

CITY OF BUENA PARK ANNEX

The City of Buena Park (Buena Park) is a participant (Member Agency [MA]) in the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan (HMP or Plan). As a participant MA, Buena Park representatives were part of the HMP Planning Process and served on the Planning Team responsible for the Plan Update; refer to Section 2 of the Plan. The primary Plan, including the hazard mitigation plan procedural requirements and planning process apply to Buena Park.

This Annex supplements information contained in the primary Plan and describes how Buena Park’s risks vary from the planning area. The Risk Assessment (Section 3) summarizes the hazards and risks that pose a threat to Orange County. The primary Plan treats the entire County as the planning area and identifies which MAs are subject to a profiled hazard. The purpose of this Annex is to provide additional information specific to Buena Park with a focus on the risk assessment and mitigation strategy.

HAZARD MITIGATION PLAN POINT OF CONTACT AND DEVELOPMENT TEAM

The following representatives attended the Planning Team meetings on behalf of Buena Park and coordinated the hazard mitigation planning efforts with Buena Park staff:

Primary Point of Contact

Michael Grisso
 Utilities Manager
 mgrisso@buenapark.com
 714-562-3705

In addition to participating on the Planning Team, an internal team was also formed to support Planning Team representatives and provide information for the Plan update. The following staff served as Buena Park’s internal hazard mitigation planning development team.

Representative	Title	How Participated
Francisco Gutierrez	Associate Engineer	Engineering Support
Mike McGee	Water Superintendent	Water Quality/Operations

JURISDICTION PROFILE (Service Population: 83,347)

Incorporated in 1953, the City of Buena Park (Buena Park) is a public municipality and is governed by an elected City Council consisting of a mayor and four councilpersons. Buena Park is situated in central Orange County, with a land area of 10.3 square miles serviced by the City’s water utility. The cities of La Mirada, Fullerton, Anaheim, La Palma, and Cypress bound Buena Park.

Buena Park has a water system with three pressure zones. The water system consists of eight active wells, one 20-million-gallon reservoir, one booster pump station and numerous pressure reducing stations. In addition, there are four imported water supply connections with the Metropolitan Water District of Southern California (Metropolitan). Water supply is transported to approximately 83,347 consumers through 225 miles of pipeline and approximately 19,000 service connections.

Groundwater is the primary source of water for Buena Park, and historically has accounted for about 58 percent of total water supply. Groundwater is drawn from eight municipal wells that are drilled down to about 1000 feet into the Orange County Groundwater Basin. The second source of water is imported water from Metropolitan through MWDOC.

HAZARDS

Detailed hazard profiles for the planning area are provided in Section 3. Buena Park is located inland and therefore is not subject to coastal hazards, such as coastal storms/erosion and tsunamis. However, the City is subject to most of the other hazards identified for the planning area. Many of these hazards are dispersed and may affect the entire region, including climate change, drought, ground shaking from earthquakes, geologic hazards, and high wind. The City contains 100-year flood zones primarily along its southeastern border and nearly the rest of the City is within the 500-year FEMA flood zone. High fire hazard severity zones are present on a very small portion of the City where it abuts regional open space. Human-caused hazards and power outages are also hazards that could impact the City. Although there are no dams within the City, it could be affected if dams upstream are compromised. Most of the City has historically been located within the dam inundation area of Prado Dam. A small area of the City is also located within the dam inundation area of Fullerton Dam. The north/central portion of the City is located within the inundation areas of Brea and Carbon Canyon Dams. There are no hazards that are unique to Buena Park.

Based on the risk assessment, the Buena Park development team identified the following hazards that affect Buena Park and summarized their geographic extent, probability of future occurrence, magnitude/severity and significance; refer to Table E-1.

**Table E-1
Buena Park Hazard Identification**

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance
Climate Change	Extensive	Likely	Negligible	Low
Contamination/ Salt Water Intrusion	Limited	Unlikely	Negligible	Low
Dam/Reservoir Failure	Limited	Unlikely	Negligible	Low
Drought	Extensive	Likely	Negligible	Low
Earthquake Fault Rupture & Seismic Hazards	Extensive	Likely	Catastrophic	High
Flood	Extensive	Unlikely	Critical	High
Geologic Hazards	Limited	Unlikely	Negligible	Low
High Winds/ Santa Ana Winds	Extensive	Highly Likely	Negligible	Low
Landslide/Mudflow	Limited	Unlikely	Negligible	Low
Wildland/Urban Fire	Limited	Occasional	Limited	Low
Human-Caused Hazards	Limited	Unlikely	Negligible	Low
Power Outage	Limited	Highly Likely	Negligible	Low
Geographic Extent Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area		Magnitude/Severity Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths. Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability. Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability. Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid.		
Probability of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year, or happens every year. Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less. Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years. Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.		Significance Low: Minimal potential impact Medium: Moderate potential impact High: Widespread potential impact		

The identification of hazards provided in Table E-1 is highly dependent on the location of facilities within each agencies jurisdiction and takes into consideration the history of the hazard and associated damage (if any), information provided by agencies specializing in a specific hazard (e.g., FEMA, California Geological Survey), and relies upon each agencies’ expertise and knowledge.

