WATER SHORTAGE CONTINGENCY PLAN

CITY OF SOUTH GATE

JUNE 2021
FINAL

WATER SHORTAGE CONTINGENCY PLAN

City of South Gate

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Table of Contents

Section		Page
1	Introduction	1
2	Water Supply Reliability Analysis	1
3	Annual Water Supply & Demand Assessment Procedures	4
4	Shortage Stages and Shortage Response Actions	6
5	Communication Protocols	24
6	Compliance and Enforcement	27
7	Legal Authorities	29
8	Financial Consequences of WSCP Implementation	30
9	Monitoring and Reporting	31
10	Special Water Feature Distinction	31
11	WSCP Adoption and Refinement Procedures	31

Appendices

Appendix	Description
Appendix A	City Council Resolution Adopting WSCP
Appendix B	City's Local Hazard Mitigation Plan

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ACRONYMS

AF	acre-feet
City	City of South Gate
CWC	California Water Code
CBMWD	Central Basin Municipal Water District
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
EOC	Emergency Operation Center
ERP	Emergency Response Plan
FY	Fiscal Year
LHMP	Local Hazard Mitigation Plan
MWD	Metropolitan Water District of Southern California
RRA	Risk and Resilience Assessment
SWP	State Water Project
UWMP	Urban Water Management Plan
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDM	Water Surplus and Drought Management Plan

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1. OVERVIEW

Water supplies may be interrupted or reduced significantly in a number of ways, including droughts, earthquakes, and power outages, which hinder a water agency's ability to effectively deliver water. The ability to manage water supplies in times of drought or other emergencies is an important part of water resources management for a community.

Recent water supply challenges throughout the American Southwest and the State of California have resulted in the development of a number of policy actions that water agencies would implement in the event of a water shortage. In Southern California, the development of such policies has occurred at both the wholesale and retail level. This section addresses elements related to the urban water supplier's Water Shortage Contingency Plan (WSCP) describing new and existing policies that Metropolitan Water District of Southern California (MWD), Central Basin Municipal Water District (CBMWD), and the City of South Gate (City) have in place to respond to water supply shortages, including a catastrophic interruption and up to 50 percent or greater reduction in water supply.

2. WATER SUPPLY RELIABILITY ANALYSIS

2.1. WATER SERVICE RELIABILITY ASSESSMENT

Southern California is expected to experience an increase in regional demands in the years 2025 through 2045 as a result of population growth. Although increases in demand are expected, future demands are effectively limited due to the requirements of SBx7-7. It can be reasonably expected that the majority of agencies have met or were near their compliance targets for 2020 and will continue to meet, or will soon meet, their per-capita usage limit in the future.

The data in the MWD 2020 Urban Water Management Plan (UWMP) shows supply reliability projections for average and single dry years and is important to effectively project and analyze supply and demand over the next 25 years for many regional agencies. Projected supplies during single and multiple dry year scenarios indicate MWD's projected supply will exceed its projected single dry year demands in all years. Likewise, for average years, MWD supply exceeds projected demands for all years. Due to the semi-arid nature of the City's climate and as a result of past drought conditions, the City is vulnerable to water shortages due to its climatic environment and seasonally hot summer months. Section 3 of the City's 2020 UWMP describes the water availability during single and multiple dry year scenarios. **Tables 1**, **2**, and **3** summarize the supply and demand comparisons during normal, single-

dry year, and multiple dry year, respectively. As shown, the City is capable of providing a reliable supply of water to meet the future demands.

Table 1: Normal Year Supply & Demand Comparison (AF)

	2025	2030	2035	2040	2045
Supply totals	11,883	11,883	11,883	11,883	11,883
Demand totals	7,855	7,872	7,888	7,904	7,920
Difference	4,028	4,011	3,995	3,979	3,963

Table 2: Single Dry Year Supply & Demand Comparison (AF)

	2025	2030	2035	2040	2045
Supply totals	11,383	11,383	11,383	11,383	11,383
Demand totals	6,919	6,933	6,948	6,963	6,977
Difference	4,464	4,450	4,435	4,420	4,406

Table 3: Multiple Dry Year Supply & Demand Comparison (AF)

		2025	2030	2035	2040	2045
First year	Supply totals	11,383	11,383	11,383	11,383	11,383
	Demand totals	7,735	7,752	7,768	7,785	7,801
	Difference	3,648	3,631	3,615	3,598	3,582
Second year	Supply totals	11,383	11,383	11,383	11,383	11,383
	Demand totals	7,685	7,701	7,718	7,734	7,750
	Difference	3,698	3,682	3,665	3,649	3,633
Third year	Supply totals	11,383	11,383	11,383	11,383	11,383
	Demand totals	7,688	7,704	7,720	7,737	7,753
	Difference	3,695	3,679	3,663	3,646	3,630
Fourth year	Supply totals	11,383	11,383	11,383	11,383	11,383
	Demand totals	7,416	7,432	7,448	7,463	7,479
	Difference	3,967	3,951	3,935	3,920	3,904
Fifth year	Supply totals	11,383	11,383	11,383	11,383	11,383
	Demand totals	6,919	6,933	6,948	6,963	6,977
	Difference	4,464	4,450	4,435	4,420	4,406

2.2. FIVE-YEAR DROUGHT RISK ASSESSMENT

During a five-year drought, the City may import water to meet demands in excess of its local water supplies. Imported water supplies, like groundwater, are subject to demand

increases and reduced supplies during dry years; however, MWD modeling in its 2020 UWMP results in 100 percent reliability for full-service demands through the year 2045 for all climatic conditions. Based on the conditions described above, the City anticipates the ability to meet water demand for all climatic conditions for the near future.

As part of the WSCP, a Drought Risk Assessment (DRA) was conducted over a 5-year period examining the reliability of the City's water supplies. **Table 4** shows the results of the analysis. The analysis was done utilizing DWR's DRA Planning Tool to determine supply and demand projections, and to analyze the City's vulnerability to droughts. The tool also allows water purveyors to utilize potential water usage saving or supply augmentation methods to mitigate supply shortfalls. These water usages saving methods (restrictions) are further discussed in the WSCP. As shown, the City is capable to meet the projected demands based on the estimated water supplies during drought conditions without the need for WSCP stage implementation.

Table 4: Five-Year Drought Risk Assessment (AF)

	2021	2022	2023	2024	2025
Total Water Use	7,642	7,646	7,649	7,652	7,655
Total Supplies	11,383	11,383	11,383	11,383	11,383
Surplus/Shortfall w/o WSCP Action	3,741	3,737	3,734	3,731	3,728
Planned WSCP Actions (Use Reduction and Supply Augmentation)					
Supply Augmentation Benefit from WSCP Response	0	0	0	0	0
Use Reduction Savings Benefit from WSCP Response	0	0	0	0	0
Revised Surplus/Shortfall	3,741	3,737	3,734	3,731	3,728
Resulting % Use Reduction from WSCP Action	0%	0%	0%	0%	0%

Response to a future drought would follow the water use efficiency mandates of the City's WSCP along with implementation of the appropriate stage of regional plans, such as MWD's Water Surplus Drought Management (WSDM) Plan and CBMWD's Water Supply Allocation Plan (WSAP), as described in **Section 4.1** of this WSCP.

3. ANNUAL WATER SUPPLY & DEMAND ASSESSMENT PROCEDURES

Under CWC Section 10632(a)(2), beginning by July 1, 2022, each urban water supplier is required to prepare their annual water supply and demand assessment (Annual Assessment) and submit an Annual Water Shortage Assessment Report to DWR. The Annual Water Shortage Assessment Report will be due by July 1 of every year, as required by CWC Section 10632.1.

This section outlines the City's procedures used in conducting an Annual Assessment, including the following: 1) written decision-making process for determining water supply reliability; and 2) key data inputs and assessment methodology for evaluating the water supply reliability for the current year and one dry year.

3.1. DECISION-MAKING PROCESS

The City's Annual Assessment will be mostly based on regularly reviewed and recorded water production and supply figures. Data will be monitored and compared periodically and used to measure the effectiveness of any water shortage contingency stage that may be implemented. Water consumption is monitored regularly through the metering of all City service connections in its distribution system. To determine its water supply reliability and actual reductions in water use during declared water shortages or emergencies, the City can rely on its regularly recorded supply and demand totals. These periodical analyses are used by the City to manage resources to meet projected demands and adjust to changing conditions (i.e., precipitation) throughout the year.

Starting in 2022, City staff will submit and present a finalized Annual Water Shortage Assessment Report to the Board of Directors for approval by June each year. City staff will also present determination of recommended water shortage response actions deemed appropriate as a result of the Annual Assessment. Following approval, City staff will submit the approved Annual Water Shortage Assessment Report to DWR by July 1 of every year. The functional procedures for the decision-making process are depicted in the following timeline shown in **Figure 1**.

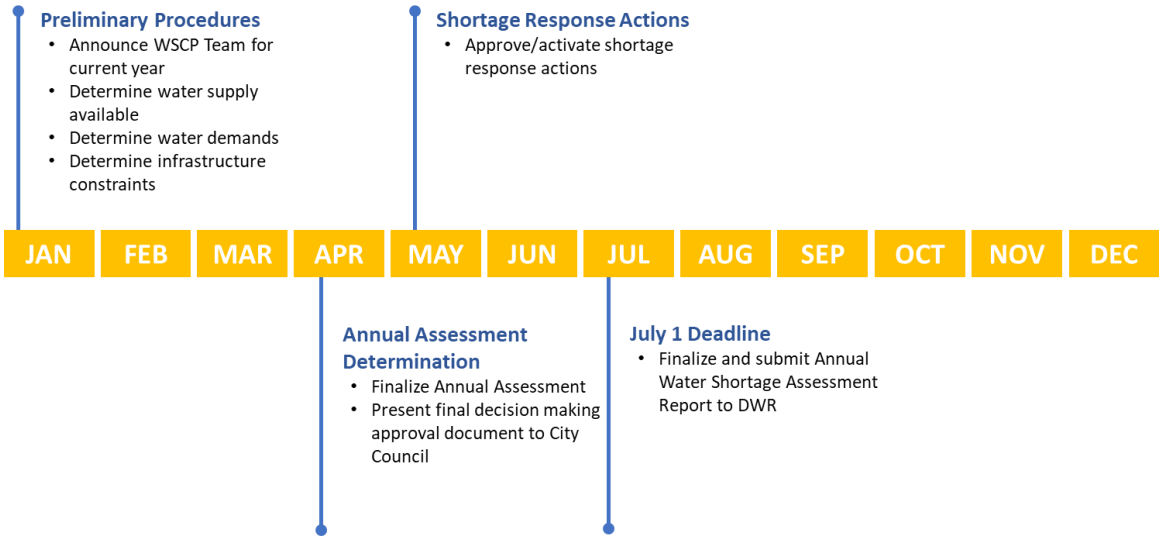

Figure 1: Sample Annual Assessment Decision-Making Process Timeline

3.2. KEY DATA INPUTS AND ASSESSMENT METHODOLOGY

This section defines the key data inputs and assessment methodology used to evaluate the water supply reliability for the anticipated conditions for the current year and for one dry year that follows. The Annual Assessment determination will focus on the current year unconstrained demand, infrastructure constraints, and total water supply availability. Moreover, the Annual Assessment will consider the current year's weather, population growth, policies in place that will impact demands, and other influencing factors. The current year available supply will incorporate the hydrological regulatory conditions for the current year and following dry year.

LOCALLY APPLICABLE EVALUATION CRITERIA

The locally applicable evaluation criteria that will be consistently relied on for each Annual Assessment include the following:

1) Assumed unconstrained demand (i.e., demand without any conservation measures) for current year and one dry year
2) Assumed total water supply availability for current year and one dry year
3) Existing infrastructure capabilities and plausible constraints
    - Any known issues with the water facilities (including water quality conditions limiting local sources)
    - Planned power outages for operation and maintenance
    - New construction and repairs
    - Environmental mitigation measures
    - Other constraints that may affect near-term water supply reliability

WATER SUPPLY SOURCES DESCRIPTION AND QUANTIFICATION

As part of the Annual Assessment, the total available water supply evaluation criteria will comprise of the City's water supply sources as shown and quantified in **Tables 5** and **6**.

