Second Draft Plan

July 28, 2017 | # Hazard Mitigation Plan

emergency planning consultants

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Credits

Q&A | ELEMENT A: PLANNING PROCESS | A1

Q: A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))
A: See **Hazard Mitigation Planning Team** below.

Special Thanks

Hazard Mitigation Planning Team:

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Acknowledgements

Omnitrans Board of Directors

- ✓ Sam Spagnola, Chair, Rancho Cucamonga
- ✓ Ron Dailey, Vice Chair, Loma Linda
- ✓ Supervisor Curt Hagman, County of San Bernardino
- ✓ Supervisor Robert Lovingood, County of San Bernardino
- ✓ Supervisor James Ramos, County of San Bernardino
- ✓ Supervisor Josie Gonzales, County of San Bernardino
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- ✓ Sylvia Robles, Grand Terrace
- ✓ Penny Lilburn, Highland
- ✓ Paul Eaton, Montclair
- ✓ Alan Wapner, Ontario
- ✓ Pat Gilbreath, Redlands
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Mapping

The maps in this plan were provided by Omnitrans, County of San Bernardino, Federal Emergency Management Agency (FEMA), or were acquired from public Internet sources. Care was taken in the creation of the maps contained in this Plan, however they are provided "as is". Omnitrans cannot accept any responsibility for any errors, omissions or positional accuracy, and therefore, there are no warranties that accompany these products (the maps). Although information from land surveys may have been used in the creation of these products, in no way does this product represent or constitute a land survey. Users are cautioned to field verify information on this product before making any decisions.

Mandated Content

In an effort to assist the readers and reviewers of this document, the jurisdiction has inserted "markers" emphasizing mandated content as identified in the Disaster Mitigation Act of 2000 (Public Law – 390). Following is a sample marker:

Q&A | ELEMENT A: PLANNING PROCESS | A1

Q A1: Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))

A:

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Part I: PLANNING PROCESS

Introduction

The Hazard Mitigation Plan (Mitigation Plan) was prepared in response to Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 (also known as Public Law 106-390) requires state and local governments (including special districts and joint powers authorities) to prepare mitigation plans to document their mitigation planning process, and identify hazards, potential losses, mitigation needs, goals, and strategies. This type of planning supplements Omnitrans' comprehensive land use planning and emergency management planning programs. This document is a federally mandated update to the Omnitrans 2011 Hazard Mitigation Plan and ensures continuing eligibility for Hazard Mitigation Grant Program (HMGP) funding.

DMA 2000 was designed to establish a national program for pre-disaster mitigation, streamline disaster relief at the federal and state levels, and control federal disaster assistance costs. Congress believed these requirements would produce the following benefits:

- ✓ Reduce loss of life and property, human suffering, economic disruption, and disaster costs.
- ✓ Prioritize hazard mitigation at the local level with increased emphasis on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring critical facilities/services survive a disaster.
- ✓ Promote education and economic incentives to form community-based partnerships and leverage non-federal resources to commit to and implement long-term hazard mitigation activities.

The following FEMA definitions are used throughout this plan (Source: FEMA, 2002, *Getting Started, Building Support for Mitigation Planning*, FEMA 386-1):

Hazard Mitigation – "Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards".

Planning – "The act or process of making or carrying out plans; specifically, the establishment of goals, policies, and procedures for a social or economic unit."

Planning Approach

The four-step planning approach outlined in the FEMA publication, *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies* (FEMA 386-3) was used to develop this plan:

- ✓ **Develop mitigation goals and objectives -** The risk assessment (hazard characteristics, inventory, and findings), along with municipal policy documents, were utilized to develop mitigation goals and objectives.
- ✓ **Identify and prioritize mitigation actions -** Based on the risk assessment, goals and objectives, existing literature/resources, and input from participating entities, mitigation activities were identified for each hazard.

- ✓ **Prepare implementation strategy -** Generally, high priority activities are recommended for implementation first. However, based on organizational needs and goals, project costs, and available funding, some medium or low priority activities may be implemented before some high priority items.
- ✓ **Document mitigation planning process -** The mitigation planning process is documented throughout this plan.

Hazard Land Use Policy in California

Planning for hazards should be an integral element of any local government's land use planning program. All California cities and counties have General Plans (also known as Comprehensive Plans) and the implementing ordinances that are required to comply with the statewide land use planning regulations. Since Omnitrans is a special district entity (joint powers authorities), the only "land use" controls pertain to properties owned by Omnitrans. Even in those cases, the underlying land use regulations are prepared and enforced by the controlling jurisdiction (e.g. Omnitrans Headquarters is located in the City of San Bernardino).

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.

Planning for hazards requires a thorough understanding of the various hazards facing the Omnitrans service area. Additionally, it's important to take an inventory of the structures and contents of various holdings of Omnitrans. These inventories should include the compendium of hazards facing Omnitrans, 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. Such an analysis is found in this hazard mitigation plan.

State and Federal Partners in Hazard Mitigation

As mentioned above, all mitigation is local and the primary responsibility for development and implementation of risk reduction strategies and policies lies with each local jurisdiction. 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 hazards and hazard mitigation.

Some of the key agencies include:

- ✓ California Office of Emergency Services (Cal OES) is responsible for disaster mitigation, preparedness, response, recovery, and the administration of federal funds after a major disaster declaration;
- ✓ Southern California Earthquake Center (SCEC) gathers information about earthquakes, integrates information on earthquake phenomena, and communicates this to end-users and the general public to increase earthquake awareness, reduce economic losses, and save lives.
- ✓ California Department of Forestry and Fire Protection (CAL FIRE) is responsible for all aspects of wildland fire protection on private and state properties, and administers forest practices regulations, including landslide mitigation, on non-federal lands.
- ✓ California Division of Mines and Geology (DMG) is responsible for geologic hazard characterization, public education, and the development of partnerships aimed at reducing risk.

- ✓ 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
- ✓ FEMA provides hazard mitigation guidance, resource materials, and educational materials to support implementation of the capitalized DMA 2000.
- ✓ United States Census Bureau (USCB) provides demographic data on the populations affected by natural disasters.
- ✓ United States Department of Agriculture (USDA) provides data on matters pertaining to land management.

Q&A | ELEMENT A: PLANNING PROCESS | A3

Q: A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))

A: See **Stakeholders** below.

Stakeholders

A Hazard Mitigation Planning Team (Planning Team) consisting of staff worked with Emergency Planning Consultants to create the updated Plan. **The Planning Team served as the primary stakeholders throughout the planning process.**

As required by DMA 2000, the Planning Team involved "the public". The general public and external agencies were invited to contribute to the mitigation plan during the plan writing phase. The Second Draft Plan was announced and posted on the Omnitrans' website on ___, 2017. External agencies were emailed information about the availability of the Second Draft Plan.

The general public and external agencies served as secondary stakeholders with opportunity to contribute to the plan during the Plan Writing Phase of the planning process.

Hazard Mitigation Legislation

Hazard Mitigation Grant Program

In 1974, Congress enacted the Robert T. Stafford Disaster Relief and Emergency Act, commonly referred to as the Stafford Act. In 1988, Congress established the Hazard Mitigation Grant Program (HMGP) via Section 404 of the Stafford Act. Regulations regarding HMGP implementation based on the DMA 2000 were initially changed by an Interim Final Rule (44 CFR Part 206, Subpart N) published in the Federal Register on February 26, 2002. A second Interim Final Rule was issued on October 1, 2002.

The HMGP helps states and local governments implement long-term hazard mitigation measures for natural hazards by providing federal funding following a federal disaster declaration. Eligible applicants include state and local agencies, Indian tribes or other tribal organizations, and certain nonprofit organizations.

In California, the HMGP is administered by Cal OES. Examples of typical HMGP projects include:

- ✓ Property acquisition and relocation projects
- ✓ Structural retrofitting to minimize damages from earthquake, flood, high wind, wildfire, or other natural hazards
- ✓ Elevation of flood-prone structures
- ✓ Vegetative management programs, such as:
  - Brush control and maintenance
  - Fuel break lines in shrubbery
  - Fire-resistant vegetation in potential wildland fire areas

Pre-Disaster Mitigation Program

The Pre-Disaster Mitigation Program (PDM) was authorized by §203 of the Stafford Act, 42 United States Code, as amended by §102 of the DMA 2000. Funding is provided through the National Pre-Disaster Mitigation Fund to help state and local governments (including tribal governments) implement cost-effective hazard mitigation activities that complement a comprehensive mitigation program.

In Fiscal Year 2017, two types of grants (planning and competitive) were offered under the PDM Program. Planning grants allocate funds to each state for Mitigation Plan development. Competitive grants distribute funds to states, local governments, and federally recognized Indian tribal governments via a competitive application process. FEMA reviews and ranks the submittals based on pre-determined criteria. The minimum eligibility requirements for competitive grants include participation in good standing in the National Flood Insurance Program (NFIP) and a FEMA-approved Mitigation Plan. (Source: http://www.fema.gov/fima/pdm.shtm)

"Floods and hurricanes happen. The hazard itself is not the disaster – it's our habits, it's how we build and live in those areas…that's the disaster."

Craig Fugate,
Former FEMA Director

Flood Mitigation Assistance Program

The Flood Mitigation Assistance (FMA) Program was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101). Financial support is provided through the National Flood Insurance Fund to help states and communities implement measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP.

Three types of grants are available under FMA: planning, project, and technical assistance. Planning grants are available to states and communities to prepare Flood Mitigation Plans. NFIP-participating communities with approved Flood Mitigation Plans can apply for project grants to implement measures to reduce flood losses. Technical assistance grants in the amount of 10 percent of the project grant are available to the state for program administration. Communities that receive planning and/or project grants must participate in the NFIP. Examples of eligible projects include elevation, acquisition, and relocation of NFIP-insured structures. (Source: http://www.fema.gov/fima/fma.shtm)

Q&A | ELEMENT C. MITIGATION STRATEGY | C2

Q: C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))

A: See **NFIP Participation** below.

National Flood Insurance Program

Established in 1968, the NFIP provides federally-backed flood insurance to homeowners, renters, and businesses in communities that adopt and enforce floodplain management ordinances to reduce future flood damage. Omnitrans does not control land use so has no floodplain management ordinance" or a floodplain administrator. Furthermore, the Omnitrans service area and its facilities rely on infrastructure (roads, bridges, etc.) throughout an expansive area included in many Flood Insurance Rate Maps (FIRM) that show floodways, 100-year flood zones, and 500-year flood zones.

NFIP Participation

Omnitrans facilities are located in the City of San Bernardino and the City of Montclair, both of whom participate in NFIP. The FEMA FIRM maps for the project area were last updated September 2, 2016 and August 28, 2008. It's important to note that FEMA flood maps are not entirely accurate. The studies and maps represent flood risk at the point in time when FEMA completed the studies, and does not incorporate planning for floodplain changes in the future due to new development. Although FEMA is considering changing that policy, it is optional for local communities.

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B4

Q: B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))

A: See **Repetitive Loss Properties** below.

Repetitive Loss Properties

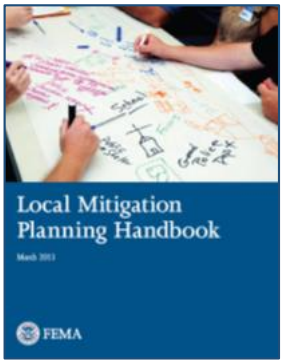
Repetitive Loss Properties (RLPs) are most susceptible to flood damages; therefore, they have been the focus of flood hazard mitigation programs. Unlike a Countywide program, the Floodplain Management Plan (FMP) for repetitive loss properties involves highly diversified property profiles, drainage issues, and property owner's interest. It also requires public involvement processes unique to each RLP area. The objective of an FMP is to provide specific potential mitigation measures and activities to best address the problems and needs of communities with repetitive loss properties. A repetitive loss property is one for which two or more claims of $1,000 or more have been paid by the National Flood Insurance Program (NFIP) within any given ten-year period. According to FEMA resources, none of the Omnitrans facility locations are designated as a Repetitive Loss Property (RLPs).

State and Federal Guidance in Hazard Mitigation

While local jurisdictions have primary responsibility for developing and implementing hazard mitigation strategies, they are not alone. Various state and federal partners and resources can help local agencies with mitigation planning.

The Mitigation Plan was prepared in accordance with the following regulations and guidance documents:

- ✓ DMA 2000 (Public Law 106-390, October 10, 2000)
- ✓ 44 CFR Parts 201 and 206, Mitigation Planning and Hazard Mitigation Grant Program, Interim Final Rule, October 1, 2002
- ✓ 44 CFR Parts 201 and 206, Mitigation Planning and Hazard Mitigation Grant Program, Interim Final Rule, February 26, 2002
- ✓ How-To Guide for Using HAZUS-MH for Risk Assessment, (FEMA 433), February 2004
- ✓ Mitigation Planning "How-to" Series (FEMA 386-1 through 9 available at: http://www.fema.gov/fima/planhowto.shtm)
- ✓ Getting Started: Building Support For Mitigation Planning (FEMA 386-1)
- ✓ Understanding Your Risks: Identifying Hazards and Estimating Losses (FEMA 386-2)
- ✓ Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies (FEMA 386-3)
- ✓ Bringing the Plan to Life: Implementing the Mitigation Plan (FEMA 386-4)
- ✓ Using Benefit-Cost Review in Mitigation Planning (FEMA 386-5)
- ✓ Integrating Historic Property and Cultural Resource Considerations into Mitigation Planning (FEMA 386-6)



- ✓ Integrating Manmade Hazards into Mitigation Planning (FEMA 386-7)
- ✓ Multi-Jurisdictional Mitigation Planning (FEMA 386-8)
- ✓ Using the Mitigation Plan to Prepare Successful Mitigation Projects (FEMA 386-9)
- ✓ State and Local Plan Interim Criteria Under the DMA 2000, July 11, 2002, FEMA
- ✓ Mitigation Planning Workshop for Local Governments-Instructor Guide, July 2002, FEMA
- ✓ Report on Costs and Benefits of Natural Hazard Mitigation, Document #294, FEMA
- ✓ LHMP Development Guide – Appendix A - Resource, Document, and Tool List for Local Mitigation Planning, December 2, 2003, Cal OES
- ✓ Local Mitigation Plan Review Guide (FEMA 2011)
- ✓ Local Mitigation Planning Handbook (FEMA 2013)

How is the Plan Organized?

The structure of the plan enables the reader to use a section of interest to them and allows Omnitrans to review and update sections when new data is available. The ease of incorporating new data into the plan will result in a Mitigation Plan that remains current and relevant.

Following is a description of each section of the plan:

Part I: Planning Process

Introduction

Describes the background and purpose of developing a mitigation plan.

Planning Process

Describes the mitigation planning process including: stakeholders and integration of existing data and plans.

Part II: Risk Assessment

Community Profile

Summarizes the history, geography, demographics, and socioeconomics of the Omnitrans service area.

Risk Assessment

This section provides information on hazard identification, vulnerability and risk associated with hazards in the Omnitrans service area.

Omnitrans Hazard Analysis

Describes the hazards posing a significant threat to the Omnitrans service area including:

Earthquake | Wildfire | Flooding | Drought | Technological & Human-Caused

The Omnitrans-Specific Hazard Analysis includes information on previous occurrences, local conditions, hazard assessment, and local impacts including climate change

Part III: Mitigation Strategies

Mitigation Strategies

Documents the goals, community capabilities, and priority setting methods supporting the Plan. Also highlights the Mitigation Actions Matrix: 1) goals met; 2) identification, assignment, timing, and funding of mitigation activities; 3) benefit/cost/priorities; 4) plan implementation method; and 5) activity status.

Plan Maintenance

Establishes tools and guidelines for maintaining and implementing the Mitigation Plan.

Part IV: Appendix

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

General Hazard Overviews

Generalized subject matter information discussing the science and background associated with the identified hazards.

Attachments

FEMA Letter of Approval
Board of Directors Staff Report
Board of Directors Resolution
Planning Team sign-in sheets, agendas, and minutes
General public web postings and notices
External agency email invitation
References
Listing of Maps, Tables, and Figures

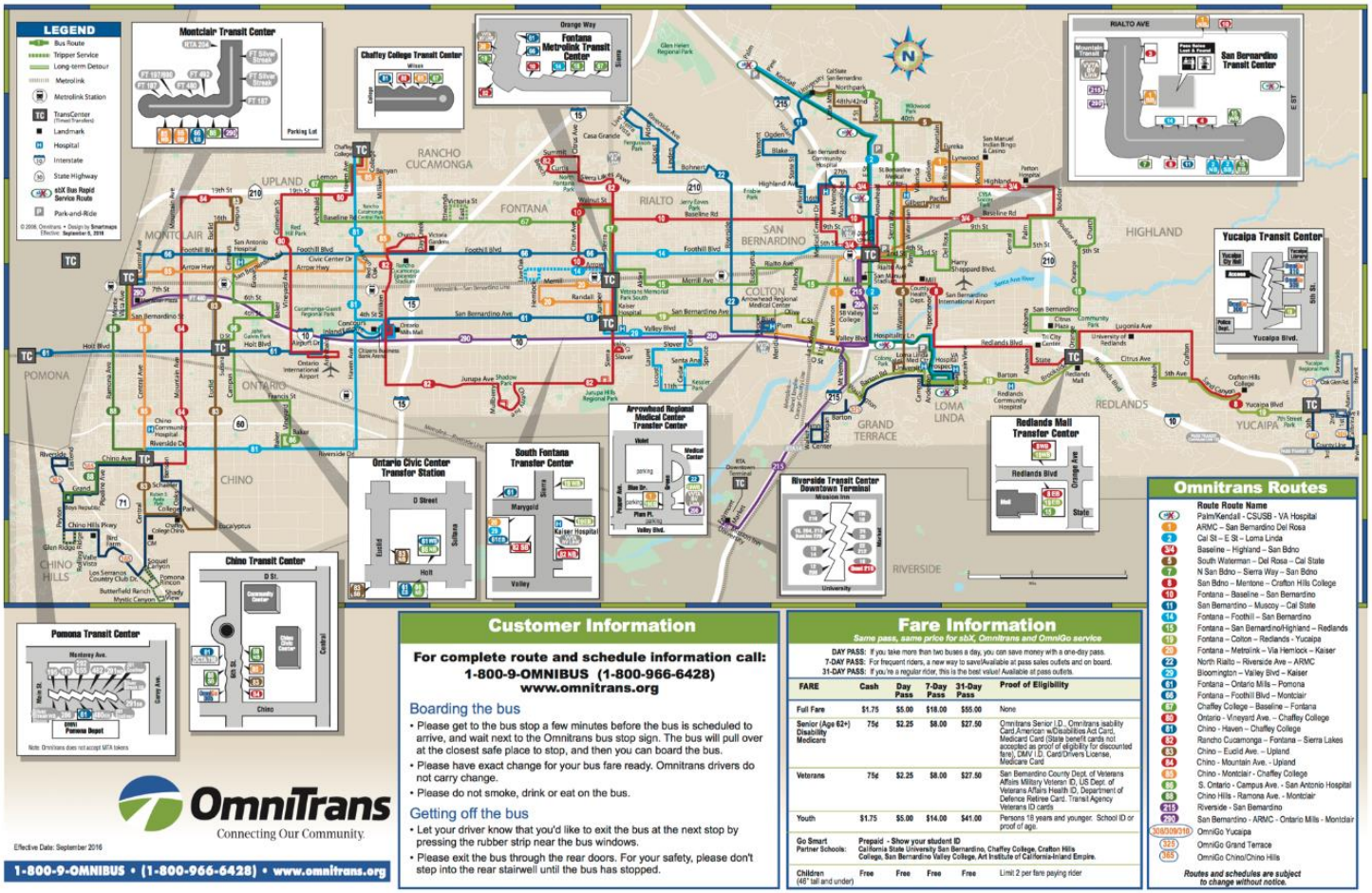
Plan Adoption and Approval

As per DMA 2000 and supporting Federal regulations, the Mitigation Plan is required to be adopted by the Omnitrans Board of Directors and approved by FEMA. See the **Planning Process Section** for details.

Who Does the Mitigation Plan Affect?

This plan provides a framework for planning for the identified hazards. The resources and background information in the plan are applicable to the entire Omnitrans service area. **Map: Omnitrans System** shows the regional proximity of Omnitrans and nearby communities.

Map: Omnitrans System
(Source: www.omnitrans.org)



Planning Process

Throughout the project, the Planning Team served as the primary stakeholders while also making a concerted effort to gather information from the general public, external agencies (joint powers authority jurisdictions, utility providers, and special districts). In addition, the Planning Team solicited information from agencies and people with specific knowledge of hazards and past historical events, as well as building codes and facilities maintenance planning. The hazard mitigation strategies contained in this plan were developed through an extensive planning process involving Omnitrans staff, general public, and external agencies.

Following review and input by the Planning Team to the First Draft Plan, next, during the Plan Writing Phase, the Second Draft Plan was shared with the general public and external agencies (joint powers authority jurisdictions, special districts, utility providers, etc.). The general public and external agencies served as the secondary stakeholders. Next, the comments gathered from the secondary stakeholders were incorporated into a Third Draft Plan which was submitted to Cal OES and FEMA along with a request for a conditional approval.

Next, the Planning Team completed amendments to the Plan to reflect mandated input by Cal OES and FEMA. The Fourth Draft Plan was then posted for an additional opportunity for input from the secondary stakeholders. Following the review period, comments gathered were incorporated into a Planning Team Report and a public notice was placed on the Omnitrans website announcing the Board of Directors public meeting. Following adoption by the Omnitrans Board of Directors, the Final Draft Plan was re-submitted to FEMA with a request for final approval. The planning process described above is portrayed below in a timeline:

Q&A | ELEMENT A: PLANNING PROCESS | A1

Q: A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))

A: See **Planning Phases Timeline** below.

Q&A | ELEMENT A: PLANNING PROCESS | A2

Q: A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))

A: See **Planning Phases Timeline** below.

Q&A | ELEMENT A: PLANNING PROCESS | A3

Q: A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))

A: See **Planning Phases Timeline** below.

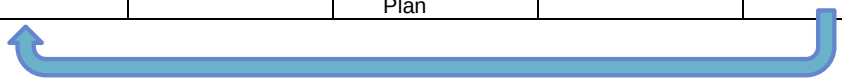
Q&A | ELEMENT E: PLAN ADOPTION | E1

Q: E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))

A: See **Planning Phases Timeline** below.

Figure: Planning Phases Timeline

PLANNING PHASES TIMELINE				
Plan Writing Phase (First & Second Draft Plan)	**Plan Review Phase (Third Draft Plan)**	**Plan Adoption Phase (Fourth Draft Plan)**	**Plan Approval Phase (Final Draft & Final Plan)**	**Plan Implementation Phase**
• Planning Team input – research, meetings, writing, review of First Draft Plan • Incorporate input from the Planning Team into Second Draft Plan • Invite public and external agencies to review, comment, and contribute to the Second Draft Plan • Incorporate input into the Third Draft Plan	• Third Draft Plan sent to Cal OES and FEMA for conditional approval • Address any mandated revisions identified by Cal OES and FEMA into Fourth Draft Plan • Invite public and external agencies to review, comment, and contribute to the Fourth Draft Plan	• Incorporate input into the Planning Team staff report • Post public notice of Board of Directors meeting • Fourth Draft Plan distributed to Board of Directors in advance of meeting • Present Fourth Draft Plan to the Board of Directors • Board of Directors Adopted Plan • Incorporate input from Omnitrans Board of Directors public meeting into Final Draft Plan	• Submit Final Draft Plan to FEMA with request for final approval • Receive FEMA approval • Incorporate FEMA approval into the Final Plan	• Conduct quarterly Planning Team meetings • Integrate mitigation action items into budget, Facilities Maintenance plan and other funding and strategic documents



Plan Methodology

The Planning Team discussed knowledge of hazards and past historical events, as well as building codes and facilities maintenance plans.

The rest of this section describes the mitigation planning process including 1) Planning Team involvement, 2) general public and external agency involvement; and 3) integration of existing data and plans.