Hazard Maps

The following maps show the location of hazard zones within the jurisdiction relative to either potable water or wastewater systems, as applicable.

VULNERABILITY AND RISK ASSESSMENT

Assets Susceptible to Hazard Events

Table E-2, Buena Park Infrastructure and Exposure to Hazards, identifies Buena Park’s water and wastewater infrastructure assets that are located within the mapped hazard zones, identified above.

**Table E-2
Buena Park Infrastructure and Exposure to Hazards**

Hazard		Infrastructure Type	
		Interties (#)	Potable Pipeline (miles)
Fire Hazard Zone	Moderate	0	0.2
	High	0	0.3
	Very High	1	0.3
FEMA Flood Zone	100-Year	1	0.2
	500-Year	0	17.9
Alquist-Priolo Rupture Zone		0	0
Ground Shaking	Moderate	0	0
	High	0	0
	Extreme	4	21.1
Liquefaction	Moderate	1	4.7
	High	0	15.7
	Very High	0	0
	Unknown	0	0.6
Landslide Zone		0	0
Tsunami Zone		0	0

An intertie is located within an area identified as a very high fire hazard area and four interties are located within an area identified as at risk for extreme ground shaking during an earthquake. Several miles of the City’s potable water lines are located in areas identified as susceptible to the 500-year flood. Additionally, there are several miles of potable pipeline located within an area identified at risk for extreme ground shaking and areas having moderate and high risk of liquefaction during an earthquake.

CAPABILITIES ASSESSMENT

The capabilities assessment is designed to identify existing local agencies, personnel, planning tools, public policy and programs, technology, and funds that have the capability to support hazard mitigation activities and strategies outlined in this Plan. The Buena Park internal development team revised the capabilities identified in the 2012 plan and collaborated to identify current local capabilities and mechanisms available to the MA for reducing damage from future hazard events. Tables E-3a through E-3d assess the authorities, policies, programs, and resources that the jurisdiction has in place that are available to help with the long-term reduction of risk through mitigation. These capabilities include

planning and regulatory tools, administrative and technical resources, financial resources, and education and outreach programs. The agency has the ability to create or expand existing policies and programs to implement mitigation programs.

**Table E-3a
Planning and Regulatory Capabilities Summary**

Ordinance, Plan, Policy, Program	Responsible Agency or Department	Description/Comments
Building Code	Planning & Code Enforcement Departments; City of Buena Park	Regulates construction standards and ensures enforcement of City's adopted standards. The City adheres to both the State and City building code.
Zoning Ordinance	Planning Department; City of Buena Park	Controls land use to protect public health, welfare and safety. Through the zoning code, the City controls and limits the type and density of development.
Subdivision Ordinance or Regulations	Planning Department; City of Buena Park	Regulates the development of housing, commercial, industrial, and other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development.
Special Purpose Ordinance	County of Orange; Regional Water Quality Control Board	Complies with applicable special purpose ordinances, and works with the cities within the District service area.
Growth Management Ordinances	Planning; County of Orange; LAFCO	Complies with applicable growth management ordinances, and works with the cities within the District service area.
Site Plan Review Requirements	Planning; County of Orange; Public Works	Complies with applicable site plan review requirements, and works with the cities within the District service area.
General Plan	Planning	The City's general plan is designed to guide development and actions in the community, including long range goals and objectives for future decision making.
Capital Improvements Plan	Finance	Guides the scheduling of spending on Capital Improvement Projects (CIP), and serves as a mechanism to guide future development (water and wastewater facilities).
Economic Development Plan	Administration	Included in the City's General Plan.
Emergency Response Plan		Maintains an Emergency Operations Plan.

