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Attendees

Name	Agency
Dale Carnathan	Ventura County Sheriff's OES
Anna Davis	AECOM
Dan Klemann	Ventura County Resource Management Agency, Planning Division
Howard De Leon	Ventura County Department of Public Works, Transportation Department
Scott Holder	Ventura County Watershed Protection District
Phil Raba	Ventura County Public Works Agency
Jim O'Tousa	Ventura County Public Works Agency
Matt Wyatt	Ventura County Building and Safety Division
Brian Trushinski	Ventura County Watershed Protection District

Items to Discuss

- Draft Hazard Figures

Name	Data Source/Additional Information
Sea-Level Rise Inundation Areas (3 feet and 6 feet)	NOAA, Office for Coastal Management, Digital Coast. Illustrates potential flooding from future sea level rise, calculated from current mean higher high water (the higher of the two high waters of any tidal day). Sea level rise scenarios from three-feet and six-feet above the average highest tides, and the corresponding areas that would be impacted by flooding are shown on the figure.
Extreme Winter Storm Scenario	USGS, Coastal Storm Modeling System (CoSMoS), ARkStorm. A numerical modelling system to predict coastal flooding due to both sea level rise and storms driven by climate change. Sea level along the California coast is expected to rise by as much as 1.7 meters (approximately 6 feet) by 2100. Winter storms can elevate coastal water levels by an additional 5 meters (approximately 16 feet) or more, primarily because of large waves and storm surge (rise in water level caused by low atmospheric pressure and wind). ARkStorm simulates an extreme winter storm event with a recurrence interval of at least 100-years. A team of atmospheric scientists with expertise in west coast storms used information from two powerful west coast storms in 1969 and 1986 to simulate this extreme winter storm event scenario.
Tsunami Inundation Areas	CalEMA, Earthquake and Tsunami Program. Tsunami Inundation Map, February 2009 (CalEMA, CGS, USC). CalEMA and CGS both confirmed there was no change to the 2009 model. New information on the Pitas Point/Ventura faults was published in 2014, and has recently made news headlines. CGS has been studying whether this new information about these faults would influence the current tsunami hazard maps. The inside scoop from Mark Johnson (Earthquake and Tsunami Program, CalEMA) and Rick Wilson (CGS) was that they took this new information into consideration and that it did not affect the 2009 tsunami inundation line.
Ground Shaking	California Geological Survey (CGS), Earthquake Shaking Potential for California, Map Sheet 48 (Revised 2008).



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Name	Data Source/Additional Information
Potential	http://www.consrv.ca.gov/cgs/information/publications/ms/Documents/MS48_revised.pdf This model shows the expected relative intensity of ground shaking and damage in California from anticipated future earthquakes. The shaking potential is calculated as the level of ground motion that has a 2% chance of being exceeded in 50 years. Earthquake shaking potential is calculated considering historic earthquakes, slip rates on major faults and deformation throughout the region, and the potential for amplification of seismic waves by near-surface geologic materials. Low frequency shaking potential is shown on the figure (shaking at 1.0 second periods)—local soil conditions have a greater effect on low frequency shaking.
Liquefaction Areas	California Geological Survey (CGS), Seismic Hazard Zones, July 2003 Derived from CGS efforts to identify earthquake-triggered ground failures as required by the Seismic Hazards Mapping Act. Liquefaction represents areas where historical occurrence of liquefaction exists; or where local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation would be required.
Special Flood Hazard Areas	FEMA. Ventura County DFIRM, version 03/19/2015.
Areas with Reduced Flood Risk Due to Levees	FEMA. Ventura County DFIRM, version 03/19/2015.
Dam Failure Inundation Areas	CalOES. Dam Inundation distribution DVD, version 11-3. Obtained May 6, 2015.
Recent Wildfire Perimeters	California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (CDF FRAP). Fire perimeters, version 13_2. Fires over 1000 acres for the past three years are shown on the figure.
Wildfire Hazard Severity Zones	California Department of Forestry and Fire Protection, Fire and Resource Assessment Program Fire Hazard Severity Zones within State Responsibility Areas (SRA), and Local Responsibility Areas (LRA). SRA: Adopted 11/2007. LRA: Recommended 10/2010.

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- CRS Floodplain Management Step 7, Floodplain Management Category Activities (*CRS Coordinator's Manual 510-20 Edition: 2013*)

Floodplain Management Category Activities

1. **Preventive** activities keep flood problems from getting worse. The use and development of flood-prone areas is limited through planning, land acquisition, or regulation. They are usually administered by building, zoning, planning, and/or code enforcement offices.

- Floodplain mapping and data Planning and zoning
- Open space preservation Stormwater management
- Floodplain regulations Drainage system maintenance
- Erosion setbacks Building codes

2. **Property protection** activities are usually undertaken by property owners on a building by building or parcel basis.

- Relocation
- Retrofitting
- Acquisition
- Sewer backup protection
- Building elevation
- Insurance

3. **Natural resource protection** activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies, primarily parks, recreation, or conservation agencies or organizations.

- Wetlands protection Water quality improvement
- Erosion and sediment control Coastal barrier protection
- Natural area preservation Environmental corridors
- Natural area restoration Natural functions protection

4. **Emergency services** measures are taken during an emergency to minimize its impact. These measures are usually the responsibility of city or county emergency management staff and the owners or operators of major or critical facilities.

- Hazard threat recognition Critical facilities protection
- Hazard warning Health and safety maintenance
- Hazard response operations Post-disaster mitigation actions

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Floodplain Management Category Activities

5. **Structural projects** keep flood waters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.

- Reservoirs
- Channel modifications
- Levees/floodwalls
- Storm drain improvements
- Diversions

6. **Public information** activities advise property owners, potential property owners, and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. They are usually implemented by a public information office.

- Map information
- Library
- Outreach projects
- Technical assistance
- Real estate disclosure
- Environmental education