Table 5: 2020 Water Supplies (AF)

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume	Water Quality
Purchased or Imported Water	From CBMWD	0	Drinking Water
Groundwater (not desalinated)	City Wells	8,311	Drinking Water
Recycled Water	From CBMWD	247	Recycled Water
	Total	8,558	

Table 6: Projected Water Supplies (AF) (2025 – 2045)

Water Supply	Additional Detail on Water Supply	Projected Water Supplies				
		2025	2030	2035	2040	2045
Purchased or Imported Water	CBMWD	500	500	500	500	500
Groundwater (not desalinated)	Central Groundwater Basin	11,183	11,183	11,183	11,183	11,183
Recycled Water	CBMWD	200	200	200	200	200
Total		11,883	11,883	11,883	11,883	11,883

Imported Water Purchases

The City receives its imported water supply from MWD through CBMWD. Supply from MWD originates from the Colorado River and the Sacramento-San Joaquin River Delta in Northern California. The City is projected to be able to have access of its full Tier 1 limit supply with CBMWD of 500 AFY as shown in **Table 6**.

Groundwater Supply

The City uses its groundwater wells to extract groundwater from the Central Groundwater Basin and has an adjudicated right of about 11,183 AFY. The City currently maintains 8 active wells (Well Nos. 14, 18, 19, 24, 26, 27, 28, and 29) for groundwater extraction. Over the past five years, groundwater has comprised 100 percent of the total potable water supply.

Recycled Water Supply

The City purchases recycled water from CBMWD from Los Angeles County Sanitation District's Los Coyotes WRP located in the City of Cerritos for non-potable purposes, such as landscape irrigation, to augment local supplies and reduce dependence on imported water.

4. SHORTAGE STAGES AND SHORTAGE RESPONSE ACTIONS

4.1. MWD STAGES OF ACTION

WATER SURPLUS & DROUGHT MANAGEMENT PLAN (WSDM)

In addition to the provisions of the City's WSCP, the City also works in conjunction with MWD to implement conservation measures within the framework of MWD's Water Surplus and Drought Management (WSDM) Plan. The WSDM Plan was developed in 1999 by MWD with assistance and input with its member agencies. The plan addresses both surplus and shortage contingencies. MWD's WSDM Plan documents the stages of action that it would undertake in response to a water supply shortage. the City's water supply shortage stages reflect MWD's WSDM Plan.

Figure 2: Severe Droughts Highlight the Importance of Conservation Ordinances

The WSDM Plan guiding principle is to minimize adverse impacts of water shortage. The plan guides the operations of water resources (local resources, Colorado River, SWP, and regional storage) to ensure regional reliability. It identifies the expected sequence of resource management actions MWD will take during surpluses and shortages of water to minimize the probability of severe shortages that require curtailment of full-service demands. Mandatory allocations are avoided to the extent practicable; however, in the event of an extreme shortage, an allocation plan will be implemented.

MWD's WSDM and WSAP Plans help guide drought management for many agencies throughout the region.

In addition to its WSDM Plan, MWD developed a WSAP, which provides a standardized methodology for allocation of supplies during times of extreme shortage (Stage 7 in MWD's WSDM Plan). During a shortage, the City's imported water supplies will be allocated based on the methodology documented in MWD's allocation plan.

The following description of shortage stages is from MWD's 2020 UWMP, page 2-29:

> *"**Shortage**: Metropolitan can meet full-service demands and partially meet or fully meet interruptible demands, using stored water or water transfers as necessary.*
>
> ***Severe Shortage**: Metropolitan can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.*
>
> ***Extreme Shortage**: Metropolitan allocates available supply to full-service customers.*
>
> *The WSDM Plan also defines six shortage management stages to guide resource management activities. These stages are not defined merely by shortfalls in imported water supply, but also by the water balances in Metropolitan's storage programs. Thus, a 10 percent shortfall in imported supplies could be a stage one shortage if storage levels are high. If storage levels are already depleted, the same shortfall in imported supplies could potentially be defined as a more severe shortage.*
>
> *When Metropolitan must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Under most of these stages, Metropolitan is still able to meet all end-use demands for water. For shortage stages 1 through 3, Metropolitan will meet demands by withdrawing water from storage. At shortage stages 4 and 5, Metropolitan may undertake additional shortage management steps, including issuing public calls for extraordinary conservation and exercising water transfer options, or purchasing water on the open market."*

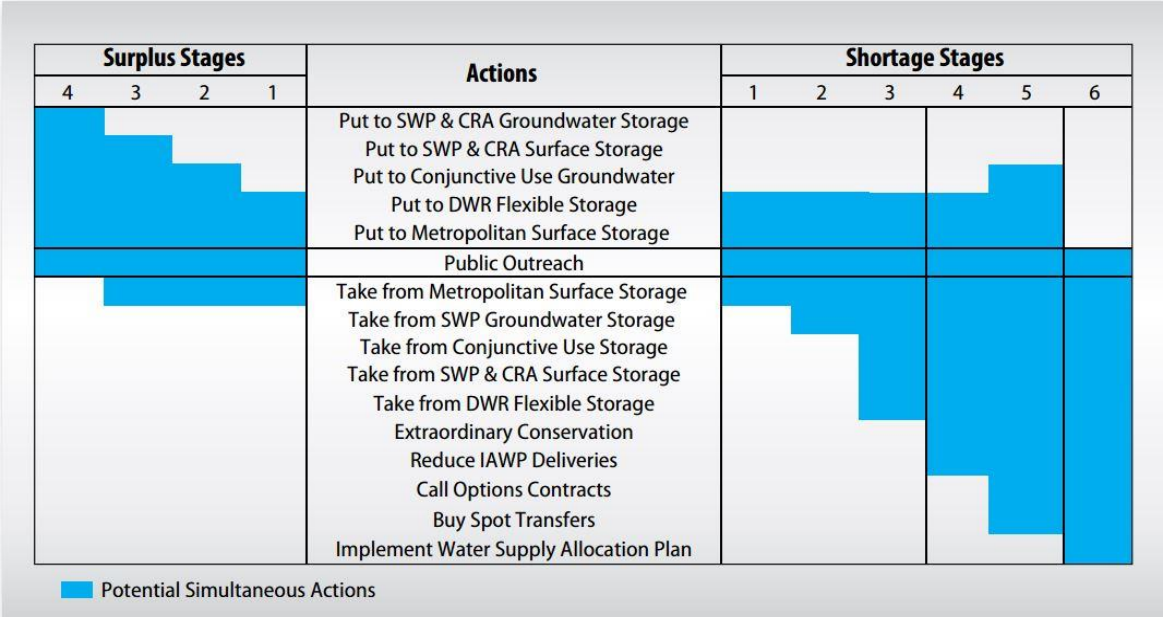

Figure 3: MWD WSDM Surplus & Drought Stages

MWD WATER SUPPLY ALLOCATION PLAN (FOR WSDM SHORTAGE STAGE 7)

In February 2008, MWD's Board of Directors adopted a WSAP, which includes a methodology for calculating supply allocations in the event that MWD enters a Shortage Stage 7 and is unable to meet the firm demands of its member agencies. MWD revised its WSAP in 2014 to include the following updates: new FY 12-13 to FY 13-14 baseline, implement a Conservation Demand Hardening Adjustment, create a separate Groundwater Replenishment Allocation for applicable agencies, and replace WSAP Penalty Rates with Allocation Surcharges based on the marginal costs of turf removal. It should be noted that the WSAP is not a rationing plan. Rather, it is a pricing plan where water is allocated at regular prices and agencies that choose to take more water pay surcharges. The surcharge pricing mechanism acts to discourage the use of water above the allocation. The WSAP uses a combination of estimated total retail demands and historical local supply production within the member agency service area to estimate the demands on MWD from each member agency in a given year. Based on a number of factors, including storage and supply conditions, MWD then determines whether it has the ability to meet these demands or will need to allocate its limited supplies among its member agencies. Thus, implicit in MWD's decision not to implement an allocation of its supplies is that, at a minimum, MWD will be able to meet the demands identified for each of the member agencies.

When a WSDM Shortage Stage 7 is triggered, MWD's WSAP helps to assess resources in the most equitable way possible.

Figure 4: MWD's Diamond Valley Lake (Potential Reserves for WSAP Allocations)

According to MWD' 2015 Integrated Resource Plan (IRP), the approach seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level and takes into account growth, local investments, changes in supply conditions and the demand hardening aspects of non-potable recycled water use and the implementation of conservation savings programs. The methodology attempts to allocate supplies based on an estimate of an agency's relative need for imported water using the following process:

1. Establish a baseline for total retail demands (and adjust for growth) to determine the allocation year total retail demands. (*"What are your total water demands?"*)

2. Estimate the amount of local supplies to be utilized in the allocation year and subtract from total retail demands. This is the allocation year baseline demand on MWD. ("*How much imported water do you need from MWD?*")

3. Apply the minimum allocation percentage (per the regional shortage level) to the allocation year baseline demand and provide minor adjustments based on various criteria. ("*Restrict normal supply deliveries and provide allocation.*")

BASE PERIOD CALCULATIONS (USED TO DETERMINE WSAP REDUCTIONS)

The Base Period is calculated using data from FY 2012-13 and FY 2013-14. Base Period wholesale demands are based on the two-year average of demands on MWD during the Base Period, including full-service, seawater barrier, seasonal shift, and surface storage operating agreement demands.

Local supplies for the base period are calculated using a two-year average of groundwater production, groundwater recovery, Los Angeles Aqueduct supply, surface water production, and other imported supplies. Non-potable recycling production is not included in this calculation, which, according to MWD, is intended to address the impact of demand hardening due to recycled water use.

Total potable retail demands for the Base Period are then calculated by adding the Base Period wholesale demands on MWD and the Base Period local supplies.

WSAP ALLOCATION YEAR CALCULATIONS

The next step is to estimate water needs in an allocation year by (1) adjusting the Base Period total retail demands for population or economic growth, and (2) accounting for changes in local supplies.

Figure 5: Lake Mead "Bathtub Ring" (December 20, 2020)

The Base Period retail demands are adjusted for growth using the average annual rate of population growth occurring since the two-year base period based on county-level data generated by the California Department of Finance.

Next, these growth-adjusted demands are adjusted again to account for (1) gains and losses of local supply, and (2) extraordinary increases in production over the base year. According to MWD, these adjustments are made to give a more accurate estimate of actual supplies in the allocation year, and, in turn, more accurately reflect an agency's demand for MWD supplies.

The adjustment for gains in local supplies is intended to account for planned or scheduled gains in local supply production above the Base Period, which are not due to extraordinary actions to increase water supply in the allocation year. These previously scheduled increases in supply programs (i.e., San Diego County Water Authority/Imperial Irrigation District) or local production are added to the base period local supplies. Again, new supplies from non-potable recycling projects are not counted as local supplies.

While the local agency does become more reliable with the addition of the new supplies, assuming that the new supplies are available during an allocation, the benefits of these programs are partially offset because the impact of adding the new supplies to the Base Period local supplies is to reduce an agency's dependence on MWD and thus their allocation under the WSAP.

Alternatively, only a portion of the additional supplies from what are termed "extraordinary

increases in production" are added back to Allocation Year local supplies depending on the retail shortage level. Extraordinary increases in production include such efforts as purchasing transfers or mining of groundwater basins. By adding only a percentage of the yield from these supplies to Allocation Year local supplies, it has the effect of "setting aside" the majority of yield for the agency who procured the supply.

Table 7 reflects the set of percentages used in the WSAP to establish water allocations for each agency.

Table 7: Water Allocation Percentages

Regional Shortage Level	Regional Shortage Percentage	Wholesale Minimum Percentage	Maximum Retail Impact Adjustment Maximum
1	5%	92.5%	2.5%
2	10%	85.0%	5.0%
3	15%	77.5%	7.5%
4	20%	70.0%	10.0%
5	25%	62.5%	12.5%
6	30%	55.0%	15.0%
7	35%	47.5%	17.5%
8	40%	40.0%	20.0%
9	45%	32.5%	22.5%
10	50%	25.0%	25.0%

4.2. CBMWD WSAP

CBMWD's Board of Directors approved to move forward reevaluating CBMWD's existing plan. The framework for CBMWD's WSAP contains similar guiding principles under MWD's plan.

