agency (FEMA) for review. This review will address the federal criteria outlined in FEMA Interim Final Rule 44 CFR Part 201. Upon acceptance by FEMA, the City will gain eligibility for Hazard Mitigation Grant Program funds.

Coordinating Body

The City's Planning Team will be responsible for coordinating implementation of plan action items and undertaking the formal review process. The City Manager (or other authority) will assign representatives from City agencies, including, but not limited to, the current Planning Team members. The City's Natural Hazards Planning Team consists of the following members:

City of Rolling Hills	Anton Dahlerbruch, City Manager
	Yolanta Schwartz, Planning Director
	Art Beckler, Rolling Hills Community Association Supervisor
	Roy Itani, Los Angeles County Building and Safety District Engineer

(There was a change in personnel since this report was first prepared)

In order to make this Team as broad and useful as possible, the City Manager will engage other relevant organizations and agencies in hazard mitigation. Other potential additions

to the Planning Team could include:

- A representative from Fire and Sheriff Departments
- A representative from the Rolling Hills Community Association
- A utility company representative

The Planning Director will be responsible for evaluating the plan on an annual basis. Every five years, prior to submitting a progress report to the Office of Emergency Services meeting will be scheduled with the staff of the other agencies, constituting the Planning Team to review the progress of City's implementation plan. These meetings will provide an opportunity to discuss the progress of the action items and maintain the partnerships that are essential for the sustainability of the mitigation plan.

Convener

The City Council will adopt the Natural Hazards Mitigation Plan, and the Planning Team will take responsibility for plan implementation. The City Manager (or designee) will serve as a convener to facilitate the meetings, and will assign tasks such as updating and presenting the Plan to the members of the Team. Plan implementation and evaluation will be a shared responsibility among all of the Team members.

Implementation through Existing Programs

The City addresses statewide planning goals and legislative requirements through its General Plan, and Los Angeles County Building and Safety Codes, which are adopted by the City. The Natural Hazards Mitigation Plan provides a series of recommendations - many of which are closely related to the goals and objectives of existing planning programs. The City will have the opportunity to implement recommended mitigation action items through existing programs and procedures.

The Los Angeles County Building and Safety Department is responsible for administering the Building and Safety Codes. In addition, the Planning Team will work with other agencies at the state level to review, develop and ensure Building and Safety Codes that are adequate to mitigate or prevent damage by natural hazards. This is to ensure that life-safety criteria are met for new construction.

The meetings of the Planning Team will provide an opportunity for members to report back on the progress made on the integration of mitigation planning elements into the City's planning documents and procedures.

Economic Analysis of Mitigation Projects

In March 2007, the Planning Team prioritized the mitigation actions identified in the Executive Summary. The prioritization method utilized was STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental). See Plan Maintenance – Attachment 1 for the results of the STAPLEE analysis.

FEMA's approaches to identify the costs and benefits associated with natural hazard mitigation strategies, measures, or projects fall into two general categories: benefit/cost analysis and cost-effectiveness analysis.

Conducting benefit/cost analysis for a mitigation activity can assist communities in determining whether a project is worth undertaking now, in order to avoid disaster-related damages later.

Cost-effectiveness analysis evaluates how best to spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating natural hazards can provide decision-makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

Given federal funding, the Natural Hazards Mitigation Committee will use a FEMA-approved benefit/cost analysis approach to identify and prioritize mitigation action items. For other projects and funding sources, the Committee will use other approaches to understand the costs and benefits of each action item and develop a prioritized list. For more information regarding economic analysis of mitigation action items, please see Appendix C: Benefit/Cost Analysis.

Evaluating and Updating the Plan

Formal Review Process

The Natural Hazards Mitigation Plan will be evaluated on an annual basis to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities. The evaluation process includes a firm schedule and timeline, and identifies the local agencies and organizations participating in plan evaluation. The convener or designee will be responsible for contacting the Planning Team members and organizing the annual meeting.

Team members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the Plan.

The Team will review the goals and action items to determine their relevance to changing situations in the City, as well as changes in State or Federal policy, and to ensure they are addressing current and expected conditions. The Team will also review the Risk Assessment portion of the Plan to determine if this information should be updated or modified, given any new available data. The coordinating organizations responsible for the various action items will report on the status of their projects, the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised.

The convener will assign the duty of updating the plan to one or more of the Team members. The Planning Team will also notify all holders of the City's Plan when

changes have been made. Every five years the updated Plan will be submitted to the State Hazard Mitigation Officer and the Federal Emergency Management Agency for review.

Continued Public Involvement

The City is dedicated to involving the public directly in review and updates of the Natural Hazards Mitigation Plan. The Planning Director is responsible for the annual review and update of the plan, and the remaining Planning Team members are responsible for the five-year review and update of the plan and submission to the State.

The public will also have the opportunity to provide feedback about the Plan. Copies of the Plan will be kept at in the Planning Department in the City Hall and at the Rolling Hills Community Association. The existence and location of these copies will be publicized in the City's Newsletter, which reaches every household in the City. The City Planning Department will be responsible for keeping track of public comments on the Plan.

In addition, copies of the Plan and any proposed changes will be posted on the City's Website. This site will also contain an email address and phone number to which people can direct their comments and concerns.