Q&A | ELEMENT A: PLANNING PROCESS | A1

Q: A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))

A: See **Table: Planning Team Involvement and Level of Participation** below.

Planning Team Involvement

The Planning Team consisted of representatives from different Omnitrans departments with a role in hazard mitigation processes. The Planning Team served as the primary stakeholders throughout the planning process. The general public and external agencies served as secondary stakeholders in the planning process. The Planning Team was responsible for the following tasks:

- ✓ Confirming planning goals
- ✓ Prepare timeline for plan update
- ✓ Ensure plan meets DMA 2000 requirements
- ✓ Organize and solicit involvement of public and external agencies
- ✓ Analyze existing data and reports
- ✓ Update hazard information
- ✓ Review HAZUS loss projection estimates
- ✓ Update status of Mitigation Action Items
- ✓ Develop new Mitigation Action Items
- ✓ Participate in Planning Team meetings and Board of Directors public meeting
- ✓ Provide existing resources including maps and data

The Planning Team, with assistance from Emergency Planning Consultants, identified and profiled hazards; determined hazard rankings; estimated potential exposure or losses; evaluated development trends and specific risks; and developed mitigation goals and action items.

Q&A | ELEMENT A: PLANNING PROCESS | A1

Q: A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))

A: See **Table: Planning Team Level of Participation and Planning Team Timeline** below.

Table: Planning Team Level of Participation

Name	Research and Writing of Plan	Planning Team Meeting 11/2/2016	Planning Team Meeting 1/16/17	Planning Team Comment on First Draft Plan	Review input from public, and external agencies of the Second Draft Plan	Distribute Second Draft Plan to general public and external agencies	Submit Third Draft Plan to Cal OES/FEMA for Conditional Approval	Post Fourth Draft Plan fin advance of Board of Director meeting	Present Fourth Draft Plan to Board of Directors at Public Meeting for Plan Adoption	Submit Final Draft Plan to FEMA for Final Approval
Omnitrans										
Mark Crosby		X		X	X	X	X	X	X	X
Dylan Firth		X		X						
Terry Morocco		X		X						
Barbara Erwin		X		X						
Emergency Planning Consultants										
Carolyn J. Harshman	X	X	X		X	X	X	X	X	X

Table: Planning Team Timeline

	September 2016	October	November	December	January 2017	February	March	April	May	June	July	August	September	October	November	December
Research and Writing of First Draft Plan	X	X	X	X	X											
Planning Team Meetings				X	X											
Planning Team Review and Comment on First Draft Plan					X											
Post Second Draft Plan and solicit input from general public and external agencies											X					
Submit Third Draft Plan to Cal OES/FEMA for Conditional Approval												X				
Incorporate mandated amendments into Fourth Draft Plan													X	X	X	X
Post Fourth Draft Plan in advance of Board of Directors meeting.																X
Present Fourth Draft Plan to Board of Directors at Public Meeting																X
Submit Final Draft Plan to FEMA for Final Approval																X
Incorporate FEMA Approval into Final Plan																X

Q&A | ELEMENT A: PLANNING PROCESS | A2

Q: A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))

A: See **Secondary Stakeholder Involvement** below.

Q&A | ELEMENT A: PLANNING PROCESS | A3

Q: A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))

A: See **Secondary Stakeholder Involvement** below.

Secondary Stakeholder Involvement

In addition to the Planning Team, the secondary stakeholders also provided information, expertise, and other resources during plan writing phase. The secondary stakeholders included the Omnitrans staff, general public (including riders), and external agencies. All gathered input was incorporated into the Third Draft Plan prior to distribution to Cal OES and FEMA. Following is a specific accounting of the date, source, information gathered, and use of information during the Plan Writing Phase:

Date Invited to Provide Input or Input Gathered	Agency Represented, Name, Position Title	Information Gathered	How Information was Addressed
	Omnitrans Staff via the Omnitrans Newsletter -		
July 2017	City of Chino, Chris Wolff, Administrative Services Manager		
July 2017	City of Chino Hills, Bonnie Michaels, Emergency Services Coordinator		
July 2017	City of Colton, Shannon Kendall, Emergency Services Coordinator		
July 2017	City of Fontana, Kevin Goltara, Police Sergeant		
July 2017	City of Grand Terrace, Harold Duffey, City Manager		
July 2017	City of Highland, David Daniely, Administrative Analyst		
July 2017	City of Loma Linda,		

	Shannon, Kendall, Emergency Services Coordinator		
July 2017	City of Montclair, Steve Jackson, Deputy Fire Chief		
July 2017	City of Ontario, Ray Cheung, Emergency Manager		
July 2017	City of Rancho Cucamonga, Breanna Medina, Emergency Manager		
July 2017	City of Redlands, Fay Glass, Emergency Operations Manager		
July 2017	City of Rialto, Art Poduska, Battalion Chief		
July 2017	City of San Bernardino, Eric Fyvie, Sergeant		
July 2017	City of Upland, Dave Corbin, Deputy Fire Chief		
July 2017	City of Yucaipa, Jennifer Shankland, Deputy City Manager		
July 2017	County of San Bernardino, Mike Antonucci, Emergency Services Manager		
July 2017	San Bernardino City Unified School District, Eric Vetere, Safety/Security Manager		
July 2017	San Manuel Band of Mission Indians, Mike Russ, Disaster Services Manager / Fire Captain		
July 2017	San Bernardino Community College District, Chris Grant, Emergency Preparedness Coordinator		

External agencies listed below were invited via email and provided with an electronic link to the Omnitrans website. Following is the email distributed along with the invitation to contribute:

Figure: External Agencies Email Invite

Hello,
Omnitrans is in the process of updating its 2011 Hazard Mitigation Plan (Plan). As you know, mitigation plans are regulated by the federal government through the Disaster Mitigation Act of 2000. They are required to identify the natural hazards, however Omnitrans has opted to also include human-caused and technological hazards within our service area in order to be better aware and prepared for a broader range of hazards. The Plan provides a list of mitigation action items that will be used to reduce the impacts from the identified hazards.
Part of the mandated approval process for the Plan requires the authoring jurisdiction to share the draft plan with key stakeholders and solicit comments during the "plan writing phase". Should you have interest (and time), feel free to review the Draft Plan and share any comments with me by August 15, 2017. If you are not able to provide comments by that date, I will move forward with the understanding that you do not have any concerns and are comfortable with the Draft Plan as it is written.
Thank you in advance for your time and assistance with this project. I look forward to reading any comments that may come my way.
Mark Crosby, Security & Emergency Preparedness Coordinator
Omnitrans
Mark.Crosby@Omnitrans.org
(909) 379-7117

Omnitrans Newsletter – March 2017

OmniViews
March 2017
An Omnitrans Employee Publication

Hazard Mitigation Planning

When it comes to safety and security, the team here at Omnitrans takes a proactive approach so that our employees, customers, and surrounding community are well prepared in advance in the event of a disaster.

"Hazard mitigation is preparing for natural disasters. We can't prevent them from happening, but we can learn from past events, mitigate, and pre-plan for how we're going to get through one," explains Safety, Security, and Regulatory Compliance Manager Barbara Erwin. The 2017 plan will be an update which covers potential disasters including earthquakes, fires, and floods.

In compliance with Federal Emergency Management Agency (FEMA) guidelines, the Safety and Security Office (AKA the Hazard Mitigation Planning Team) has already begun the process which includes:

- Develop a Planning Team;
- Identify hazards of concern (particularly floods, fires and earthquakes);
- Profile hazards;
- Estimate potential risk and potential losses
- Develop mitigation strategies and goals; and,
- Develop plan maintenance procedures for implementation after the California Office of Emergency Services (Cal OES) review and FEMA approval of the HMP.

Omnitrans is now in the process of notifying our neighboring community about the hazard mitigation process we have planned and soliciting public comments and input. In addition to the general public, Omnitrans will reach out to members of our joint powers agreement as well as other external agencies.

In addition to staff, local stakeholders will review the plan as well since Omnitrans plays a community role when a disaster occurs. "Transit is critical infrastructure, so depending on the event, we may be called upon to provide emergency transportation," said Security and Emergency Preparedness Coordinator Mark Crosby.

The agency has assisted with both fire and flood emergencies in the past as well as the December 2, 2015 terrorist attack in San Bernardino.

Priorities for the updated HMP include:

- Protecting Life and Property;
- Enhancing Public Awareness;
- Protecting Natural Systems;
- Increasing Partnerships; and,
- Improving Emergency Services

These goals will guide the development and implementation of specific mitigation activities.

To discover hazards in your area and learn steps to reduce personal risk visit MyHazards - a tool for the general public complete with maps and area information. Check it out at: http://myhazards.caloes.ca.gov/

Employee of the Quarter: Christina Diaz

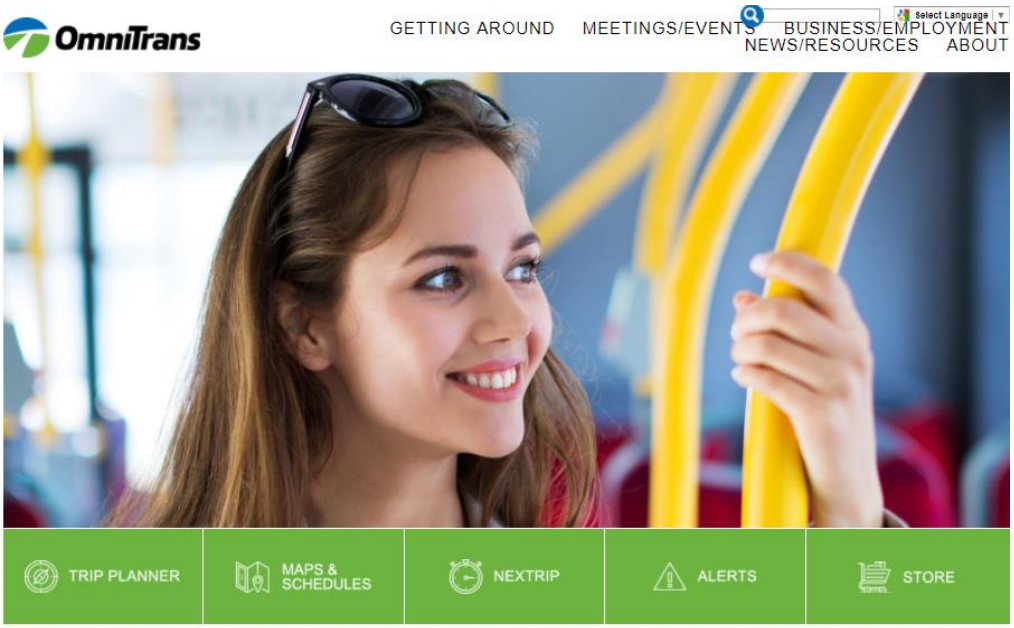
When Employee of the Quarter Christina Diaz is not leading a new class of coach operators through their five-week training period, she can be found working on tasks to improve our fleet safety or enhance our operation processes. She currently also sits on the Accident Tracking and Prevention Committee and is an alternate representative on the Accident Incident Review Committee.

Over the last quarter, Christina, a fleet safety and training instructor, has: become the first in the Training section to complete the Leadership Action Plan program and the University of the Pacific Transit Management certification, and developed an employee proficiency form that improved

continued on page 2

OmniTrans

Omnitrans Website – Safety and Security – January 2017



Safety and Security

The safety and security of our family of Omnitrans employees and customers is our highest priority. Our coach operators are trained with the latest safety and security information. Additionally, our buses are equipped with onboard cameras for your protection. Omnitrans' dedication to safety has been recognized with 14 National Safety Council Awards. If you have a safety and security concern, please let us know and we address it immediately. You can contact us by ***email***, or call ***1-(800)-9-OMNIBUS*** (***1-800-966-6428***). In an emergency always follow the instructions of your driver, police and fire officials.

Text-a-Tip

CONTACT US

Omnitrans Headquarters
1700 W. Fifth Street
San Bernardino, CA 92411
(909) 379-7100
Map & Directions
Office Hours
8:00 am to 5:00 pm
weekdays.
Closed weekends &
holidays.

2011 Hazard Mitigation Plan

The Omnitrans 2011 Hazard Mitigation Plan (HMP) complies with the regulations set forth by the Federal Emergency Management Agency (FEMA). The Disaster Mitigation Act of 2000 requires that local governments/districts, as a condition of receiving federal disaster mitigation funds, have a mitigation plan that:

- Describes the process for identifying hazards, risks and vulnerabilities.
- Identifies and prioritizes mitigation actions.
- Encourages the development of local mitigation.
- Provides technical support for those efforts.

View the ***2011 Hazard Mitigation Plan***. If you would like more information on the 2011 HMP, please contact Mark Crosby at ***(909) 379-7117*** or e-mail us at ***safety@omnitrans.org***.

In advance of the Board of Directors public meeting the Omnitrans staff (via Newsletter), general public (via public noticing) and external agencies (via email invitation) were informed of the Fourth Draft Plan and encouraged to provide input and attend the public meeting. Gathered comments from the public and external agencies were noted in the Planning Team Staff Report and added to the Final Draft Plan.

Q&A | ELEMENT C. MITIGATION STRATEGY | C1

Q: C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

A: See **Capability Assessment – Existing Processes and Programs** and **Table: Capability Assessment – Existing Processes and Programs** below.

Capability Assessment – Existing Processes and Programs

Omnitrans will incorporate mitigation planning as an integral component of daily operations. This will be accomplished by the Planning Team working with their respective departments to integrate mitigation strategies into the planning documents and Omnitrans' operational guidelines. In addition to the Capability Assessment below, the Planning Team will strive to identify additional policies, programs, practices, and procedures that could be created or modified to address mitigation activities.

Table: Capability Assessment - Existing Processes and Programs

Process	Action	Implementation of Plan
Administrative	Departmental or organizational work plans, policies, and procedural changes	✓ *Safety & Security Office* ✓ *Other departments as appropriate*
	Other plans	✓ *Reference plan in the System Security and Emergency Response Preparedness Plan (SSERPP)* ✓ *Address plan findings and incorporate mitigation activities in the Facilities Maintenance Plan*
Budgetary	Capital and operational budgets	✓ *Include line item mitigation measures in budget as appropriate*
Regulatory	Executive orders, ordinances, and other directives	✓ *Building Code* ✓ *Facilities Maintenance Plan*
Funding	Traditional and nontraditional sources	✓ *Once plan is approved, seek authority to use bonds, fees, loans, and taxes to finance projects* ✓ *Seek assistance from federal and state government, foundation, nonprofit, and private sources, such as Hazard Mitigation Grant Program* ✓ *Research and grant opportunities through U.S. Department of Housing and Urban Development, Community Development Block Grant*
Partnerships	Creative funding and initiatives	✓ *Community volunteers* ✓ *In-kind resources* ✓ *Public-private partnerships* ✓ *State support*
Partnerships	Advisory bodies and committees	✓ *Safety & Security Coordinator Program* ✓ *OACC* ✓ *Inland Valley Emergency Communications Service*

Comment [CH1]: Ask Mark what this stands for…Operational Area ? ?

Q&A | ELEMENT A: PLANNING PROCESS | A4

Q: A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))

A: See **Use of Existing Data** below.

Use of Existing Data

The Planning Team gathered and reviewed existing data and plans during plan writing and specifically noted as "sources". Numerous electronic and hard copy documents were used to support the planning process:

Omnitrans Hazard Mitigation Plan (2011)
www.omnitrans.org
Applicable Incorporation: Community Profile section – employment and transportation data

County of San Bernardino Multi-Jurisdictional Mitigation Plan (2011)
Applicable Incorporation: Information about hazards in the County contributed to the hazard-specific sections in the Omnitrans Mitigation Plan.

California State Hazard Mitigation Plan (2013)
www.hazardmitigation.calema.ca.gov
Applicable Incorporation: Used to identify hazards posing greatest hazard to State.

HAZUS maps and reports
Created by Emergency Planning Consultants
Applicable Incorporation: Numerous HAZUS maps and reports have been included for Earthquake, Flooding, and Dam Inundation to determine specific risks and impacts to Omnitrans.

California Department of Finance
www.dof.ca.gov/
Applicable Incorporation: Community Profile section – demographic and population data

FEMA "How To" Mitigation Series (386-1 to 386-9)
www.fema.gov/media
Applicable Incorporation: Mitigation Measures Categories and 4-Step Planning Process are quoted in the Executive Summary.

National Flood Insurance Program
www.fema.gov/national-flood-insurance-program
Applicable Incorporation: Used to confirm there are no repetitive loss properties within the Omnitrans service area.

Local Flood Insurance Rate Maps
www.msc.fema.gov
Applicable Incorporation: Provided by FEMA and included in Flood Hazard section.

California Department of Forestry and Fire Protection (CALFIRE)
www.fire.ca.gov
Applicable Incorporation: Wildland fire hazard mapping

California Department of Conservation
www.conservation.ca.gov/cgs
Applicable Incorporation: Seismic hazards mapping

U.S. Geological Survey (USGS)
www.usgs.gov
Applicable Incorporation: Earthquake records and statistics

Q&A | ELEMENT E: PLAN ADOPTION | E1

Q: E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))

A: See **Plan Adoption Process** below.

Plan Adoption Process

Adoption of the plan by the local governing body demonstrates Omnitrans' commitment to meeting mitigation goals and objectives. Governing body approval legitimizes the plan and authorizes responsible agencies to execute their responsibilities.

The Third Draft Plan was submitted to Cal OES and FEMA for review and approval. FEMA issued a conditional approval on _____ requiring the adoption of the Plan by the Omnitrans Board of Directors. The adoption resolution was included in the Final Draft Plan and resubmitted to FEMA along with a request to replace the conditional approval with a final approval.

In preparation for the public meeting with the Board of Directors, the Planning Team prepared a Staff Report including an overview of the Planning Process, Risk Assessment, Mitigation Goals, and Mitigation Actions. The staff presentation concluded with a summary of the input received during the public review of the document. The meeting participants were encouraged to present their views and make suggestions on possible mitigation actions.

The Omnitrans Board of Directors heard the item on _____. The Board voted _____ to adopt the updated Mitigation Plan. The Resolution of adoption is in the **Appendix**.

Plan Approval

FEMA approved the Plan on _____. A copy of the FEMA Letter of Approval is in the **Appendix**.

Part II: RISK ASSESSMENT

Community Profile

Geography and the Environment

Omnitrans is the public transit agency serving the San Bernardino Valley. Founded in 1976 through a joint powers agreement, Omnitrans carries over 15 million passengers each year throughout its 480-square mile service area.

More than 85 percent of San Bernardino County is desert that contains low mountains, valleys, and dry lake bed. The remainder of the area consists of the San Bernardino Mountains and the San Bernardino Valley in the southwest corner of the county. Elevations in the county vary from 11,500 feet on the San Gorgonio Peak in the San Bernardino Mountains to the sea level at the southern end of Death Valley.

Climate

Climatic conditions in the county vary substantially with the topography and region. In general, the climate of the San Bernardino Valley is similar to coastal southern California, except that it is warmer in summer and is not as foggy. This area is well suited for growing citrus and other semitropical fruits. The monthly average daily extreme temperatures range from 37 to 96 degrees Fahrenheit in July. Temperatures at residential and resort elevations in the San Bernardino Mountains are from 15 to 20 degrees Fahrenheit colder than in the valley. The annual rainfall, most of which falls in the winter months, averages 16 inches in the valley area and from 20 to 30 inches in the mountains. The average annual rainfall in the desert area ranges from 2 to 5 inches.

Population and Demographics

The population of San Bernardino County is approximately 1.6 million. Of this total, 66 percent live in San Bernardino Valley; 82 percent live in the 23 incorporated cities and towns; and 285,000 live in the unincorporated (county) areas. City of San Bernardino, the county's largest city and county seat, has a population exceeding 185,000.

According to the United States Census Bureau, the demographic makeup of San Bernardino County is as follows:

Table: City of San Bernardino Demographics
(Source: US Census Bureau 2010-2014 American Community Survey 5-year Estimates)

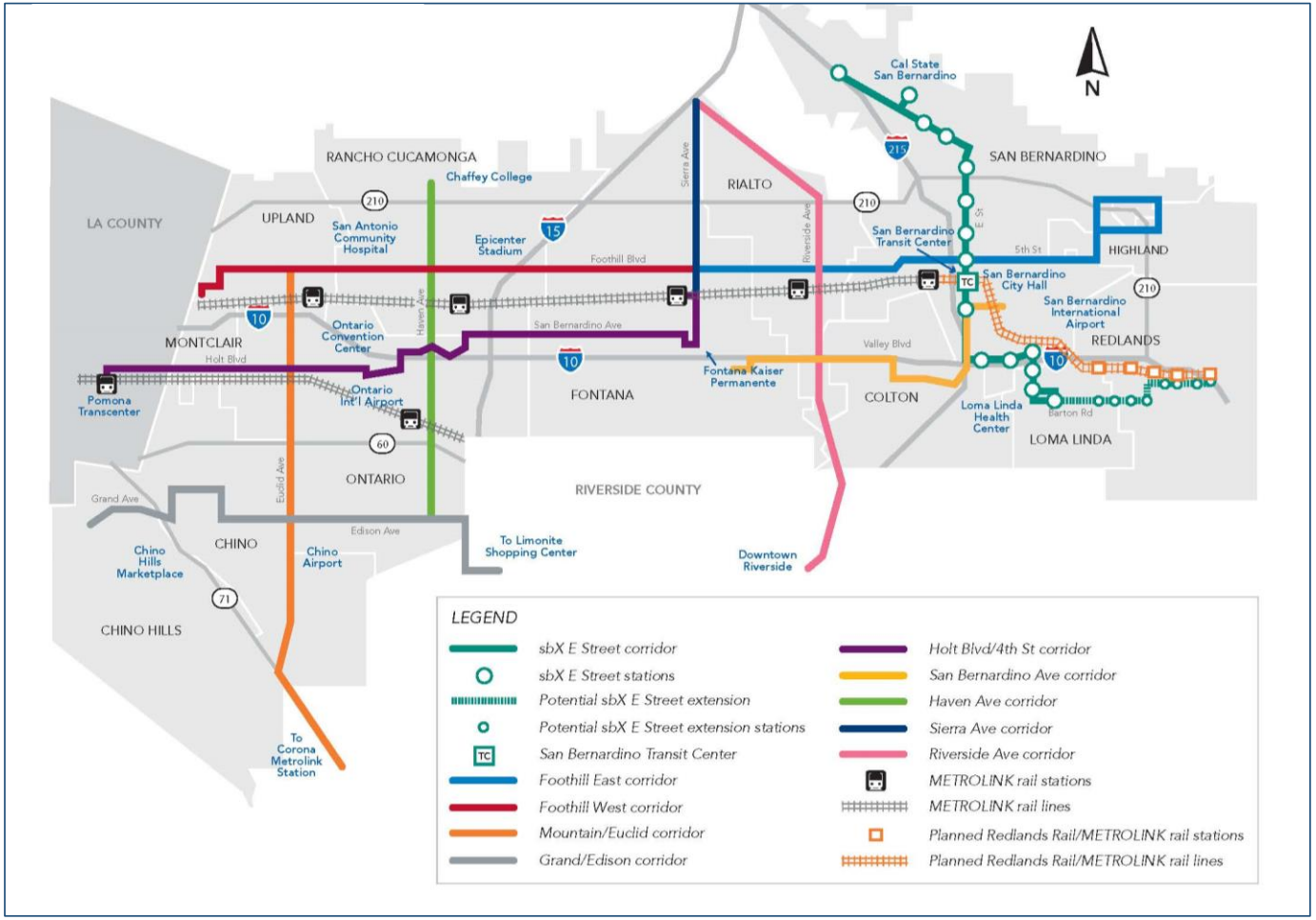
Racial/Ethnic Group	2010	2014	Change	Change %
White	97,283	116,013	18,730	19%
Black	33,684	29,551	(4133)	-12%
American Indian and Alaska Native	1,606	2,004	398	25%
Asian or Pacific Islander	9,450	10,731	1,281	25%
Other	59,271	44,090	15,181	26%
Total	201,294	202,389	1,095	<.01%
Hispanic	121,583	130,363	8,780	7%

Housing and Community Development

Table: City of San Bernardino Housing
(Source: US Census Bureau 2010-2014 American Community Survey 5-year Estimates)

2014	Number	Percent %
Housing Type:		
1-unit, detached	38,403	60.5 %
1-unit, attached	2,742	4.3 %
2-4 Units	5,624	8.9 %
5+ Units	12,585	19.8 %
Mobile homes/Other	4,096	6.5 %
Housing Statistics:		
Total Available Housing Units	57,577	100 %
Owner-Occupied Housing	28,129	48.9%
Renter-Occupied	29,448	51.1 %
Average Household Size:	3.58 persons	
Median Home Price:	$151,400	

Map: Omnitrans sbX System
(Source: www.omnitrans.org)



Risk Assessment

What is a Risk Assessment?