- The baseline for CBMWD retail agency demand is estimated on a two-year average during FY 2012-13 and FY 2013-14.
- Conservation demand hardening credits can be applied using a method based on GPCD water use reductions. Qualifying mandatory conservation ordinances and requirements can be taken into consideration.
- Includes a provision for replenishment water deliveries to drought-impacted groundwater basins through a qualifying consultation process with MWD.

- An Allocation Surcharge will be imposed on agencies who exceed their maximum allocated supplies.

CBMWD has developed a model used in calculating allocated supplies for each of its retailers that have imported water connections.

Previous penalty rates were replaced with an Allocation Surcharge that is based on the cost associated with MWD's turf removal program. MWD's current cost to remove turf is $2 per square foot, and the estimated water savings for turf removal is 44 gallons per year for a period of 10 years. The estimated cost of the program is $1,480 per AF. Two times the Allocation Surcharge amount at $2,960 per AF would allow funding of additional conservation programs to further reduce demand on imported water. Therefore, water use between 100 percent and 115 percent of the allocated amount will result in an Allocation Surcharge of $1,480 per AF. Water use greater than 115 percent of the allocated amount will result in an Allocation Surcharge of $2,960 per AF.

The WSAP became effective when a regional shortage was declared by MWD in 2015. The allocation period typically covers a fiscal year 12-month period beginning in July and ending in the following June. Monthly reports are used to track potential overage of annual allocations that might be charged at the end of the 12-month allocation period (CBMWD, Imported Water Supply Allocation Plan, October 2014).

4.3. CITY OF SOUTH GATE RESPONSE PLAN

The City of South Gate has adopted the Ordinance No. 2263 to respond to water shortages. This Ordinance amends Title 6.64 of the South Gate Municipal Code relating to the implementation of water conservation measures. This ordinance is referred to as the "Water Conservation Ordinance."

This ordinance authorizes the City Council to protect the public health, safety and welfare when it is determined there will be a water shortage. The City Council will determine by resolution the water conservation plan. The City Council may implement water conservation measures in addition to those specified in this ordinance.

Ordinance No. 2263 has three stages of water conservation:

Level 1 **–** This level places some restrictions upon the use of water for washing down driveways and other similar exteriors, washing vehicles, use of decorative

fountains and other fixtures, water served in restaurants, water leakage loss, landscaping water waste, etc. It also requires some large users to submit a water conservation plan.

Level 2 – This level restricts landscape irrigation to two to three days per week at certain hours of the day to minimize water waste. Commercial nurseries and growers are exempt.

Level 3 – This level restricts landscape irrigation to one to two days per week at certain hours of the day to minimize water waste. Commercial nurseries and growers are required to observe these restrictions.

City Ordinances establish a lower priority for use of water to such uses as the commercial and industrial landscaping and washing down driveways or washing vehicles. The second step is to reduce the residential landscaping applications. Finally, the general water use by commercial and industrial users is reduced. The City will provide water to residential users.

The City's priority is not to reduce the availability of potable water for domestic use by residential customers, fire suppression, and the maintenance of health and safety. The conservation ordinances and program establish processes for reducing landscape use of water and curtail commercial and industrial water use.

The determination of water shortage and implementation of the Water Conservation Ordinance is to be made by the City Council. The Water Department provides reports and recommendations to the City Council regarding implementation of any water restriction measures.

Water allotment is focused on maintaining water service for public health and safety. The goals are to provide residential customers with sufficient water to provide for their needs including normal sanitary uses. Fire suppression is a primary goal to protect life and property. Landscaping water uses will be curtailed.

City customers are metered, and the Water Division reviews water use to assess the need to reduce water consumption.

CITY OF SOUTH GATE STAGES OF ACTION

The WSCP establishes progressively more serious stages of action dependent on the percent of water shortage. This shortage can be for any reason. A summary of the stages of water shortage is displayed in **Table 8**.

Per CWC Section 10632(a)(3)(B), a supplier may continue using their own water shortage levels that were previously used. In accordance with this allowance, the City has chosen to continue to use its current water shortage levels in its WSCP and has included a graphic (**Table 8**) to correlate its water shortage levels to the six standard water shortage levels mandated by CWC Section 10632(a)(3)(A).

Table 8: Water Supply Shortage Stages – Rationing Stages

City of South Gate Shortage Levels			Mandated Standard Shortage Levels	
Shortage Level	**Water Supply Condition**	**% Shortage**	**Shortage Level**	**% Shortage**
1	A Level 1 water supply shortage condition exists when the city notifies its water users that, due to drought or other supply reductions, a consumer demand reduction of up to ten percent is necessary to make more efficient use of water and respond to existing water conditions.	Up to 10%	1	Up to 10%
2	A Level 2 water supply shortage condition exists when the city notifies its water users that due to drought or other supply reductions, a consumer demand reduction of up to fifteen percent is necessary to make more efficient use of water and respond to existing water conditions.	Up to 15%	2	Up to 20%
3	A Level 3 water supply shortage emergency exists when the city declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that more than a fifty percent consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection.	Up to 40% or greater	3	Up to 30%
			4	Up to 40%
			5	Up to 50%
			6	>50%

As reflected in **Table 8**, the mandatory prohibitions applied by Level 3 will curtail water use more than 50 percent below the projected water consumption level. Correspondingly, the City's shortage levels depicted in **Table 8** are bundled in such a way that if a conservation stage to reduce water consumption by 30 percent were mandated (CWC standard shortage level 3), the prohibitions and additional conservation measures activated by the City's Level 3 will provide more than enough shortage responses to exceed the conservation goal.

The currently adopted plan has Level 3 at a 40 percent or greater shortage. It will be revised for a 50 percent or greater shortage.

4.4. PROHIBITIONS

The City's Water Conservation Ordinance No. 2263 lists water conservation requirements that will take effect upon implementation by the City Council. These prohibitions will promote the efficient use of water, reduce or eliminate water waste, and enable implementation of the City's water conservation measures. Water conservation measures become more restrictive per each progressive stage in order to address the increasing differential between water supply and demand. A list of restrictions and prohibitions that are applicable to each stage is displayed in **Table 9**.

Table 9: Mandatory Prohibitions

Stage	Restrictions and Prohibitions	Additional Explanation or Reference
Permanent	Landscape - Other landscape restriction or prohibition	Limits on Watering Hours
Permanent	Landscape - Other landscape restriction or prohibition	Limit on Water Duration
Permanent	Landscape - Restrict or prohibit runoff from landscape irrigation	No Excessive Water Flow or Runoff
Permanent	Other - Prohibit use of potable water for washing hard surfaces	Except of safety and sanitary needs
Permanent	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Excessive Loss-3 days
Permanent	Water Features - Restrict water use for decorative water features, such as fountains	Except recirculated

Stage	Restrictions and Prohibitions	Additional Explanation or Reference
Permanent	Other	Limits on Washing Vehicles
Permanent	CII - Restaurants may only serve water upon request	Mandated by state
Permanent	CII - Lodging establishment must offer opt out of linen service	Mandated by state
Permanent	Other	No Installation of Single Pass Cooling Systems
Permanent	Other	No Installation of Non-re-circulating in Commercial Car Wash or Laundry Systems
Permanent	CII - Commercial kitchens required to use pre-rinse spray valves	
Level 1	Landscape - Limit landscape irrigation to specific days	3 days/week May-Nov
Level 1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks-72 hours
Level 1	Landscape - Limit landscape irrigation to specific days	2 days/week May-Nov
Level 2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks – 48 hours
Level 2	Other water feature or swimming pool restriction	Limits on Filling Ornamental Lakes or Ponds
Level 2	Other	Limits on Washing Vehicles
Level 2	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	
Level 3	Landscape - Prohibit all landscape irrigation	
Level 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks-24 hours

4.5. CONSUMPTION REDUCTION METHODS

Additional consumption reduction methods and their stage of implementation to reduce the use of potable water are listed in **Table 10**.

Table 10: Consumption Reduction Methods

Stage When Method Takes Effect	Consumption Reduction Methods	Additional Explanation or Reference	Projected Reduction (%)
Level 2	Other	Water Allocations/ Water Budget	Up to 15%
Level 2	Implement or Modify Drought Rate Structure or Surcharge	Water Supply Shortage Rates	Up to 15%
Level 2	Other	Mandatory % Use Reductions	Up to 15%
Level 3	Moratorium or Net Zero Demand Increase on New Connections		Up to 40% or greater

4.6. CATASTROPHIC SUPPLY INTERRUPTION

A water shortage emergency could be caused by a catastrophic event such as result of drought, failures of transmission facilities, a regional power outage, earthquake, flooding, supply contamination from chemical spills, and other adverse conditions. Given the great distances imported water supplies travel to reach the City's service area, the region is vulnerable to interruptions along hundreds of miles of pipelines and other facilities associated with delivering the supplies to the region. Additionally, this water is distributed to customers through an intricate network of pipes and water mains that are susceptible to damage from earthquakes and other disasters, natural or otherwise.

MWD

MWD has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM and WSAP Plans. MWD also developed an Emergency Storage Objective to mitigate potential interruption in water supplies resulting from catastrophic occurrences within the Southern California region,

Figure 6: Reservoirs Provide Emergency Supplies (Lake Skinner)

including seismic events along the San Andreas Fault. In addition, MWD is working with the state to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the Southern California region, such as a probable maximum seismic event in the Delta, which could cause levee failure and disruption of SWP deliveries.

In July 2019, MWD's Board adopted amendments to their Administrative Code allowing deliveries of member agency water supplies in MWD's system during an emergency. With these enabled deliveries, MWD's member agencies will be able to deliver their water through MWD's system under specific emergency conditions. Emergency deliveries using a portion of MWD's system can only be made if MWD is unable to make deliveries to a member agency due to physical damage to its system resulting from a natural disaster or other emergency, and there are no alternatives.

CITY OF SOUTH GATE

The City has adopted ordinances to respond to water shortage. The City is also a participant in the Member Agency Response System (MARS), which was developed by MWD for its members' agencies. The MARS network was developed in a coordinated effort to improve emergency response and expedite mutual aid to participating agencies.

The City's water conservation ordinances assist in the reduction of water use; however, if a natural disaster, such as an earthquake, causes an emergency, the City will follow the MARS network of MWD.

4.7. SEISMIC RISK ASSESSMENT AND MITIGATION PLAN

INTRODUCTION

Earthquakes can vary significantly in magnitude and the amount of damage caused. Major earthquakes can cause loss of electrical power, damage to the City's structures and equipment, disruption of service, and injuries to staff. This section provides a description of the City's procedures (i.e., response and mitigation) after an earthquake event.

As mandated in CWC Section 10632.5, beginning January 1, 2020, water suppliers are required to include a seismic risk assessment and mitigation plan as part of their WSCP to assess the vulnerability of each of the various facilities of their water system and mitigate those vulnerabilities. If an urban water supplier does not have a seismic risk assessment and mitigation plan, the urban water supplier may instead, per CWC Section 10632.5(c), include a local hazard mitigation plan (LHMP) or a multi-hazard mitigation plan. This requirement is satisfied by the incorporation of elements and analyses from the City's Risk and Resilience Assessment (RRA), Emergency Response Plan (ERP), and LHMP. The complete RRA and ERP documents are not presented within this plan due to the highly confidential nature of the reports. Although the City does not currently have a seismic risk assessment and mitigation plan, the City does have an LHMP (**Appendix B**), which was prepared in June 2018 pursuant to the requirements of the Disaster Mitigation Act of 2000.

CITY OF SOUTH GATE LHMP

In July 2015, the City kicked off the development of an LHMP and an update to the General Plan Safety Element. Together, the two documents provide the City's framework to mitigate local risks to natural hazards and plan for a resilient future. The City received Federal Emergency Management Agency (FEMA) certification of the LHMP to maximize the City's eligibility for future grant funding for hazard mitigation.

LHMP Purpose

The City prepared the LHMP to be consistent with current FEMA requirements for hazard mitigation plans and to inform the Safety Element of the City's General Plan.

