



City of Los Angeles
Hazard Mitigation Plan Update
Steering Committee Meeting
Tuesday, July 25, 2023
1:00 – 2:30 p.m.

AGENDA

[Click here to join the meeting](#)

Welcome - Jon Brown, Division Chief | Steering Committee Chairperson

Old Business - Jon Brown

- Acceptance of HMP Steering Committee Meeting #2 summary

New Business - Jon Brown (*needed – motion, second, and consensus for each action*)

- Acceptance of goals
- Acceptance of objectives

Public Comment #1 – (limited to current HMP project and/or hazard mitigation) – limit 3 minutes

Hazard Datasets and Scenarios

- Discuss and accept

Project Coordination – Bart Spencer, Tetra Tech

- Planning Process
- Timeline

Public Engagement – Megan Brotherton, Tetra Tech

- Update

Public Comment #2 – (limited to current HMP project and/or hazard mitigation) – limit 3 minutes

Requests or Comments from Committee Members

Adjourn



City of Los Angeles
Meeting Summary



Purpose of Meeting:	City of Los Angeles Hazard Mitigation Plan Steering Committee Meeting #2
Location of Meeting:	Virtual: Teams
Date of Meeting:	06.20.2023

Steering Committee Members and Alternates:

Organization	Member	Alternate
American Red Cross	<input checked="" type="checkbox"/> Francisca Herrera , Disaster Cycle Services	None
Caltech	<input checked="" type="checkbox"/> Dr. Monica Kohler , Research Professor of Mechanical and Civil Engineering	None
City of Los Angeles Community for Investment in Families	<input checked="" type="checkbox"/> Ruth Rodrigues , Senior Management Analyst	None
City of Los Angeles Department of Building and Safety	<input checked="" type="checkbox"/> Lisa Yancey , Chief Inspector	None
City of Los Angeles Department of Disability	<input checked="" type="checkbox"/> Deisy Gonzalez , Emergency Management Coordinator I	None
City of Los Angeles Department of General Services	<input checked="" type="checkbox"/> Howard Bein , Emergency Planning Unit	None
City of Los Angeles Department of Neighborhood Empowerment	<input type="checkbox"/> John Darnell , Neighborhood Empowerment Advocate	None
City of Los Angeles Department of Public Works	<input type="checkbox"/> Robert Kadomatsu , Chief Management Analysis <input checked="" type="checkbox"/> Samson Wong , Civil Engineer Associate <input type="checkbox"/> Raul Virgen , GIS Chief <input type="checkbox"/> Thein Phan , Environmental Engineering Associate	None
City of Los Angeles Department of Recreation and Parks	<input type="checkbox"/> RAP Duty Officer	None
City of Los Angeles Department of Transportation	<input type="checkbox"/> Paul Weinberg , Emergency Management Coordinator I	<input type="checkbox"/> Vilma Boada-Tellez , Emergency Management Coordinator I
City of Los Angeles Department of Water and Power	<input type="checkbox"/> Patrick Munongo , Emergency Management Coordinator I <input type="checkbox"/> Yidnekachew Wubishet , Civil Engineer Associate <input checked="" type="checkbox"/> Cliff Plumb , Engineering Geologist	None
City of Los Angeles Emergency Management Department	<input checked="" type="checkbox"/> Omari Battles , DAFN Principle Project Coordinator <input checked="" type="checkbox"/> Jon Brown , Division Chief of Planning and Resilience <input checked="" type="checkbox"/> Jillian De Vela , Emergency Management Coordinator <input checked="" type="checkbox"/> Joseph Riser , Public Information Officer	None
City of Los Angeles Fire Department	<input type="checkbox"/> Rico Gross , Captain	None
City of Los Angeles Housing Department	<input checked="" type="checkbox"/> EJ Martinez , Emergency Management Coordinator	None
City of Los Angeles Information Technology Agency	<input type="checkbox"/> Thanh Su , Management Analyst	None