A public meeting will also be held after each annual evaluation or as deemed necessary by the Planning Team. The meetings will provide the public a forum for which they can express its concerns, opinions, or ideas about the Plan. The Team will be responsible for using City resources to publicize the annual public meetings and maintain public involvement through resources such as the City Newsletter.

Plan Maintenance – Attachment 1: STAPLEE

STAPLEE Instructions

One method of assessing the costs and benefits associated with mitigation actions in FEMA's STAPLEE tool. STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) is a systematic approach for weighing strengths and weaknesses of various mitigation actions. Each of the STAPLEE categories can be assessed in terms of opportunities and constraints. Following is a list of questions that will guide a jurisdiction through the STAPLEE process. **Note: An answer of "yes" is not always judged positively.**

Social

- Community Acceptance - Will the mitigation action be socially accepted within the community where it will be implemented?
Yes (+) or No (-)
- Effect on Segment of Population - Will the mitigation action adversely impact one particular segment of the population (neighborhood, culture, religion, etc.)?
No (+) or Yes (-)

Technical

- Technical Feasibility - Is the mitigation action technically feasible?
Yes (+) or No (-)
- Long-Term Solution - Will the mitigation action help to reduce losses in the long term?
Yes (+) or No (-)
- Secondary Impacts - Will there be any secondary effects which could nullify the action's benefits?
No (+) or Yes (-)

Administrative

- Staffing - Does the jurisdiction have the staffing capability (own and outside resources) to implement the action, and can it be readily obtained?
Yes (+) or No (-)
- Funding Allocated - Does the jurisdiction have the capability to fund the action (i.e. annual budget, CIP, grants, etc.)?
Yes (+) or No (-)
- Maintenance/Operations - Can the community provide the necessary maintenance work required to maintain the mitigation action?
Yes (+) or No (-)

Political

- Political Support - Is there political support to implement and maintain the mitigation action?
Yes (+) or No (-)
- Local Champion - Is there a local champion (political or public) willing to help see the action to completion?
Yes (+) or No (-)

Public Support - Is there enough public support to ensure the success of the mitigation action?
Yes (+) or No (-)

Legal

State Authority - Do State regulations exist that support the implementation of the mitigation action?

Yes (+) or No (-)

Existing Local Authority - Are the proper local laws, ordinances, and resolutions in place to implement the mitigation action?

Yes (+) or No (-)

Potential Legal Challenge - Is the mitigation action likely to be challenged by stakeholders who may be negatively affected?

No (+) or Yes (-)

Economic

Benefit of Action - Do the benefits of the mitigation action exceed the associated costs?

Yes (+) or No (-)

Cost of Action - Does the cost seem reasonable for the size of the problem and likely benefits?

Yes (+) or No (-)

Contributions to Economic Goals - Does the action contribute to other community economic goals, such as capital improvements or economic development?

Yes (+) or No (-)

Outside Funding Required - Will outside sources of funding be required?

No (+) or Yes (-)

Environmental

Effect on Land/Water - Will the mitigation action have a significant affect the environment (including land, water, and air resources)?

No (+) or Yes (-)

Effect on Endangered Species - Will the mitigation action have a significant affect endangered species?

No (+) or Yes (-)

Effect on HAZMAT/Waste Sites - Will the mitigation action have a significant affect HAZMAT or waste sites?

No (+) or Yes (-)

Consistent with Community Environmental Goals - Will the mitigation action comply with local, State, and Federal environmental laws and regulations?

Yes (+) or No (-)

Consistent with Federal Environmental Laws - Is the mitigation action consistent with the community's environmental values and goals?

Yes (+) or No (-)

STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) Prioritization

(Note: “+” = 1 point, “-” = -1 point, “n/a” = 0 point)

STAPLEE Criteria	Estimated Cost to Accomplish Action	S Social			T Technical			A Administrative			P Political			L Legal			E Economic			E Environmental			Priority Total (net)	
		Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites		Consistent with Community Environmental Goals
MH 1-Continue policy to ensure mitigation projects are in place to safeguard critical facilities.	Data not available	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 2-Adopt updates to the Uniform Building Code.	Data not available	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 3-Develop additional building and reconstruction policies and requirements in the City's building code for post-disaster situations.	Data not available	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 4-Ensure compliance to rebuilding in conformance with	Data not available	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18

Multi-Hazard Mitigation Actions

STAPLEE Criteria		S	T	A	P	L	E	E	
Alternatives	Estimated Cost to Accomplish Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	
and facilitate the adoption of building codes that provide protection for new construction and substantial renovations from the effects of identified hazards.	available	Community Acceptance	Technical Feasibility	Staffing	Political Support	Existing Local Authority	Benefit of Action	Effect on Land / Water	
MH 12-Provide adequate and consistent enforcement of ordinances and codes within and between jurisdictions.	Data not available	Effect on Segment of Population	Long-Term Solution	Funding Allocated	Local Champion	Potential Legal Challenge	Cost of Action	Effect on Endangered Species	
MH 13-Integrate the goals and action items from the City's Natural Hazard Mitigation Plan into existing regulatory documents and programs, where appropriate.	Data not available		Secondary Impacts	Maintenance/Operations	Public Support		Contributes to Economic Goals	Effect on HAZMAT/Waste Sites	
							Outside Funding Required	Consistent with Community Environmental Goals	
								Consistent with Federal Laws	
								Priority Total (net)	18
									18