The goals and objectives of the City's LHMP include:

- Enhanced protection of life and property from hazard impacts.
- Municipal and emergency operations are fully functional during disasters.
- Strengthened partnerships within the community and throughout the region that enhance hazard mitigation, preparation, response, and recovery capabilities.
- Educated and empowered community members prepare for, mitigate, respond to, and recover from hazards that affect their family and property.

SEISMOLOGY OF WATER FACILITIES & VULNERABILITY

An earthquake is caused by the shifting of tectonic plates beneath the Earth's surface. Ground shaking from moving geologic plates collapses buildings and bridges, and sometimes triggers landslides, avalanches, flash floods, fires and tsunamis. The strong ground motion of earthquakes has the potential to cause a great deal of damage to drinking water and wastewater utilities, particularly since most utility components are constructed from inflexible materials (i.e., concrete, metal pipes). Earthquakes create many cascading and secondary impacts that may include, but are not limited to:

- Structural damage to facility infrastructure and equipment
- Water tank damage or collapse
- Water source transmission line realignment or damage
- Damage to distribution lines due to shifting ground and soil liquefaction, resulting in potential water loss, water service interruptions, low pressure, contamination and sinkholes and/or large pools of water throughout the service area
- Loss of power and communication infrastructure
- Restricted access to facilities due to debris and damage to roadways

Additional seismic risks are further described in the City's LHMP.

According to the maps provided on the California Office of Emergency Services' online planning tool (My Plan) and the California Geological Survey's online earthquake hazards zone application (EQ Zapp), no portion of the City's system is crossed by a known fault line as shown in **Figure 7**. As indicated in the LHMP, the 6 nearest faults are within 60 miles of the City: Newport-Inglewood, Palos Verdes, Whittier-North Elsinore, Sierra Madre, San Andreas, and San Jacinto fault zones. Therefore, there are no City water structures with an extremely high risk of earthquake damage. There are, however, areas indicated in the LHMP with increased risk due to soil liquefaction and some critical

facilities that are more susceptible to seismic shaking and earthquake-induced liquefaction than other facilities. Per the LHMP, although the City is located in a state liquefaction zone, water tables are deep enough (between 80 and 100 feet) that, despite being in a liquefaction zone, liquefaction does not pose a substantial threat.

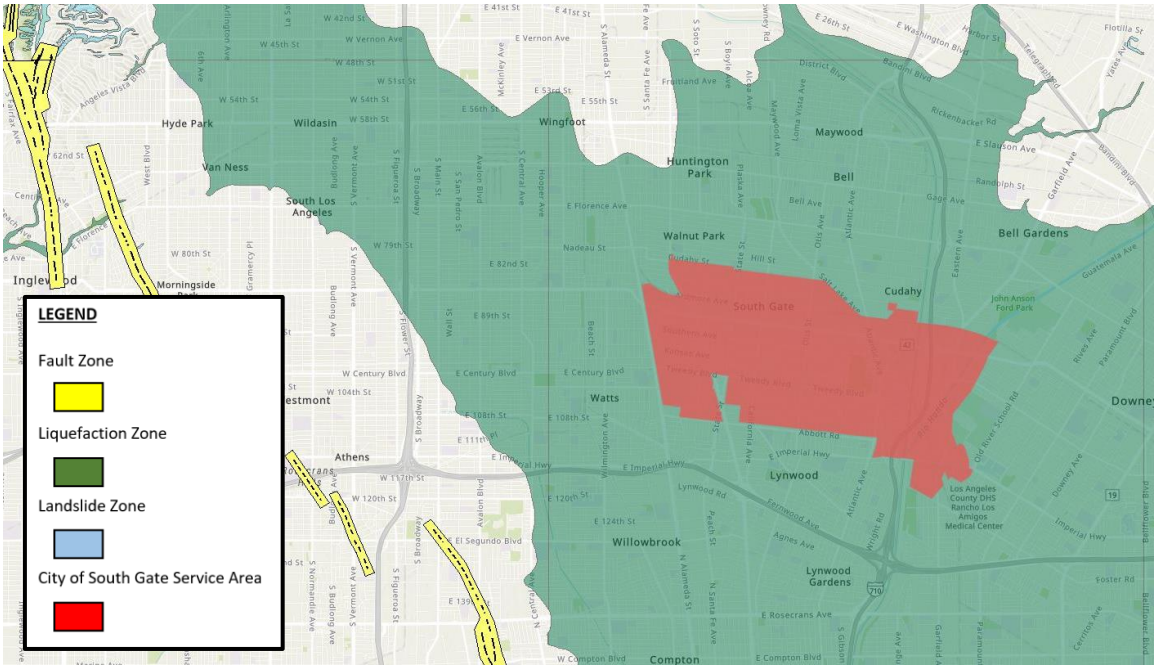

Figure 7: Seismic Hazards within the City's Service Area (California Geological Survey)

ERP – EARTHQUAKE EMERGENCY RESPONSE

The City is currently updating its ERP to replace its existing ERP by December 31, 2021 in order to meet the requirements of America's Water Infrastructure Act of 2018 (AWIA). The ERP provides City staff with the necessary information, strategies, procedures, and mitigation actions to address earthquake emergencies. The City's ERP policies are intended to guide disaster management planners and emergency responders, and to provide a consistently high level of preparedness at all the facilities.

Per the ERP, after a major earthquake, the Emergency Operations Center (EOC) will be activated by the EOC Coordinator if potential or significant damage has occurred in the City's service area, and the situation cannot be handled by routine public safety response or immediate mutual aid assistance. Based on the severity of the incident, the City Manager or designee may also recommend that the Los Angeles County EOC be activated. The EOC Coordinator assigned by the City shall assess the situation and establish the incident command post as necessary. The City EOC designee should provide immediate, specific information to the relevant agencies by phone or radio and be prepared to describe the

magnitude and potential impact of the event on public health and safety. Updates on the actions of the City, as well as damages and recovery actions, should be provided regularly and consistently during the event.

In the event of an emergency, City personnel will be required to inspect all water facilities for apparent signs of damage or abnormal conditions and conserve the existing water supply in the reservoirs from loss through water line breaks in the distribution system. Assessing damage to the water system requires a street-by-street inspection of local water mains, transmission mains, groundwater production wells, water storage plants, emergency interconnections and import water connections. Crews will search for damage in teams assigned by the Water Division Manager or Water Distribution Foreman.

MITIGATION ACTIONS

Hazard mitigation may occur during any phase of a threat, emergency, or disaster. Mitigation can and may take place during the preparedness (before), response (during), and recovery (after) phases. The process of hazard mitigation involves evaluating a hazard's impact and identifying and implementing actions to minimize or eliminate the impact.

Figure 8: The Five Phases of Emergency Management

According to the City's 2018 LHMP, mitigation actions for seismic hazards include, but are not limited to, the following:

- Conduct a comprehensive and ongoing education campaign to improve awareness of hazard threats and ways to reduce risks.
- Adopt, implement, and actively enforce the current state building code.
- Retrofit City-owned facilities and infrastructure, including water storage tanks, to increase resiliency to seismic hazards and to remain operable immediately after seismic events.
- If deemed necessary, conduct a seismic study for public buildings and infrastructure and retrofit facilities based on findings and available funding.
- Adopt a phased ordinance for seismic retrofits to require existing unreinforced buildings to meet current seismic standards. Identify and secure to the extent

possible funding to assist property owners with retrofit costs.

- In coordination with state and regional agencies, conduct seismic evaluations of infrastructure owned by other agencies in the City (i.e., CBMWD), including electrical wires and natural gas pipelines, and identify funding sources to conduct seismic retrofits of vulnerable infrastructure.

The mitigation actions and goals established by the City to mitigate seismic risks and vulnerabilities are further described within its LHMP and ERP.

5. COMMUNICATION PROTOCOLS

5.1. INTRODUCTION

The City's communication protocol includes the various channels that the City will utilize to convey critical messages regarding water shortage allocations and voluntary and mandatory actions. A strong communication strategy and a common understanding on the water supply situation and necessary actions between the City and its customers, the public, elected officials, and other key stakeholders are essential should the WSCP need to be activated. How the water shortage messages are addressed to the public are described in this communication protocol. The communication protocol will be in place prior to a water supply shortage. Activation of the communication protocol will continue through all subsequent water shortage stages. The City will ensure outreach efforts are reaching key audiences as needed.

It is important to communicate to its customers the following when urgent conservation is needed:

- Which shortage stage is being implemented;
- What response actions are triggered to save water;
- Why water needs to be saved; and
- What actions the City is taking to respond to the water supply situation.

5.2. COORDINATION

The goal of the City's outreach plans during dry periods and water shortages is to maintain effective coordination with key audiences. In order to maintain reliability in this communication, the City will work closely with the City Council. During dry periods or other times of limited supply, the frequency and extent of coordination will increase to

ensure outreach tactics are consistent with the changing needs of the City and its customers. In addition to collaboration with its wholesaler, CBMWD, the City will seek opportunities with outside organizations and agencies to complement its own outreach.

5.3. COMMUNICATION GOALS

Communication objectives during an existing or anticipated water shortage condition include the following:

- Motivate key audiences (i.e., customers) to increase conservation in following any voluntary or mandatory actions called for at the current stage of the WSCP.
- Raise awareness of the drought, regulations, or other conditions affecting water sources and supplies.
- Educate customers, key stakeholders, elected officials, and the general public about water supply reliability, water quality, and water delivery.
- Prepare customers for any potential escalation of the supply shortage stages.

5.4. COMMUNICATION PROTOCOL FOR CURRENT OR PREDICTED SHORTAGE

A current or predicted shortage, as determined by the City's Annual Assessment, will be addressed to the public and its customers upon submittal of the Annual Water Shortage Assessment Report to DWR by July 1 of every year. This notice may be conducted by the City's website, signage in front of City Hall, and wholesale agency coordination.

5.5. COMMUNICATION PROTOCOL FOR SHORTAGE RESPONSE ACTIONS TRIGGERED OR ANTICIPATED TO BE TRIGGERED

The City's customers and public will be notified about any triggered or anticipated to be triggered shortage response actions. Prior to making a public announcement of a water supply shortage level, the City Manager shall document the basis for the water shortage declaration and communicate this information to the City Council. The existence of Level 1, Level 2, and Level 3 water supply shortage conditions may be declared by resolution of the City adopted at a regular or special public meeting held in accordance with state law. The mandatory conservation requirements applicable to Level 1 or Level 2 conditions will take effect on the tenth day after the date the shortage level is declared. Within five days following the declaration of the shortage level, the city must publish a copy of the resolution in a newspaper used for publication of official notices. If the city establishes a water allocation, it must provide notice of the allocation by including it in the regular billing

statement for fees or charges for ongoing water service. A water allocation will be effective on the fifth day following the date of mailing or at such later date as specified in the notice.

The City Council will change the level designation as appropriate; however, the City Council will not impose mandatory measures without first conducting a duly-noticed public hearing pursuant to CWC Sections 350 et seq., or 375 et seq. The appropriate level of water conservation and the shortage response action triggered by the level is then declared in a public notification posted on the City's website and published in a local newspaper of general circulation. Upon declaration by the City Council that a water shortage emergency exists, the WSCP shall be implemented and remain in effect until the City Council declares the water shortage emergency has ended.

5.6. OTHER RELEVANT COMMUNICATION PROTOCOLS

To reduce water use consumption during any water shortage level, the City will increase its public education and outreach efforts to build awareness of needed actions from the public. Moreover, the City will regularly revise its outreach campaign to reflect current supply conditions. Key communication strategies and associated water shortage level implementation are listed below:

- Promote available water assistance resources for vulnerable populations; specialized outreach for impacted industries (Level 2).
- Keep stakeholders aware of conditions (all Levels).
- Proclaim phase change to key stakeholders and the general public (all Levels).
- Conduct meetings with elected officials and other key civic and business leaders (Level 2).
- Encourage reduced optional outdoor use through outreach (Level 1).

The City may implement these communication strategies through its newsletters, website, and social media platforms to reflect supply conditions. In addition, the City may conduct news briefings or other media outlets (i.e., TV, radio, newspapers) to announce changes in supply conditions.