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City of Los Angeles Mayor's Office	<input type="checkbox"/> Jacquelyn Sandoval, Mayoral Aide	None
City of Los Angeles Planning Department	<input checked="" type="checkbox"/> Ari Briski, City Planner	<input type="checkbox"/> Marie Cobian, Senior City Planner <input type="checkbox"/> Conni Pallini-Tipton, Senior Planner
City of Los Angeles Police Department	<input checked="" type="checkbox"/> Hayley Smith, Lieutenant	<input type="checkbox"/> Michael Boyle, Sergeant <input checked="" type="checkbox"/> Richard Rogers, Officer
City of Los Angeles World Airports	<input type="checkbox"/> Justin Pierce, Director of Emergency Management Division <input type="checkbox"/> Zina Cheng, Grants & PFC Manager	None
Climate Emergency Mobilization Office	<input checked="" type="checkbox"/> Marta Segura, Chief Heat Officer	None
Community Emergency Response Team	<input type="checkbox"/> Chin Thammasaengri, CERT South Bureau & LAFD Dispatch	None
Emergency Network in Los Angeles	<input type="checkbox"/> Rene Martin, Interim Program Director <input checked="" type="checkbox"/> Kayla Kelly-Slatten, Program Director	<input type="checkbox"/> Michael Flood
Los Angeles Area Chamber of Commerce	<input type="checkbox"/> Andrea Nunn, Senior VP, Entrepreneurship & Innovation	<input type="checkbox"/> Peter Foo, VP of Entrepreneurship & Workforce Development
Los Angeles County Office of Emergency Management	<input type="checkbox"/> Sinan Khan, Associate Director	None
Los Angeles Unified School District	<input checked="" type="checkbox"/> Jill Barnes, Administrator of Emergency Management	None
National Weather Service	<input checked="" type="checkbox"/> Eric Boldt, Warning Coordination Meteorologist <input type="checkbox"/> John Dumas, Science and Operations Officer	None
Neighborhood Council Emergency Preparedness Alliance	<input checked="" type="checkbox"/> Commissioner Leonard Shaffer, Commissioner	None
Office of the City Administrative Officer	<input type="checkbox"/> Mary Reuschel, Senior Administrative Analyst	None
Port of Los Angeles	<input checked="" type="checkbox"/> Lynette Ursery, Emergency Management Coordinator I <input checked="" type="checkbox"/> Jennifer Maradiaga-Contreras, Emergency Management Coordinator I	None
The Nature Conservancy	<input type="checkbox"/> Kelsey Jessup, Urban Conservation Program Manager	<input type="checkbox"/> Alysa Mann, Climate Resilience Project Director <input checked="" type="checkbox"/> Deborah Glaser, Climate Resilient Communities Project Director
University of California, Los Angeles	<input checked="" type="checkbox"/> Dr. Travis Longcore, Adjunct Professor	<input checked="" type="checkbox"/> Sahar Derakhshan, Postdoctoral Research Fellow
University of Southern California Sea Grant Program	<input checked="" type="checkbox"/> Karina Alvarez, Science, Research, and Policy Specialist	None
U.S. Army Corps of Engineers	<input type="checkbox"/> Major Kevin Stucker, Operations Officer	None

Other Attendees:

Somersby Jenkins, Fellow, City of Los Angeles Emergency Management Department
Rob Flaner, Project Manager, Tetra Tech
Bart Spencer, Lead Project Planner, Tetra Tech
Megan Brotherton, Process Coordinator, Tetra Tech
Jake Poland, Planner, Tetra Tech
Nathan Neumann

Adriana Smith
F. Rangel
Armond
Jacob Burman
Monica Gonzalez
Alejandro Becerra
Keith Garcia



City of Los Angeles
Meeting Summary



Meeting Summary: Welcome, acceptance of list of hazards, mission statement, Steering Committee Ground Rules, and status update on the planning process.