STAPLEE Criteria	Estimated Cost to Accomplish Action	S		T		A		P		L		E			E			Priority Total (net)				
		Social	Technical	Administrative	Political	Legal	Economic	Environmental	Consistent with Community Environmental Goals	Consistent with Federal Laws												
safe housing development. The information is probably most efficiently dispersed through city bi-weekly newsletter.																						
MH 21-Minimize the risk of erosion through policy development.	Data not available	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 22-Install and improve back-up power in critical facilities.	Data not available	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15
MH 23-Develop updates for the Natural Hazards Mitigation Action Plan based on new information.	Data not available	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15
MH 24-Review observed damage with a view toward revising codes to help mitigate damage from future	Data not available	+	+	+	+	-	-	+	-	+	+	+	+	+	+	-	n/a	n/a	n/a	+	+	15

STAPLEE Criteria	Alternatives	Estimated Cost to Accomplish Action	S		T			A		P		L			E			E			Priority Total (net)		
			Social	Technical	Administrative	Political	Legal	Economic	Environmental														
	disasters.																						
	MH 25-Bury the utility lines on Crest Road. Provide funding and revise Code Regulations in an effort to spearhead the utility line burial project.	Data not available	+	+	+	+	-	-	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15
	MH 26-Minimize suffering and disruption caused by disasters.	Data not available	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
	MH 27-Provide technical assistance to help the community develop disaster management operations capabilities.	Data not available	+	+	+	+	-	-	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15
	MH 28-Determine temporary protection measures; install plastic sheeting on roofs, cover exterior openings such as windows or doors,	Data not available	+	+	+	+	-	-	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15

STAPLEE Criteria	Estimated Cost to Accomplish Action	S		T		A		P		L		E			E			Priority Total (net)		
		Social		Technical		Administrative		Political		Legal		Economic		Environmental						
contractors, and other jurisdictions to increase availability of equipment and manpower for efficiency of response efforts.																				
MH 36-Enhance outreach and education programs aimed at mitigating wildfire hazards and reducing or preventing the exposure of citizens, public agencies, private property owners, and businesses to natural hazards.																				
	Data not available																			
MH 37-Conduct a full review of the Natural Hazards Mitigation Action Plan every 5 years by evaluating mitigation																				
	Data not available																			

STAPLEE Criteria	Estimated Cost to Accomplish Action	S		T		A			P		L		E			E			Priority Total (net)			
		Social	Technical	Administrative	Political	Legal	Economic	Environmental	Environmental	Environmental												
emergency management personnel; upgrade resources as necessary.																						
MH 40-Coordinate public education to increase awareness of hazards and opportunities for mitigation.	Data not available	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 41-Encourage interested individuals to participate in hazard mitigation planning and training activities.	Data not available	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 42-Educate the public about procedures for reporting human-caused incidents.	Data not available	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 43-Educate the public about emergency	Data not available	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18

STAPLEE Criteria	Estimated Cost to Accomplish Action	S	Social	T	Technical	A	Administrative	P	Political	L	Legal	E			E			Priority Total (net)			
												Economic	E	E	Environmental	E	E		E		
sheltering and evacuation procedures.																					
MH 44-Educate the public about hazards prevalent to the area.	Data not available	+	+	+	+	+	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 45-Hold a city-sponsored hazard mitigation seminar for the community residents.	Data not available	+	+	+	+	+	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 46-Publicize the documents associated with emergency response and mitigation.	Data not available	+	+	+	+	+	+	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	18
MH 47-Develop and distribute maps of evacuation routes that will facilitate the community's safe evacuation.	Data not available	+	+	+	+	-	-	-	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15
MH 48-Develop informational literature on animal disaster plans and supply kits and have	Data not available	+	+	+	+	-	-	+	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	15

STAPLEE Criteria	Estimated Cost to Accomplish Action	S		T			A		P		L			E			E			Priority Total (net)	
		Social		Technical			Administrative		Political		Legal										
Roofers, and List of Retail/Wholesale Supply Vendors.																					15
MH 51-Distribute wildfire safety and prevention information to residents and businesses residing within identified forested land.	Data not available																				15
MH 52-Maintain materials at City Hall on disaster supplies kits and plans, etc.	Data not available																				18
MH 53-Work with the County Office of Emergency Services, the American Red Cross, the Board of Education, County Fire	Data not available																				15

STAPLEE Criteria Alternatives	Estimated Cost to Accomplish Action	S		T			A		P		L		E			E	Priority Total (net)						
		Social		Technical	Technical	Administrative	Administrative	Political	Political	Legal	Legal	Economic	Economic	Environmental	Environmental								
coordination with the County of Los Angeles and the Community Association.																							
MH 55-Conduct occasional tabletop disaster exercises with local fire, law enforcement, emergency managers, town and county officials, the LEPC and other disaster response agencies.	Data not available																						
MH 56-Periodically review City's regulations to make sure that	Data not available																						
		+	+	+	+	+	-	-	+	+	-	+	+	+	+	+	-	n/a	n/a	n/a	+	+	15