Conducting a risk assessment can provide information regarding: 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*
2. *Profiling Hazard Events*
3. *Vulnerability Assessment/Inventory of Existing Assets*
4. *Risk Analysis*
5. *Assessing Vulnerability/Analyzing Development Trends*

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B1

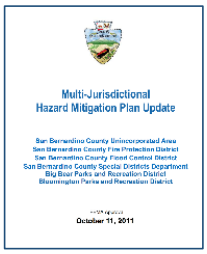
Q: B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))

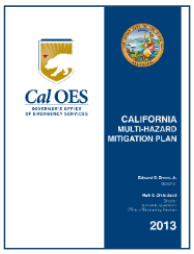
A: See **Hazard Identification** below.

1) Hazard Identification

This section is the description of the geographic extent, potential intensity, and the probability of occurrence of a given hazard. Maps are used in this plan to display hazard identification data. ***Omnitrans utilized the categorization of hazards as identified in California's State Hazard Mitigation Plan, including: Earthquakes, Floods, Levee Failures, Wildfires, Landslides and Earth Movements, Tsunami, Climate-Related Hazards, Volcanoes, and Other Hazards***.

Next, the Planning Team reviewed existing documents to determine which of these hazards posed the most significant threat to Omnitrans and its ability to deliver services. In other words, which hazard would likely result in a local declaration of emergency.





The geographic extent of each of the identified hazards was identified by the Planning Team utilizing maps and data contained in the Multi-Jurisdictional Hazard Mitigation Plan. In addition, numerous internet resources and the County of San Bernardino All-Hazards Mitigation Plan served as valuable resources. Utilizing the Calculated Priority Risk Index (CPRI) ranking

technique, the Planning Team concluded the following hazards posed a significant threat against Omnitrans:

Earthquake | Wildfire | Flooding | Drought | Technological & Human-Caused

The hazard ranking system is described in **Table: Calculated Priority Risk Index**, while the actual ranking is shown in **Table: Calculated Priority Risk Index Ranking for Omnitrans.**

Table: Calculated Priority Risk Index
(Source: Federal Emergency Management Agency)

CPRI Category	Degree of Risk			Assigned Weighting Factor
	Level ID	Description	Index Value	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than 1 in 1,000 years.	1	45%
	Possibly	Rare occurrences. Annual probability of between 1 in 100 years and 1 in 1,000 years.	2	
	Likely	Occasional occurrences with at least 2 or more documented historic events. Annual probability of between 1 in 10 years and 1 in 100 years.	3	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability of greater than 1 every year.	4	
Magnitude/ Severity	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure. Injuries or illnesses are treatable with first aid and there are no deaths. Negligible loss of quality of life. Shut down of critical public facilities for less than 24 hours.	1	30%
	Limited	Slight property damage (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). Injuries or illnesses do not result in permanent disability, and there are no deaths. Moderate loss of quality of life. Shut down of critical public facilities for more than 1 day and less than 1 week.	2	
	Critical	Moderate property damage (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and at least 1 death. Shut down of critical public facilities for more than 1 week and less than 1 month.	3	
	Catastrophic	Severe property damage (greater than 50% of critical and non-critical facilities and infrastructure). Injuries and illnesses result in permanent disability and multiple deaths. Shut down of critical public facilities for more than 1 month.	4	
Warning Time	> 24 hours	Population will receive greater than 24 hours of warning.	1	15%
	12–24 hours	Population will receive between 12-24 hours of warning.	2	
	6-12 hours	Population will receive between 6-12 hours of warning.	3	
	< 6 hours	Population will receive less than 6 hours of warning.	4	
Duration	< 6 hours	Disaster event will last less than 6 hours	1	10%
	< 24 hours	Disaster event will last less than 6-24 hours	2	
	< 1 week	Disaster event will last between 24 hours and 1 week.	3	
	> 1 week	Disaster event will last more than 1 week	4	

Table: Calculated Priority Risk Index Ranking for Omnitrans

Hazard	Probability	Weighted 45% (x.45)	Magnitude Severity	Weighted 30% (x.3)	Warning Time	Weighted 15% (x.15)	Duration	Weighted 10% (x.1)	CPRI Total
Earthquake – San Andreas M7.8	3	1.35	3	0.9	4	0.6	1	0.1	**2.95**
Technological & Human-Caused	2	0.9	4	1.2	4	0.6	2	0.2	**2.90**
Flooding	3	1.35	2	0.6	2	0.30	2	0.2	**2.45**
Drought	3	1.35	1	0.3	1	0.15	4	0.4	**2.20**
Wildfire	2	0.9	1	0.3	1	0.15	2	0.2	**1.55**

2) Profiling Hazard Events

This process describes the causes and characteristics of each hazard and what part of Omnitrans' facilities, infrastructure, and environment may be vulnerable to each specific hazard. A profile of each hazard discussed in this plan is provided in the Omnitrans Specific Hazard Analysis. **Table: Vulnerability: Location, Extent, and Probability for Omnitrans** indicates a generalized perspective of the community's vulnerability of the various hazards according to extent (or degree), location, and probability.

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B1

Q: B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))

A: See **Table: Vulnerability: Location, Extent, and Probability for Omnitrans** below.

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B2

Q: B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))

A: See **Table: Vulnerability: Location, Extent, and Probability for Omnitrans** below.

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B3

Q: B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))

A: See **Table: Vulnerability: Location, Extent, and Probability for Omnitrans** below.

Table: Vulnerability: Location, Extent, and Probability for Omnitrans

Hazard	Location (Where)	Extent (How Big an Event)	Probability (How Often) *	Previous Occurrences
Earthquake	Entire Project Area	The Southern California Earthquake Center (SCEC) in 2007 concluded that there is a 99.7 % probability that an earthquake of M6.7 or greater will hit California within 30 years.[1]	Moderate-High	1992 – Landers Earthquake
Wildfire	Outer boundaries of Omnitrans service area.	Very High Fire Hazard Severity Zone ratings.	Moderate	2016 – Blue Cut Fire
Flooding	Along the boundaries of the Santa Ana River.	Urban and localized flooding from severe weather (100-yr floodplain).	Moderate-High	Highland Flood 2010
Drought	Entire Project Area	Droughts in urban areas vary considerably in scope and intensity. Likely emergency water shortage regulations would restrict such activities as watering of landscape, washing of cars, and other non-safety related activities.	Moderate	None
Technological & Human Caused	Entire Project Area	Terrorism, train derailment, aircraft incident, or hazardous material spill impacting major transportation routes.	Moderate	December 2, 2015 Waterman Terrorist Attack - Inland Regional Center, San Bernardino
* Probability is defined as: Low = 1:1,000 years, Moderate = 1:100 years, High = 1:10 years				
[1] Uniform California Earthquake Rupture Forecast				

3) Vulnerability Assessment/Inventory of Existing Assets

A Vulnerability Assessment in its simplest form is a simultaneous look at the geographical location of hazards and an inventory of the underlying land uses (populations, structures, etc.). Facilities that provide critical and essential services following a major emergency are of particular concern because these locations house staff and equipment necessary to provide important public safety, emergency response, and/or disaster recovery functions.

Critical Facilities

FEMA separates critical buildings and facilities into the five categories shown below based on their loss potential. All of the following elements are considered critical facilities:

Essential Facilities are essential to the health and welfare of the whole population and are especially important following hazard events. Essential facilities include hospitals and other medical facilities, police and fire stations, emergency operations centers and evacuation shelters, and schools.

Transportation Systems include airways – airports, heliports; highways – bridges, tunnels, roadbeds, overpasses, transfer centers; railways – trackage, tunnels, bridges, rail yards, depots; and waterways – canals, locks, seaports, ferries, harbors, drydocks, piers.

Lifeline Utility Systems such as potable water, wastewater, oil, natural gas, electric power and communication systems.

High Potential Loss Facilities are facilities that would have a high loss associated with them, such as nuclear power plants, dams, and military installations.

Hazardous Material Facilities include facilities housing industrial/hazardous materials, such as corrosives, explosives, flammable materials, radioactive materials, and toxins.

Table: Critical Facilities Vulnerable to Hazards illustrates the hazards with potential to impact critical facilities owned by or providing services to Omnitrans.

Table: Critical Facilities Vulnerable to Hazards

Name of Facility	Earthquake	Wildfire	Flooding	Drought	Technological & Human-Caused
Omnitrans Headquarters (aka East Valley) 1700 W. Fifth Street San Bernardino, CA 92411	X		X	X	X
Omnitrans West Valley Facility 4748 Arrow Hwy Montclair, CA 91763	X			X	X
Omnitrans I Street Facility 234 South I Street	X			X	X

San Bernardino, CA 92410					
Omnitrans Feron Facility 9421 Feron Blvd. #101 Rancho Cucamonga, CA 91730	X			X	X
San Bernardino Transit Center 599 West Rialto San Bernardino, CA 92401	X			X	X
sbX Park & Ride – Palm Avenue					
Sbx Park & Ride - Marshall					
Sbx Park & Ride – Civic Center					
Sbx Park & Ride – Redlands Boulevard					

Comment [CH2]: Asked Mark to confirm and provide addresses

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. For each hazard where data was available, quantitative estimates for potential losses have been included in the hazard assessment. Data was not available to make vulnerability determinations in terms of dollar losses for all of the identified hazards. The **Mitigation Actions Matrix** 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 Omnitrans' facilities and contents in relation to the identified hazards so that mitigation options can be considered in land use planning and future land use decisions. This Mitigation Plan provides comprehensive description of the character of Omnitrans in the **Community Profile Section**. 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 Omnitrans 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, state, or federal sources.

Regardless of the data available for hazard assessments, there are numerous strategies Omnitrans can take to reduce risk. These strategies are described in the action items detailed in the Mitigation Actions Matrix in the **Mitigation Strategies Section**. 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.

Development

Q&A | ELEMENT D: MITIGATION STRATEGY | D1

Q: D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))

A: See **Changes in Development** below

Changes in Development

Since the adoption of the 2011 Plan, Omnitrans has opened the recently built San Bernardino Transit Center (SBTC). The new facility is built on four acres, including a 7,500 square-foot building and 22 bus bays. Approximately 5,000 passengers pass through the SBTC each weekday, making connections with 13 Omnitrans bus routes as well as routes operated by Mountain Transit and Victor Valley Transit Authority. Two additional acres are available at the facility for future transit-oriented development.

Earthquake Hazards

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B2

Q: B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))

A: See **Previous Occurrences of Earthquakes in the Omnitrans Service Area**.

Previous Occurrences of Earthquakes in the Omnitrans Service Area

The following earthquake events significantly impacted the region surrounding the Omnitrans service area.

On June 28, 1992, the magnitude 7.3 Landers Earthquake rocked Southern California and was the largest quake to have occurred in the continental United States in 40 years. The epicenter was in Landers, approximately 50 miles northwest of the Omnitrans Service Area. Over 400 people were injured in the region and 3 people lost their lives.

Since the writing of the 2011 Mitigation Plan, there have been no significant earthquake events in the Omnitrans service area.

Local Conditions

The Omnitrans service area lies within a metropolitan area that has historically been seismically active. Faults are prevalent throughout California and are commonly classified as either "active" or "potentially active." An active fault is a break that has moved in recent geologic time (the last 11,000 years) and that is likely to move within the next approximately 100 years. Active faults are the primary focus of concern in attempting to prevent earthquake hazards. A potentially active fault is one that has shifted but not in the recent geologic period (or, between 11,000 and 3,000,000 years ago) and is therefore considered dormant or unlikely to move in the future.

Active earthquake faults that could affect the Omnitrans service area would most likely originate from the San Andreas, Sierra Madre, or Cucamonga fault zones. These faults are close enough in proximity or expected to generate strong enough shaking that could affect the service area.

San Andreas Fault Zone

The San Andreas Fault Zone is located approximately 11 miles northwest of the Omnitrans service area. This fault zone extends from the Gulf of California northward to the Cape Mendocino area where it continues northward along the ocean floor. The total length of the San Andreas Fault Zone is approximately 750 miles. The activity of the fault has been recorded during historic events, including the 1906 (M8.0) event in San Francisco and the 1857 (M7.9) event between Cholame and San Bernardino, where at least 250 miles of surface rupture occurred. These seismic events are among the most significant earthquakes in California history. Geologic evidence suggests that the San Andreas Fault has a 50 percent chance of producing a magnitude 7.5 to 8.5 quake (comparable to the great San Francisco earthquake of 1906) within the next 30 years.

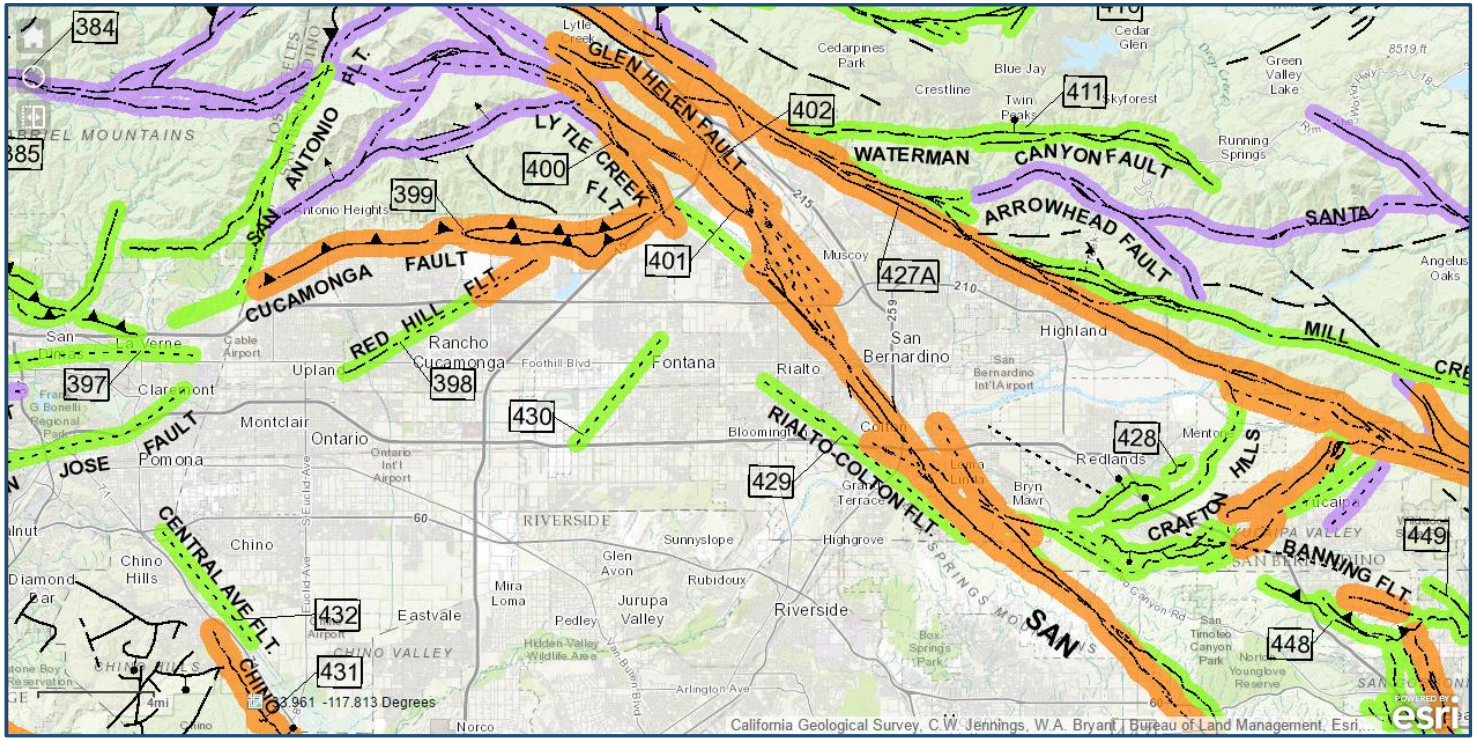
Sierra Madre Fault Zone

The Sierra Madre fault zone is a series of moderate angle, north-dipping, reverse faults (thrust faults). Movement along these frontal faults has resulted in the uplift of the San Gabriel Mountains. According to the Southern California Earthquake Data Center, rupture on the Sierra Madre fault zone (theoretically) could be limited to one segment at a time, it has recently been suggested that a large event on the San Andreas fault to the north (like that of 1857) could cause simultaneous rupture on reverse faults south of the San Gabriel Mountains – the Sierra Madre fault zone being a prime example of such. Whether this could rupture multiple Sierra Madre fault zone segments simultaneously is unknown. Seismic activity on the Sierra Madre Fault is expected to have a maximum magnitude of 7.2.

Cucamonga Fault

The Cucamonga fault is located only 5 miles north of the Omnitrans service area. According to USGS, the Cucamonga fault zone is part of the same fault system, marking the southern boundary of the San Gabriel Mountains, as the Sierra Madre fault zone. Sometimes it is included as part of the Sierra Madre fault zone, as is the San Fernando fault zone far to the west. Seismic activity on the Cucamonga Fault is expected to have a maximum magnitude of 7.0.

Map: Local Faults
(Source: California Department of Conservation)



Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B3

Q: B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))

A: See **Impact of Earthquakes in the Omnitrans Service Area** below.

Impact of Earthquakes in the Omnitrans Service Area

Based on the risk assessment, it is evident that earthquakes will continue to have potentially devastating economic impacts to the Omnitrans service area and Omnitrans facilities. Impacts that are not quantified, but can be anticipated in future events, include:

- ✓ Injury and loss of life;
- ✓ Commercial and residential structural damage;
- ✓ Disruption of and damage to public infrastructure;
- ✓ Secondary health hazards e.g. mold and mildew;
- ✓ Damage to roads/bridges resulting in loss of mobility;
- ✓ Significant economic impact (jobs, sales, tax revenue) upon the community;
- ✓ Negative impact on commercial and residential property values; and
- ✓ Significant disruption to students and teachers as temporary facilities and relocations would likely be needed.

Earthquake-Induced Landslides

Earthquake-induced landslides are secondary earthquake hazards that occur from ground shaking. They can destroy the roads, buildings, utilities, and other critical facilities necessary to respond and recover from an earthquake. Many communities in Southern California have a high likelihood of encountering such risks, especially in areas with steep slopes.

Rock falls may happen suddenly and without warning, but are more likely to occur in response to earthquake induced ground shaking, during periods of intense rainfall, or as a result of human activities, such as grading and blasting. Ground acceleration of at least 0.10g in steep terrain is necessary to induce earthquake-related rock falls.

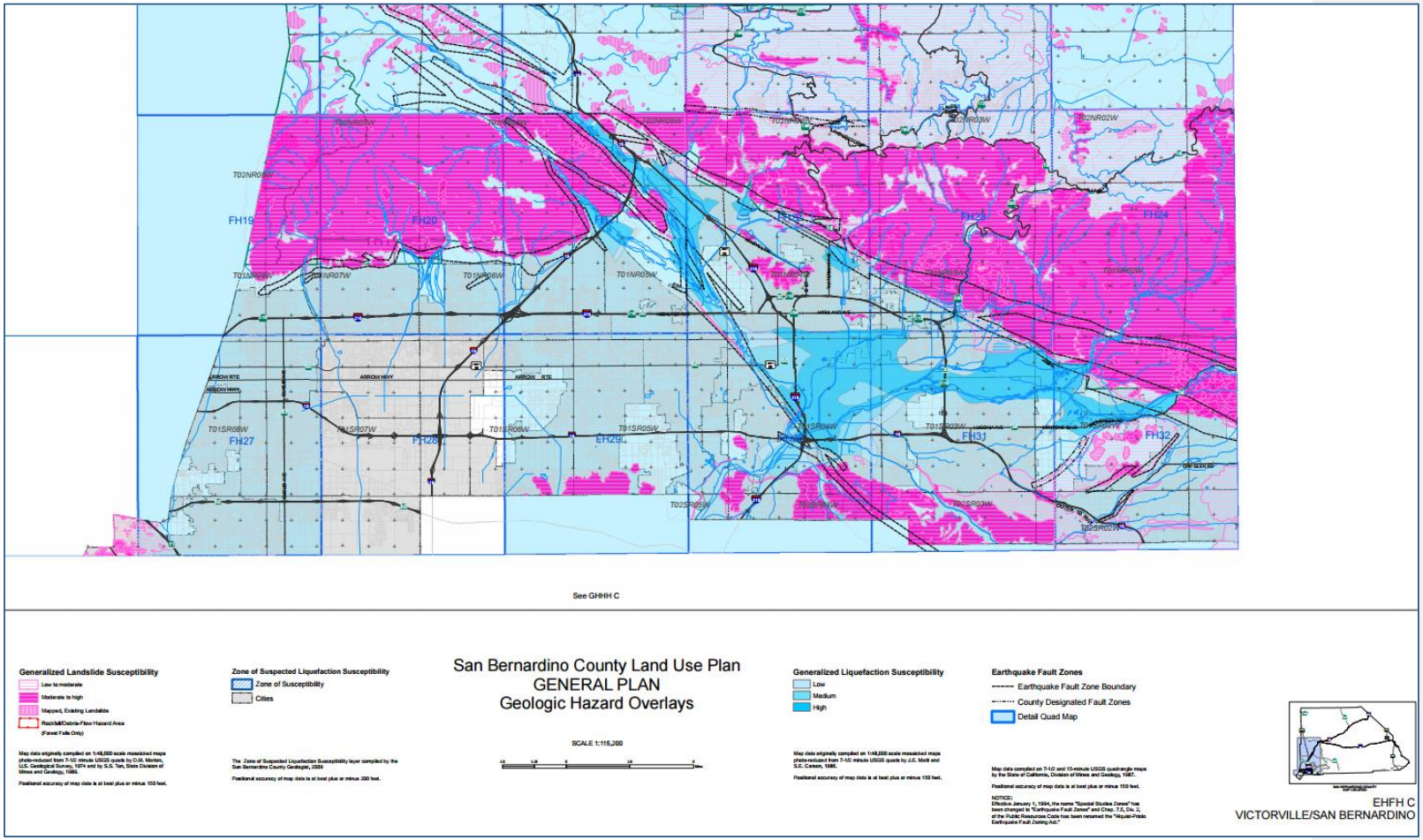
Map: Geologic Hazards shows the moderate risk of earthquake-induced landslide risk within the Omnitrans service area.

Liquefaction

Liquefaction is a phenomenon in which the strength and stiffness of a soil is reduced by earthquake shaking or other events. Liquefaction occurs in saturated soils, which are soils in which the space between individual soil particles is completely filled with water. This water exerts a pressure on the soil particles that influences how tightly the particles themselves are pressed together. Prior to an earthquake, the water pressure is relatively low. However, earthquake shaking can cause the water pressure to increase to the point where the soil particles can readily move with respect to each other. Because liquefaction only occurs in

saturated soil, its effects are most commonly observed in low lying areas. Typically, liquefaction is associated with shallow groundwater, which is less than 50 feet beneath the earth's surface. **Map: Geologic Hazards** shows the moderate risk of earthquake-induced liquefaction risk within the Omnitrans service area.

Map: Geologic Hazards
(Source: San Bernardino County Land Use Plan, www.sbcounty.gov)



Exposure

The data in this section was generated using the HAZUS-MH program for earthquakes. Once the location and size of a hypothetical earthquake are identified, HAZUS-MH estimates the intensity of the ground shaking, the number of buildings damaged, the number of casualties, the amount of damage to transportation systems and utilities, the number of people displaced from their homes, and the estimated cost of repair and clean up.