Item No.	Description	Action/Decision item(s):
1	<p>Welcome 1:02 p.m.</p>	None
2	<p>Old Business (Jon Brown)</p> <ul style="list-style-type: none"> • Acceptance of HMP Steering Committee Meeting #1 summary <ul style="list-style-type: none"> ○ Accepted 	<p>Decision:</p> <p>Motion to accept summary: Kayla Kelly-Slatten</p> <p>Second: Ruth Rodrigues</p>
3	<p>New Business (Jon Brown)</p> <ul style="list-style-type: none"> • Discussion and acceptance of list of hazards <p><u>Natural Hazards:</u> Dam Failure Drought Earthquake Extreme Cold or Freeze Extreme Heat Flood Landslide, Debris Flow, and other Mass Movements Sea Level Rise, Coastal Flooding, and Erosion Severe Wind, Weather, and Storms Tsunami and Seiche Wildfire</p> <p><u>Other Hazards of Interest:</u> Civil Disorder Cyber Threats Geomagnetic Storm (Space Weather) Hazardous Material Release Oil Spills Public Health Hazards (Epidemic/Pandemic/Vector-Borne Diseases) Radiological Accidents Smoke/Air Pollution Terrorism Transportation Accidents Resulting in Explosions or Toxic Releases Urban Structural Fire</p> <ul style="list-style-type: none"> ○ Local HMPs are required to align with the CA SHMP ○ Due to the High Hazard Potential Dam Program’s (HHPD) identification of high hazard dams in the planning area, dam failure must be identified as a natural hazard ○ Geomagnetic storms are considered a hazard of interest in the CA SHMP and will be classified the same in the City of LA LHMP. State legislation now requires General Plans to address electromagnetic pulse (EMP) events. 	<p>Decisions:</p> <p>Motion to accept list of hazards: Leonard Shaffer</p> <p>Second: Travis Longcore</p> <p>Motion to accept mission statement as revised: Leonard Shaffer</p> <p>Second: Ruth Rodrigues</p> <p>Motion to accept revised Steering Committee Ground Rules: Leonard Shaffer</p> <p>Second: Travis Longcore</p> <p>Action Items:</p> <p>CPT: Revise Goals and Objectives based on input received from the Steering Committee</p>



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	<ul style="list-style-type: none"> ○ Tetra Tech uses the best available data to develop hazard mapping ○ Hazard data sources and scenarios will be confirmed at a future meeting ○ In the previous LHMP, data on Sea Level Rise was provided by the University of Southern California (USC) – USC may again be called on to provide data ○ A number of DWP assets are located outside of the geopolitical boundaries of the City, but flow into or directly affect Los Angeles ○ Potential mitigation actions for DWP include addressing seismic concerns in the Elizabeth Tunnel ● Acceptance of mission statement <ul style="list-style-type: none"> ○ Accepted as revised: <ul style="list-style-type: none"> ○ <i>The mission of the City of Los Angeles LHMP is to reduce risk and increase resilience through whole community engagement, comprehensive risk analysis, and identifying corresponding mitigation strategies to protect City residents, their property, community lifelines, and the environment from traditional and emerging hazards.</i> ● Discussion of goals <ul style="list-style-type: none"> ○ Goals are swim lanes to be followed, objectives are used to measure success in achieving project goals ○ Steering Committee has chosen to hold acceptance until Goals 2 and 4 are revised to reflect equity and nature language; TNC has proposed the introduction of a new Goal to be included ○ No decision was made on the acceptance of goals; additional discussion will be included in next meeting ● Discussion of objectives <ul style="list-style-type: none"> ○ Objectives are meant to target certain areas while working in concert with goals ○ Action items are permitted to be broad and can also be directed toward outside agencies (HUD, EPA, etc.) ○ Objective will be added by CPT to address coastal retreat. FEMA mitigation funding may be available for planned retreat out of the SLR hazard area. ○ Determine who will be coordinating with dam owners in Objective 2 ○ Steering Committee has chosen to hold acceptance of objectives until Objectives 1, 2 5, 6, 9, and 12 are revised ○ No decision was made on the acceptance of objectives: additional discussion will be included in the next meeting ● Acceptance of revised Steering Committee Ground Rules <ul style="list-style-type: none"> ○ Accepted without discussion 	
4	Public Comment #1	None
5	Project Coordination (Bart Spencer)	Action Items:



	<ul style="list-style-type: none"> • Planning Process <ul style="list-style-type: none"> ○ LHMP framework is in place, CPT is addressing codes, regulation and guidance while staying on track with project timeline ○ GIS risk analysis, including HAZUS, will be performed by the Tetra Tech GIS team • Timeline <ul style="list-style-type: none"> ○ CPT and EMD are coordinating to keep planning process on time <ul style="list-style-type: none"> ▪ Planning process is currently on schedule 	<p>Steering Committee: Marta Segura is to send revised Goal statement with updated equity language to the CPT</p> <p>Tetra Tech: Follow up with Ari Briski on the development of hazard maps</p>
6	<p>Hazard Assessment & Risk Analysis</p> <ul style="list-style-type: none"> • Overview and process update <ul style="list-style-type: none"> ○ Hazard assessment does take time; Tetra Tech is focused on making City plan consistent with the SHMP ○ Socially vulnerable communities and climate considerations are included in the hazard assessment 	None
7	<p>Public Engagement (Megan Brotherton)</p> <ul style="list-style-type: none"> • Public Survey <ul style="list-style-type: none"> ○ Public survey is now available in both English and Spanish and will remain open throughout the entirety of the planning process ○ May 26th – public survey will be released by EMD ○ The public survey is a major tool in gauging public perception, readiness, and greatly assists in the development of mitigation actions that correspond with community needs Public Comment Period <ul style="list-style-type: none"> ○ Details are being worked out to determine the most productive timing for public comment on the draft plan • StoryMap <ul style="list-style-type: none"> ○ In development 	<p>Action Items:</p> <p>EMD: Facilitate the distribution of physical copies of the public survey if requested</p>
8	Public Comment #2	None
9	<p>Requests or Comments from Steering Committee Members</p> <ul style="list-style-type: none"> • Date has not yet been set for Steering Committee Meeting #3 • The Steering Committee meeting cycle is expected to conclude by the end of the calendar year 	None
10	Adjourned at 2:24 p.m.	

Goals:

1. Protect life, property, infrastructure, and the environment, including protecting the health and safety of communities.

Original: Protect life and property, including protecting the health and safety of communities.

Summary of Changes: Per the Climate Emergency Mobilization Office (CEMO) suggestion, the word “infrastructure” and “environment” have been added. CEMO originally suggested, “Develop and implement equitable hazard mitigation strategies that protect life, infrastructure, and property such as the health and safety of communities, and nature.” The word “equitable” was incorporated in Goal #4.

2. Engage the whole community to better understand the hazards of Los Angeles and ways to reduce their personal vulnerability to those hazards.

Summary of Changes: the term “whole community” will be defined in the footnote as well as on the definition page. We will use the “Whole Community” definition of FEMA definition.

3. Align the City of Los Angeles LHMP to inform with future vulnerability assessments, action, and policy planning, and all levels of government’s hazard mitigation goals.

Original: Align the City of Los Angeles LHMP with future climate vulnerability assessments, action plans, and all levels of government’s hazard mitigation goals.

Summary of Changes: During the Steering Committee meeting, City Planning, CEMO, and EMD had come to an agreement to remove the word “climate.” Per City Planning Department, the word “policy” has been added.

4. Develop and implement hazard mitigation strategies that leverage federal and state grants, local general and private funds in an efficient, equitable, and cost-effective way.

Original: Develop and implement hazard mitigation strategies that use public funds in an efficient and cost-effective way.

Summary of Changes: Per the Los Angeles World Airport’s (LAWA) proposal, the word “Public Funds” has been replaced with “federal and state grants, local general and private funds.” This updated objective also incorporated CEMO’s suggestion to describe mitigation strategies as equitable.

5. Strive to increase adaptive capacity to reduce risk from hazard impacts based on future conditions.

No changes

6. Protect nature and natural systems, which are vital to the resilience of Los Angeles' human and natural communities by providing critical hazard risk reduction benefits, sequestering carbon, and providing other co-benefits.

Summary of Changes: Per The Nature Conservancy's (TNC) suggestion, and after considering the new FEMA Local Hazard Mitigation Guideline, this new goal has been added. TNC provided an explanation as to why this goal is important:

The LHMP should emphasize the long-term resilience, health, and well-being outcomes of nature-based approaches, including that these provide environmental justice benefits that communities have been excluded from and/or under-targeted and under-invested in. Nature-based solutions, in addition to often reducing hazard risk, are also effective at reducing GHGs by sequestering carbon (also known as "climate mitigation"). It is estimated that to meet California's GHG reduction targets, nature-based solutions can contribute 33% of needed reductions, reducing climate risk.

Objectives:

The following objectives were re-arranged to ensure a smooth transition from one objective to another. These objectives will be used as a guideline when implementing the putting together City's mitigation actions.