STAPLE Criteria	Estimated Cost to Accomplish Action	S		T			A			P			L			E			E			Priority Total (net)			
		Social		Technical			Administrative			Political			Legal			Economic			Environmental						
Alternatives																									
earthquake damage risk by retrofitting critical facilities.	available																								15
EQ 3-Integrate new earthquake hazard mapping data for the city and improve technical analysis of earthquake hazards as they become available.	Data not available	+		+		+		-		-		+		+		+		+		+		+		+	15
EQ 4 -Allocate City resources and assistance to mitigation projects when possible.	Data not available	+		+		+		-		-		+		+		+		+		+		+		+	15
EQ 5-Encourage reduction of nonstructural and structural earthquake hazards in homes, schools, businesses, and government offices.	Data not available	+		+		+		-		-		+		+		+		+		+		+		+	15
Windstorm Mitigation Actions																									
WS 1-Monitor trees	Data not	+		+		+		-		-		+		+		+		+		+		+		+	15

STADPEE Criteria	Estimated Cost to Accomplish Action	S			T			A			P			L			E			E			Priority Total (net)						
		Social	Technical	Administrative	Political	Legal	Economic	Environmental																					
<p>and branches in public areas at risk of breaking or falling in windstorms. Prune or thin trees or branches when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the community.</p> <p>WS 2-Encourage development and enforcement of wind-resistant building siting and construction codes.</p> <p>WS 3-Support/encourage electrical utilities to use underground construction methods where</p>	available	Community Acceptance																											
		Effect on Segment of Population																											
		Technical Feasibility																											
		Long-Term Solution																											
		Secondary Impacts																											
		Staffing																											
		Funding Allocated																											
		Maintenance/Operations																											
		Political Support																											
		Local Champion																											
		Public Support																											
		State Authority																											
		Existing Local Authority																											
		Potential Legal Challenge																											
		Benefit of Action																											
		Cost of Action																											
		Contributes to Economic Goals																											
		Outside Funding Required																											
Effect on Land / Water																													
Effect on Endangered Species																													
Effect on HAZMAT/Waste Sites																													
Consistent with Community Environmental Goals																													
Consistent with Federal Laws																													
Priority Total (net)																													

STAPLEE Criteria	Estimated Cost to Accomplish Action	S		T				A			P			L			E				Priority Total (net)						
		Social		Technical				Administrative			Political			Legal			Economic			Environmental							
Alternatives	available	Community Acceptance																									
		Effect on Segment of Population																									
knowledge of landslide hazard areas and understanding of vulnerability and risk to life and property in hazard-prone areas.	Data not available	Technical Feasibility																									
		Long-Term Solution																									
LM 2-Identify safe evacuation routes in high-risk debris flow and landslide areas.	Data not available	Secondary Impacts																									
		Staffing																									
LM 3-Limit activities in identified potential and historical landslide areas through regulation and public outreach.	Data not available	Funding Allocated																									
		Maintenance/Operations																									
		Political Support																									
		Local Champion																									
		Public Support																									
		State Authority																									
		Existing Local Authority																									
		Potential Legal Challenge																									
		Benefit of Action																									
		Cost of Action																									
		Contributes to Economic Goals																									
		Outside Funding Required																									
		Effect on Land / Water																									
		Effect on Endangered Species																									
		Effect on HAZMAT/Waste Sites																									
		Consistent with Community Environmental Goals																									
		Consistent with Federal Laws																									
		Priority Total (net)																									
																											15

**Section 3:
Community Profile
in the City of Rolling
Hills**

Section 3:

Community Profile

Why Plan for Natural Hazards in City of Rolling Hills?

Natural hazards impact citizens, property, the environment, and the economy of the City of Rolling Hills. Earthquakes, windstorms, wildfires, and earth movements have exposed City of Rolling Hills residents and utility companies to the financial and emotional costs of recovering after natural disasters. The risk associated with natural hazards increases as more people move to areas affected by natural hazards.

Although the population of Rolling Hills has been constant at less than 2000 people in the last three decades, the adjoining communities are increasing their populations and densities at a greater rate. The inevitability of natural hazards, the growing population and activity outside the City and the changes in the development trends create an urgent need to develop strategies, coordinate resources, and increase public awareness to reduce risk and prevent loss from future natural hazard events. Identifying the risks posed by natural hazards, and developing strategies to reduce the impact of a hazard event can assist in protecting life and property of citizens and communities. Local residents and businesses can work together with the City to create a natural hazards mitigation plan that addresses the potential impacts of hazard events.

Geography and the Environment

The City of Rolling Hills is characterized by beautifully wooded deep canyons and hilly terrain located on the San Pedro Hills of the Palos Verdes Peninsula in Southern California. The City of Rolling Hills is 2.98 square miles and is an entirely residential private gated community consisting of mostly large estate size one-story ranch style residences with agricultural and equestrian accessory structures and uses. Lot sizes range from a minimum of one acre to several acres in size. (Source: General Plan Land Use-3)

The City of Rolling Hills is located in the northwestern quadrant of Los Angeles County. It is bordered on the west by the City of Rancho Palos Verdes and on the east by the City of Rolling Hills Estates. The City is bordered on the southeast by Miralest and southwest by Portuguese Blend.

Elevations in the City range from a high of 1350 feet above sea level to a low of 500 feet above sea level.

Community Profile

From its inception in 1936, Rolling Hills has been guided by deed restrictions established by the original developer. The City was incorporated January 24, 1957. From its inception, the emphasis in Rolling Hills has been to create and maintain a distinctive rural residential character which preserves the sense of openness created by the areas hilly

topography (Source: General Plan Intro-1, Housing Element-1, and Green Sheet).