5.7. CRISIS COMMUNICATION PROTOCOL

In the event of a catastrophic supply interruption due to a natural disaster or damage to the City water facilities, the City will implement communication procedures in accordance with local, regional, state, and federal emergency response guidelines as outlined in its

ERP. Depending upon the severity of the emergency and potential damage to the City water facilities, the City may determine that it is necessary to utilize the Standardized Emergency Management System (SEMS) response and the Incident Command System (ICS). Public information and crisis communication are an integral part of the ICS structure. National Incident Management System (NIMS), SEMS, and ICS have been integrated into the ERP. It provides for a strategic response by all employees and assigns specific responsibilities in the event the plan is activated.

When an incident occurs interrupting supply, the City Manager, EOC Coordinator, and other assigned personnel will go to the designated EOC and begin implementation of City procedures and employ appropriate strategies from the shortage stages in **Table 8**.

Crisis communication efforts will concentrate on providing information to the public and external audiences. Furthermore, outreach messaging will reflect emergency conditions and the need to focus on health and public safety. The City will keep the Members of the City Council informed of incident status and coordinate with public health officials.

The City will maintain communication with its wholesaler and its customers. In addition, the City may also authorize release of public information to news media to announce conditions and explain needed action. Finally, the City will ensure ongoing coordination with emergency response services with daily advisories or alerts as needed.

6. COMPLIANCE AND ENFORCEMENT

The means by which the City will use to safeguard compliance with and enforcement of water shortage rules include, but are not limited to, the following:

- Warning and citation protocols
- Water-waste patrols
- Fines and surcharges
- Rules and measures associated with fixing breaks or leaks in irrigation systems
- Customer service, education, and communication programs
- Other responses

The City may penalize repeat violators of water waste prohibitions through an escalating series of imposed actions. Compliance and enforcement protocols for violators are further detailed in the City's Municipal Code.

6.1. PENALTIES OR CHARGES

Violation of any of the water use restrictions as listed in **Table 9** will be penalized as follows:

A. Misdemeanor. Any violation may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than 30 days, or by a fine not exceeding $1,000 or as established by resolution of the City Council, whichever is greater, or by both.

B. Civil Penalties. Civil penalties for failure to comply with any provisions of the Water Conservation Ordinance are as follows:

1. **First Violation**. The City will issue a written warning and deliver a copy of the ordinance codified in the Water Conservation Ordinance by certified mail.

2. **Second Violation**. A second violation within the preceding 12 calendar months is punishable by a fine not to exceed $100 or as established by resolution of the City Council, whichever is greater.

3. **Third Violation**. A third violation within the preceding 12 calendar months is punishable by a fine not to exceed $250 or as established by resolution of the City Council, whichever is greater.

4. **Fourth and Subsequent Violations**. A fourth and any subsequent violation is punishable by a fine not to exceed $500 or as established by resolution of the City Council, whichever is greater.

    i. Water Flow Restrictor. In addition to any fines, the City may install a services water flow restrictor device of approximately 1 gallon per minute capacity for services up to 1- and 1 1/2-inch size and comparatively sized restrictors for larger services after written notice of intent to install a flow restrictor for a minimum of 48 hours.

    ii. Termination of Service. In addition to any fines and the installation of a water flow restrictor, the city may disconnect and/or terminate a customer's water service.

C. Cost of Flow Restrictor and Disconnecting Service. A person or entity that violates the Water Conservation Ordinance is responsible for payment of the City's charges

for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the City's schedule of charges then in effect. This charge for installing or removing a flow restriction device will be set at $100 each or as established by resolution of the City Council, whichever is greater. The charge for installing and/or removing any flow restricting device must be paid to the City before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of basic water rates.

D. Separate Offenses. Each day that violation of the Water Conservation Ordinance occurs is a separate offense.

6.2. APPEALS PROCEDURE

The City will issue a notice of violation by certified mail or personal delivery at least 10 days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A customer may appeal the notice of violation by filing a written notice of appeal with the City no later than the close of business on the day before the date scheduled for enforcement action. Any notice of violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the City will mail written notice of the hearing date to the customer at least 10 days before the date of the hearing.

6.3. EXEMPTION FROM COMPLIANCE

HARDSHIP WAIVER

If, due to unique circumstances, a specific requirement of the Water Conservation Ordinance would result in undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply for a waiver to the requirements in accordance with administrative procedures established by the City.

7. LEGAL AUTHORITIES

Under California law, including CWC Chapter 3 (commencing with Section 350) of Division 1, Parts 2.55 and 2.6 of Division 6, Division 13, and Article X, Section 2 of the California Constitution, the City Council is authorized to implement the water shortage response actions outlined in this section. In all water shortage cases, shortage response actions to be implemented will be at the discretion of the City Council and will be based

on an assessment of the supply shortage, customer response, and need for demand reductions.

It is noted that upon proclamation by the Governor of a state of emergency under the California Emergency Services Act, Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code, based on drought conditions, the state will defer to implementation of locally adopted water shortage contingency plans to the extent practicable. The City will coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

8. FINANCIAL CONSEQUENCES OF WSCP IMPLEMENTATION

During a catastrophic interruption of water supplies, prolonged drought, or water shortage of any kind, the City will experience a reduction in revenue due to reduced water sales. Throughout this period of time, expenditures may increase or decrease with varying circumstances. Expenditures may increase in the event of significant damage to the water system, resulting in emergency repairs. Expenditures may also decrease as less water is pumped through the system, resulting in lower power costs.

The City receives water revenue from a service charge and a commodity charge based on consumption. The service charge recovers costs associated with providing water to the serviced property. The service charge does not vary with consumption, and the commodity charge is based on water usage. Rates have been designed to recover the full cost of water service in the charges. Therefore, the total cost of purchasing water would decrease as the usage or sale of water decreases.

The City will monitor projected revenues and expenditures should an extreme shortage and a large reduction in water sales occur for an extended period of time. To overcome these potential revenue losses and/or expenditure impacts, the City may use reserves. The City also partners with the region to increase outreach to customers, offsetting the individual expenditure amount. If necessary, the City may reduce expenditures by:

- delaying implementation of its Capital Improvement Program and equipment purchases;
- adjust the work force;
- implement a drought surcharge; and/or
- make adjustments to its water rate structure.

9. MONITORING AND REPORTING

9.1. REDUCTION MEASURING MECHANISM

The City's production and consumption data are recorded by meters and reviewed regularly. Data will be monitored and compared periodically and used to measure the effectiveness of any water shortage contingency stage that may be implemented.

The City will follow CBMWD's Plan and other regional guidelines as the City enters into Water Shortage Stages. If MWD or CBMWD calls for extraordinary conservation, MWD's Drought Program Officer will coordinate public information activities directly with the City through CBMWD and monitor the effectiveness of ongoing conservation programs.

MWD will provide CBMWD with water use monthly reports that will compare each member agency's current cumulative retail usage to their allocation baseline. MWD will also provide quarterly reports on its cumulative retail usage versus its allocation baseline.

10. SPECIAL WATER FEATURE DISTINCTION

As required under CWC 10632(b), water features that are not pools or spas must be analyzed and defined separately from pools and spas in the WSCP. Non-pool or non-spa water features may use recycled water, whereas, for health and safety considerations, pools and spas must use potable water. Furthermore, the WSCP requires potable water recirculation for fountains and decorative water features.

11. WSCP ADOPTION AND REFINEMENT PROCEDURES

11.1. WSCP PUBLIC NOTICE AND ADOPTION

To encourage broad community participation in the WSCP preparation process, the City provided 60-day notification letters to agencies within the City's service area. Copies of the draft WSCP were made available for public review at the City Hall prior to the public hearing. Shortly before the public hearing, a two-week and a one-week notice was published in the local press alerting the public of the public hearing. At a subsequent board meeting following the public hearing, the City's final WSCP was approved and adopted by its Councilmembers on June 22, 2021. **Appendix A** contains the Council resolution adopting the WSCP. The final plan was submitted to DWR within 30 days of Council adoption and includes all information necessary to meet the requirements of CWC Section 10632.

By July 1, 2021, the City's approved WSCP was filed with DWR. By July 1, 2021, the City's plan was submitted to the California State Library, County of Los Angeles, and cities within its service area. The City will make the plan available for public review no later than 30 days after filing with DWR.

11.2. WSCP REFINEMENT PROCEDURES

This section discusses the process for reviewing and updating the WSCP to ensure it remains actively used, relevant and appropriate to the community, and consistent with applicable state and local requirements. It is vital that the City's WSCP remain up to date so as to best ensure shortage risk tolerance is adequate, appropriate water shortage mitigation strategies are implemented as needed, proper procedures for water efficient practices are in place for the community, and better alignment with long-term water use goals.

The City's Water Division is responsible for maintaining this plan and updating it as needed. The Water Division Manager is the primary City staff member who will carry out this process, under the direction of the Water Engineer or other appropriate staff member. The Water Engineer, or their designee, will serve as the WSCP project manager and will coordinate maintenance of the plan, conduct the formal review process, and direct the plan updates. The project manager will assign tasks, which may include collecting data, developing new or updated water shortage mitigation measures, updating sections of the plan, and presenting the plan to others.

Appendix A: City Council Resolution Adopting WSCP

City of South Gate | Water Shortage Contingency Plan

City of South Gate

8650 CALIFORNIA AVENUE • SOUTH GATE, CA 90280 • (323) 563-9510
FAX: (323) 563-5411

CARMEN AVALOS, CMC
OFFICE OF THE CITY CLERK

STATE OF CALIFORNIA)

COUNTY OF LOS ANGELES) SS

CITY OF SOUTH GATE)

I, Carmen Avalos, City Clerk of the City of South Gate, California, hereby certify that the attached document is a true and correct copy of Resolution No. 2021-27-CC - Resolution of the City Council of the City of South Gate, California, adopting the 2020 Water Shortage Contingency Plan to comply with the Urban Water Management Planning Act (California Water Code Division 6, Part 2.6, Sections 10610 through 10657) as mandated in California.

The original is on file in the Office of the City Clerk, located at 8650 California Avenue, South Gate, California 90280.

IN WITNESS WHEREOF, I hereunto set my hand and affix my official seal this 22nd day of June 2021.

Carmen Avalos, City Clerk
City of South Gate, California

RESOLUTION NO. 2021-27-CC

CITY OF SOUTH GATE
LOS ANGELES COUNTY, CALIFORNIA

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SOUTH GATE, CALIFORNIA, ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN TO COMPLY WITH THE URBAN WATER MANAGEMENT PLANNING ACT (CALIFORNIA WATER CODE DIVISION 6, PART 2.6, SECTIONS 10610 THROUGH 10657) AS MANDATED IN CALIFORNIA

WHEREAS, the Urban Water Management Planning Act ("Act") (California Water Code Division 6, Part 2.6, Sections 10610 through 10656 and 10608) requires urban water suppliers that serve either more than 3,000 acre-feet of water annually or have more than 3,000 service connections to prepare an Urban Water Management Plan ("UWMP") every five years;

WHEREAS, Section 10632 of the California Water Code requires that every urban water supplier shall prepare and adopt a Water Shortage Contingency Plan ("WSCP") as part of its UWMP;

WHEREAS, pursuant to recent amendments to the Act, urban water suppliers are required to update and electronically submit their 2020 Plans to the California Department of Water Resources (DWR) by July 1, 2021;

WHEREAS, the City of South Gate ("City"), is an urban water supplier providing water to over 14,000 customers and serving an annual average of approximately 8,300 acre-feet of water, is required to prepare, adopt and file a WSCP with the State of California Department of Water Resources;

WHEREAS, in 2021, the City prepared its 2020 WSCP to assess existing and future water demands and water sources, over a 25-year horizon, to ensure there are adequate water supplies for the City's water district through the year 2045;

WHEREAS, based on the analysis prepared in the 2020 UWMP and 2020 WSCP, sufficient water resources are forecasted to be available to meet water demands in the City's water district over the next 25 years, thus, a water shortage is not projected at this time;

WHEREAS, consistent with Section 6066 of the Government Code, the 2020 UWMP was made available for public review, for which a notice of the Public Hearing was published in the *Los Angeles Wave* newspaper; posted on the City's Website; and mailed directly to the Los Angeles County Department of Public Works; Golden State Water Company; and the Cities of Downey, Huntington Park, and Lynwood; and

WHEREAS, the City Council conducted a duly noticed Public Hearing to receive input on the 2020 WSCP on June 22, 2021.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH GATE DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The City Council does hereby declare that the above recitals are true and correct and incorporated herein by reference.