- 1. Where applicable, mitigation strategies that are inclusive of engineering, design, feasibility, cost, and co-benefits, such as ecosystem and social benefits.**

Original: Develop mitigation strategies that are inclusive of engineering, design, feasibility, and cost.

Summary of Changes: Per TNC's suggestion, the statement "inclusive of co-benefits, such as ecosystem services" was incorporated into this objective. TNC explained the following to support the changes of this objective:

Historically high discount rates can favor traditional gray infrastructure projects that provide greater short-term benefits over those that have longer-term benefits, such as Nature Based Solutions (NBS). Emerging guidance at both the state and federal levels support lower discount rates (3%) for NBS in order to more fairly account for the long-term primary and co-benefits that NBS provide.

- 2. Identify locations, potential impacts, and linkages among threats, hazards, vulnerability, and measures needed to protect life, property, and the environment.**

Original: Continue to identify locations, potential impacts, and linkages among threats, hazards, vulnerability, and measures needed to protect life, safety, and health.

Summary of Changes: This objective used to be #3, but has been moved up to #2. Moreover, Per American Red Cross suggestion (ARC), the word “Continue” has been removed to ensure consistency of the language throughout the objectives. The word “safety and health” has been replaced with “property and the environment” to ensure it covers other aspects of the mitigation umbrella.

- 3. Reduce repetitive losses from various hazards by determining and implementing hazard mitigation plans and projects based on available data and science that are consistent with state, regional, and local climate action and adaptation goals, policies, and programs.**

Summary of Changes: This objective used to be #4, but has been moved to #3. Removed the word “property” to ensure it is holistic.

- 4. Where feasible, identify and implement nature-based solutions across hazards to provide resilience benefits, including but not limited to **sequester carbon to mitigate climate change, and provide other community benefits, including environmental justice.****

Original: Where feasible, identify and implement nature-based mitigation strategies

Summary of Changes: This objective used to be #12, but has been moved to #4. Per TNC’s proposal, the language has been amended to emphasize the importance the benefits of nature-based solutions.

- 5. Establish, **strengthen**, and maintain partnerships among all levels of government, the private sector, community-based organizations, and academic institutions to improve the ability to **protect life, property, and the environment.****

Original: Establish and maintain partnerships among all levels of government, the private sector, community-based organizations, and institutions of higher learning that improve the ability to protect life and property.

Summary of Changes: EMD included the word “strengthen” the existing partnerships that the City has formed. EMD also included amended the language from “protect life and property” to “protect life, property and environment.”

- 6. Incorporate risk-informed analysis to strengthen communication and coordination with local, state, and federal partners to reduce the potential consequences of dam-specific incidents.**

Original: Coordinate with partner agencies, specifically dam owners and operators, to limit impacts to public infrastructure and the environment.

Summary of Changes: This objective has been amended to incorporate the Los Angeles Department of Water & Power's (LADWP) proposal in defining "partner agencies." The reason why this objective is very specific to one hazard is due to the requirements of the [Rehabilitation of High Hazard Potential Dam Grant Program \(HHPD\)](#). To be eligible for HHPD grants, local governments with jurisdiction over the area of an eligible dam must have an approved local hazard mitigation plan that includes all dam risks and complies with the Robert T. Stafford Act, as amended. In addition, hazard mitigation goals do not need to mention specific actions, specific dams, or use the term "high hazard potential dam." Projects submitted for consideration for HHPD funding must be consistent with the goals and actions identified in the current, approved hazard mitigation plan.

- 7. Develop and provide updated information about threats, hazards, vulnerabilities, climate change, and mitigation strategies to local, state, and regional agencies, as well as private-sector and community group organizations.**

Summary of Changes: No change

- 8. Integrate life and property protection measures for all communities, with particular attention to socially vulnerable communities that have fewer resources and capacity to adapt or strengthen structures and community lifelines (critical facilities located in hazard areas).**

Summary of Changes: This objective used to be #11, but has been moved to #8. The CPT took DOD's suggestion into consideration, which is:
"Integrate life and property protection measures for all communities including people with disabilities and those who are already vulnerable, including lower-income and other marginalized communities that have lower capacity to prepare for and cope with hazard-related events."

However, it was determined that the suggested revision would narrow the objective so much that it excluded, rather than included all populations. No change was made to the wording.