Rolling Hills has no public roads or streets. Entry to the City and use of privately owned roadways requires approval of the Rolling Hills Community Association. The City's privately-owned road network is typified by winding roads with a 20-50 foot paved cross section lacking in curbs, gutters, or sidewalks. Road width, coupled with steep grades and private roadways, effectively precludes public transit within the City (Source: General Plan Housing Element-35).

The City has five major collector streets: Portuguese Bend Road, Crest Road, Eastfield Drive, Southfield Drive, and Saddleback Road (Source: General Plan Circulation-2). Direct public transit service is not provided since all of the City's roadways are private. Transit service is provided along the south perimeter of the City by RTD line 225 which runs along Palos Verdes Drive North. There are no current plans to expand transit services (Source: General Plan Circulation-5).

The City of Rolling Hills is 100% residential. There are no hospitals, large corporations, or transportation corridors located within the city limits. One school is located in the city, owned and operated by the Palos Verdes Peninsula Unified School District and is located outside of the gates into the city.

Rolling Hills consists of a single gated community. Residents work, shop, attend school and obtain services in the other towns on the Palos Verdes Peninsula. Incorporated in 1957, the city maintains a ranch character, with no traffic lights, large spaces between houses and wide equestrian paths along streets. The city borders Rolling Hills Estates to the north and Rancho Palos Verdes on all other sides (including the vacant Portuguese Bend landslide area to the south). The only City-owned "structure" is City Hall.

Major Rivers

Major rivers do not impact rolling Hills.

Climate

Temperatures on the Peninsula range from 56.1 degrees in the winter months to 69.7 degrees in the summer months. However the temperatures can vary over a wide range, particularly when the Santa Ana winds blow, bringing higher temperatures and very low humidity. Temperatures rarely exceed 85 degrees in the summer months (June - September), and rarely drop below 45.3 degrees in the winter months (November-March). In September 1955, the highest temperature was recorded at 110 degrees in lower Rolling Hills. The lowest temperature of 21 degrees was in December 1990 at the Botanic Gardens in Rolling Hills Estates. (Peninsula News, 1997)

It is rare to have wind speeds over 30 mph on the Palos Verdes Peninsula. This is largely due to phenomenon created by the peninsula's natural landform.

Rainfall in this area averages 13.57 inches of rain per year. Due to the Peninsula's topography, the south and west slopes tend to receive less rain than the north and east slopes. Furthermore, actual rainfall in Southern California tends to fall in large amounts during sporadic and often heavy storms rather than consistently during storms at somewhat regular intervals. In short, rainfall in Southern California might be characterized as feast or famine within a single year.

The City of Rolling Hills enjoys the advantages of being located on the San Pedro Hills of the Palos Verdes Peninsula, including cool sea breezes and low concentrations of smog in the summer months, more sunshine due to its elevation above much of the coastal fog, and commanding views of the Pacific Ocean and Los Angeles Basin (Source: General Plan Land Use-1).

Minerals and Soils

The characteristics of the minerals and soils present in City of Rolling Hills indicate that potential types of hazards that may occur. Rock hardness and soil characteristics can determine whether or not an area will be prone to geologic hazards such as earthquakes, liquefaction and landslides.

Soils in Rolling Hills consist primarily of those which exist on gently sloping or rolling foothills and terraces throughout the Los Angeles Basin. Soil types consist predominantly of fertile clays with some loams and shales. The following soil types have been identified in the City: Altamont-Diablo Association (30-50% of the slopes), Ramona-Placentia Association (5-9% of the slopes), and Diablo-Altamont Association (2-9% of the slopes) (Source: General Plan OSCE-12).

No mineral resources or mines are indicated for the Rolling Hills area (Source: General Plan OSCE-13).

Most of Rolling Hills is composed of "Altimara Shale", which is a marine deposit composed of various types of shale, including: clay shale, diatomaceous shale (diatoms are microscopic plants and animals whose skeleton is made of silicon dioxide), siliceous shale (silicon dioxide cement causing the rock to be very hard). The main contributor to land sliding are volcanic ash layers called "tuff", which may be altered to a particular clay called "bentonite" that when wetted becomes conducive to sliding. Also common is basalt, the contact between the shale and basalt can be conducive to land sliding due to differences in permeability. Finally there is what is known as "catalina schist breccia", it is not known to be particularly unstable.

As far as soils, the Altimera Shale weathers to "adobe clay" a black, clay soil that is very hard when dry and spongy when wet. It is very common throughout the peninsula as an alteration product of the shales. The diatomaceous shale, if abundant in diatoms, has been quarried at various locales on the peninsula. Its primary use is filtering material.

Other Significant Geologic Features

City of Rolling Hills, like most of the Los Angeles Basin, lie over the area of one or more known earthquake faults, and potentially many more unknown faults, particularly so-called lateral or blind thrust faults.

The major faults that have the potential to affect the greater Los Angeles Basin, and therefore the City of Rolling Hills are the:

Newport Inglewood
Palos Verdes
Santa Monica and
Cabrillo

The Los Angeles Basin has a history of powerful and relatively frequent earthquakes, dating back to the powerful 8.0+ magnitude, 1857 San Andreas Earthquake which did substantial damage to the relatively few buildings that existed at the time. Paleoseismological research indicates that large (8.0+) earthquakes occur on the San Andreas fault at intervals between 45 and 332 years with an average interval of 140 years¹. Other lesser faults have also caused very damaging earthquakes since 1857. Notable earthquakes include the 1933 Long Beach Earthquake, the 1971 San Fernando Earthquake, the 1987 Whittier Earthquake, and the 1994 Northridge Earthquake.