Building Inventory

HAZUS estimates approximately 93% of the building stock within Omnitrans is residential housing consisting of wood frame construction.

Critical Facility Inventory

HAZUS breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

Table: Critical Facility Inventory – HAZUS

Essential Facilities	Count
Hospitals	16
Schools	479
Fire Stations	33
Police Stations	43
Emergency Operations Facilities	4

High Potential Loss (HPL) Facilities	Count
Dams	1
Levees	0
Military Installations	0
Nuclear Power Plants	0
Hazardous Material Sites	201

Transportation and Utility Lifeline Inventory

Within HAZUS, the lifeline inventory is divided between transportation and utility lifeline systems. Transportation systems include highways, railways, light rail, bus, ports, ferry and airports. Utility systems include potable water, wastewater, natural gas, crude & refined oil, electric power and communications.

Casualties

HAZUS estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows:

- ✓ **Severity Level 1:** Injuries will require medical attention but hospitalization is not needed.
- ✓ **Severity Level 2:** Injuries will require hospitalization but are not considered life-threatening
- ✓ **Severity Level 3:** Injuries will require hospitalization and can become life threatening if not promptly treated.
- ✓ **Severity Level 4:** Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Building-Related Losses

Building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

HAZUS Earthquake Event Summary Results

San Andreas M7.5 Earthquake Scenario

Building Damage

Table: Expected Building Damage by Occupancy – San Andreas M7.5

	None	Slight	Moderate	Extensive	Complete
	Count	Count	Count	Count	Count
Agriculture	343	136	105	44	21
Commercial	9,082	3,848	3,702	1,708	680
Education	354	151	113	45	15
Government	182	89	89	46	18
Industrial	2,575	1,048	1,040	469	188
Other Residential	13,059	8,593	9,677	6,614	2,978
Religion	735	347	304	149	63
Single Family	186,770	94,625	37,025	4,227	1,281
Total	**213,100**	**108,837**	**52,055**	**13,301**	**5,245**

Table: Expected Building Damage by Building Type – San Andreas M7.5

	None	Slight	Moderate	Extensive	Complete
	Count	Count	Count	Count	Count
Wood	195,473	99,436	38,752	4,265	1,336
Steel	2,665	1,153	1,388	698	284
Concrete	2,625	1,250	1,078	541	219
Precast	2,574	1,041	1,203	584	212
RM	5,438	1,599	1,790	694	273
URM	679	341	363	204	155
MH	3,645	4,058	7,482	6,046	2,767
Total	**213,100**	**108,837**	**52,055**	**13,301**	**5,245**

Transportation and Utility Lifeline Damage

Table: Expected Utility System Pipeline Damage – San Andreas M7.5

System	Total Pipelines (Length km)	Number of Leaks	Number of Breaks
Potable Water	54,054	8,005	2,001
Waste Water	32,432	5,737	1,434
Natural Gas	21,621	1,646	411
Oil	0	0	0

Table: Potable Water and Electric Power System Performance – San Andreas M7.5

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	**430,702**	51,687	49,130	44,100	18,550	0
Electric Power		70,974	44,407	18,710	3,763	98

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 7,388 households to be displaced due to the earthquake. Of these, 6,809 people (out of a total population of 1,493,534) will seek temporary shelter in public shelters.

Casualties

The table below represents a summary of casualties estimated for San Andreas M7.5 earthquake scenario.

Table: Casualty Estimates – San Andreas M7.5

Time	Sector	Level 1	Level 2	Level 3	Level 4
2AM	Commercial	44	12	2	4
	Commuting	0	0	0	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	66	17	3	5
	Other-Residential	1,068	240	25	46
	Single-Family	845	119	6	10
	TOTAL	**2,023**	**389**	**36**	**65**
2PM	Commercial	2,640	714	113	222
	Commuting	3	4	6	1
	Educational	1,111	297	47	93
	Hotels	0	0	0	0
	Industrial	484	125	18	36
	Other-Residential	250	57	6	11
	Single-Family	186	27	2	2
	TOTAL	**4,674**	**1,224**	**193**	**365**
5PM	Commercial	1,884	509	81	157
	Commuting	44	63	101	20
	Educational	100	27	4	8
	Hotels	0	0	0	0
	Industrial	303	78	12	22
	Other-Residential	396	90	10	17
	Single-Family	326	47	3	4
	TOTAL	**3,054**	**813**	**210**	**229**

Economic Losses

The total economic loss estimated for the San Andreas M7.5 earthquake scenario is **$9.9 billion dollars** which includes building and lifeline related losses based on the region's available inventory. The following tables provide more detailed information about these losses.

Table: Building-Related Economic Losses ($ Dollars) – San Andreas M7.5

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses	Wage	$0	$15,159,600	$223,742,900	$9,861,200	$13,856,200	$262,619,900
	Capital-Related	$0	$6,377,400	$181,249,900	$5,961,800	$3,121,600	$196,710,700
	Rental	$61,541,200	$75,036,700	$114,501,300	$3,920,300	$7,342,700	$262,342,200
	Relocation	$230,907,100	$83,509,300	$181,891,600	$18,737,200	$50,872,000	$565,917,200
	Subtotal	**$292,448,300**	**$180,083,000**	**$701,385,700**	**$38,480,500**	**$75,192,500**	**$1,287,590,000**
Capital Stock Losses	Structural	$498,100,000	$210,600,800	$343,671,700	$76,560,000	$71,508,800	$1,200,441,300
	Non-Structural	$2,505,200,400	$1,069,547,200	$1,018,216,400	$268,471,200	$232,231,800	$5,093,667,000
	Content	$778,812,600	$244,551,300	$490,233,500	$176,994,400	$108,702,000	$1,799,293,800
	Inventory	$0	$0	$14,094,400	$29,343,700	$955,300	$44,393,400
	Subtotal	**$3,782,113,000**	**$1,524,699,300**	**$1,866,216,000**	**$551,369,300**	**$413,397,900**	**$8,137,795,500**
	TOTAL	**$4,074,561,300**	**$1,704,782,300**	**$2,567,601,700**	**$589,849,800**	**$488,590,400**	**$9,425,385,500**

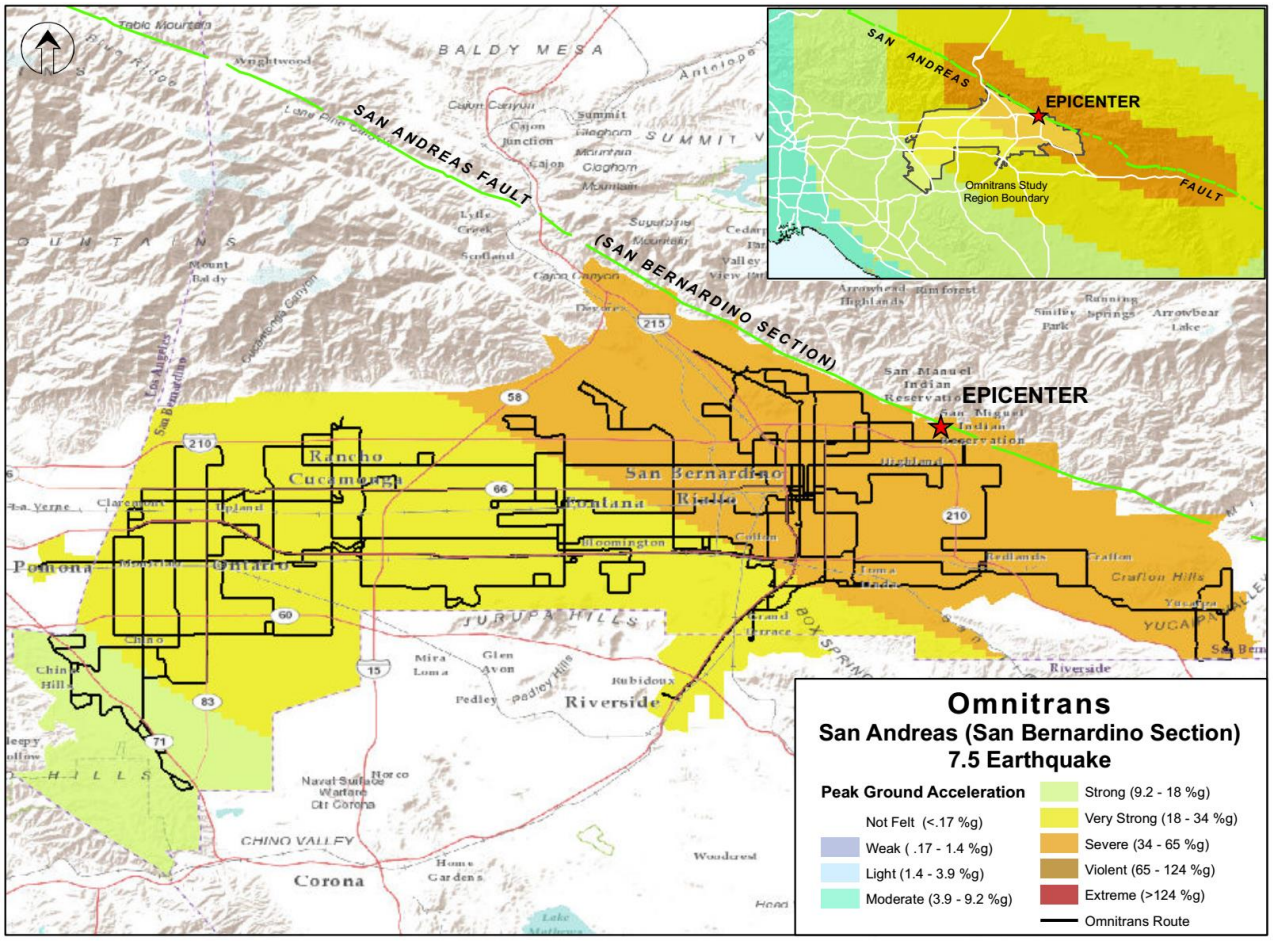
Table: Transportation System Economic Losses ($ Dollars) – San Andreas M7.5

System	Component	Total Inventory Value	Economic Loss	Loss Ratio %
Highway	Segments	$7,321,595,800	$0	0%
	Bridges	$1,503,072,900	$95,653,000	6%
	Tunnels	$0	$0	0%
Railways	Segments	$392,082,500	$0	0%
	Bridges	$5,012,600	$90,700	2%
	Tunnels	$0	$0	0%
	Facilities	$50,597,000	$11,976,200	24%
Light Rail	Segments	$95,306,300	$0	0%
	Bridges	$0	$0	0%
	Tunnels	$0	$0	0%
	Facilities	$29,293,000	$6,541,300	22%
Bus	Facilities	$3,858,600	$1,232,800	32%
Ferry	Facilities	$0	$0	0%
Port	Facilities	$0	$0	0%
Airport	Facilities	$63,906,000	$17,302,500	27%
	Runways	$379,640,000	$0	0%
	TOTAL	**$9,844,364,700**	**$132,796,500**	

Table: Utility System Economic Losses ($ Dollars) – San Andreas M7.5

System	Component	Total Inventory Value	Economic Loss	Loss Ratio %
Potable Water	Pipelines	$0	$0	0%
	Facilities	$157,176,000	$40,487,900	26%
	Distribution Lines	$1,081,071,500	$36,023,400	3%
Waste Water	Pipelines	$0	$0	0%
	Facilities	$628,704,000	$91,256,000	15%
	Distribution Lines	$648,642,900	$25,816,700	4%
Natural Gas	Pipelines	$0	$0	0%
	Facilities	$0	$0	0%
	Distribution Lines	$432,428,600	$7,404,800	2%
Oil Systems	Pipelines	$0	$0	0%
	Facilities	$0	$0	0%
Electrical Power	Facilities	$908,600,000	$136,966,300	15%
Communication	Facilities	$1,416,000	$273,400	19%
	TOTAL	**$3,858,039,000**	**$338,228,500**	

Map: Shake Intensity Map – San Andreas M7.5
(Source: Emergency Planning Consultants)



Wildfire Hazards

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B2

Q: B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))

A: See **Previous Occurrences of Wildfire in the Omnitrans Service Area** below.

Previous Occurrences of Wildfire in the Omnitrans Service Area

Wildfires present a significant potential for disaster in San Bernardino County, a region with relatively high temperatures, low humidity, and low precipitation during the summer, followed by a fall season that includes high velocity, very dry "Santa Ana" winds.

The most recent wildfire to impact the region near Omnitrans was the Blue Cut Fire located in the San Gabriel Mountains of San Bernardino County. The Blue Cut Fire started on August 16, 2016 in the Cajon Pass west of Interstate 15. The fire quickly spotted across Cajon Creek and grew into a large wildland fire. During the course of the fire fight, railroad lines, local roads, highway 138 and Interstate 15 were closed along with a large evacuation area that included Lytle Creek, Wrightwood, Summit Valley, Baldy Mesa, Phelan and Oak Hills. An estimate of 105 single family residences and 216 outbuildings were destroyed by the Blue Cut Fire, and 3 single family residences and 5 other structures were damaged.

Since the writing of the 2011 Mitigation Plan, there have been no significant wildfire events in the Omnitrans service area.

Wildfire occurrences from 2005 – 2010 are shown below. Since 2006, there have been 7 significant wild land fires (>10,000 acres burned) within San Bernardino County.

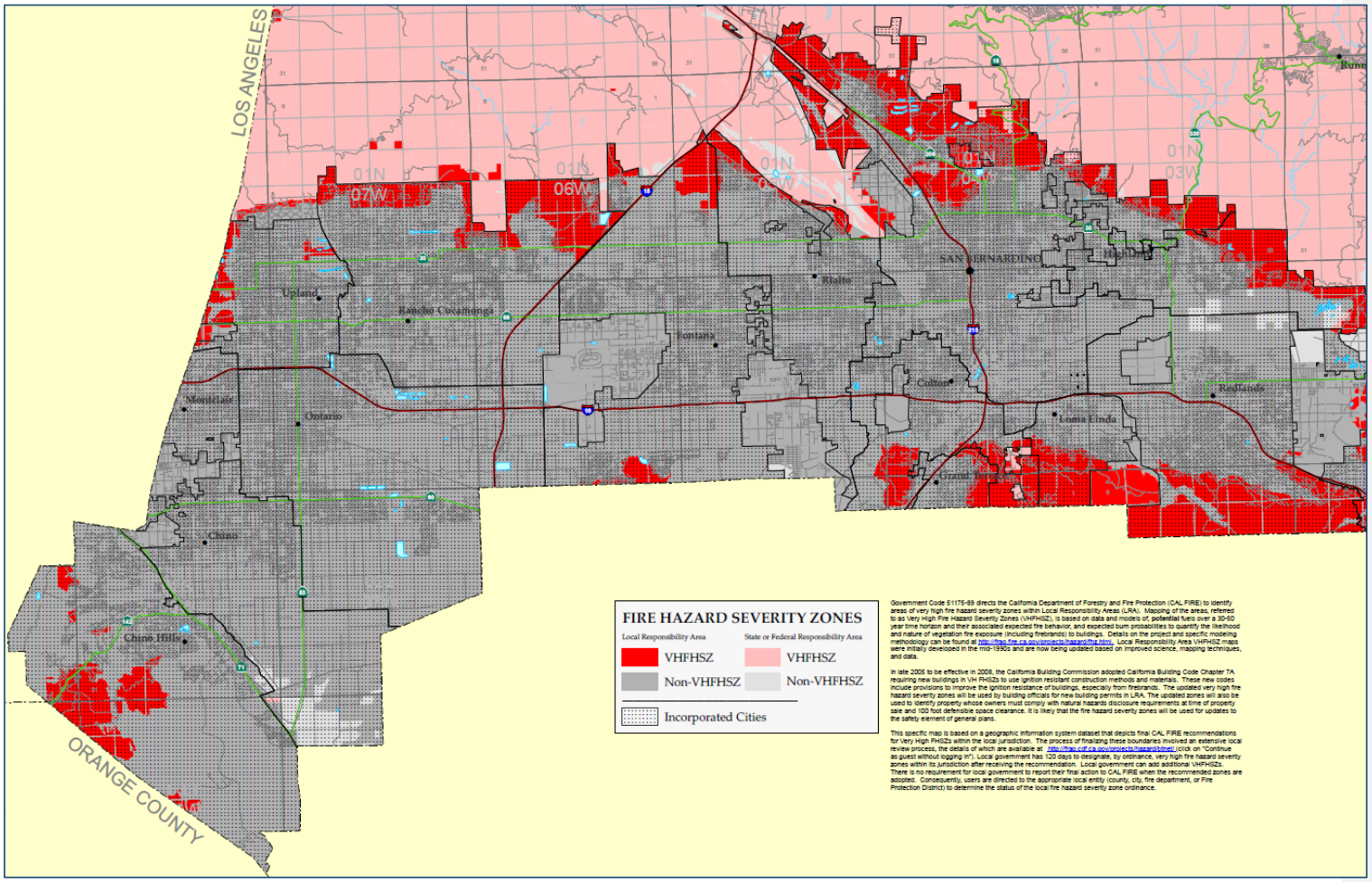
Table: Large Wildfire History 2006-2016 for San Bernardino County (>10,000 Acres Burned) (Source: CAL FIRE)

Year	Name	Acres Burned
2006	Sawtooth Complex	61,700
2006	Millard Complex	24,210
2007	Butler II Fire	14,089
2007	Slide Fire	12,789
2008	Freeway Fire	28,889
2015	Lake Fire	31,359
2016	Blue Cut Fire	36,274

Local Conditions

As shown on **Map: Fire Hazard Severity Zones**, the majority of the Omnitrans service area is indicated as not falling within a very high fire hazard severity zone. However, the areas immediately outside the Omnitrans service area are highly prone to wildfires due to its topography and native vegetation. The extended droughts characteristic of California's Mediterranean climate result in large areas of dry vegetation that provide fuel for wildland fires. Furthermore, the native vegetation typically has a high oil content that makes it highly flammable. The area is also intermittently impacted by Santa Ana winds, the hot, dry winds that blow across southern California in the spring and late fall.

Map: Very High Fire Hazard Severity Zones (Source: CAL FIRE)



Government Code §1175-89 directs the California Department of Forestry and Fire Protection (CAL FIRE) to identify areas of very high fire hazard severity zones within Local Responsibility Areas (LRA). Mapping of the areas, referred to as Very High Fire Hazard Severity Zones (VHFHSZ), is based on data and models of potential fuels over a 30-60 year time horizon and their associated expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to buildings. Details on the project and specific modeling methodology can be found at http://frap.fire.ca.gov/projects/hazard/fhz.html. Local Responsibility Area VHFHSZ maps were initially developed in the mid-1990s and are now being updated based on improved science, mapping techniques, and data.

In late 2005 to be effective in 2008, the California Building Commission adopted California Building Code Chapter 7A requiring new buildings in VH FHSZs to use ignition resistant construction methods and materials. These new codes include provisions to improve the ignition resistance of buildings, especially from firebrands. The updated very high fire hazard severity zones will be used by building officials for new building permits in LRA. The updated zones will also be used to identify property whose owners must comply with natural hazards disclosure requirements at time of property sale and 100 foot defensible space clearance. It is likey that the fire hazard severity zones will be used for updates to the safety element of general plans.

This specific map is based on a geographic information system dataset that depicts final CAL FIRE recommendations for Very High FHSZs within the local jurisdiction. The process of finalizing these boundaries involved an extensive local review process, the details of which are available at http://frap.cdf.ca.gov/projects/hazard/phtml (click on "Continue as guest without logging in"). Local government has 120 days to designate, by ordinance, very high fire hazard severity zones within its jurisdiction after receiving the recommendation. Local government can add additional VHFHSZs. There is no requirement for local government to report their final action to CAL FIRE when the recommended zones are adopted. Consequently, users are directed to the appropriate local entity (county, city, fire department, or Fire Protection District) to determine the status of the local fire hazard severity zone ordinance.

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B3

Q: B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))

A: See **Impact of Wildfire in the Omnitrans Service Area** below.

Impact of Wildfire in the Omnitrans Service Area

Wildfires and their impact varies by location and severity of any given wildfire event, and will likely only affect certain areas of the region during specific times.

Impact that is not quantified, but anticipated in future events includes:

- ✓ Injury and loss of life
- ✓ Commercial and residential structural damage
- ✓ Disruption of and damage to public infrastructure
- ✓ Secondary health hazards e.g. mold and mildew
- ✓ Damage to roads/bridges resulting in loss of mobility
- ✓ Significant economic impact (jobs, sales, tax revenue) upon the community
- ✓ Negative impact on commercial and residential property values
- ✓ Significant disruption to students and teachers as temporary facilities and relocations would likely be needed

Flood Hazards

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B2

Q: B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))

A: See **Previous Occurrences of Flooding in the Omnitrans Service Area**

Previous Occurrences of Flooding in the Omnitrans Service Area

According to historical records, Omnitrans facilities have not been impacted by flooding.

Urban flooding could pose a threat to life and safety, and possibly can cause damage to public and private property. There is potential for localized flooding in natural depressions within the Agency service area, however none of the Agency-owned facilities are located within an identified 100-year floodplain. However, the potential for a localized flood event still exists within the Omnitrans service area.

Since the writing of the 2011 Mitigation Plan, there have been no significant flooding events in the Omnitrans service area.

Local Conditions

According to the 2010 San Bernardino County Operational Area Multi-Jurisdictional Hazard Mitigation Plan, the densely populated urban southern part of the County is at the headwaters of the Santa Ana River with its tributaries crossing the valley floor. With the construction of the Seven Oaks Dam the main river source has been controlled. However, Mill Creek, City Creek, Lytle Creek, and Cajon Creek still have the potential to flood areas of the valley if levees fail. A similar potential occurs with the high desert portion of the County with the Mojave River, which is controlled by the Mojave River Falls Dam that flows north from the San Bernardino Mountains to the City of Barstow. The San Antonio Dam on the southwest side of the county provides more than 100-year flood protection to the west end of the San Bernardino Valley. The Colorado River is on the eastern border of the County. The dams along the river have controlled the flow but bank erosion and damage to roads in the area have been experienced during periods of high water.

The size and frequency of a flood in a particular area, depends on a complex combination of conditions, including the amount, intensity, and distribution of rainfall previous moisture condition and drainage patterns.

The magnitude of a flood is measured in terms of its peak discharge, which is the maximum volume of water passing a point along a channel in a given amount of time, usually expressed in cubic feet per second (cfs). Floods are usually referred to in terms of their chance of occurrence. For example, a 100-year flood has a 1% chance of occurring in any given year.

The Federal Emergency Management Agency (FEMA) establishes base flood heights and inundation areas for 100-year and 500-year flood zones. The 100-year flood zone is defined as the area that could be inundated by the flood which has a one percent probability of occurring in

any given year. The 500-year flood is defined as the flood which has a 0.2 percent probability of occurring in any given year.

Q&A | ELEMENT C. MITIGATION STRATEGY | C2

Q: C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))

A: See **National Flood Insurance Program** below.