To ensure consistency and reduce redundancy, this objective will define the word "socially vulnerable" in the definition page. EMD will take DOD's lead on defining the word "socially vulnerable."

- 9. Incorporate hazard mitigation measures into repairs, major alterations, new development, and redevelopment practices, [targeting communities with historically underserved populations that are disproportionately impacted by disasters and climate change.](#)**

Original: Ensure incorporation of hazard mitigation measures into repairs, major alterations, new development, and development practices, especially in socially vulnerable communities.

Summary of Changes: This objective used to be #10, but has been moved to #9. EMD also changed the word “socially vulnerable” since it has been used to objective #8.

10. Prevent or reduce mitigation-related disparities among under-served and under-represented communities through plans and investments that prioritize multi-objective projects, and culturally competent outreach programs.

Original: Reduce mitigation-related disparities among under-served and under-represented communities through plans, investments, and culturally competent outreach programs

Summary of Changes: This objective used to be #6, but has been moved to #10. EMD added the word “prevent.” Per TNC’s suggestion, this objective also added the statement “that prioritize multi-benefit projects.” To support this, TNC specified that “Under-served and under-represented communities are at the frontlines of climate change and often suffer the largest impacts from hazards. Plans and investments should prioritize multi-benefit projects to ensure their communities are resilient both now and into the future.”

11. Identify financial and regulatory incentives to motivate stakeholders such as property owners, renters, private sector businesses, and community-based organizations to identify risks and mitigate hazards.

Original: Continue to determine financial and regulatory incentives to motivate stakeholders such as homeowners, private sector businesses, and community-based organizations to identify risks and mitigate hazards.

Summary of Changes: This objective used to be #9, but has been moved to #11. Per ARC’s suggestion, the word “continue” has been removed. During the previous steering committee meeting, it was stated by the University of California, Los Angeles (UCLA), CEMO, and City Planning, to change the word “homeowner” to “property owners” and add “renters” in the objective.

12. Utilize understanding of risk to support training and exercise for city staff and external stakeholders.

Original: Continue providing City emergency services personnel with training, resources, and equipment to identify risks and address hazards.

Summary of Changes: This objective used to be #7, but has been moved to #12 and reworded by the CPT to focus on training and exercise activities for a broader range of city staff and stakeholders.