In addition, many areas in the Los Angeles Basin have sandy soils that are subject to liquefaction. The City of Rolling Hills has liquefaction zones that are discussed in Section 5: Earthquake.

The City of Rolling Hills also has areas with landslide potential. Currently the city has potentially active landslide activity in the Flying Triangle Area. Although Rolling Hills is subject to moderate to high seismic shaking, the general lack of thick, loose, sandy soils and saturated alluvial deposits makes the potential for liquefaction low to very low (Source: General Plan Safety Element-8).

The City of Rolling Hills, because of the nearby seismic sources and presence of large landslides and steep road cuts in some locations is vulnerable to earthquake-induced slope instability (Source: General Plan Safety Element-8). The City of Rolling Hills has the potential for complex, shallow and deep-seated earthquake-induced hillslope failure particularly if combined with high rain fall (Source: General Plan Safety Element-9).

Population and Demographics

City of Rolling Hills has a population of about 1,871 in an area of 2.98 square miles.

The City has not experienced significant increase of people in the past three decades.

¹ Peacock, Simon M.,
<http://aamc.geo.lsa.umich.edu/eduQuakes/EQpredLab/EQprediction.peacock.html>

However, changes in life styles and development trends slowly create more community exposure and changes how agencies prepare for and respond to natural hazards. Wildfire has an increased chance of starting due to human activities in the urban/rural interface, and has the potential to injure more people and cause more property damage. But an urban/wildland fire is not the only exposure to the City of Rolling Hills. In the 1987 publication, Fire Following Earthquake issued by the All Industry Research Advisory Council, Charles Scawthorn explains how a post-earthquake urban conflagration would develop. The conflagration would be started by fires resulting from earthquake damage, but made much worse by the loss of pressure in the fire mains, caused by either lack of electricity to power water pumps, and /or loss of water pressure resulting from broken fire mains.

The City of Rolling Hills is experiencing very little in-fill building. As a result, the population density is not expected to increase service loads on the built infrastructure, including roads, water supply, sewer services and storm drains. As a nearly built-out community, residential growth has begun to slow in Rolling Hills as the supply of buildable land becomes exhausted and various constraints prohibit redevelopment of existing lots at higher densities (Source: General Plan Housing Element-15).

Natural hazards do not discriminate, but the impacts in terms of vulnerability and the ability to recover vary greatly among the population. According to Peggy Stahl of the Federal Emergency Management Agency (FEMA) Preparedness, Training, and Exercise Directorate, 80% of the disaster burden falls on the public, and within that number, a disproportionate burden is placed upon special needs groups: women, children, minorities, and the poor.²

According the 2000 census figures, the demographic make up of the city is as follows:

Caucasian	79.8%
Hispanic	4.5%
African American	2%
Asian	14%
Native American	.03%

The ethnic and cultural diversity suggests a need to address multi-cultural needs and services.

The percentage of citizens living in poverty in the City of Rolling Hills is about 1.3% according to the 2000 Census. Of those, 0% are under 18 years old, and 0% are over 65.

Vulnerable populations, including seniors, disabled citizens, women, and children may be disproportionately impacted by natural hazards.

² www.fema.gov

Examining the reach of hazard mitigation policies to special needs populations may assist in increasing access to services and programs. FEMA's Office of Equal Rights addresses this need by suggesting that agencies and organizations planning for natural disasters identify special needs populations, make recovery centers more accessible, and review practices and procedures to remedy any discrimination in relief application or assistance. The cost of natural hazards recovery can place an unequal financial responsibility on the general population when only a small proportion may benefit from governmental funds used to rebuild private structures. Discussions about natural hazards that include local citizen groups, insurance companies, and other public and private sector organizations can help ensure that all members of the population are a part of the decision-making processes.

Land and Development

Development in Southern California from the earliest days was a cycle of boom and bust. The Second World War however dramatically changed that cycle. Military personnel and defense workers came to Southern California to fill the logistical needs created by the war effort. The available housing was rapidly exhausted and existing commercial centers proved inadequate for the influx of people. Immediately after the war, construction began on the freeway system, and the face of Southern California was forever changed. Home developments and shopping centers sprung up everywhere and within a few decades the central basin of Los Angeles County was virtually built out. This pushed new development further and further away from the urban center.

The City of Rolling Hills General Plan addresses the use and development of private land, which is exclusively residential. This plan is one of the City's most important tools in addressing environmental challenges including transportation, air quality; growth management; conservation of natural resources; clean water and open spaces.

The environment of most Los Angeles County cities is nearly identical with that of their immediate neighbors and the transition from one incorporated municipality to another is seamless to most people. Seamless too are the exposures to the natural hazards that affect all of Southern California.

Housing and Community Development

	City of Rolling Hills
Development Type	
Residential	100%
Commercial/Industrial	0%
Open Space	30%
Housing Type	
Single-Family	100%
Multi-Residential (20+ units)	0%
Mobilehomes	0%

Housing Statistics	
Total Available Housing Units	682
Owner-Occupied Housing	95.3%
Average Household Size	2.90
Average Home Value	\$1,000,000+

Transportation and Commuting Patterns

Private automobiles are the dominant means of transportation in Southern California and in the City of Rolling Hills.