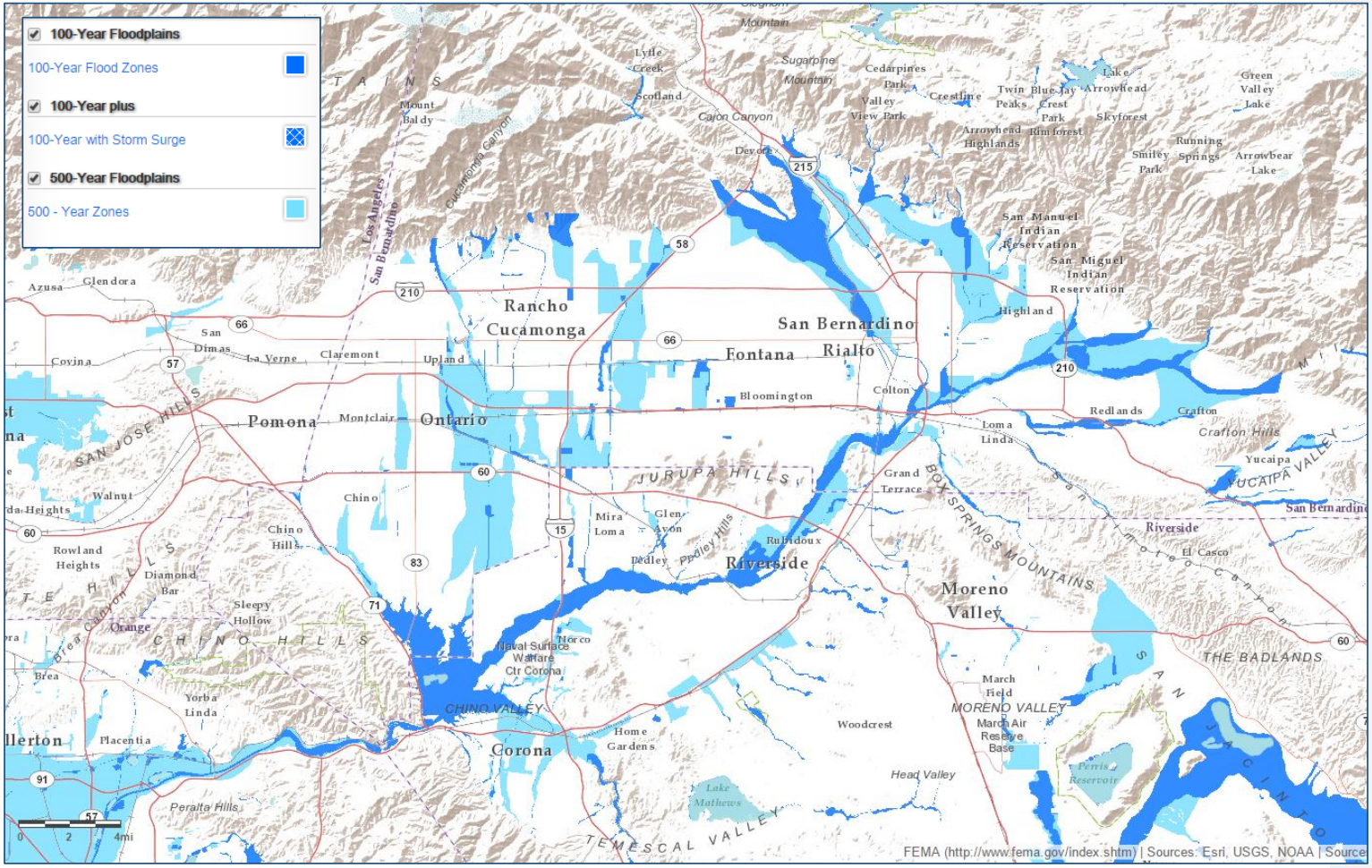
National Flood Insurance Program

The City of San Bernardino and City of Montclair both participate in the National Flood Insurance Program (NFIP). Created by Congress in 1968, the NFIP makes flood insurance available in communities that enact minimum floodplain management rules consistent with the Code of Federal Regulations §60.3.

According to **Map: FEMA Floodplains**, areas within the Omnitrans service area are in "Flood Zone X" and "Flood Zone A". Zone X is defined as the area outside the 500-year flood and protected by levee from 100-year flood. Zone A is defined as Areas subject to inundation by the 1-percent-annual-chance flood event.

The Omnitrans Headquarters and Administrative Offices located at 1700 W. Fifth Street is the only Omnitrans facility that is located within the 500-year flood zone (Zone X). All other facilities, including Omnitrans - West Valley Facility, Omnitrans - Street Facility, and Omnitrans – Feron Facility are located outside the 500-year flood zone. Omnitrans is self-insured for flooding.

Map: FEMA Floodplains
(Source: My Plan - Cal EMA)



Santa Ana River 100-Year Flood Scenario

Building Damage

Table: Expected Building Damage by Occupancy – Santa Ana River 100-Year Flood

	Slight	Moderate	Extensive	Complete
	Count	Count	Count	Count
Agriculture	0	0	0	0
Commercial	13	26	1	0
Education	0	0	0	0
Government	0	0	0	0
Industrial	0	0	2	3
Other Residential	0	0	0	0
Religion	1	0	0	0
Single Family	21	607	1,182	493
Total	**35**	**633**	**1,185**	**496**

Table: Expected Building Damage by Building Type – Santa Ana River 100-Year Flood

	Slight	Moderate	Extensive	Complete
	Count	Count	Count	Count
Concrete	4	3	5	0
MH	0	0	0	315
Masonry	3	5	9	0
Steel	2	4	4	3
Wood	22	615	1,162	178
Total	**31**	**627**	**1,180**	**496**

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 4,536 households to be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 12,879 people (out of a total population of 122,925) will seek temporary shelter in public shelters.

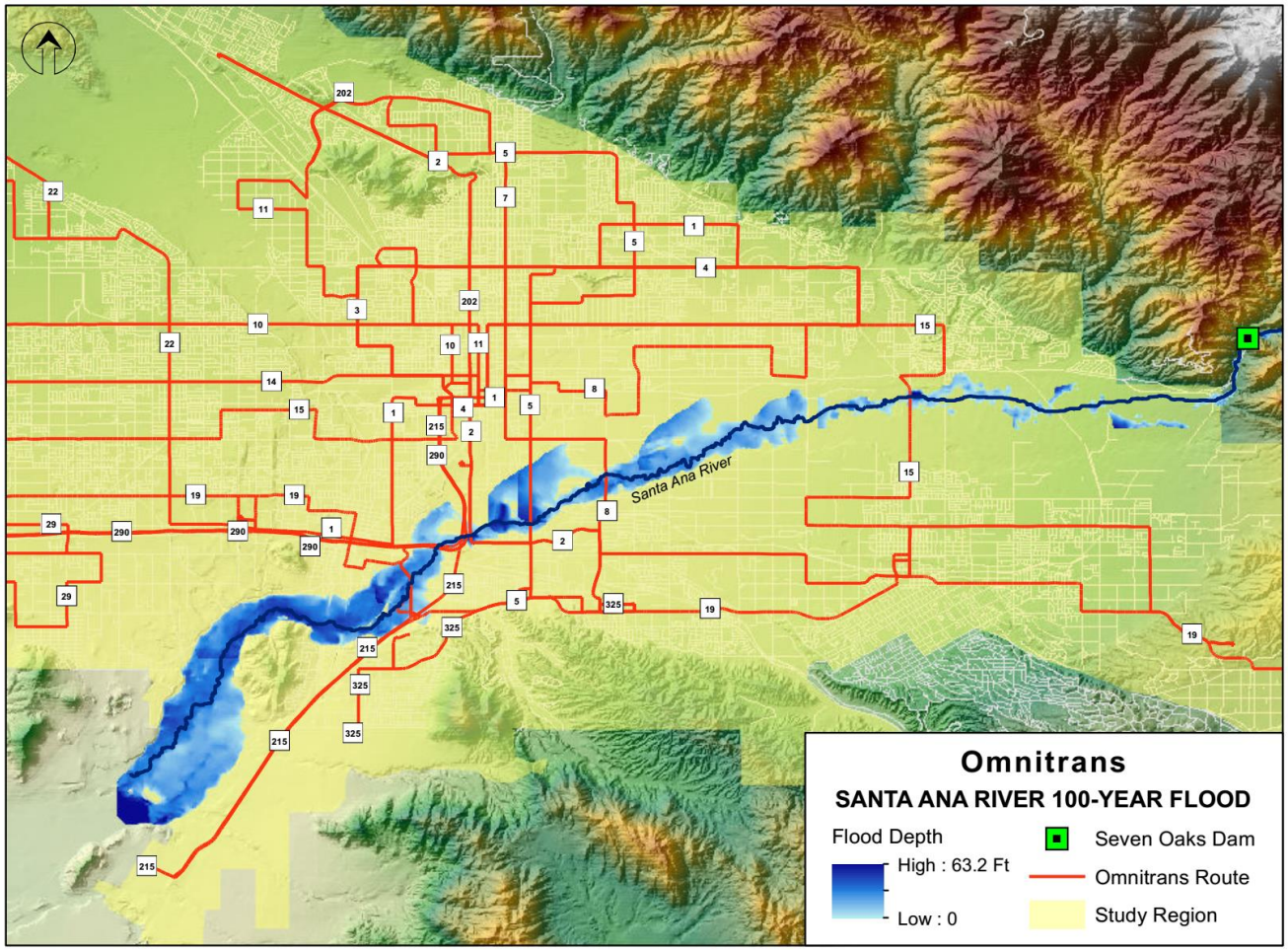
Economic Losses

The total economic loss estimated for the Santa Ana River 100-Year Flood scenario is **$1.26 billion dollars** which includes building and lifeline related losses based on the region's available inventory. The following tables provide more detailed information about these losses.

Table: Building-Related Economic Losses ($ Dollars) – Santa Ana River 100-Year Flood

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss	Building	$317,410,000	$158,410,000	$47,634,000	$13,516,000	$536,970,000
	Content	$200,656,000	$362,570,000	$101,389,000	$43,413,000	$708,028,000
	Inventory	$0	$7,025,000	$12,553,000	$298,000	$19,876,000
	Subtotal	**$518,066,000**	**$528,005,000**	**$161,576,000**	**$57,227,000**	**$1,264,874,000**
Business Interruption	Income	$17,000	$1,219,000	$1,000	$55,000	$1,292,000
	Relocation	$353,000	$354,000	$4,000	$33,000	$744,000
	Rental Income	$125,000	$227,000	$0	$8,000	$360,000
	Wage	$51,000	$1,579,000	$6,000	$741,000	$2,377,000
	Subtotal	**$546,000**	**$3,379,000**	**$ $11,000**	**$837,000**	**$4,773,000**
	TOTAL	**$518,612,000**	**$531,384,000**	**$161,587,000**	**$58,064,000**	**$1,269,647,000**

Map: HAZUS Santa Ana River 100-Year Flood Scenario
Source: Emergency Planning Consultants



Dam Failure Flooding

In the San Bernardino area, an earthquake can cause dam failure. The greatest threat to people and property is normally in areas immediately below the dam since flood discharges decrease as the flood wave moves downstream. The following HAZUS scenario is for the Seven Oaks Dam located northwest of the Omnitrans service area.

Seven Oak Dam Failure Flood Scenario

Building Damage

Table: Expected Building Damage by Occupancy – Seven Oak Dam Failure Flood Scenario

	Slight	Moderate	Extensive	Complete
	Count	Count	Count	Count
Agriculture	0	0	0	0
Commercial	8	19	5	2
Education	0	0	0	0
Government	2	0	0	0
Industrial	0	0	2	3
Other Residential	0	0	0	0
Religion	0	0	0	0
Single Family	76	997	1,678	654
Total	**86**	**1,016**	**1,685**	**659**

Table: Expected Building Damage by Building Type – Seven Oak Dam Failure Flood Scenario

	Slight	Moderate	Extensive	Complete
	Count	Count	Count	Count
Concrete	3	1	6	0
MH	0	0	0	375
Masonry	1	5	12	0
Steel	1	3	3	2
Wood	75	999	1,656	279
Total	**80**	**1,008**	**1,677**	**656**

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 7,105 households to be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 20,385 people (out of a total population of 122,925) will seek temporary shelter in public shelters.

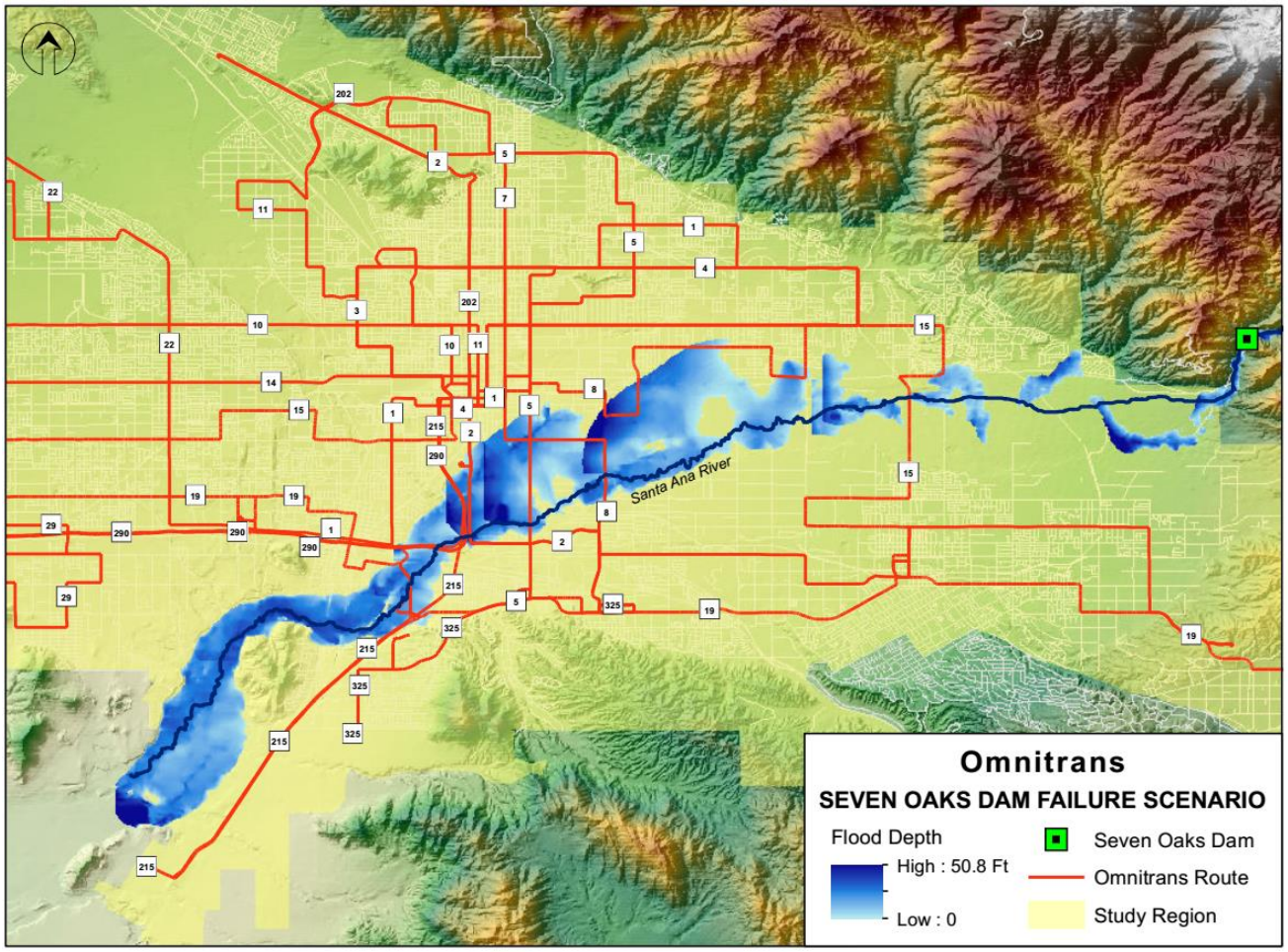
Economic Losses

The total economic loss estimated for the Seven Oak Dam Failure Flood scenario is **$1.72 billion dollars** which includes building and lifeline related losses based on the region's available inventory. The following tables provide more detailed information about these losses.

Table: Building-Related Economic Losses ($ Dollars) – Seven Oak Dam Failure Flood Scenario

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss	Building	$437,663,000	$219,261,000	$63,424,000	$19,228,000	$739,576,000
	Content	$278,522,000	$475,108,000	$131,310,000	$63,453,000	$948,393,000
	Inventory	$0	$9,893,000	$16,288,000	$365,000	$26,546,000
	Subtotal	**$716,185,000**	**$704,262,000**	**$211,022,000**	**$83,046,000**	**$1,714,515,000**
Business Interruption	Income	$22,000	$1,537,000	$1,000	$83,000	$1,643,000
	Relocation	$499,000	$460,000	$5,000	$54,000	$1,018,000
	Rental Income	$169,000	$300,000	$-	$13,000	$482,000
	Wage	$66,000	$2,038,000	$7,000	$1,007,000	$3,118,000
	Subtotal	**$756,000**	**$4,335,000**	**$0**	**$1,157,000**	**$6,261,000**
	TOTAL	**$716,941,000**	**$708,597,000**	**$211,035,000**	**$84,203,000**	**$1,720,776,000**

Map: HAZUS Seven Oak Dam Failure Flood Scenario
Source: Emergency Planning Consultants



Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B3

Q: B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))

A: See **Impact of Flooding in the Omnitrans Service Area** below.

Impact of Flooding in the Omnitrans Service Area

Floods and their impacts vary by location and severity of any given flood event, and likely only affect certain areas of the region during specific times. Based on the risk assessment, it is evident that floods will continue to have devastating economic impact to certain areas of the Omnitrans service area.

Impact that is not quantified, but anticipated in future events includes:

- ✓ Injury and loss of life;
- ✓ Commercial and residential structural damage;
- ✓ Disruption of and damage to public infrastructure;
- ✓ Secondary health hazards e.g. mold and mildew
- ✓ Damage to roads/bridges resulting in loss of mobility
- ✓ Significant economic impact (jobs, sales, tax revenue) upon the community
- ✓ Negative impact on commercial and residential property values and
- ✓ Significant disruption to students and teachers as temporary facilities and relocations would likely be needed.

Drought Hazards

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B2

Q: B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))

A: See **Previous Occurrences of Drought in the Omnitrans Service Area** below.

Previous Occurrences of Drought in the Omnitrans Service Area

Fortunately, there is no severe history of drought within the Omnitrans service area. Although there is no evidence of a drought having a significant impact on the region at the current time, California as a whole has experienced a serious drought since 2012.

Since the writing of the 2011 Mitigation Plan, there have been no significant damages to the Omnitrans service area from a drought.

Local Conditions

The region's Mediterranean climate makes it especially susceptible to variations in rainfall. Though the potential risk to the Omnitrans service area is in no way unique, severe water shortages could have a bearing on the economic well-being of the community.

A significant drought has hit the state of California since 2012. The drought has depleted reservoir levels all across the state. In January of 2014, Governor Brown declared a state of emergency and directed state officials to take all necessary actions to prepare for water shortages. As the drought prolonged into 2015, to help cope with the drought, Governor Brown gave an executive order in April 2015 which mandated a statewide 25 percent reduction in water use. In January of 2016, the DWR and the U.S. Bureau of Reclamation have finalized the 2016 Drought Contingency Plan that outlines State Water Project and Central Valley Project operations for February 2016 to November 2016. The plan was developed in coordination with staff from State and federal agencies. Although the drought has more significantly impacted surfaces waters and other agencies that use water for agriculture, the Omnitrans service area is still affected by the drought, primarily due to reduced reliability of imported water.

With respect to the present day, climate data also suggests that the last significant wet period was the 1940s. Well level data and other sources seem to indicate the historic high groundwater levels (reflecting recharge from rainfall) occurred in the same decade. Since that

time, rainfall (and groundwater level trends) appears to be in decline. This slight declining trend, however, is not believed to be significant. Climatologists compiled rainfall data from 96 stations in the State that spanned a 100-year period between 1890 and 1990. An interesting note is that during the first 50 years of the reporting period, there was only one year (1890) that had more than 35 inches of rainfall, whereas the second 50-year period recording of 5-year intervals (1941, 1958, 1978, 1982, and 1983) that exceeded 35 inches of rainfall in a single year. The year of maximum rainfall was 1890 when the average annual rainfall was 43.11 inches. The second wettest year on record occurred in 1983 when the State's average was 42.75 inches.

The driest year of the 100-year reported in the study was 1924 when the State's average rainfall was only 10.50 inches. The region with the most stations reporting the driest year in 1924 was the San Francisco Bay area. The second driest year was 1977 when the average was 11.57 inches. The most recent major drought (1987 to 1990) occurred at the end of a sequence of very wet years (1978 to 1983). The debate continues whether "global warming" is occurring, and the degree to which global climate change will have an effect on local micro-climates. The semi-arid southwest is particularly susceptible to variations in rainfall. A study that documented annual precipitation for California since 1600 from reconstructed tree ring data indicates that there was a prolonged dry spell from about 1755 to 1820 in California. Fluctuations in precipitation could contribute indirectly to a number of hazards including wildfire and the availability of water supplies.

Q&A | ELEMENT B: HAZARD IDENTIFICATION AND RISK ASSESSMENT | B3

Q: B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))

A: See **Impacts of Drought in the Omnitrans Service Area** below.

Impacts of Drought in the Omnitrans Service Area

Based on the risk assessment, it is evident that drought events continue to have potentially devastating economic impacts to certain areas of the Omnitrans service area.

Impacts that are not quantified, but can be anticipated in future events, include:

- ✓ Injury and loss of life
- ✓ Disruption of and damage to public infrastructure
- ✓ Significant economic impact (jobs, sales, tax revenue) upon the community
- ✓ Negative impact on commercial and residential property values
- ✓ Uncontrolled fires and associated injuries and damage

Technological & Human-Caused Hazards

Rail Incidents

Train derailments are so localized that the incidents themselves would not typically result in a disaster. However, if there are volatile or flammable substances on the train and the train is in a highly populated or densely forested area, death, injuries, damage to homes, or wildfires could occur. The following table shows rail accidents within San Bernardino County from 2012-2016.

Table: Train Accidents – San Bernardino County (2012-2016)
(Source: Federal Railroad Administration – Office of Safety Analysis)

Year	2012	2013	2014	2015	2016
Total Accidents	26	26	19	30	12
Derailments	24	20	12	26	6
Fatalities	0	0	0	0	0

Duffy Street Incident – San Bernardino - 1989

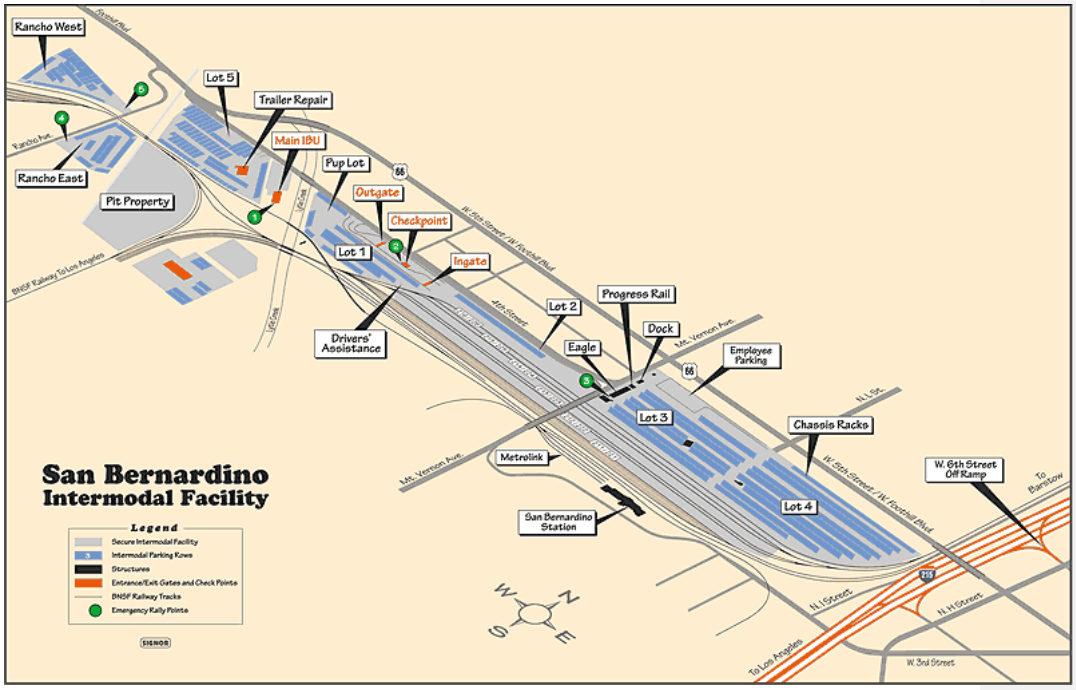
On May 12, 1989, a 6-locomotive/69-car Southern Pacific freight train was transporting trona (a carbonate mineral), lost control while descending Cajon Pass, derailed on an elevated curve and plowed into a residential area on Duffy Street, just northeast of where the 210 Foothill Freeway crosses the Cajon Creek Wash.