SECTION 2. The City Council does hereby adopt the City's 2020 WSCP attached hereto as Exhibit "A", which was prepared by the City in accordance with Section 10642 of the California Water Code and in accordance with all other application provisions of the Urban Water Management Planning Act.

SECTION 3. The City Clerk is hereby directed to make a copy of the 2020 UWMP available for public review at the City Clerk's office no later than 30 days after submittal to the California Department of Water Resources and the California State Library in accordance with Section 10645 of the California Water Code.

SECTION 4. The City Clerk shall certify to the adoption of this Resolution which shall be effective upon its adoption.

PASSED, APPROVED and **ADOPTED** this 22nd day of **June 2021.**

CITY OF SOUTH GATE:

By: _____
Al Rios, Mayor

ATTESTED:

By: _____
Carmen Avalos, City Clerk
(SEAL)

APPROVED AS TO FORM:

By: _____
Raul F. Salinas, City Attorney

RESOLUTION CERTIFICATION PAGE

STATE OF CALIFORNIA)

COUNTY OF LOS ANGELES) SS

CITY OF SOUTH GATE)

I, Carmen Avalos, City Clerk of the City of South Gate, California, hereby certify that the whole number of Members of the City Council of said City is five; that Resolution No. 2021-27-CC was adopted by the City Council at their Regular Meeting held on June 22, 2021 by the following vote:

Ayes:	Council Members:	Rios, Avalos, Davila and Hurtado
Noes:	Council Members:	None
Absent:	Council Members:	Diaz
Abstain:	Council Members:	None
Recused:	Council Member:	None

Witness my hand and the seal of said City on June 23, 2021.

Carmen Avalos, City Clerk
City of South Gate, California

Appendix B: City's Local Hazard Mitigation Plan

City of South Gate | Water Shortage Contingency Plan

CITY OF SOUTH GATE

HAZARD MITIGATION PLAN

FINAL PLAN

June 2018

TABLE OF CONTENTS

Chapter 1: Introduction 1

1.1 Plan Purpose and Mitigation Goals 1
1.2 Authority 1
1.3 Plan Adoption 2
1.4 Plan Use 4
1.5 Hazard Mitigation Planning Process 4
1.6 Public Review Draft 6
1.7 Supporting Plans, Studies, and Technical Reports 7

Chapter 2: Community Profile 11

2.1 Physical Setting 11
2.2 History 11
2.3 Community Profile 13
2.4 Economic Trends 14
2.5 Existing Land Uses 15
2.6 Development Trends 15
2.7 Critical Facilities 15
2.8 Disaster and Evacuation Routes 18

Chapter 3: Hazard Profiles 23

3.1 Hazard Identification and Prioritization 23
3.2 Climate Change Considerations 27
3.3 Vulnerability/Risk Assessment Method 27
3.4 Hazard Profiles 28
3.5 Vulnerability Summary 66

Chapter 4: Mitigation Actions 71

4.1 Hazard Mitigation Overview 71
4.2 Hazard Mitigation Measures 74
4.3 Capabilities Assessment 85

Chapter 5: Plan Maintenance 91
5.1 Coordinating Body 91
5.2 Plan Evaluation 91
5.3 Method and Schedule for Plan Update 92
5.4 Implementation through Existing Programs 93
5.5 Continued Public Involvement 93
5.6 Point of Contact 94
Appendix A – LHMP Team Documents A-1
Appendix B – Public Outreach Materials and Outcomes B-1
Appendix C – Master Facilities List C-1

TABLES

Table 1. LHMP Team Meetings 5
Table 2. Sources of Information Used to Create the LHMP 7
Table 3. South Gate Population Data (2010) 13
Table 4. South Gate Household Data (2010) 13
Table 5. South Gate Ethnicity (2010) 13
Table 6. South Gate Educational Attainment (2010) 14
Table 7. Current Land Uses In South Gate 15
Table 8. 2015 Development Activities 16
Table 9. South Gate Critical Facilities 17
Table 10. South Gate Bridges 17
Table 11. City of South Gate Hazard Identification, 2015 23
Table 12. Hazard Ranking Scores and Weighing Factors 26
Table 13. South Gate Hazard Ranking Worksheet Outcomes 27
Table 14. US Drought Monitor Classification Scheme 28
Table 15. Mercalli Intensity Scale 32
Table 16. Comparison of Moment Magnitude and Mercalli Intensity Scales 33
Table 17. Critical Facilities Susceptible to Seismic Shaking and Liquefaction 43
Table 18. Cortese List Sites in South Gate 47
Table 19. Regulated Groundwater Contaminant Sites in South Gate by Status 48
Table 20. South Gate Critical Facilities Located Adjacent to Hazardous Materials Sites 50

Table 21. Enhanced Fujita Scale 51
Table 22. Beaufort Scale 52
Table 23. Dam Safety Action Classification System 61
Table 24. South Gate Critical Facilities at Risk of Inundation from Dam Failure 63
Table 25. Risk Assessment Summary Table 66
Table 26. Populated Area and Number of Residents and Employees Affected 68
Table 27. Most Costly South Gate Critical Facilities 69
Table 28. STAPLE/E Review and Selection Criteria 73
Table 29. Hazard Mitigation Actions 75
Table 30. South Gate Capabilities Assessment 85

FIGURES

Figure 1. City of South Gate 2017 Local Hazard Mitigation Plan Resolution 3
Figure 2. Regional Vicinity Map 12
Figure 3. South Gate Critical Facilities and Bridges 19
Figure 4. South Gate Evacuation Routes 21
Figure 5. California Drought Conditions, Summer 2016 29
Figure 6. Proximity to Major Faults 37
Figure 7. Potential Ground Shaking 39
Figure 8. Area Susceptible to Liquefaction 41
Figure 9. Hazardous Material Locations 49
Figure 10. South Gate Flood Zones 56
Figure 11. South Gate Dam Failure Inundation Zones 64

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CHAPTER 1: INTRODUCTION

A natural hazard is a natural occurring event, such as an earthquake or flood that could harm human life and property. Natural hazards pose severe risks to people and property. Such events may cause injuries or deaths, and damage or destroy buildings and infrastructure. People may be displaced from their homes, key services can be disrupted, and the local economy may be affected. While a community cannot fully protect against every potential impact of every hazard, such impacts can be reduced or mitigated. This Local Hazard Mitigation Plan (LHMP, Plan) identifies opportunities to mitigate these impacts and improve resiliency to natural hazards in the City of South Gate. It is an update to the City's previous LHMP, which was adopted in 2008.

1.1 Plan Purpose and Mitigation Goals

This Plan helps the City of South Gate become a safer place to live and work by identifying effective and feasible actions to achieve the following mitigation-related public safety goals identified in the General Plan:

1. Enhanced protection of life and property from hazard impacts.
2. Municipal and emergency operations are fully functional during disasters.
3. Strengthened partnerships within the community and throughout the region that enhance hazard mitigation, preparation, response, and recovery capabilities.
4. Educated and empowered community members prepare for, mitigate, respond to, and recover from hazards that affect their family and property.

Plan actions include education and outreach programs; the development of partnerships with businesses, nonprofits, and other government agencies; capital improvements; updates to municipal regulations and practices; and monitoring and reporting activities. This Plan establishes a basis for coordination and collaboration among participating public and private organizations, identifies and prioritizes future mitigation activities and projects, and assists in meeting the requirements of federal assistance programs.

The City prepared this Plan to be consistent with current Federal Emergency Management Agency (FEMA) requirements for hazard mitigation plans and to inform the Safety Element of the City's General Plan.

1.2 Authority

Federal Emergency Management Agency

The Federal Disaster Management Act of 2000 (DMA 2000), Section 322 (a-d), requires that any local government wishing to receive federal disaster mitigation funds have a mitigation plan that accomplishes the following:

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

This Plan meets the requirements identified in DMA 2000 and is consistent with current FEMA hazard mitigation requirements and guidance.

State of California

California Government Code Section 65302.6 (as added by Assembly Bill [AB] 2140) identifies specific components to include in a local mitigation plan:

- An evaluation of the earthquake performance of public facilities that provide critical government functions, shelters, and other essential services.
- An inventory of private facilities that may be hazardous.
- Strategies to reduce the risk from private and government facilities.

In addition, California Government Code Section 8685.9 (also as added by AB 2140) provides for additional disaster funding if a jurisdiction has an adopted mitigation plan as part of its General Plan. This Plan is consistent with Sections 65302.6 and 8685.9, as it is integrated with the Safety Element of the General Plan.

Local Authority

The adopted City of South Gate General Plan provides a comprehensive, long-term blueprint for community growth and development. Goal CH 8 in the Healthy Communities element of the General Plan calls for a "reduced risk to the community from earthquakes and other natural and manmade hazards". This LHMP implements this goal in the General Plan by improving mitigation actions in the City, thereby reducing the threat the community faces from natural and human-caused hazards.

1.3 Plan Adoption

The City of South Gate will adopt the LHMP via a resolution of the City Council following plan approval from FEMA. Figure 1 is the resolution used to adopt the 2018 Local Hazard Mitigation Plan.

Figure 1. City of South Gate 2018 Local Hazard Mitigation Plan Resolution

[A copy of the resolution will be added upon receipt of Approved Pending Adoption Notification from FEMA.]

1.4 Plan Use

Each section of the Plan provides information and resources to assist people in understanding the hazard-related issues facing South Gate residents and businesses. The Plan consists of the following chapters:

- Chapter 1: Introduction. The introduction describes the background and purpose of the LHMP, including the Plan's regulatory authority and a summary of the Plan development process.
- Chapter 2: Community Profile. The community profile summarizes the history, geography, demographics, and development conditions of South Gate. It provides background and additional context for the hazard assessment and mitigation actions.
- Chapter 3: Hazard Profiles. This chapter identifies the types of hazards present in South Gate, their historical occurrence in and around the community, the risks these hazards pose to South Gate, and the vulnerability of critical facilities and infrastructure to hazardous events.
- Chapter 4: Mitigation Actions. This chapter provides policies and strategies to reduce the risks to residents, businesses, and critical facilities and infrastructure from hazardous events. These policies and strategies may include pre-disaster mitigation programs or post-disaster response and recovery activities.
- Chapter 5: Plan Maintenance. This chapter provides information on implementing, monitoring, and evaluating the Plan. It also discusses the assets and capabilities available to implement the policies and strategies in the Mitigation Actions chapter, and provides opportunities for continued public involvement.

1.5 Hazard Mitigation Planning Process

LHMP Team

A variety of stakeholders, including City departments, local agencies, local businesses and landowners, and South Gate residents, came together to inform this Plan, which reflects local values, concerns, and opinions. City staff established the LHMP Team to draft this Plan, which was reviewed and revised through public outreach efforts. The following staff from City departments and other agencies comprised the LHMP Team:

- City of South Gate Administrative Services Department: Richard J. Luna (Management Analyst) and Kim Sao (Deputy Director)
- City of South Gate Community Development Department: Jessica Jimenez (Assistant Planner)
- City of South Gate Parks & Recreation Department: Glenn Massey (Parks Superintendent)
- City of South Gate Police Department: Sheri Koomen (Emergency Manager) and Edward Perez (Lieutenant)
- City of South Gate Public Works Department: Chris Castillo (Water Division Manager) and Guillermo Petra (Assistant Engineer)
- Los Angeles County Fire Department: Nick Berkuta (Battalion Chief)
- Los Angeles County Office of Emergency Management: Rosemary Vivero (Community Services Representative)

City project managers sent invitations to other City and County departments working on issues relevant to the LHMP, inviting a representative to participate in the planning process. These invitations were sent via email and through personal telephone calls. A copy of the email is included in Appendix A (page A-2). Additionally, when the LHMP project began, the City of South Gate identified a number of external stakeholders for inclusion in the planning process. During this process, coordination with these agencies was conducted by several of the planning team members in a variety of settings. The contact list used by the City is included in Appendix B.