**Table E-3b
Administrative and Technical Capabilities Summary**

Staff/Personnel or Type of Resource	Responsible Agency or Department	Description/Comments
Planner(s) or Engineer(s) with Knowledge of Land Development and Land Management Practices	Community Development	Planners expertise in land development practices. Collaborate with Engineering and cities to comply with all requirements.
Engineer(s) or Professional(s) Trained in Construction Practices Related to Buildings and/or Infrastructure	Outside consultants in coordination with the Engineering Department	City staff utilizes an outside consultant with input from staff.
Planners or Engineer(s) with an Understanding of Natural and/or Human - Caused Hazards	Outside consultants in coordination with the Planning or Engineering Department	City staff utilizes an outside consultant with input from staff.
Floodplain manager	County of Orange	Works with the County.
Surveyors	Outside consultant in coordination with applicable departments	City staff utilizes an outside consultant with input from staff.
Staff with Education or Expertise to Assess the Community's Vulnerability to Hazards	County of Orange, WEROC	Works with the County and WEROC to identify vulnerabilities.
Personnel Skilled in GIS and/or HAZUS	IT Department, City of Buena Park	City employs a full time GIS staff member.
Emergency Manager	Fire Department, City of Buena Park	Work with the City fire department and the City emergency manager.
Grant Writers	City Administration Analyst, City of Buena Park	Work with the city to apply for grants.
Lab Specialist & Lab Staff	Contractual Lab	City staff utilizes an outside consultant.

**Table E-3c
Financial Capabilities Summary**

Financial Resources	Agency or Department
Community Development Block Grants (CDBG)	Finance Department, City of Buena Park
Capital Improvements Project Funding	Finance Department, City of Buena Park
Authority to Levy Taxes for Specific Purposes	Finance Department, City of Buena Park
Fees for Water, Sewer, Gas, or Electric Service	Finance Department, City of Buena Park
Impact Fees for Homebuyers or Developers for New Developments/Homes	Finance Department, City of Buena Park
Incur Debt Through General Obligation Bonds	Finance Department, City of Buena Park
Incur Debt Through Private Activity Bonds	Finance Department, City of Buena Park
Withhold Spending in Hazard-Prone Areas	Finance Department, City of Buena Park

**Table E-3d
Education and Outreach Capability Summary**

Resource/Programs	Agency or Department	Description/Comments
N/A	City Manager's Office & Buena Park Police Department	Utilize social media to provide education and outreach to the community Instagram, Twitter, www.Buenapark.com, www.bppd.com

MITIGATION STRATEGY

Mitigation Goals

Buena Park adopts the hazard mitigation goals developed by the Planning Team; refer to Section 4.

Mitigation Actions

The internal development team reviewed the mitigation actions identified in the 2012 plan and the updated risk assessment to determine if the mitigation actions were completed, require modification, should be removed because they are no longer relevant, and/or should remain in the Plan Update. New mitigation actions to address the updated risk assessment and capabilities identified above were also considered and added. Table E-4, Buena Park Mitigation Actions, identifies the mitigation actions, including the priority, hazard addressed, risk, timeframe, and potential funding sources.

**Table E-4
Buena Park Mitigation Actions**

Priority (High, Medium, or Low)	Action/Task/Project Description	Location/Facility	Risk (High, Medium, or Low)	Cost	Timeframe (Immediate, Short Term, or Long Term)	Possible Funding Sources	Status/Progress (New, Existing, Modified)	Status Rationale
Multi-Hazard								
Low	Install isolation valves at all locations when feasible.	New installations will have all necessary isolation valves. Identify and install new valves as needed. Part of valve exercise program.	Medium	\$25k/Year	Short Term	Water Fund	Existing	Budgeted
Low	Prepare an emergency response preparedness brochure for the local community identifying all types of natural hazards.	City in-house	Low	Unknown	Long Term	Water Fund	Existing	General funding - low priority.
Medium	Publish newsletters for the public and business leaders with information regarding mitigation of natural and man-made hazards.	Buena Park Today articles and Orange County brochures used by NPDES staff	Low	-	Long Term	Water Fund	Existing	Buena Park Today articles and Orange County brochures used by NPDES staff.
Medium	Monitor low-pressure areas in the water system.	Upgrade booster pump system for low pressure areas	Medium	\$6M	Long Term	Water Fund	Modified	Construction of new booster station underway. Estimated completion Summer 2018.