According to the 2000 Census, the City has a population of 1,871. The mean travel time to work for the residents of the City of Rolling Hills is 32 minutes.

As stated in the City's General Plan, the City of Rolling Hills is served by the 405 Freeway and 110 Freeway, connecting the city to adjoining parts of Los Angeles County. The City has 26 miles of private roads and 23 miles of horse trails.

**Section 4:
Risk Assessment in
the City of Rolling
Hills**

Section 4:

Risk Assessment

What is a Risk Assessment?

Conducting a risk assessment can provide information: on the location of hazards, the value of existing land and property in hazard locations, and an analysis of risk to life, property, and the environment that may result from natural hazard events. Specifically, the five levels of a risk assessment are as follows:

1) Hazard Identification

The Planning Team considered a range of natural hazards facing the region including: Earthquake, Flooding, Windstorms, Wildfires, Land Movement, Tsunami, and Drought. The attached Ranking Your Hazard (Risk Assessment – Attachment 1) handout guided the Team in prioritizing the natural hazards with the highest probability of significantly impacting the City of Rolling Hills. The Team agreed that any hazards receiving a Team average score of “3” or higher would be included in the Natural Hazards Mitigation Plan. Utilizing the ranking technique, the Team identified: Earthquakes, Windstorms, Wildfire, and Land Movement as the most prominent hazards facing the community.

This is the description of the geographic extent, potential intensity and the probability of occurrence of a given hazard. Maps are frequently used to display hazard identification data. The City of Rolling Hills identified four major hazards that affect this geographic area. These hazards – earthquakes, windstorms, wildfires, and land movement - were identified through an extensive process that utilized input from the Hazard Mitigation Planning Team. The geographic extent of each of the identified hazards has been identified by the City of Rolling Hills utilizing the maps contained in the City’s General Plan and the MHFP Threat Assessment, and are illustrated in the tables, maps, and photos listed on page iii. The Planning Team determined that should any of the identified natural hazards occur it would affect the entire City and not just parts thereof, as the City is less than 3 square miles in area.

2) Profiling Hazard Events

This process describes the causes and characteristics of each hazard and what part of the City's population, infrastructure, and environment may be vulnerable to each specific hazard. A profile of each hazard discussed in this plan is provided in each hazard section. For a full description of the history of hazard specific events, please see the appropriate Hazard-Specific Sections (also see Risk Assessment – Attachment 2 Vulnerability: Location, Extend, and Probability). The Planning Team determined that should any of the identified natural hazards occur it would affect the entire City and not just parts thereof, as the City is less than 3 square miles in area.

3) Vulnerability Assessment/Inventorying Assets

This is a combination of hazard identification with an inventory of the existing (or planned) property development(s) and population(s) exposed to a hazard. Critical

facilities are of particular concern because these facilities provide critical products and services to the general public that are necessary to preserve the welfare and quality of life in the City and fulfill important public safety, emergency response, and/or disaster recovery functions. The critical facilities have been identified and are illustrated in Table 4-2. A description of the critical facilities in the City is also provided in this section. In addition, these tables indicate vulnerabilities to the various identified hazards.

4) Risk Analysis

Estimating potential losses involves assessing the damage, injuries, and financial costs likely to be sustained in a geographic area over a given period of time. This level of analysis involves using mathematical models. The two measurable components of risk analysis are magnitude of the harm that may result and the likelihood of the harm occurring. Describing vulnerability in terms of dollar losses provides the community and the state with a common framework in which to measure the effects of hazards on assets. Data was not available to make vulnerability determinations in terms of dollars losses. The Mitigation Actions Matrix (Executive Summary – Attachment 1) includes an action item to conduct such an assessment in the future.

5) Assessing Vulnerability/ Analyzing Development Trends

This step provides a general description of land uses and development trends within the community so that mitigation options can be considered in land use planning and future land use decisions. This plan provides comprehensive description of the character of City of Rolling Hills in the Community Profile. This description includes the geography and environment, population and demographics, land use and development, housing and community development, employment and industry, and transportation and commuting patterns. Analyzing these components of City of Rolling Hills can help in identifying potential problem areas and can serve as a guide for incorporating the goals and ideas contained in this mitigation plan into other community development plans.

Hazard assessments are subject to the availability of hazard-specific data. Gathering data for a hazard assessment requires a commitment of resources on the part of participating organizations and agencies. Each hazard-specific section of the plan includes a section on hazard identification using data and information from City, County or State agency sources.

Regardless of the data available for hazard assessments, there are numerous strategies the City can take to reduce risk. These strategies are described in the action items detailed in each hazard section of this Plan. Mitigation strategies can further reduce disruption to critical services, reduce the risk to human life, and alleviate damage to personal and public property and infrastructure. Action items throughout the hazard sections provide recommendations to collect further data to map hazard locations and conduct hazard assessments.

Federal Requirements for Risk Assessment

Recent federal regulations for hazard mitigation plans outlined in 44 CFR Part 201

include a requirement for risk assessment. This risk assessment requirement is intended to provide information that will help communities to identify and prioritize mitigation activities that will reduce losses from the identified hazards. There are four hazards profiled in the mitigation plan, including earthquakes, windstorms, wildfires, and earth movements. The Federal criteria for risk assessment and information on how the City of Rolling Hills Natural Hazards Mitigation Plan meets those criteria is outlined in Table 4-1 below.