The conductor, head-end brakeman, and two residents were killed in the wreck. Seven houses on the street immediately next to the tracks were demolished by the wreck, as were the lead locomotives and all of the freight cars. Clerks in Mojave had miscalculated the weight of the train, while the engineer and crew at the head end were unaware that one of the rear helper engines had inoperative dynamic brakes. Hence there was not enough dynamic braking force available to maintain control of train speed during the descent. When the helper engineer realized that the train speed was not being adequately controlled, he made an emergency brake application, which deactivated dynamic braking, resulting in a runaway condition. The train reached a speed of about 100 miles per hour (mph) before derailing on an elevated 35 mph curve next to Duffy Street, sending the head end locomotives and several cars off the high railroad bed and into houses on the street below, completely demolishing them.

Local Conditions

There are several major railyards located within the Omnitrans service area including the Union Pacific Colton Railyard located in Bloomington and the B.N.S.F Intermodal Yard located in San Bernardino. Omnitrans Headquarters at W 5th Street is located adjacent to the B.N.S.F Intermodal Yard.

Map: B.N.S.F Intermodal Yard – San Bernardino
(Source: BNSF Railway)



Hazardous Materials

Hazardous materials are substances that are flammable, combustible, explosive, toxic, noxious, and corrosive, an oxidizer, an irritant, or radioactive. A hazardous material spill or release can pose a risk to life, health, or property. An incident can result in the evacuation of a few people, a section of a facility, or an entire neighborhood.

Hazardous Materials Transportation

Federal emergency planning requirements include the formation of local emergency planning committees (LEPCs). The LEPC is required to evaluate facilities using threshold quantities of extremely hazardous substances (EHS), and determine which facilities are at risk of a release or subject to additional risk due to their proximity to another facility using EHS. The LEPC is also required to identify hazardous materials transportation routes. This requirement has led Region I LEPC to develop a specific transportation element to its plan. The following represents the Region I transportation element:

Transportation of hazardous materials by air, land, or water poses a significant need to plan and coordinate emergency resources necessary to respond to hazardous materials spills and releases. These types of incidents could affect several million Californians and are potentially hazardous to both the local community, and those traveling near the incident site. First, we will discuss the different modes of transportation and the unique challenges presented for planners and emergency responders.

Air

The southern California region has several major air transportation facilities. In some instances, there may be hazardous materials incidents involving air cargo either on the aircraft or on the ground. Initial response to these incidents would be provided by airport emergency response personnel. The need may arise for additional resources to respond. Response efforts must be coordinated to ensure all personnel are made aware of the material involved and of the potential hazards. In the event of a crash of an aircraft, the major hazardous materials concerns will be fuel from the aircraft, hydraulic fluid, and oxygen systems. The threat posed by onboard hazardous cargo will be minimal. Regulations on hazardous materials shipments by air are found in 49 CFR section 175.

Water

Two major ports serve the southern California region. These are the Port of Los Angeles and the Port of Long Beach. The prime concern for these two major ports would be releases of petroleum products from both oil tankers and other large ocean

going vessels. Not only is there a significant potential from fire and explosion, the environmental effects could be catastrophic. Additionally, many other types of hazardous materials may be shipped by bulk or containerized cargo. Planners must recognize potential risks associated with vessels and port facilities in their hazard assessment. Response to water related incidents is coordinated through the Coast Guard and the California Department of Fish and Game.

Ground

Ground transportation provides the largest movement of hazardous materials and will generate the majority of incidents which will be confronted by local emergency response personnel. The three modes of ground transportation are rail, highway, and pipeline.

Rail is unique in both the quantity and types of hazardous materials which can be involved in one incident. Collisions, derailments, and mechanical failure, as well as loading and unloading, can all result in very serious hazardous materials incidents. A critical consideration for planners is a careful evaluation of the rail traffic in their jurisdiction. Rail companies as well as product manufacturers have emergency response teams available to assist local emergency responders. The United States Department of Transportation governs the transportation of hazardous materials by rail.

Highway-related hazardous materials incidents account for the vast majority of situations faced by local responders. Highway incidents range from minor releases of diesel fuel, to multiple vehicle accidents involving large quantities of multiple types of hazardous materials. A concern for planners is the fact that these incidents can occur anyplace throughout the region. Multiple agency coordination is essential for successful control and mitigation of these incidents. Section 2454 of the California Vehicle Code mandates authority for incident command at the scene of an on-highway hazardous substance incident in the appropriate law enforcement agency having primary traffic investigative authority on the highway where the incident occurs.

Pipeline incidents will typically involve compressed natural gas, or petroleum products. An important aspect for planners to consider is that pipelines are frequently out of sight and out of mind. Southern California region is honeycombed with underground pipelines ranging from a few inches to several feet in diameter. Pipelines transport products from as far away as Texas for use by local consumers. An important source of information on underground pipelines is Dig Alert. Regulation of pipeline activity is governed by the U.S. Department of Transportation and the California Public Utilities Commission.

Potential Effects of a Hazardous Materials Incident

As previously mentioned, highway accidents and incidents will constitute the majority of emergency response situations. There are two distinct facets which must be addressed in a local emergency action plan. Planners must consider the local community with fixed facilities and those individuals in transit. The following is illustrative of typical concerns which planners will encounter in addressing hazardous material occurrences.

Residential and Business Community

Chemical spills on streets and highways can impact the public in one or more of the following ways:

- ✓ Shelter-in-place
- ✓ Evacuations
- ✓ Restriction or detour of local traffic
- ✓ Damage to homes and businesses
- ✓ Injury, illness or death

Because of these potentially dangerous situations, it is necessary for emergency responders to be familiar with requirements for hazmat spill notification and to obtain and direct the resources necessary to protect public health and the environment.

Commuter/Delivery Traffic

In addition to the surrounding locale, travelers going through or near transportation incidents may be impacted in several ways:

- ✓ Exposure to harmful or flammable chemicals resulting in injury or illness
- ✓ Delayed travel
- ✓ Accidents
- ✓ Vehicle damage due to chemical contact

Agencies with on highway responsibility in LEPC Region VI should become familiar with shipping corridors and traffic patterns.

Region VI Transportation Needs

Research has indicated that the majority of hazardous materials incidents occur in the transportation arena. This fact strongly suggests that the region make the following recommendations for further transportation planning assessment:

- ✓ Identify various surface transporters within the region
- ✓ Determine level of training as it relates to transportation routes and notification requirements
- ✓ Evaluate emergency response resources for both public and private hazardous materials response teams
- ✓ Prioritize response resources in areas unable to respond to proportionally higher number of incidents.
- ✓ Develop standard guidelines for evacuation of populations impacted by transportation related incidents.
- ✓ Evaluate the need to perform Transportation Risk Assessment for selected high priority areas.

Region VI Map

Emergency planning principles and practices indicate that emergency plans include all the hazards existing within a jurisdiction. California OES has developed the Emergency Planning Guidance for Local Government to assist local government in conducting emergency planning.

Terrorism

The complexity, scope, and potential consequences of a terrorist threat or incident require that there be a rapid and decisive capability to resolve the situation. The resolution to an act of terrorism demands an extraordinary level of coordination of crisis and consequence management functions and technical expertise across all levels of government. No single Federal, State, or Local governmental agency has the capability or requisite authority to respond independently and mitigate the consequences of such a threat to national security.

The incident may affect a single location or multiple locations, each of which may be a disaster scene, a hazardous scene and/or a crime scene simultaneously.

History

On December 2, 2015, 14 people were killed and 22 others were seriously injured in a terrorist attack consisting of a mass shooting and an attempted bombing at the Inland Regional Center in San Bernardino, California. The incident is commonly referred to as the "Waterman Terrorist Attack". The fourteen people killed that day were staff members of the County of San Bernardino Public Health Department – Environmental Health Services Division.

State of California Terrorism Guidance

The catastrophic attacks on the World Trade Center Building in New York City and the Alfred P. Murrah Federal Building in Oklahoma City shocked the nation into the reality that there are no domestic safe havens from acts of terrorism. These two apparently unrelated events punctuate our nation's vulnerability, and highlight California's risk of similar attack against its public officials, private and multi-national corporations, public infrastructure, and government facilities.

Historically, California has had a long experience combating terrorist groups, both domestic and international. Domestic terrorist groups in the state have been largely issue-oriented, while the few known internationally based incidents have mostly targeted the state's émigré communities and been related to foreign disputes. Today, however, both groups are more likely to be aligned nationally and/or internationally through electronic networking. The issues and politics of these groups remain essentially unchanged but now include increasing expressions of hatred for existing forms of government. The World Trade Center Incident demonstrates that international

terrorist groups have the potential to operate with deadly effectiveness in this country. Such groups may offer no allegiance to any particular country but seek political or personal objectives that transcend national/state boundaries.

There is appropriate concern that such attacks as witnessed in Tokyo, New York City, and Oklahoma City could occur in California. A terrorist acting alone or in concert with any of the known national or international groups could readily commit acts of terrorism in California. The open availability of basic shelf-type chemicals and mail order biological research materials, coupled with an access to even the crudest laboratory facilities, could enable the individual extremist or an organized terrorist faction to manufacture proven highly lethal substances or to fashion less sophisticated weapons of mass destruction. The use of such weapons could result in mass casualties, long term contamination, and wreak havoc to both the state and national economies.

The freedom of movement and virtually unrestricted access to government officials, buildings, and critical infrastructure afforded to California's citizens and foreign visitors, presents the terrorist with the opportunity and conditions of anonymity to deliver such devastation and its tragic consequences with only the crudest devices of nuclear, chemical, or biological content.

Terrorist incidents create a unique environment in which to manage emergency response. Local responders are typically the first on scene during an actual incident and local government has primary responsibility for protecting public health and safety. Ordinarily, the local first response will be conducted under California's Standardized Emergency Management System (SEMS) which forms the basis of California's concept of operations for managing any kind of emergency or disaster, including terrorist incidents. The local responders will manage all aspects of the incident until the FBI assumes command, by virtue of its legal authority, of the law enforcement aspects relating to identifying, apprehending, and neutralizing the terrorists and their weapons. Local and state authorities always maintain control of their response resources and continue to operate utilizing SEMS.

San Bernardino/Riverside Critical Infrastructure Protection Working Group

Comment [CH3]: Mark – I need a description. Can't find anything on the internet.

San Bernardino/Riverside County Terrorism Early Warning Group (TEWG)

Effective and rapid dissemination of indications and warnings to local emergency response agencies is an essential yet problematic element of terrorism management efforts. For bio-terrorist threats, such efforts must integrate ongoing real-time surveillance efforts. Terrorism Early Warning Groups are a multilateral, multidisciplinary effort to monitor open source data to identify trends and potential threats, monitor potential threat information during periods of heightened concern, assess potential targets and perform net assessments to guide decision making during actual events. TEWG provides integrated threat and net assessment from a multi-jurisdictional perspective. City and county fire departments work together with emergency management, FBI, local law enforcement agencies, Department of Health Services, as well as other state and federal offices. The formation of TEWGs supports field response in the preparation for and response to acts of terrorism.

The San Bernardino/Riverside County TEWG provides Unified Command Structure with the impact of an attack on the operational area, gauges resource needs and shortfalls, continuously

monitors and assesses situational awareness and status, and acts as the point of contact for inter-agency liaison in order to develop options for courses of action for incident resolution. TEWG is an Emerging Threat Workspace (Civil Battle Lab) for stimulating National Strategy for emerging threat issues:

- Terrorism and Infrastructure Protection
- Public Order (Riots/Disturbances)
- Civil-Military Interoperability for Urban Operations
- Civilian Police (CIVPOL) for Peace Officers
- Networked Threats and Emerging Threats
- Counterterrorism Technology Test Bed

Biological & Chemical Terrorism

The Public Health Response to Biological and Chemical Terrorism: Interim Planning Guidance for State Public Health Officials (hereafter referred to as the Planning Guidance) outlines steps for strengthening the capacity of the public health system to respond to and protect the nation against the dangers of a terrorism incident. Although the Planning Guidance focuses on the biological and chemical terrorism preparedness efforts of state-level health department personnel, it can be used as a planning tool by anyone in the response community, regardless of his or her position within that community or level of government.

The public health community at large also can use this document to improve its terrorism preparedness and develop terrorism response plans. The preparedness program outlined in this Planning Guidance, once implemented, should improve the ability of all public health agencies to respond to emergency situations arising from all sources, not just terrorism.

The Planning Guidance focuses on the capabilities that state health departments are likely to need to respond effectively to a terrorism incident. Despite the public health focus of this document, the terrorism plan ultimately should not be agency-specific. Instead, the terrorism plan should be integrated, outlining the roles and responsibilities of all agencies that participate in a response. This coordinated terrorism plan should then be annexed to the State's all-hazard Emergency Plan.

Terrorism Mitigation

Because the primary mechanism for past terrorist incidents has been bombings and because of the potential for mass casualties from a WMD terrorist event, the primary focus of the State's hazard mitigation strategy for terrorism is on mitigation measures that reduce risk from bomb blast and nuclear, biological, and chemical attacks to critical state facilities and population.

Measures include:

Hardening (construction/retrofitting)

- ✓ Relocation/retrofitting of air intakes
- ✓ Ventilation system upgrade/retrofit
- ✓ Protect tower bases of bridges
- ✓ Seismic retrofitting
- ✓ Upgrade/retrofit water main system
- ✓ Blast guard window film/glazing, frames
- ✓ Egress improvements

Barriers and Fencing

- ✓ Fencing around air intakes
- ✓ Fencing around fuel supply
- ✓ Vehicle barriers, bollards, popup gates, hydraulic barriers
- ✓ Waterfront security system
- ✓ Perimeter fencing

Redundant systems
- ✓ Fire protection system
- ✓ Communications systems
- ✓ Information technology
- ✓ Utility (Gas/Heat/Water)
- ✓ Utility (Electric)

Security Measures
- ✓ Security systems/early warning systems
- ✓ Warning and alarms systems directly related to system protection/shut down
- ✓ Smart utility management systems on all critical services.

Planning/Studies
- ✓ Telecommunications plans
- ✓ IT disaster recovery plans
- ✓ Business continuity/resumption plans
- ✓ Intelligence gathering and sharing
- ✓ Threat, vulnerability, and risk assessments
- ✓ Evacuation plans
- ✓ Site security planning

Seismic Study
- ✓ Retrofitting
- ✓ Interior lighting
- ✓ Exterior lighting
- ✓ Staging areas

Surveillance
- ✓ Secure Access & Entry Points
- ✓ Card swipe system
- ✓ Magnetometer
- ✓ Metal detectors
- ✓ Surveillance cameras & closed circuit TVs
- ✓ Personnel detection equipment
- ✓ Vehicle detection equipment
- ✓ Radar systems
- ✓ Building access system
- ✓ Motion detectors
- ✓ Replacing door locks and keys

IT Systems
- ✓ Security management system
- ✓ Building access system
- ✓ Employee identification system
- ✓ Coding protocol for sensitive records.

These above-listed measures are already being used in many communities and situations and have proven effective in reducing or eliminating hazard risk. Each of these measures directly meets an objective stated in the state's Hazard Mitigation Strategy.

Aircraft Accident

Aircraft fly over the Omnitrans service area throughout the day and night because of the high number of airports in the region. Because of the large number of flights over the region, there is the risk of an air disaster resulting from a variety of aircraft situations. The major airports in the area include: San Bernardino International Airport, Ontario International Airport, Los Angeles International Airport, and John Wayne Airport. There are also a number of smaller private and military airports in the region that could affect the service area.

Table: Major Airports near Omnitrans Service Area

Airport
San Bernardino International Airport (SBD)
Ontario International Airport (ONT)
John Wayne Airport (SNA)
Los Angeles International Airport (LAX)

Aircraft flying over San Bernardino are located in the Southern California TRACON (SCT). Southern California TRACON (SCT) serves most airports in Southern California and guides about 2.2 million planes over roughly 9,000 square miles in a year, making our facility one of the busiest in the world. SCT, or SoCal TRACON as it is nicknamed, provides radar air traffic approach control services to all arriving and departing aircraft for most airports in Southern California. SCT's airspace covers an area from 20 miles north of Burbank to the US/Mexican border and from San Bernardino to Santa Catalina Island. Airports receiving SCT services include Burbank Airport, John Wayne Airport, Los Angeles International Airport, Long Beach Airport, March AFB, MCAS Miramar, NAS North Island, Ontario Airport, San Diego International Airport, Van Nuys Airport and many smaller airports that service general aviation.

Most Recent Major Accident – San Bernardino Area

Fortunately, there have been limited aircraft accidents within the San Bernardino area – most attributed to small, civilian aircraft incidents in the mountainous regions. Although there have been no major incidents involving large commercial aircraft, the risk of a future incident is possible given the highly congested southern California airspace.

PART III: MITIGATION STRATEGIES

Mitigation Strategies

Overview of Mitigation Strategy

As the cost of damage from disasters continues to increase nationwide, Omnitrans recognizes the importance of identifying effective ways to reduce vulnerability to disasters. 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 at Omnitrans facilities.

The plan provides a set of action items to reduce risk from hazards through education and outreach programs, and to foster the development of partnerships. Further, the plan provides for the implementation of preventative activities.

The resources and information within the Mitigation Plan:

1. Establish a basis for coordination and collaboration among agencies and the public in the Omnitrans service area;
2. Identify and prioritize future mitigation projects; and
3. Assist in meeting the requirements of federal assistance programs

The Mitigation Plan is integrated with other plans including the Omnitrans System Security and Emergency Response Preparedness Plan (SSERPP) and Facilities Maintenance Plan as well as department-specific standard operating procedures.

Mitigation Measure Categories

Following is FEMA's list of mitigation categories. The activities identified by the Planning Team are consistent with the six broad categories of mitigation actions outlined in FEMA publication 386-3 *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies*.

- ✓ **Prevention:** Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.
- ✓ **Property Protection:** Actions that involve modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- ✓ **Public Education and Awareness:** Actions to inform and educate citizens, property owners, and elected officials about hazards and potential ways to mitigate them.

  Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

- ✓ **Natural Resource Protection:** Actions that, in addition to minimizing hazard losses preserve or restore the functions of natural systems. Examples include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- ✓ **Emergency Services:** Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.
- ✓ **Structural Projects:** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, levees, floodwalls, retaining walls, and safe rooms.

Q&A | ELEMENT C. MITIGATION STRATEGY | C3

Q: C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))

A: See **Goals** below.

Goals

The Planning Team developed mitigation goals to avoid or reduce long-term vulnerabilities to hazards. These general principles clarify desired outcomes.

The goals are based on the risk assessment and Planning Team input, and represents a long-term vision for hazard reduction or enhanced mitigation capabilities. They are compatible with community needs and goals expressed in other planning documents prepared by Omnitrans.

Each goal is supported by mitigation action items. The Planning Team developed these action items through its knowledge of the local area, risk assessment, review of past efforts, identification of mitigation activities, and qualitative analysis.

The five mitigation goals and descriptions are listed below.

FEMA defines **Goals** as general guidelines that explain what you want to achieve. They are usually broad policy-type statements, long-term, and represent global visions.

FEMA defines **Mitigation Activities** as specific actions that help you achieve your goals and objectives.

Protect Life and Property

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

Improve hazard assessment information to make recommendations for avoiding new development in high hazard areas and encouraging preventative measures for existing development in areas vulnerable to natural, human-caused, and technological hazards.

Enhance Public Awareness

Develop and implement education and outreach programs to increase public awareness of the risks associated with natural, human-caused, and technological hazards.

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

Preserve Natural Systems

Support management and land use planning practices with hazard mitigation to protect life.

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

Encourage Partnerships and Implementation

Strengthen communication and coordinate participation with public agencies, riders, non-profit organizations, business, and industry to support implementation.

Encourage leadership within Omnitrans and public organizations to prioritize and implement local and regional hazard mitigation activities.

Strengthen 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, business, and industry.

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

Q&A | ELEMENT C. MITIGATION STRATEGY | C5

Q: C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))

A: See **Benefit/Cost Ratings** and **Priority Rating** below.

Benefit/Cost Ratings

The benefits of proposed projects were weighed against estimated costs as part of the project prioritization process. The benefit/cost analysis was not of the detailed variety required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. A less formal approach was used because some projects may not be implemented for up to 10 years, and associated costs and benefits could change dramatically in that time. Therefore, a review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to the costs and benefits of these projects.

Cost ratings were defined as follows:

High: Existing jurisdictional funding will not cover the cost of the action item so other sources of revenue would be required.

Medium: The action item could be funded through existing jurisdictional funding but would require budget modifications.

Low: The action item could be funded under existing jurisdictional funding.

Benefit ratings were defined as follows:

High: The action item will provide short-term and long-term impacts on the reduction of risk exposure to life and property.

Medium: The action item will have long-term impacts on the reduction of risk exposure to life and property.

Low: The action item will have only short-term impacts on the reduction of risk exposure to life and property.

Priority Rating

Going beyond rating "benefit and cost", the Planning Team adopted the following process for rating the "priority" of each mitigation action item. Designations of "High", "Medium", and "Low" priority have been assigned to each action item using the following criteria:

Does the Action:
- solve the problem?
- address Vulnerability Assessment?
- reduce the exposure or vulnerability to the highest priority hazard?
- address multiple hazards?
- benefits equal or exceed costs?
- implement a goal, policy, or project identified in the General Plan or Capital Improvement Plan?

Can the Action:
- be implemented with existing funds?
- be implemented by existing state or federal grant programs?
- be completed within the 5-year life cycle of the LHMP?
- be implemented with currently available technologies?

Will the Action:
- be accepted by the community?
- be supported by community leaders?
- adversely impact segments of the population or neighborhoods?
- require a change in local ordinances or zoning laws?
- positive or neutral impact on the environment?
- comply with all local, state and federal environmental laws and regulations?

Is there:
- sufficient staffing to undertake the project?
- existing authority to undertake the project?

As mitigation action items were updated or written the Planning Team, representatives were provided worksheets for each of their assigned action items. Answers to the criteria above determined the priority according to the following scale.

- 1-6 = Low priority
- 7-12 = Medium priority
- 13-18 = High priority

Q&A | ELEMENT C. MITIGATION STRATEGY | C1

Q: C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

A: See **Mitigation Actions Matrix** below.

Q&A | ELEMENT C. MITIGATION STRATEGY | C4

Q: C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))

A: See **Mitigation Actions Matrix** below.

Q&A | ELEMENT C. MITIGATION STRATEGY | C5

Q: C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))

A: See **Mitigation Actions Matrix** below.

Q&A | ELEMENT D. MITIGATION STRATEGY | D2

Q: D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))

A: See **Mitigation Actions Matrix** below.

Q&A | ELEMENT D. MITIGATION STRATEGY | D3

Q: D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))

A: See **Mitigation Actions Matrix** below.

Mitigation Actions Matrix

Following is **Table: Mitigation Actions Matrix** which identifies the existing and future mitigation activities developed by the Planning Team.