The LHMP Team held a kickoff meeting and three additional planning meetings to discuss preparation of this Plan. Team members discussed the Plan objectives, reviewed hazards, and prepared and reviewed mitigation goals and actions. Table 1 presents the results of these meetings. Appendix A provides materials and sign-in sheets from these meetings.

Table 1. LHMP Team Meetings

Meeting Name	Meeting Date	Purpose and Outcomes
Kickoff Meeting	July 14, 2015	Provided an introduction to the project, discussed overarching goals for the effort, discussed communication protocols, and identified points of contact.
LHMP Team Meeting 1	August 12, 2015	Provided an overview of the LHMP process, identified hazards of concern, finalized critical facilities list, and prioritized hazards with LHMP Team members.
LHMP Team Meeting 2	September 16, 2015	Provided an overview of the hazard profiles and preliminary results of the risk assessment for each hazard and critical facility identified. Developed hazard mitigation goals and identified key hazard mitigation actions.
LHMP Team Meeting 3	November 4, 2015	Provided draft hazard mitigation actions for review. Finalized mitigation action table.
Planning Commission Update	April 5, 2016	Staff provided a status update to the Planning Commission regarding the preparation of the LHMP and the General Plan Safety Element. Additional details are provided in Appendix B.

Online Survey

As part of the public engagement and outreach process for the LHMP, the City created an online survey for community members. A link to the survey was placed on the City's website as well as distributed via City e-mail lists. The survey asked about potential hazards facing South Gate, and what steps community members have taken or are interested in taking to reduce the threat from these hazards. From 143 respondents that participated, the survey produced the following key outcomes:

- Earthquakes, diseases or pests, and drought were the three potential hazards that caused the most concern for community members.
- Only 20 percent of respondents are part of South Gate's Community Emergency Response Team, but over half of remaining respondents were interested in learning more about joining.

- Although nearly half of the City is in FEMA's 500-year flood zone, only 27 percent of respondents have flood insurance.

The members of the LHMP Planning Team reviewed the survey results and drafted the LHMP in response to the key issues raised in the survey, including addressing the hazards of greatest concern and responding to South Gate's perceived vulnerabilities to hazard events. A detailed summary of the online survey is included in Appendix B.

Public/Community Events

The City participated in the South Gate Family Day event that was held on October 24, 2015, at South Gate Park. This event included over 40 booths from which community groups, City departments, and local businesses shared information, sold goods/services, and educated attendees. The City occupied a booth space to talk about the LHMP and handed out hard copy versions of the online survey to attendees; survey respondents were entered into a raffle drawing for gift cards to local restaurants and three-day emergency backpacks. Through this event, the City received over 60 hard copy surveys in both English and Spanish. The results of these surveys were added to the online survey results compiled in Appendix B.

Changes to Previous LHMP

This LHMP is a substantive change from the City's 2008 LHMP, owing to substantial changes in scientific information, best practices, and regulatory conditions. As a result, the City chose to prepare an entirely new LHMP document, rather than update the existing plan. The primary changes to the sections in the 2008 LHMP are as follows:

- Section 1 – Introduction: This LHMP updated the goals and objectives of the plan, expanded the list of useful resources, and revised the discussion of the plan development process and public outreach strategy.
- Section 2 – Plan Maintenance: The discussion of the STAPLE/E analysis was removed to a new section discussing the hazard mitigation actions. The plan maintenance protocols were revised to reflect current best practices and City preferences.
- Section 3 – Community Profile: The demographic statistics were updated, and additional statistics and other information were added as relevant. Chapter 2 of this plan identifies the development activities within the City, which are occurring in areas of the City that are prone to typical hazard risk. Areas of elevated hazard risk within the City have not seen significant new development in many years.
- Section 4 – Risk Assessment: The hazard profiles for earthquakes, wind, and flooding, which were separate sections, were brought into this chapter. Full profiles were written for additional hazards (drought, extreme heat, hazardous materials, and disease/pest management). Wind was rebranded as severe weather, and dam failure was pulled out from the flood section and discussed as a separate hazard. All hazard profiles received an additional section discussing the effects of climate change on hazard location, extent, frequency, and severity. The hazard selection and prioritization section was updated to reflect the process used by the LHMP Team.

- Mitigation Actions Matrix: The mitigation actions were wholly rewritten for a variety of reasons, including reflecting changes to regulations and available resources, to address new hazards, and to incorporate updated community priorities and City goals. Columns identifying the goals addressed by each action were dropped, and were replaced by columns showing potential funding sources, policy integration opportunities, and priority score. Progress made towards mitigation actions cannot be identified in this plan update, given that the City did not implement the previous plan. As a result, the proposed mitigation actions supersede the previous actions in the former plan. All previous actions were integrated where applicable or deleted.

1.6 Public Review Draft

The City completed and released the public review draft LHMP to the public for review and comment on July 13, 2017 for 30 days. Electronic versions of the document were provided on the City's website and hard copy versions were provided at City Hall (City Clerk and Planning Departments), Hollydale Library, and the Leland R. Weaver Library.

1.7 Supporting Plans, Studies, and Technical Reports

Multiple plans, studies, technical reports, and other sources of information were used to develop this Plan. Table 2 identifies these sources of information used to develop certain sections.

Table 2. Sources of Information Used to Create the LHMP

LHMP Section	Sources of Information	Example Uses
2.1 Physical Setting	City of South Gate – General Plan US Census Bureau	Community setting and general characteristics.
2.2 History	City of South Gate – History of South Gate Los Angeles County Library – South Gate: Frequently Asked Questions US Census Bureau	Historical events and demographics
2.3 Community Profile	US Census Bureau	Community demographic data and trends.
2.4 Economic Trends	Southern California Association of Governments – Local Profile, South Gate US Census Bureau	Economic characteristics and data.
2.5 Existing Land Uses	City of South Gate – General Plan City staff/Local Hazard Mitigation Plan Team	Community land use patterns and other physical characteristics.
2.6 Development Trends	City of South Gate – General Plan City staff/Local Hazard Mitigation Plan Team	Records of ongoing and anticipated development projects.
2.7 Critical Facilities	City staff/Local Hazard Mitigation Plan Team	Lists of critical facilities and their relative importance.

LHMP Section	Sources of Information	Example Uses
2.8 Disaster and Evacuation Routes	Los Angeles County Operational Area, Area E Staff; City staff/Local Hazard Mitigation Plan Team	Lists and locations of evacuation routes.
3.1 Hazard Identification and Prioritization	City staff/Local Hazard Mitigation Plan Team	Lists of relevant hazards and their importance.
3.2 Climate Change Considerations	N/A	
3.3 Vulnerability/Risk Assessment Method	N/A	
3.4 Hazard Profiles	As listed by hazard, below	
-Drought	California Climate Adaptation Planning Guide California State Multi-Hazard Mitigation Plan City of South Gate – Urban Water Management Plan Golden State Water Company – Central Basin West Metropolitan Water District – Sources of Supply US Drought Monitor	Records of current and past drought conditions, including duration, damages, and other relevant characteristics. Information on current sources of water. Projections of future drought conditions.
-Seismic Hazards	California Geologic Survey – Alquist-Priolo Earthquake Faults California State Multi-Hazard Mitigation Plan Los Angeles County Library – South Gate: Frequently Asked Questions Southern California Earthquake Center US Geologic Survey – Earthquakes Hazard Program US Geologic Survey – Uniform California Earthquake Rupture Forecast	General information on the science of seismic hazards. Location of fault lines. Location, intensity, damage, and other relevant data from past seismic hazard events. Projections of the potential severity and location of future seismic hazard events.
-Extreme Heat	Cal-Adapt California Climate Adaptation Planning Guide California Department of Public Health	Data on the health effects of extreme heat. Projections of future extreme heat conditions.
-Hazardous Materials	Alameda Corridor Transportation Authority California Department of Toxic Substances Control California State Multi-Hazard Mitigation Plan California State Water Resources Control Board City of South Gate – General Plan	Records of known and potential hazardous material locations in and around South Gate, including the status of any clean-up operations.

LHMP Section	Sources of Information	Example Uses
-Severe Weather	California Climate Adaptation Planning Guide California State Multi-Hazard Mitigation Plan National Oceanic and Atmospheric Administration – Storm Prediction Center Royal Meteorological Society The Tornado Project	General information on the science of severe weather. Records of past severe weather events, including location, intensity, and resulting impact.
-Flood	Cal-Adapt California Climate Adaptation Planning Guide California State Multi-Hazard Mitigation Plan FEMA – Flood Map Service Center Journal of the American Water Resources Association Target Science – Los Angeles River History US Geological Survey - Overview of the ARkStorm Scenario Western Regional Climate Center	General information on the science of flooding, including atmospheric and oceanic phenomena that contribute to it. Records of past flood events, including consequences and community response. Current and projected precipitation conditions. Location of flood hazard zones.
-Disease/Pest Management	California Climate Adaptation Planning Guide California Department of Public Health California State Multi-Hazard Mitigation Plan City of South Gate – General Plan Los Angeles County Agricultural Commissioner's Office	General science on diseases and pest management, including their health impacts. History of diseases and pest management events in the region. Projections of future risks from disease and pest management hazards.
-Dam Failure	US Army Corps of Engineers	Dam safety ratings. Location and condition of regional dams.
3.5 Vulnerability Summary	Analysis based on sources referenced above	
4.1 Hazard Mitigation Overview	City of South Gate – Municipal Code FEMA – National Flood Insurance Program	Description of the National Flood Insurance Program. Status of NFIP and repetitive loss properties in South Gate.
4.2 Hazard Mitigation Measures	LHMP Team, Best Practices, FEMA Requirements	Records of best practices and requirements for regulatory compliance.
4.3 Capabilities Assessment	City of South Gate – Administrative Services Department	Existing capacity of City to mitigate against future hazard events.

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CHAPTER 2: COMMUNITY PROFILE

2.1 Physical Setting

South Gate is located in southeastern Los Angeles County, approximately 8 miles southeast of downtown Los Angeles, and covers an area slightly more than 7 square miles. It is bordered by the unincorporated community of Walnut Park and the Cities of Huntington Park, Cudahy, and Bell Gardens to the north, the City of Downey to the east, the Cities of Lynwood and Paramount to the south, and the City of Los Angeles and the unincorporated community of Florence-Graham to the east. The Los Angeles River and Interstate 710 (the Long Beach Freeway) run north–south through South Gate in the eastern part of the City, and Interstate 105 (the Century Freeway) runs through a small portion of the City in its extreme southeastern corner. The US Census reported that South Gate had a population of 94,396 in 2010, and 2015 estimates from the state of California put the City population at 96,547. Figure 2 depicts South Gate's regional location.

South Gate is part of the Gateway Cities region of Los Angeles County. The community is almost entirely developed; vacant land occupies only 1.7 percent (80 acres) of South Gate's total size. Residential land uses, primarily single-family homes, account for 41 percent (approximately 1,960 acres) of the City.

2.2 History

The area now known as South Gate was originally inhabited by the Tongva (also known as the Gabrieleño) and other Native American peoples, who settled the Los Angeles Basin and the southern Channel Islands. Spanish explorers first entered the region in 1542, but permanent occupation by Europeans would not begin until Mission San Gabriel Arcángel was constructed in 1771 in what is now the City of San Gabriel. In 1810, King Joseph I of Spain granted close to 30,000 acres of the region to Corporal Antonio Maria Lugo as a reward for his military service, forming an estate called Rancho San Antonio. Beginning in 1855, the rancho was split up, and much of it was turned into 40-acre parcels for agriculture. By 1880, cattle ranching took hold in the area. In the early 1900s, residential subdivisions began to replace the cattle ranches. The community became known as Southgate Gardens, due to its position around the southern gate of the former Rancho San Antonio.

Southgate Gardens incorporated in 1923, as the City of South Gate, with a population of approximately 2,500 people. The new City became home to many major industrial companies, including General Motors and Firestone Tires. New developments quickly sprung up in the area to provide housing for factory workers. This history is reflected in the housing stock; the 2010 US Census reports that approximately 82 percent of homes in South Gate were constructed before 1970, and over 30 percent were built during the 1940s.