**Table E-4 [continued]
Buena Park Mitigation Actions**

Priority (High, Medium, or Low)	Action/Task/Project Description	Location/Facility	Risk (High, Medium, or Low)	Cost	Timeframe (Immediate, Short Term, or Long Term)	Possible Funding Sources	Status/Progress (New, Existing, Modified)	Status Rationale
Earthquake								
Low	Secure above ground assets in all buildings, booster stations, pressure reducing stations, emergency interties, water systems, and pipelines.	Survey to identify items to secure	Low	\$5k	Long Term	Water Fund	Existing	On-going, staff to review.
Medium	Evaluate the installation of seismic valves at critical sites.	2. Well sites - seismic evaluation/ planning	Medium	\$25k	Long Term	Grant Funding/ Water Fund	Existing	Seismic threat to well sites needs to be evaluated.
Medium	Rehabilitation and replacement program for AC pipe - for earthquake protection.	Various locations in Buena Park	Medium	\$100k/Year	Long Term	Water Fund/ Grants	Modified	Water Main Assessment completed 2015. Shifts focus away from ACP to seismic threat on system wide critical pipelines.
Flood								
Low	Install jointless pipelines in all creek crossings.	Conduct a survey and list all crossings. Identify pipe type and configuration.	Medium	\$5k	Short Term	Water Fund	Existing	In-house survey.
Medium	Install jointless pipelines in all creek crossings and slope easements.	Per Standards	Medium	-	Long Term	Water Fund	Existing	Per standards.
Human-Caused								
High	Improve security at certain facilities and install surveillance equipment.	Install cameras in well sites	Medium	\$50k	Short Term	Water Fund/Grants	Modified	2015 Hazard Mitigation Plan updated to include security recommendations
Wildland/Urban Fire								
Low	Create a fire management plan outlining various impacted facilities and vulnerabilities.	Part of EOP - done	Medium	-	Long Term	Water Fund	Existing	Part of EOP – done.
Low	Provide redundant underground communication systems for critical facilities to insure reliability of operating systems.	Throughout Buena Park especially well sites and pump stations	Medium	Unknown	Long Term	Water Fund	Modified	Possible connection to traffic signal cabling-study.

**Table E-4 [continued]
Buena Park Mitigation Actions**

Priority (High, Medium, or Low)	Action/Task/Project Description	Location/Facility	Risk (High, Medium, or Low)	Cost	Timeframe (Immediate, Short Term, or Long Term)	Possible Funding Sources	Status/Progress (New, Existing, Modified)	Status Rationale
Medium	Construct interties with neighboring water purveyors.	Four possible locations determined	Medium	\$50k	Short Term	Water Fund	Modified	Will require coordination with adjoining jurisdictions, agreements, design and construction. Currently under design with City of La Palma.
Medium	Develop a comprehensive approach to reducing the possibility of damage and losses due to structural fire/wildfire.	City yard and well and reservoir facilities are CMU construction and are sprinklered when required.	Medium	-	Long Term	Water Fund	Existing	Ongoing Policy
High	Loop water sources where possible.	New Auto Center Drive water project to provide adequate fire flow	Medium	\$1.5m	Immediate	Water Fund	Modified	Design stage. May require coordination with other Cities.

Notes:

Timeframe to Completion of Project: "Immediate" is up to 1 year; "Short Term" is 1 to 3 years; "Long Term" is 3 years or longer.

Status: "New" refers to a mitigation initiative newly created as part of the plan update process; "Existing" refers to an unfinished initiative that is carried over from the 2012 plan; "Modified" refers to an existing initiative that carried over from the previous plan, but has changed to limit or expand its scope of activities

Status Rationale: A statement of justification as to why the project is currently in the status it is in.

Completed or Removed Mitigation Initiatives

The following mitigation actions from the 2012 plan have been completed or are in progress and therefore are removed from the Plan update.

Mitigation: Purchase additional generators and provide quick connections for all well sites.

Status: Purchased two new 500kw portable generators.

Mitigation: Purchase and stage water trailers for emergency response.

Status: Complete.

Mitigation: Continued with backflow prevention program.

Status: This Best Management Practice (BMP) is required by the state and is performed in conjunction with the State Water Resources Control Board (SWRCB).

Mitigation: Perform a seismic study analysis for all structures and facilities.

Status: Complete.

Mitigation: Construct retention basin for flood control.

Status: Not identified in SDMP.

Mitigation: Upgrade SCADA system to existing sites as needed.

Status: New SCADA system installed in 2013.

Mitigation: Modify SCADA system, when feasible, to look for additional parameters of operation that may indicate problem areas.

Status: New SCADA system installed in 2013.

Mitigation: Examine opportunities for on-line water quality sensing relative to potential human induced contamination, and implement if feasible.

Status: Mitigation removed, as found not effective in the operation of a water distribution system.

Mitigation: Share all infrastructures/building information with local, county, and state fire agencies.

Status: BMP part of the plan check process with Orange County Fire Authority (OCFA).

Mitigation: Provide adequate fire flow to all areas per Water Master Plan (8th Street water main replacement; Oregon, Utah and Indiana Streets; Commonwealth, Roland, Whittaker Streets).

Status: Complete.

PLAN INTEGRATION

Buena Park's General Plan, Capital Improvement Plan, Municipal Code, Water Master Plan, Wastewater Master Plan, and Emergency Operations Plan are all used to implement mitigation initiatives identified in this annex. After adoption of the HMP, the City will continue to integrate mitigation priorities into these documents.

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