Table: Mitigation Actions Matrix

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
MULTI-HAZARD ACTION ITEMS													
MH-1 Form a planning team to monitor status of Mitigation Action items.	Safety & Security Office	Annual	X	X	X	X	X	OB	OB	M	L	H	Revised – action item, timeline, funding, planning mechanism, benefit, cost.
MH-2 Ensure that all new buildings, major remodels, and/or building additions conform to California Buildings Codes, City Building Codes, Uniform Building	Maintenance Department – Facilities Management, Safety & Security	Ongoing	X	X	X	X	X	CB	CB	H	H	H	Revised – action item, agency, timeline, funding,

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
Codes, National Fire Protection Association, State Fire Marshal, and other local fire and other regulatory agencies. This will assist in mitigating effects from earthquakes, fires, and other natural disasters.	Office												planning mechanism, benefit, cost.
MH-3 Examine existing flood zones, major earthquake faults, and fire prone areas when developing Omnitrans' System Security & Emergency Response Preparedness Plan (SSERPP). This allows the Agency to mitigate placing agency resources in harm's way during these types of disasters.	Planning Department, Marketing Department	Ongoing	X	X	X	X	X	OB	OB	H	M	H	Revised – action item, agency, timeline, funding, planning mechanism, benefit, cost.
MH-4 Remove LNG Tanks and replace with underground pipes.	Maintenance Department – Facilities	1 year	X	X	X	X	X	CB	CB	H	H	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
	Management, Safety & Security Office												
MH-5 Update HAZUS each time the Hazard Mitigation Plan is updated.	Planning Team	Every 5 years	X	X	X	X	X	GR, OB	GR, OB	H	L	H	
MH-6 Contract with a geotechnical engineer to analyze seismic and flood vulnerability of Omnitrans facilities.	Safety & Security Office, Maintenance Department – Facilities Management	5 years	X	X	X	X	X	GR	GR	H	M	H	New
MH-7 At Omnitrans East Valley facility (HQ), provide dedicated A/C units for IT/DVR closets for proper cooling of heat sensitive IT components.	Maintenance Department – Facilities Maintenance	3 years	X			X	X	CB	CB	H	M	H	New
MH-8 Replace existing make up air units that are reaching their	Maintenance Department –	1 year	X			X	X	CB	CB	H	M	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
""end of life"" usage, and to achieve a more consistent level of comfort throughout the garage areas.	Facilities Maintenance												
MH-9 Provide dedicated A/C unit for Maintenance Supervisors office for after-hours operation of primary A/C unit.	Maintenance Department – Facilities Maintenance	Completed 2016	X			X	X	CB	CB	H	M	H	New
MH-10 Repair concrete lanes at WV Fuel Island and re-slope for proper drainage.	Maintenance Department – Facilities Maintenance	Completed 2016	X			X	X	CB	CB	H	M	H	New
MH-11 Complete roof replacement for administration building at I Street facility. Evaluate the use of an energy saving white roof.	Maintenance Department – Facilities Maintenance	Completed 2016	X			X	X	CB	CB	H	M	H	New
MH-12 Replace existing air conditioning units that are reaching their ""end of life"" use	Maintenance Department – Facilities	Completed 2016	X			X	X	CB	CB	H	M	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
at the I Street facility.	Maintenance												
MH-13 Replace obsolete in-ground hydraulic hoists for garage at West Valley facility.	Maintenance Department – Facilities Maintenance	Completed 2015	X			X	X	CB	CB	H	M	H	New
MH-14 Complete roof replacement for administration building at West Valley facility (Fuel Island). Evaluate the use of an energy saving white roof.	Maintenance Department – Facilities Maintenance	1 year	X			X	X	CB	CB	H	M	H	New
MH-15 Replace existing air conditioning units that are reaching their ""end of life"" use at West Valley facility (Shop).	Maintenance Department – Facilities Maintenance	1 year	X			X	X	CB	CB	H	M	H	New
MH-16 Add evaporative coolers and controls for garage to enhance cooling at West Valley facility.	Maintenance Department – Facilities Maintenance	2 years	X			X	X	CB	CB	H	M	H	New
MH-17 Replace existing air	Maintenance	1 year	X			X	X	CB	CB	H	M	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
conditioning units that are reaching their ""end of life"" use at West Valley facility (Operations).	Department – Facilities Maintenance												
MH-18 Upgrade underground storage tanks (UST) manholes with Fibrelite type composite manhole covers or equivalent.	Maintenance Department – Facilities Maintenance	3 years	X			X	X	CB	CB	H	M	H	New
EARTHQUAKE ACTION ITEMS													
EQ-1 Purchase and maintain earthquake supplies including medical supplies, water, and food rations enough to support staff and families for seven days.	Safety & Security Office, Marketing Department	1 year	X	X	X	X	X	GR	GR	H	H	H	New
EQ-2 Encourage staff awareness by promoting MyHazards.com.	Safety & Security Office, Marketing Department	1 year	X	X	X	X	X	OB	OB	H	L	H	New
EQ-3 Enlist in Earthquake Early	Safety &	As soon as	X	X	X	X	X	OB	OB	H	L	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
Warning System	Security Office	available											
EQ-4 Prepare strategy and install non-structural earthquake measures.	Maintenance Department – Facilities Maintenance	1-2 years	X	X	X	X	X	OB	OB	H	L	H	New
WILDFIRE ACTION ITEMS													
WF-1 Maintain defensible space techniques on the half-acre parcel at the "J" Street Lot and at Omnitrans Headquarters.	Maintenance Department – Facilities Management	Ongoing	X	X	X	X	X	OB	OB	H	L	H	New – started in 2016
WF-2 Work with member agencies to develop evacuation strategies suitable for Omnitrans buses.	Safety & Security Office	1-2 years	X	X	X	X	X	OB	OB	H	L	H	New
FLOODING (INCLUDING DAM FAILURE) ACTION ITEMS													
FLD-1 Conduct asphalt analysis to determine appropriate measures for preservation of	Maintenance Department – Facilities	Design in 2017, bid & build in	X	X	X	X	X	CB	CB	H	H	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
parking lots at Omnitrans HQ. Identify areas for removal & replacement, areas that could be overlaid, areas that need crack fill, and areas that need seal coating and re-striping. A major goal of this project will be to better control water runoff caused by major storms which, at present, overtax the existing storm drain system.	Management	2018											
FLD-2 Install flood sensors at each Omnitrans facility.	Maintenance Department – Facilities Management	5 years	X	X	X	X	X	OB	OB	H	M	H	New
FLD-3 Install cleanouts in storm drains at each Omnitrans facility.	Maintenance Department – Facilities Management	Monthly	X	X	X	X	X	OB	OB	H	L	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
FLD-4 Repair concrete lanes at West Valley Fuel Island and re-slope paved area to improve drainage.	Maintenance Department – Facilities Management	1 year	X	X	X	X	X	CB	CB	H	M	H	New
DROUGHT ACTION ITEMS													
DR-1 Continue using reclaimed water for bus washing.	Maintenance Department – Facilities Management	Ongoing	X	X	X	X	X	OB	OB	H	M	H	New
DR-2 Continue with water conservation techniques including landscape moisture sensors and motion sensor for internal toilets and sinks.	Maintenance Department – Facilities Management	Ongoing	X	X	X	X	X	OB	OB	H	M	H	New – started in 2015
TECHNOLOGICAL & HUMAN-CAUSED ACTION ITEMS													
THC-1 Maintain existing systems and protocols that protect riders and staff against technological	Safety & Security Office, Marketing	Ongoing	X	X	X	X	X	OB	OB	H	L	H	New

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: OB- Operating Budget, GR-Grant, CB-Capital Budget	Planning Mechanism: OB-Operating Budget, CIP, CB-Capital Budget, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
and human-caused disasters.	Department												
THC-2 Integrate technological and human-caused hazards into the Omnitrans disaster exercise schedule.	Safety & Security Office	1-5 years	X	X	X	X	X	GR, OB	GR, OB	H	M	H	New

Plan Maintenance

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 Omnitrans will integrate public participation throughout the plan maintenance process.

Q&A | ELEMENT A: PLANNING PROCESS | A6

Q: A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))

A: See **Method and Scheduling of Plan Implementation** below.

Method and Scheduling of Plan Implementation

The Planning Team that was involved in research and writing of the Plan will also be responsible for implementation. The Planning Team will be led by the Chair of the Planning Team and will be referred to as the Local Mitigation Officer.

	Year 1	Year 2	Year 3	Year 4	Year 5
Monitoring	X	X	X	X	X
Evaluating					X
Internal Planning Team Evaluation	X	X	X	X	X
Cal OES and FEMA Evaluation					X
Updating					X

Monitoring and Implementing the Plan

Plan Adoption

The Omnitrans Board of Directors will be responsible for adopting the Mitigation Plan. This governing body has the authority to promote sound public policy regarding hazards. Once the plan has been adopted, the Local Mitigation Officer will be responsible for submitting it to the State Hazard Mitigation Officer at California Emergency Management Agency (Cal OES). Cal OES will then submit the plan to the Federal Emergency Management Agency (FEMA) for review and approval. This review will address the requirements set forth in 44 C.F.R. Section 201.6 (Local Mitigation Plans). Upon acceptance by FEMA, Omnitrans will gain eligibility for Hazard Mitigation Grant Program funds.

Local Mitigation Officer

Under the direction of the Local Mitigation Officer, the Planning Team will take responsibility for plan maintenance and implementation. The Local Mitigation Officer will facilitate the Planning Team meetings and will assign tasks such as updating and presenting the Plan to the members of the Planning Team. Plan implementation and evaluation will be a shared responsibility among all of the Planning Team members. The Local Mitigation Officer will coordinate with Omnitrans leadership to ensure funding for 5-year updates to Plan as required by FEMA.

The Planning Team will be responsible for coordinating implementation of plan action items and undertaking the formal review process. The Local Mitigation Officer will be authorized to make changes in assignments to the current Planning Team.

The Planning Team will meet no less than quarterly. Meeting dates will be scheduled once the final Planning Team has been established. 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.

Q&A | ELEMENT C. MITIGATION STRATEGY | C6

Q: C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))

A: See **Implementation through Existing Program** below.

Implementation through Existing Programs

Omnitrans addresses statewide planning goals and legislative requirements through Annual Budget, Management Plan, and Service Plan. The Mitigation Plan provides a series of recommendations - many of which are closely related to the goals and objectives of existing planning programs. Omnitrans will implement recommended mitigation action items through existing programs and procedures.

The Omnitrans Safety and Security Department is responsible for adhering to the State of California's 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 are adequate to mitigate or present damage by hazards. This is to ensure that life-safety criteria are met for new construction.

Some of the goals and action items in the Mitigation Plan will be achieved through activities recommended in the Omnitrans Management Plan. Various departments develop the Plan and review it on an annual basis. Upon annual review, the Planning Team will work with the departments to identify areas that the Mitigation Plan action items are consistent with Management Plan goals and integrate them where appropriate.

Upon FEMA approval, the Planning Team will begin the process of incorporating existing planning mechanisms. The meetings of the Planning Team will provide an opportunity for Planning Team members to report back on the progress made on the integration of mitigation planning elements into planning documents and procedures.

Economic Analysis of Mitigation Projects

FEMA's approach to identify the costs and benefits associated with 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 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 Planning Team will use a FEMA-approved benefit/cost analysis approach to identify and prioritize mitigation action items. For other projects and funding sources, the Planning Team will use other approaches to understand the costs and benefits of each action item and develop a prioritized list.

The "benefit", "cost", and overall "priority" of each mitigation action item was included in the Mitigation Actions Matrix located in Part III: Mitigation Strategies. A more technical assessment will be required in the event grant funding is pursued through the Hazard Mitigation Grant Program. FEMA Benefit-Cost Analysis Guidelines are discussed below.

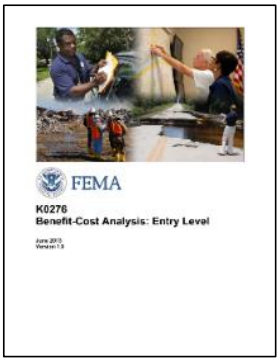
FEMA Benefit-Cost Analysis Guidelines

The Stafford Act authorizes the President to establish a program to provide technical and financial assistance to state and local governments to assist in the implementation of hazard mitigation measures that are cost effective and designed to substantially reduce injuries, loss of life, hardship, or the risk of future damage and destruction of property. To evaluate proposed hazard mitigation projects prior to funding FEMA requires a Benefit-Cost Analysis (BCA) to validate cost effectiveness. BCA is the method by which the future benefits of a mitigation project are estimated and compared to its cost. The end result is a benefit-cost ratio (BCR), which is derived from a project's total net benefits divided by its total project cost. The BCR is a numerical expression of the cost effectiveness of a project. A project is considered to be cost effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs.

Although the preparation of a BCA is a technical process, FEMA has developed software, written materials, and training to support the effort and assist with estimating the expected future benefits over the useful life of a retrofit project. It is imperative to conduct a BCA early in the project development process to ensure the likelihood of meeting the cost-effective eligibility requirement in the Stafford Act.

The BCA program consists of guidelines, methodologies and software modules for a range of major natural hazards including:

- ✓ Flood (Riverine, Coastal Zone A, Coastal Zone V)
- ✓ Hurricane Wind
- ✓ Hurricane Safe Room
- ✓ Damage-Frequency Assessment
- ✓ Tornado Safe Room
- ✓ Earthquake
- ✓ Wildfire



The BCA program provides up to date program data, up to date default and standard values, user manuals and training. Overall, the program makes it easier for users and evaluators to conduct and review BCAs and to address multiple buildings and hazards in a single BCA module run.

Q&A | ELEMENT A: PLANNING PROCESS | A6

Q: A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))

A: See **Evaluating and Updating the Plan** below.

Evaluating and Updating the Plan

Formal Review Process

The Mitigation Plan will be evaluated on a quarterly 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 agencies and organizations participating in plan evaluation. The Local Mitigation Officer or designee will be responsible for contacting the Planning Team members and organizing the annual meeting. Planning Team members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the Plan.

The Planning Team will review the goals and action items to determine their relevance to changing situations in Omnitrans, as well as changes in State or Federal policy, and to ensure they are addressing current and expected conditions. The Planning 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 Local Mitigation Officer will assign the duty of updating the Plan to one or more of the Planning Team members. The designated Planning Team members will have three months to make appropriate changes to the Plan before submitting it to the Planning Team members. The Planning Team will also notify all holders of the Omnitrans plan when changes have been made. Every five years the updated plan will be submitted to the State Hazard Mitigation Officer at the California Office of Emergency Services and the Federal Emergency Management Agency for review.

At each of the quarterly Planning Team meetings, the Local Mitigation Officer will facilitate a discussion on each section of the FEMA-approved Plan:

Planning Process – Update as necessary, including regulatory changes.

Risk Assessment - Determine if this information should be updated or modified, given any new available data.

Mitigation Strategies - Review the goals and action items to determine their relevance to changing situations in Omnitrans, as well as changes in State or Federal policy, and to ensure they are addressing current and expected conditions. Most importantly, is the thorough review of the Mitigation Action Matrix. 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.

Mitigation Action Item	Coordinating Agency	Timeline	Goal: Protect Life and Property	Goal: Public Awareness	Goal: Natural Systems	Goal: Emergency Services	Goal: Partnerships and Implementation	Funding Source: GF- General Fund, GR-Grant	Planning Mechanism: GP-General Plan, CIP, GF-General Fund, GR-Grant	Benefit: L-Low, M-Medium, H-High	Cost: L-Low, M-Medium, H-High	Priority: L-Low, M-Medium, H-High	2016 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes
MULTI-HAZARD ACTION ITEMS													
MH-1													
EARTHQUAKE ACTION ITEMS													
EQ-1													

The Local Mitigation Officer will assign the duty of updating the Plan to one or more of the Planning Team members. The designated Planning Team members will have three months to make appropriate changes to the Plan before submitting it to the Planning Team members. The Planning Team will also notify all holders of the Omnitrans plan when changes have been made. Every five years the updated plan will be submitted to the State Hazard Mitigation Officer at the California Office of Emergency Services and the Federal Emergency Management Agency for review and approval.

Q&A | ELEMENT A: PLANNING PROCESS | A5

Q: A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))

A: See **Continued Public Involvement** below.

Continued Public Involvement

Omnitrans is dedicated to involving the public directly in the continual review and updates to the Mitigation Plan. Copies of the plan will be made available at Omnitrans Headquarters and on the Omnitrans website. The existence and location of these copies will be publicized in Omnitrans newsletters and on the website. This site will also contain an email address and phone number where people can direct their comments and concerns. A public meeting will also be held after each evaluation or when deemed necessary by the Planning Team. The meetings will provide the public a forum in which they can express their concerns, opinions, or ideas about the Plan.

The Local Mitigation Officer will be responsible for using Omnitrans resources to publicize the annual public meetings and maintain public involvement through the public access channel, web page, and newspapers.

PART IV: APPENDIX

General Hazard Overviews

Earthquake Hazards

Measuring and Describing Earthquakes

An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. They usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can further amplify ground motions. The severity of these effects is dependent on the amount of energy released from the fault or epicenter. One way to express an earthquake's severity is to compare its acceleration to the normal acceleration due to gravity. The acceleration due to gravity is often called "g". A ground motion with a peak ground acceleration of 100%g is very severe. Peak Ground Acceleration (PGA) is a measure of the strength of ground motion. PGA is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability (10%, 5%, or 2%) of being exceeded in 50 years. These ground motion values are used for reference in construction design for earthquake resistance. The ground motion values can also be used to assess relative hazard between sites, when making economic and safety decisions.

When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter.

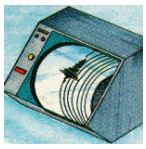
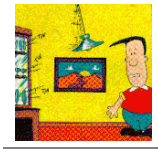
Another tool used to describe earthquake intensity is the Magnitude Scale. The Magnitude Scale is sometimes referred to as the Richter Scale. The two are similar but not exactly the same. The Magnitude Scale was devised as a means of rating earthquake strength and is an indirect measure of seismic energy released. The Scale is logarithmic with each one-point increase corresponding to a 10-fold increase in the amplitude of the seismic shock waves generated by the earthquake. In terms of actual energy released, however, each one-point increase on the Richter scale corresponds to about a 32-fold increase in energy released. Therefore, a Magnitude 7 (M7) earthquake is 100 times (10 X 10) more powerful than a M5 earthquake and releases 1,024 times (32 X 32) the energy.

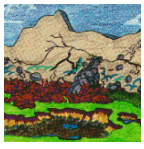
An earthquake generates different types of seismic shock waves that travel outward from the focus or point of rupture on a fault. Seismic waves that travel through the earth's crust are called body waves and are divided into primary (P) and secondary (S) waves. Because P waves move faster (1.7 times) than S waves, they arrive at the seismograph first. By measuring the time delay between arrival of the P and S waves and knowing the distance to the epicenter, seismologists can compute the magnitude for the earthquake.

The duration of an earthquake is related to its magnitude but not in a perfectly strict sense. There are two ways to think about the duration of an earthquake. The first is the length of time it takes for the fault to rupture and the second is the length of time shaking is felt at any given point (e.g. when someone says "I felt it shake for 10 seconds" they are making a statement about the duration of shaking). (Source: www.usgs.gov)

The Modified Mercalli Scale (MMI) is another means for rating earthquakes, but one that attempts to quantify intensity of ground shaking. Intensity under this scale is a function of distance from the epicenter (the closer to the epicenter the greater the intensity), ground acceleration, duration of ground shaking, and degree of structural damage. The Modified Mercalli Intensity Scale below rates the level of severity of an earthquake by the amount of damage and perceived shaking.

Table: Modified Mercalli Intensity Scale

	MMI Value	Description of Shaking Severity	Summary Damage Description Used on 1995 Maps	Full Description
	I			Not Felt
	II			Felt by persons at rest, on upper floors, or favorably placed.
	III			Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
	IV			Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motorcars rock. Windows, dishes, doors rattle. In the upper range of IV, wooden walls and frame creak.
	V	Light	Pictures Move	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clock stop, start, change rate.

	MMI Value	Description of Shaking Severity	Summary Damage Description Used on 1995 Maps	Full Description
	VI	Moderate	Objects Fall	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked.
	VII	Strong	Nonstructural Damage	Difficult to stand. Noticed by drivers of motorcars. Hanging objects quiver. Furniture broken. Damage to masonry, including cracks. Weak chimneys broken at roofline. Fall of plaster, loose bricks, stones, tiles, cornices. Some cracks in masonry C. Small slides and caving in along sand or gravel banks. Concrete irrigation ditches damaged.
	VIII	Very Strong	Moderate Damage	Steering of motorcars affected. Damage to masonry C, partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, and elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Cracks in wet ground and on steep slopes.
	IX	Violent	Heavy damage	General panic. Damage to masonry buildings ranges from collapse to serious damage unless modern design. Wood-frame structures rack, and, if not bolted, shifted off foundations. Underground pipes broken.
	X	Very Violent	Extreme Damage	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land.
	XI			Rails bent greatly. Underground pipelines completely out of services.
	XII			Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.

Earthquake Related Hazards

Ground shaking, landslides, liquefaction, and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to the fault, earthquake magnitude, and the type of earthquake.

Ground Shaking

Ground shaking is the motion felt on the earth's surface caused by seismic waves generated by the earthquake. It is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the epicenter (where the earthquake originates). Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock.

Seismic activity along nearby or more distant fault zones are likely to cause ground shaking within the Omnitrans service area.

Earthquake-Induced Landslide Potential

Generally, these types of failures consist of rock falls, disrupted soil slides, rock slides, soil lateral spreads, soil slumps, soil block slides, and soil avalanches. Areas having the potential for earthquake-induced landslides generally occur in areas of previous landslide movement, or where local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements.

Liquefaction

Liquefaction occurs when ground shaking causes wet granular soils to change from a solid state to a liquid state. This results in the loss of soil strength and the soil's ability to support weight. Buildings and their occupants are at risk when the ground can no longer support these structures. Liquefaction generally occurs during significant earthquake activity, and structures located on soils such as silt or sand may experience significant damage during an earthquake due to the instability of structural foundations and the moving earth. Many communities in Southern California are built on ancient river bottoms and have sandy soil. In some cases, the soil may be subject to liquefaction, depending on the depth of the water table.

Wildfire Hazards

Definition

A wildfire is an uncontrolled fire spreading through vegetative fuels and exposing or possibly consuming structures. They often begin unnoticed and spread quickly. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires. A wildland fire is a wildfire in an area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities. A wildland/urban interface fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

People start more than 80 percent of wildfires, usually as debris burns, arson, or carelessness. Lightning strikes are the next leading cause of wildfires. Wildfire behavior is based on three primary factors: fuel, topography, and weather. The type, and amount of fuel, as well as its burning qualities and level of moisture affect wildfire potential and behavior. The continuity of fuels, expressed in both horizontal and vertical components is also a determinant of wildfire potential and behavior. Topography is important because it affects the movement of air (and thus the fire) over the ground surface. The slope and shape of terrain can change the speed at which the fire travels, and the ability of firefighters to reach and extinguish the fire. Weather affects the probability of wildfire and has a significant effect on its behavior. Temperature, humidity and wind (both short and long term) affect the severity and duration of wildfires. San Bernardino County's topography, consisting of semi-arid plains and rolling highlands, when fueled by shrub overgrowth, occasional Santa Ana winds and high temperatures, creates an ever-present threat of wildland fire. Extreme weather conditions such as high temperature, low humidity, and/or winds of extraordinary force may cause an ordinary fire to expand into one of massive proportions.

For thousands of years, fires have been a natural part of the ecosystem in Southern California. However, wildfires present a substantial hazard to life and property in communities built within or adjacent to hillsides and mountainous areas. There is a huge potential for losses due to wildland/urban interface fires in Southern California.

Wildfire Threat

In urban areas, the effectiveness of fire protection efforts is based upon several factors, including the age of structures, efficiency of circulation routes that ultimately affect response times and availability of water resources to combat fires. In wildland areas, taking the proper precautions, such as the use of fire resistant building materials, a pro-active fire Prevention inspection program, and the development of defensible space around structures where combustible vegetation is controlled, can protect developed lands from fires and, therefore, reduce the potential loss of life and property.

Other factors contribute to the severity of fires including weather and winds. Specifically, winds commonly referred to as Santa Ana winds, which occur during fire season (typically from June to the first significant rain in November) are particularly significant. Such "fire weather" is characterized by several days of hot dry weather and high winds, resulting in low fuel moisture in vegetation.

California experiences large, destructive wildland fires almost every year, and San Bernardino County is no exception. Wildland fires have occurred within the County, particularly in the fall of the year, ranging from small, localized fires to disastrous fires covering thousands of acres. The most severe fire protection problem in the area is wildland fire during Santa Ana wind conditions.