Hazard of Concern	Type of Analysis	Hazard Data Source	Analysis Scenario	Previous HMP Analysis	Notes
Dam Failure	Quantitative - Hazus	Dam breach inundation areas and depth grids from the CA Dept of Water Resources. Data available for the following high and extremely high hazard dams: 10 MG Waltheria,18 MG Waltheria,Big Tujunga No. 1,Blanchard Debris Basin,Brand Park,Chatsworth,Cogswell,Devils Gate,Diederich Res,Eagle Rock,Elysian,Encino,Glenoaks 968 Reservoir,Green Verdugo,Greystone Reservoir,La Tuna Debris Basin,Los Angeles Reservoir,Lower Franklin,Lower San Fernando,Lower Sunset Debris Basin,Morris,Mulholland,Pacoima,Palos Verdes Res,Riviera Reservoir,San Gabriel No 1,Santa Ynez Canyon,Schoolhouse Debris Basin,Silver Lake,Stone Canyon,Stough Debris Basin,Wilson Debris Basin Dam breach inundation areas and depth grids from the USACE: Haines Canyon Debris Dam, Hansen, Lopez, Sepulveda, Whittier Narrows	Combined dam failure inundation area, to include all extremely high and high hazard dams where dam breach inundation area data is available.	Hazus analysis for the combined inundation area for the following dams: Lower Franklin No.2, Los Angeles Reservoir, Mulholland, Pacoima, Sepulveda, Silver Lake, Devils Gate, Eagle Rock, Elysian, Encino, Big Tujunga No. 1, Green Verdugo, Greystone Reservoir, Hansen, Lopez, Palos Verdes Reservoir, Riviera Reservoir, Santa Ynez Canyon, Stone Canyon, Upper Franklin. Data provided by Los Angeles County Office of Emergency Management for 2015 Floodplain Management Plan.	
Drought	Qualitative	N/A	N/A		
Earthquake	Quantitative - Hazus	USGS ShakeMaps. The following scenarios are available in the 2014 earthquake scenario event set: Compton M7.45, Hollywood M6.7, Newport-Inglewood alt 1 M7.15, Northridge M6.89, Palos Verdes M7.38, Puente Hills (LA) M6.95, Santa Monica alt 1 M6.58, Santa Susana East (connector) M6.38, Sierra Madre (San Fernando) M6.71 Other ShakeMaps: San Andreas (ShakeOut scenario) M7.8 Supplemental data includes liquefaction zones (CGS), NEHRP soils (CGS), and susceptibility to deep-seated landslides (CGS).	Scenarios: Southern San Andreas M7.8 (from the Southern California Catastrophic Earthquake Plan (SCCEP)); TBD Supplemental datasets will be used in the Hazus analyses.	Hazus analyses for the following ShakeMap scenarios: Newport-Inglewood M7.2, Palos Verde (Fleet Week) M7.3, Puente Hills (DTLA direct hit) M7.0, San Andreas (ShakeOut scenario) M7.8, Santa Monica M6.8	The specific San Andreas ShakeMap data used for the SCCEP will need to be identified, and provided to Tetra Tech.
Extreme Cold or Freeze	Qualitative	N/A	N/A		
Extreme Heat	Quantitative - Exposure	N/A	N/A		Steering Committee to provide suggestions on spatial datasets to use for the analysis.
Flood	Quantitative - Hazus or Exposure	FEMA effective DFIRM (countywide effective date is 6/2/2021 ; latest LOMR for City is 3/21/22)	FEMA 10-, 50-, 100- and 500-yr flood hazard areas	Hazus analyses for FEMA 10-, 50-, 100- and 500-yr flood hazard areas.	
Landslide, Debris Flow, and other Mass Movements	Quantitative - Exposure	Susceptibility to deep-seated landslides (CA Geological Survey)	Very high, high, and moderate susceptibility categories (risk ranking using the combined very high and high categories).	Exposure analysis using Susceptibility to deep-seated landslides data. Analyses for the very high, high, and moderate susceptibility categories. Risk ranking using the combined very high and high categories. Data provided by the California Geological Survey.	
Sea Level Rise, Coastal Flooding, and Erosion	Quantitative - Exposure	(1) Our Coast Our Future (OCOF)/Coastal Storm Modeling System (CoSMoS) - Various combinations of sea level rise (0, 25, 50, 75, 100, 125, 150, 175, 200, and 500 centimeters), and storm scenario frequency (none, annual, 20-yr, 100-yr).	TBD	Exposure analyses using the CoSMoS sea level rise data. Analyses for the 25cm with 100-year storm and 150cm sea level rise with 100-year storm scenarios, including low-lying polygons. Data provided by U.S. Geological Survey/USC Sea Grant Program.	
Severe Wind, Weather, and Storms	Qualitative	N/A	N/A		
Tsunami and Seiche	Quantitative - Hazus	Tsunami hazard areas data (2021) from Department of Conservation	Tsunami hazard areas	Hazus analysis for the tsunami inundation area. Data provided by CA Department of Conservation for 2015 Floodplain Management Plan.	
Wildfire	Quantitative - Exposure	Fire severity zones in Local Responsibility Areas data from CalFIRE.	TBD	Exposure analysis using fire hazard severity zones (FHSZ) data. Analysis for the very high severity zone. Data provided by CalFIRE.	Local Responsibility Area data are recommended areas but they were not adopted. This data is from 2012. City to check with LAFD for other spatial datasets.
Other Hazards of Interest					
Civil Disorder	Qualitative	N/A	N/A		
Cyber Threats	Qualitative	N/A	N/A		
Geomagnetic Storm (Space Weather)	Qualitative	N/A	N/A		
Hazardous Material Release	Qualitative	N/A	N/A		
Oil Spills	Qualitative	N/A	N/A		
Public Health Hazards (Epidemic/Pandemic/Vector-Borne Diseases)	Qualitative	N/A	N/A		
Radiological Accidents	Qualitative	N/A	N/A		
Smoke/Air Pollution	Qualitative	N/A	N/A		
Terrorism	Qualitative	N/A	N/A		
Transportation Accidents Resulting in Explosions or Toxic Releases	Qualitative	N/A	N/A		
Urban Structural Fire	Qualitative	N/A	N/A		