Table 4-1: Federal Criteria for Risk Assessment

Section 322 Plan Requirement	How is this addressed?
Identifying Hazards	Each hazard section includes an inventory of the best available data sources that identify hazard areas. To the extent data are available; the existing maps identifying the location of the hazard were utilized. The Executive Summary and the Risk Assessment sections of the plan include a list of the hazard maps.
Profiling Hazard Events	Each hazard section includes documentation of the history, and causes and characteristics of the hazard in the City.
Assessing Vulnerability: Identifying Assets	Where data is available, the vulnerability assessment for each hazard addressed in the mitigation plan includes an inventory of all publicly owned land within hazardous areas. Each hazard section provides information on vulnerable areas in the City in the Community Issues section. Each hazard section also identifies potential mitigation strategies.
Assessing Vulnerability: Estimating Potential Losses:	The Risk Assessment Section of this mitigation plan identifies key critical facilities in the City and includes a map of these facilities. Vulnerability assessments have been completed for the hazards addressed in the plan, and quantitative estimates were made for each hazard where data was available.
Assessing Vulnerability: Analyzing Development Trends	The Community Profile Section of this plan provides a description of the development trends in the City, including the geography and environment, population and demographics, land use and development, housing and community development, employment and industry, and transportation and commuting patterns.

Critical and Essential Facilities

Facilities critical to government response and recovery activities (i.e., life safety and property and environmental protection) include: 911 centers, emergency operations centers, police and fire stations, public works facilities, communications centers, sewer

and water facilities, hospitals, bridges and roads, shelters, and shelters. Also, facilities that, if damaged, could cause serious secondary impacts may also be considered "critical". A hazardous materials facility is one example of this type "secondary impact" critical facility.

Essential facilities are those facilities that are vital to the continued delivery of key government services or that may significantly impact the public's ability to recover from the emergency. These facilities may include: buildings such as the jail, law enforcement center, public services building, community corrections center, the courthouse, and juvenile services building and other public facilities such as schools. Table 4-2 illustrates the critical and essential facilities located in the City of Rolling Hills.

Table 4-2: City of Rolling Hills Critical and Essential Facilities Vulnerable to Hazards (data was not available to determine the extent of damages to the critical and essential facilities)

EQ	Fire	Wind	Land	Facility	Address
X		X		Sheriff Substation	26123 Narbonne Avenue Lomita, CA 90717
X	X	X	X	Fire Station #56	12 Crest Road, Rolling Hills
X	X	X	X	City Hall	2 Portuguese Bend Road, Rolling Hills
X	X	X	X	School	38 Crest Road W., Rolling Hills
X	X	X	X	Rolling Hills Community Association	1 Portuguese Bend Road, Rolling Hills
X	X	X	X	Water Company, Water Tanks, and Pumps	Various Locations in the City. Main Office: 2632 W. 237 th Street Torrance CA, 90505
X	X	X	X	Edison Company Utility Poles	Various Locations in the City. Main Office: 505 Maple Street, Torrance, CA 90503

Summary

It's important to emphasize that most of the critical and essential facilities serving the City of Rolling Hills are located outside of the city boundaries. In the event those outside services or facilities failed, the City of Rolling Hills would be greatly impacted.

Natural hazard mitigation strategies can reduce the impacts concentrated at large employment and industrial centers, public infrastructure, and critical facilities. Natural hazard mitigation for industries and employers may include developing relationships with

emergency management services and their employees before disaster strikes, and establishing mitigation strategies together. Collaboration among the public and private sector to create mitigation plans and actions can reduce the impacts of natural hazards. As stated earlier, very few critical facilities re located within the city boundary. However, the city depends on the workings of those facilities. The City collaborates and cooperates with the neighboring cities and other public and private entities through regional contracts for services, membership in the South Bay Cities Council of Governments, League of California Cities. Regional Law and Joint Power Authority.

Ranking Your Hazards

It is important to keep in mind that your rankings should be based on a hazard event that would overwhelm your jurisdiction's ability to respond effectively.

For each hazard listed assign a score. Place a number in the appropriate box.

Hazard Scoring	
1	An event of that magnitude is not likely to occur
2	There is a slight chance that an event of that magnitude will occur
3	It is possible that an event of that magnitude will occur
4	An event of that magnitude has occurred here in the past and is likely to occur again
5	There is a high probability that an event of that magnitude will occur

Identify any additional hazards for the jurisdiction at the end of the list labeled as "Other Hazard."

Hazard	Score
Earthquake	4
Flooding	4
Wildfire	3
Windstorm	4
Earth Movement (Landslide/Debris Flow)	
Tsunami	
Drought	
Other Hazard _____	

**Risk Assessment – Attachment 2
Vulnerability: Location, Extent, and Probability***

	Location (Where)	Extent (How Big)	Probability (How Often)*
Hazard			
Earthquake	Entire Project Area	According to USGS, there is a 60% chance in the next 30 years of an earthquake measuring greater than 6.7 occurring in southern California.	Moderate
Windstorm	Entire Project Area	50 miles per hour or greater	Moderate
Wildfire	Entire Project Area	California CDF-FRAP wildfire rating is "Very High Fire Severity Zone"	Moderate
Land Movement	Entire Project Area	Inches to Several Feet	Moderate
* Probability is defined as: Low = 1:500 years, Moderate = 1:100 years, High = 1:10 years			