The 2003 Southern California Fires

The fall of 2003 marked the most destructive wildfire season in California history. In a ten-day period, 12 separate fires raged across Southern California in Los Angeles, Riverside, and San Bernardino, San Diego and Ventura counties. The massive "Cedar Fire" in San Diego County alone consumed 2,800 homes and burned over a quarter of a million acres.

In October 2003, Southern California experienced the most devastating wildland fire disaster in state history. According to the Governor's Blue Ribbon Panel Fire Commission Report (2004), over 739,597 acres burned; 3,631 homes, 36 commercial properties, and 1,169 outbuildings were destroyed; 246 people were injured; and 24 people died, including one firefighter. At the height of the siege, 15,631 personnel were assigned to fight the fires.

The 2007 Southern California Fires

In late October 2007, Southern California experienced an unusually severe fire weather event characterized by intense, dry, gusty Santa Ana winds. This weather event drove a series of destructive wildfires that took a devastating toll on people, property, natural resources, and infrastructure. Although some fires burned into early November, the heaviest damage occurred during the first three days of the siege when the winds were the strongest.

According to CAL FIRE, during this siege, 17 people lost their lives, ten were killed by the fires outright, three were killed while evacuating, four died from other fire siege related causes, and 140 firefighters, and an unknown number of civilians were injured. A total of 3,069 homes and other buildings were destroyed, and hundreds more were damaged. Hundreds of thousands of people were evacuated at the height of the siege. The fires burned over half a million acres, including populated areas, wildlife habitat and watershed. Portions of the electrical power distribution network, telecommunications systems, and even some community water sources were destroyed. Transportation was disrupted over a large area for several days, including numerous road closures. Both the Governor of California and the President of the United States personally toured the ongoing fires. Governor Schwarzenegger proclaimed a state of

emergency in seven counties before the end of the first day. President Bush quickly declared a major disaster. While the total impact of the 2007 fire siege was less than the disastrous fires of 2003, it was unquestionably one of the most devastating wildfire events in the history of California.

Wildfire Characteristics

There are three categories of wildland/urban interface fire: The classic wildland/urban interface exists where well-defined urban and suburban development presses up against open expanses of wildland areas; the mixed wildland/urban interface is characterized by isolated homes, subdivisions, and small communities situated predominantly in wildland settings. The occluded wildland/urban interface exists where islands of wildland vegetation occur inside a largely urbanized area. Certain conditions must be present for significant interface fires to occur. The most common conditions include: hot, dry and windy weather; the inability of fire protection forces to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; and a large fuel load (dense vegetation). Once a fire has started, several conditions influence its behavior, including fuel topography, weather, drought, and development.

Southern California has two distinct areas of risk for wildland fire. The foothills and lower mountain areas are most often covered with scrub brush or chaparral. The higher elevations of mountains also have heavily forested terrain. The lower elevations covered with chaparral create one type of exposure.

The higher elevations of Southern California's mountains are typically heavily forested. The magnitude of the 2003 fires is the result of three primary factors: (1) severe drought, accompanied by a series of storms that produce thousands of lightning strikes and windy conditions; (2) an infestation of bark beetles that has killed thousands of mature trees; and (3) the effects of wildfire suppression over the past century that has led to buildup of brush and small diameter trees in the forests.

The Interface

One challenge Southern California faces regarding the wildfire hazard is from the increasing number of houses being built on the urban/wildland interface. Every year the growing population expands further into the hills and mountains, including forest lands. The increased "interface" between urban/suburban areas, and the open spaces created by this expansion, produces a significant increase in threats to life and property from fires, and pushes existing fire protection systems beyond original or current design and capability. Property owners in the interface are not aware of the problems and fire hazards or risks on their own property. Furthermore, human activities increase the incidence of fire ignition and potential damage.

Fuel

Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is classified by volume and by type. Volume is described in terms of "fuel loading," or the amount of available vegetative fuel.

The type of fuel also influences wildfire. Chaparral is a primary fuel of Southern California wildfires. Chaparral habitat ranges in elevation from near sea level to over 5,000 feet in Southern California. Chaparral communities experience long dry summers and receive most of their annual precipitation from winter rains. Although chaparral is often considered as a single

species, there are two distinct types; hard chaparral and soft chaparral. Within these two types are dozens of different plants, each with its own particular characteristics.

An important element in understanding the danger of wildfire is the availability of diverse fuels in the landscape, such as natural vegetation, manmade structures and combustible materials. A house surrounded by brushy growth rather than cleared space allows for greater continuity of fuel and increases the fire's ability to spread. After decades of fire suppression "dog-hair" thickets have accumulated, which enable high intensity fires to flare and spread rapidly.

Topography

Topography influences the movement of air, thereby directing a fire course. For example, if the percentage of uphill slope doubles, the rate of spread in wildfire will likely double. Gulches and canyons can funnel air and act as chimneys, which intensify fire behavior and cause the fire to spread faster. Solar heating of dry, south-facing slopes produces up slope drafts that can complicate fire behavior. Unfortunately, hillsides with hazardous topographic characteristics are also desirable residential areas in many communities. This underscores the need for wildfire hazard mitigation and increased education and outreach to homeowners living in interface areas.

Weather

Weather patterns combined with certain geographic locations can create a favorable climate for wildfire activity. Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High-risk areas in Southern California share a hot, dry season in late summer and early fall when high temperatures and low humidity favor fire activity. The so-called "Santa Ana" winds, which are heated by compression as they flow down to Southern California from Utah, create a particularly high risk, as they can rapidly spread what might otherwise be a small fire.

Drought

Recent concerns about the effects of climate change, particularly drought, are contributing to concerns about wildfire vulnerability. The term 'drought' is applied to a period in which an unusual scarcity of rain causes a serious hydrological imbalance. Unusually dry winters, or significantly less rainfall than normal, can lead to relatively drier conditions and leave reservoirs and water tables lower. Drought leads to problems with irrigation and contributes to additional fires, or increased difficulty in fighting fires.

Development

Growth and development in scrubland and forested areas is increasing the number of human-caused structures in Southern California interface areas. Wildfire affects development, yet development can also influence wildfire. Owners often prefer homes that are private with scenic views, nestled in vegetation, and use natural materials. A private setting is usually far from public roads, or hidden behind a narrow, curving driveway. These conditions, however, make evacuation and firefighting difficult. The scenic views found along mountain ridges can also mean areas of dangerous topography. Natural vegetation contributes to scenic beauty, but it may also provide a ready trail of fuel leading a fire directly to the combustible fuels of the home itself.

Flood Hazards

Flood Terminology

Floodplain

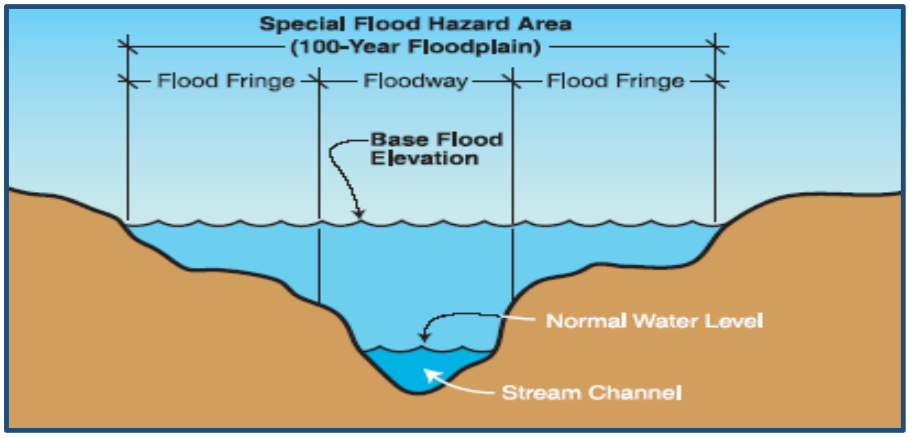
A floodplain is a land area adjacent to a river, stream, lake, estuary, or other water body that is subject to flooding. This area, if left undisturbed, acts to store excess flood water. The floodplain is made up of two sections: the floodway and the flood fringe.

100-Year Flood

The 100-year flooding event is the flood having a one percent chance of being equaled or exceeded in magnitude in any given year. Contrary to popular belief, it is not a flood occurring once every 100 years. The 100-year floodplain is the area adjoining a river, stream, or watercourse covered by water in the event of a 100-year flood. Schematic: Floodplain and Floodway shows the relationship of the floodplain and the floodway.

The 100-year flooding event is the flood having a 1% chance of being equaled or exceeded in magnitude in any given year. **Contrary to popular belief, it is not a flood occurring once every 100 years.**

Figure: Floodplain and Floodway
(Source: FEMA How-To-Guide Assessing Hazards)



Floodway

The floodway is one of two main sections that make up the floodplain. Floodways are defined for regulatory purposes. Unlike floodplains, floodways do not reflect a recognizable geologic feature. For NFIP purposes, floodways are defined as the channel of a river or stream, and the overbank areas adjacent to the channel. The floodway carries the bulk of the flood water downstream and is usually the area where water velocities and forces are the greatest. NFIP regulations require that the floodway be kept open and free from development or other structures that would obstruct or divert flood flows onto other properties.

Base Flood Elevation (BFE)

The term "Base Flood Elevation" refers to the elevation (normally measured in feet above sea level) that the base flood is expected to reach. Base flood elevations can be set at levels other than the 100-year flood. Some communities use higher frequency flood events as their base flood elevation for certain activities, while using lower frequency events for others. For example, for the purpose of storm water management, a 25-year flood event might serve as the base flood elevation; while the 500-year flood event serves as base flood elevation for the tie down of mobile homes. The regulations of the NFIP focus on development in the 100-year floodplain.

Types of Flooding

Two types of flooding primarily affect the region: slow-rise or flash flooding. Slow-rise floods may be preceded by a warning period of hours or days. Evacuation and sandbagging for slow-rise floods have often effectively lessened flood related damage. Conversely, flash floods are most difficult to prepare for, due to extremely limited, if any, advance warning and preparation time. Unlike most of California, the areas of San Bernardino County that are subject to slow-rise flooding are not associated with overflowing rivers, aqueducts, canals or lakes. Slow-rise flooding is usually the result of one or a combination of the following factors: extremely heavy rainfall, saturated soil, area recently burned in wild fires with inadequate new ground cover growth, or heavy rainfall with runoff from melting mountain snow.

Urban Flooding

As land is converted from fields or woodlands to roads and parking lots, it loses its ability to absorb rainfall. Urbanization of a watershed changes the hydrologic systems of the basin. Heavy rainfall collects and flows faster on impervious concrete and asphalt surfaces. The water moves from the clouds, to the ground, and into streams at a much faster rate in urban areas. Adding these elements to the hydrological systems can result in flood waters that rise very rapidly and peak with violent force.

The Omnitrans service area has a high concentration of impermeable surfaces that either collect water, or concentrate the flow of water in unnatural channels. During periods of urban flooding, streets can become swift moving rivers and basements can fill with water. Storm drains often back up with vegetative debris causing additional, localized flooding.

Riverine Flooding

Riverine flooding is the overbank flooding of rivers and streams. The natural processes of riverine flooding add sediment and nutrients to fertile floodplain areas. Flooding in large river systems typically results from large-scale weather systems that generate prolonged rainfall over a wide geographic area, causing flooding in hundreds of smaller streams, which then drain into the major rivers. Shallow area flooding is a special type of riverine flooding. FEMA defines shallow flood hazards as areas that are inundated by the 100-year flood with flood depths of only one to three feet. These areas are generally flooded by low velocity sheet flows of water.

Definitions of FEMA Flood Zone Designations

Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

Moderate to Low Risk Areas

In communities that participate in the NFIP, flood insurance is available to all property owners and renters in these zones:

ZONE	DESCRIPTION
B and X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C and X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

High Risk Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

ZONE	DESCRIPTION
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
A1-30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.

ZONE	DESCRIPTION
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

Undetermined Risk Areas

ZONE	DESCRIPTION
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

Drought Hazards

Hazard Characteristics

Definition

Drought is defined as a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector. Drought should be considered relative to some long-term average condition of balance between precipitation and evapotranspiration (i.e., evaporation + transpiration) in a particular area, a condition often perceived as "normal". It is also related to the timing (e.g., principal season of occurrence, delays in the start of the rainy season, occurrence of rains in relation to principal crop growth stages) and the effectiveness of the rains (e.g., rainfall intensity, number of rainfall events). Other climatic factors such as high temperature, high wind, and low relative humidity are often associated with it in many regions of the world and can significantly aggravate its severity. Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply. Human beings often exacerbate the impact of drought. Recent droughts in both developing and developed countries and the resulting economic and environmental impacts and personal hardships have underscored the vulnerability of all societies to this "natural" hazard.

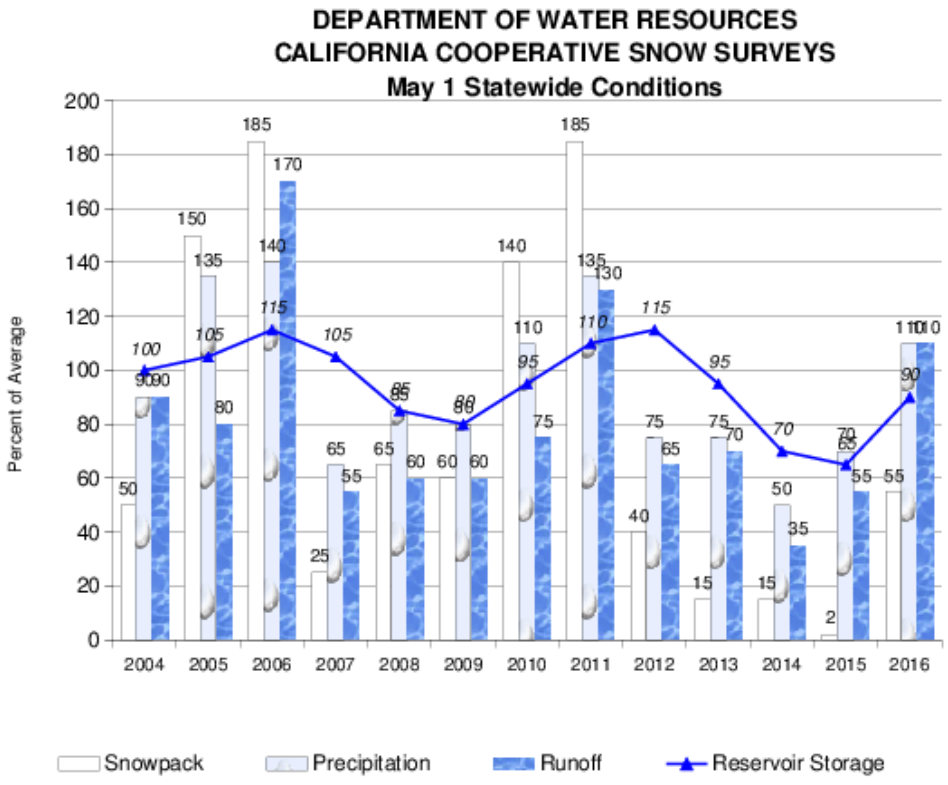
One dry year does not normally constitute a drought in California, but serves as a reminder of the need to plan for droughts. California's extensive system of water supply infrastructure - its reservoirs, groundwater basins, and inter-regional conveyance facilities - mitigates the effect of short-term dry periods for most water users. Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users having a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.

Many governmental utilities, the National Oceanic and Atmospheric Administration (NOAA), and the California Department of Water Resources, as well as academic institutions such as the University of Nebraska-Lincoln's National Drought Mitigation Center and the National Drought Mitigation Center, generally agree that there is no clear definition of drought. Drought is highly variable depending on location.

General Situation

Figure: Water Supply Conditions below illustrates several indicators commonly used to evaluate California water conditions. The percent of average values are determined for measurement sites and reservoirs in each of the State's ten major hydrologic regions. Snow pack is an important indicator of runoff from Sierra Nevada watersheds, the source of much of California's developed water supply.

Figure: Water Supply Conditions
(Source: California Department of Water Resources)



Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a multiyear period. There is no universal definition of when a drought begins or ends.

Types of Drought

There are four different ways that drought can be defined:
(1) Meteorological - a measure of departure of precipitation from normal. Due to climatic differences what is considered a drought in one location may not be a drought in another location.
(2) Agricultural - refers to a situation when the amount of moisture in the soil no longer meets the needs of a particular crop.
(3) Hydrological - occurs when surface and subsurface water supplies are below normal.
(4) Socioeconomic - refers to the situation that occurs when physical water shortage begins to affect people.

Historical California Droughts

A significant drought, reported by many of the ranchers in southern California, occurred in 1860. The great drought of the 1930s, coined the "Dust Bowl," was geographically centered in the Great Plains yet ultimately affected water shortages in California. The drought conditions in the plains resulted in a large influx of people to the west coast. Approximately 350,000 people from Arkansas and Oklahoma immigrated mainly to the Great Valley of California. As more people moved into California, including San Bernardino County increases in intensive agriculture led to overuse of the Santa Ana River watershed and groundwater resulting in regional water shortages. Several bills have been introduced into Congress in an effort to mitigate the effects of drought. In 1998, President Clinton signed into law the National Drought Policy Act, which called for the development of a national drought policy or framework that integrates actions and responsibilities among all levels of government. In addition, it established the National Drought Policy Commission to provide advice and recommendations on the creation of an integrated federal policy. The most recent bill introduced into Congress was the National Drought Preparedness Act of 2003, which established a comprehensive national drought policy and statutorily authorized a lead federal utility for drought assistance. Currently there exists only an ad-hoc response approach to drought unlike other disasters (e.g., hurricanes, floods, and tornadoes) which are under the purview of FEMA.

Droughts exceeding three years are relatively rare in Northern California, the source of much of the State's developed water supply. The 1929-34 droughts established the criteria commonly used in designing storage capacity and yield of large Northern California reservoirs. The driest single year of California's measured hydrologic record was 1977. According to USGS, California's most recent multi-year droughts occurred between 1987-92, 2006-2010 and 2012-2016.

The Long-term Climatic Viewpoint

The historical record of California hydrology is brief in comparison to geologically modern climatic conditions. The following sampling of changes in climatic conditions over time helps put California's twentieth century droughts into perspective. Most of the dates shown below are necessarily approximations.

Not only must the climatic conditions be inferred from indirect evidence, but the onset or extent of changed conditions may vary with geographic location. Readers interested in the subject of paleo-climatology are encouraged to seek out the extensive body of popular and scientific literature on this subject.

Past California Droughts

The historical record of California hydrology is brief in comparison to the time period of geologically modern climatic conditions. The following samplings of changes in climatic and hydrologic conditions help put California's twentieth century droughts into perspective, by illustrating the variability of possible conditions. Most of the dates shown below are approximations, since the dates must be inferred from indirect sources.

11,000 years before present

Beginning of Holocene Epoch- Recent time, the time since the end of the last major glacial epoch.

6,000 years before present

Approximate time when trees were growing in areas now submerged by Lake Tahoe. Lake levels were lower then, suggesting a drier climate.

900-1300 A.D. (Approximate)

The Medieval Warm Period, a time of warmer global average temperatures. The Arctic ice pack receded, allowing Norse settlement of Greenland and Iceland. The Anasazi civilization in the Southwest flourished, its irrigation systems supported by monsoonal rains.

1300-1800 A.D. (approximate)

The Little Ice Age, a time of colder average temperatures. Norse colonies in Greenland failed near the start of the time period, as conditions became too cold to support agriculture and livestock grazing. The Anasazi culture began to decline about 1300 and had vanished by 1600, attributed in part to drought conditions that made agriculture infeasible.

Mid - 1500s A.D.

Severe, sustained drought throughout much of the continental U.S., according to dendrochronology. Drought suggested as a contributing factor in the failure of European colonies at Parris Island, South Carolina and Roanoke Island, North Carolina.

1850s A.D.

Sporadic measurements of California precipitation began.

1890s A.D.

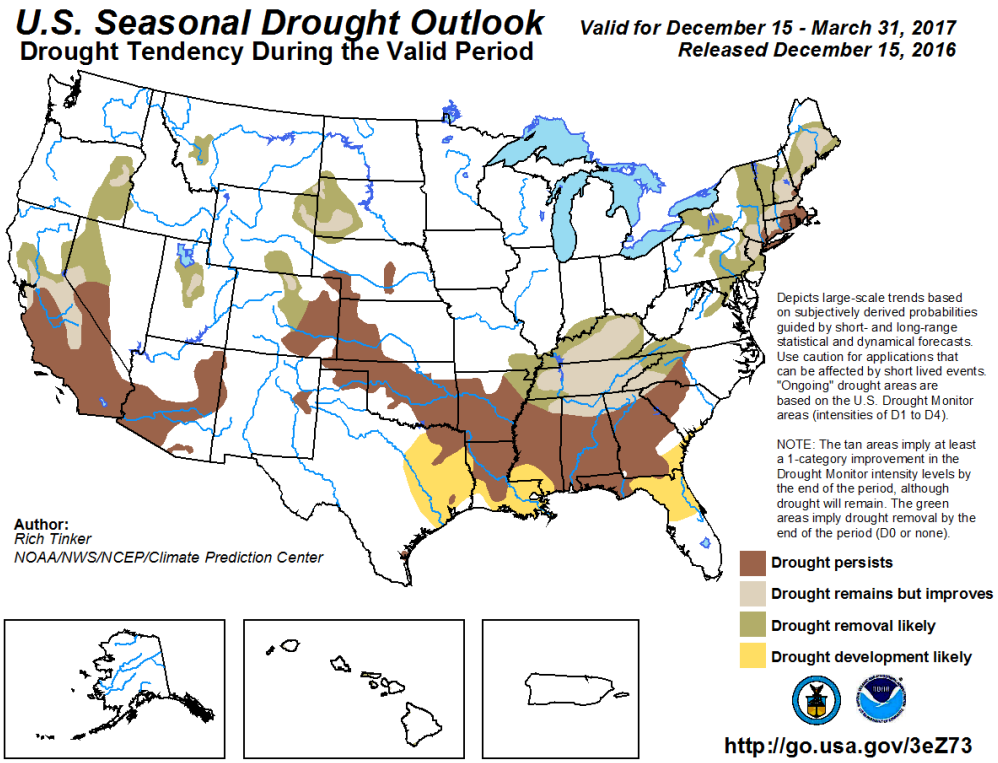
Long-term stream flow measurements began at a few California locations.

Palmer Drought Severity Index

Of the many varied indexes used to measure drought, the "Palmer Drought Severity Index" (PDSI) is the most commonly used drought index in the United States. Developed by meteorologist Wayne Palmer, the PDSI is used to measure dryness based on recent temperature compared to the amount of precipitation. It utilizes a number range, 0 as normal, drought shown in terms of minus numbers, and wetness shown in positive numbers. The PDSI is most effective at analyzing long-range drought forecasts or predications. Thus, the PDSI is very effective at evaluation trends in the severity and frequency of prolonged periods of drought, and conversely wet weather. The National Oceanic and Atmospheric Administration (NOAA) publish weekly Palmer maps, which are also used by other scientists to analyze the long-term trends associated with global warming and how this has affected drought conditions.

The following map is the most current snapshot of drought conditions across the U.S. It is provided by NOAA's Climate Prediction Center.

Map: U.S. Seasonal Drought Outlook
(Source: NOAA Climate Prediction Center)



Attachments

FEMA Letter of Approval

Planning Team Staff Report

Board of Directors Resolution

Planning Team Sign-In Sheets

Omnitrans
Hazard Mitigation Planning Team Meeting #1
November 2, 2016

Name	Department
CAROLYN HARSHMAN	EMERGENCY PLANNING CONSULTANTS
Dylan Firth	Security
Terry Morocco	HR/SRC
Barbara Erwin	HR/SRC
Mark Crosby	HR/SRC

Omnitrans
Hazard Mitigation Planning Team Meeting #2
January 16, 2017

Name	Department
CAROLYN HARSHMAN	EMERGENCY PLANNING CONSULTANTS
Dylan Firth	Security
Mark Crosby	HR/SRC
Terry Morocco	HR/SRC
Barbara Erwin	HR/SRC

Web Postings and Notices