Figure 2. Regional Vicinity Map

2.3 Community Profile

South Gate had a population of 94,396 people in 2010, according to the US Census. Tables 3, 4, 5, and 6 provide an overview of the City's population, households, ethnicity, and education levels based on the 2010 Census.

Table 3. South Gate Population Data (2010)

Category	Population
Total population	94,396
Male population	46,321
Female population	48,075
Median age	29.4
Elderly population (65+)	6,623

Source: US Census 2010

Table 4. South Gate Household Data (2010)

Category	Population
Number of households	23,838
Number of families	20,833
Average household size	3.97
Average family size	4.24
Number of female householders	5,065
Median household income	$43,268
Median family income	$44,986
Median house value	$376,700
Number of rental households	13,210

Source: US Census 2010

Table 5. South Gate Ethnicity (2010)

Ethnicity	Number	Percent of Population
White (non-Hispanic)	3,209	3.4%
Black or African American	890	0.9%
American Indian and Alaska Native	878	0.9%
Asian	732	0.8%
Native Hawaiian and other Pacific Islander	99	0.1%

Ethnicity	Number	Percent of Population
Other race	40,624	43.0%
Two or more races	3,528	3.7%
Hispanic or Latino (of any race)	89,442	94.8%

Source: US Census 2010

Table 6. South Gate Educational Attainment (2010)

Educational Attainment (Age 25+)	Number	Percent of Population
Less than 9th grade	17,754	33.2%
9th grade to 12th grade	8,381	15.7%
High school graduate	13,912	26.0%
Some college, no degree	7,270	13.6%
Associate degree	2,493	4.7%
Bachelor degree	2,704	5.1%
Graduate or professional degree	896	1.7%

Source: US Census 2010

2.4 Economic Trends

The nature of South Gate's economy has changed as manufacturing and heavy industry have declined in recent decades. According to the Southern California Association of Governments (SCAG), the education, retail, and manufacturing sectors provide the most jobs in the community (approximately 59 percent, as of 2013). Household median income has decreased since 2010, and as of 2014 was $40,454 according to SCAG, compared to $53,125 for all of Los Angeles County. As with much of California, home prices in South Gate peaked around 2006 and 2007 with a median sales price of $460,000. Due to the collapse of the subprime housing market and the resulting global recession, home sale prices fell significantly, reaching as low as $230,000 in 2011. Prices have risen as the economy has recovered, and as of 2014 the median home sale price was $310,000.

Like many smaller communities surrounding major cities, more people commute out of South Gate than commute in. The US Census reports that, as of 2012, 19,285 people who lived in other communities worked in South Gate, while 26,623 South Gate residents worked in other communities. Only 1,648 South Gate residents worked in the City. Among people with jobs in South Gate who lived elsewhere, the largest number came from Los Angeles, Long Beach, Downey, Lynwood, and East Los Angeles. Among South Gate residents who worked elsewhere, the largest numbers went to Los Angeles, Vernon, Long Beach, Downey, and Commerce.

2.5 Existing Land Uses

The South Gate General Plan, which was adopted in 2009 and is the principal policy document regulating land use in the City, identifies nine main types of land uses in the community. Like much of the region, South Gate has gone from a largely agricultural community in its earlier history to a largely built-out urban community. Table 7 shows the current distribution of land uses in South Gate.

Table 7. Current Land Uses In South Gate

Land Use	Acres	Percent of Total	Example
Vacant	80	1.7%	Undeveloped/abandoned land
Civic/Institutional	99	2.1%	Local government buildings, religious facilities
Schools	109	2.3%	Elementary schools, high schools, adult school campuses
Parks	166	3.4%	South Gate Park, Hollydale Regional Park
Commercial	308	6.4%	Retail stores, auto dealers, restaurants, offices
Public Works, Water Bodies, Easements	342	7.1%	Los Angeles River, power lines, flood control channels, railways
Industrial	762	15.9%	Heavy manufacturing, light industry, warehouses
Transportation	968	20.2%	Roads
Residential	1,966	41.0%	Single-family homes, multifamily units, mobile home parks
Total	4,800	100%	

Source: City of South Gate

2.6 Development Trends

Numerous development projects are under way or in the planning stages in the City. Table 8 identifies current development activities in the City. Prior developments within the City (since the last plan update) have consisted of redevelopment and infill developments that have reduced the City's vulnerability since these developments have increase infrastructure capacity and were constructed using the most up to date building codes and development standards.

2.7 Critical Facilities

The project team identified a number of critical facilities in South Gate. These facilities provide important services to the community, such as basic government functions, water and power service, and schools. Some of these facilities can also serve additional roles during an emergency situation, including as a shelter for displaced residents, a staging area for emergency response and recovery activities, or a location for important City administration functions. Damage to these

facilities can impair response and recovery operations, and may lead to a disruption of vital services for South Gate residents. The City also identified a number of bridges in the planning area, which may be owned by non-local government agencies but are included in the risk assessment maps due to their importance. Table 9, Table 10, and Figure 3 show the critical facilities and bridges in South Gate.

Table 8. 2015 Development Activities

Project	Location	Description	Estimated Completion
Tweedy Atlantic Plaza	9918 Atlantic Ave. (SE corner of Tweedy/Atlantic)	Proposed project to convert existing industrial buildings into a neighborhood shopping center with approximately 7 tenants which include Bright Now! Dental, Winchell's, Baskin-Robbins, and Cricket.	Winter 2016
La Aldea	9923 Atlantic Ave. (SW corner of Tweedy/Atlantic)	A proposed 5-story mixed-use project on the formerly occupied site by Adohr Farms. The project will feature 105 market-rate apartments and approximately 35,000 square feet of retail.	Summer 2018
Alta Med (Medical Facility)	8627 Atlantic Ave.	New 2-story, 28,961-SF medical facility, just north of the Azalea Shopping Center. The facility will provide a pharmacy, X-ray accommodations, labs, dental office/exam rooms, and separate areas for sick and well patients, and will accommodate between 150–170 people.	Summer 2017
Chakemco Plaza	10000 Atlantic Ave.	New neighborhood retail center with approximately 5,800 SF of retail. Replacing an existing used truck dealership and will sit adjacent to the new Atlantic/Tweedy retail center.	Fall 2017
7-Eleven	10840 Garfield Ave.	New 2,000-SF 7-Eleven at the NE corner of Garfield Avenue and Imperial Highway.	Summer 2017
Gardendale Condos	5495 Gardendale Ave.	7 condominiums at approximately 1,700 SF each.	Fall 2018
State Apartments	8148 State Street	10 new apartments units at approximately 1,200 SF each.	Summer 2017
Willow Apartments	2742 Firestone Blvd.	7 unit apartment located next to Willow Elementary School.	Fall 2017
Paramount Apartments	SE corner of Golden/Paramount	10 unit apartment project.	Fall 2017
Rincon Taurino	4680 Firestone Blvd.	Tenant improvements to an existing restaurant to include an open patio.	Summer 2017
K-Pac	9415 Burtis Street	New 86,000-SF industrial building with 4,000 SF of office space.	Summer 2017

Source: City of South Gate

Table 9. South Gate Critical Facilities

Map Number	Facility Name	Location
1	City of South Gate Civic Center (includes Police Department)	8620-8650 California Avenue
2	Parks & Recreation - Administration	4900 Southern Avenue
3	Parks & Recreation - Hollydale Community Resource Center	12221 Industrial Avenue
4	Parks & Recreation - South Gate Girls Clubhouse	4940 Southern Avenue
5	Parks & Recreation - South Gate Golf Course	9615 Pinehurst Avenue
6	Parks & Recreation - South Gate Senior Center	4855 Tweedy Boulevard
7	Parks & Recreation - South Gate Sports Center	9520 Hildreth Avenue
8	Parks & Recreation - Westside Community Resource Center	9200 State Street
9	Public Works Corporate Yard	4244 Santa Ana Street
10	L.A. County Fire Station #54	4867 Southern Place
11	L.A. County Fire Station #57	5720 Gardendale Avenue

Table 10. South Gate Bridges

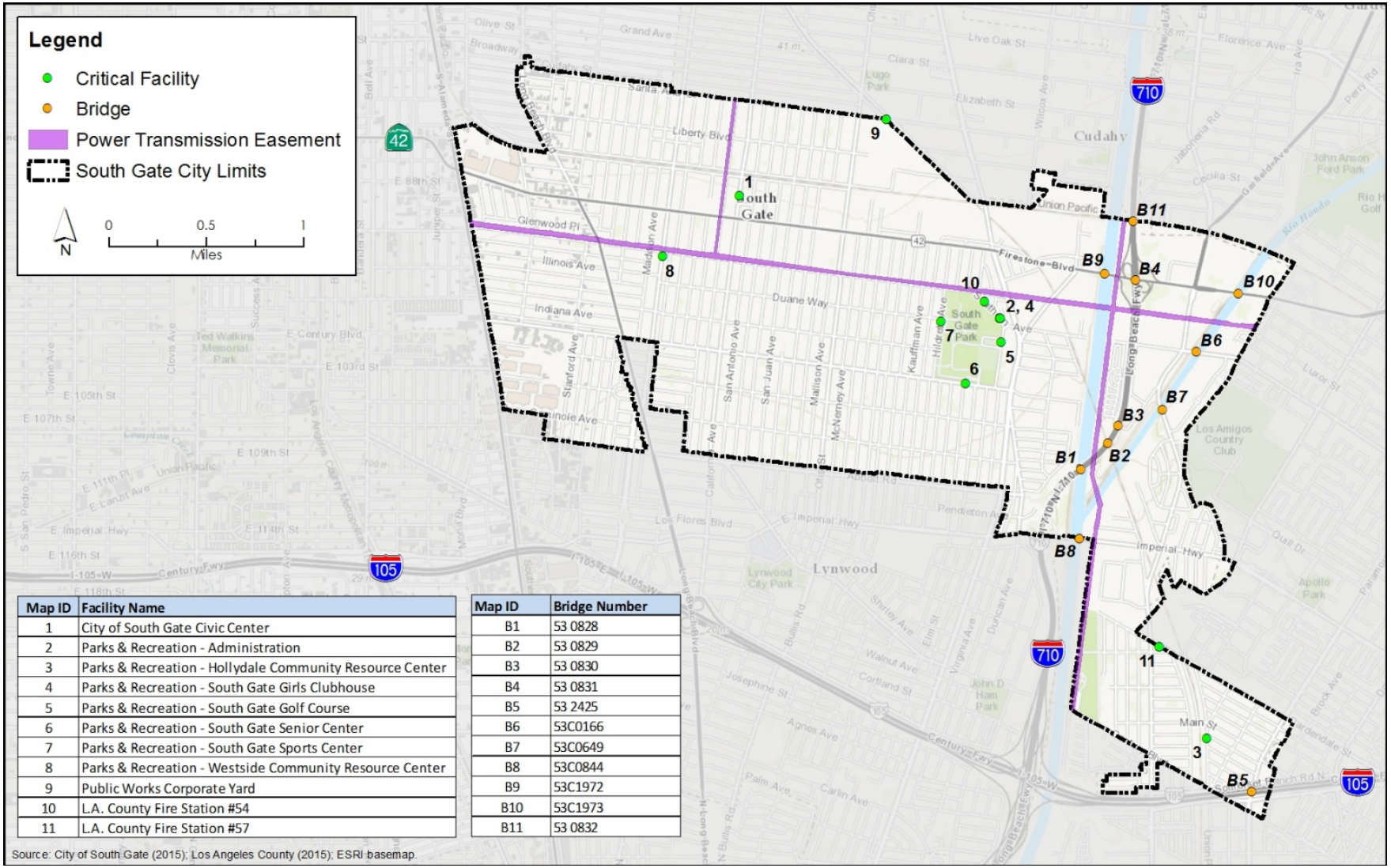
Map Number	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

The City has a number of critical facilities that could be vulnerable to human attacks. In order to maintain safety, the City has removed these confidential facilities from the publicly accessible LHMP. A separate risk assessment has been conducted and is kept by the City under separate file. In addition to the Critical Facilities list, the LHMP Team also identified "Facilities of Concern," which are the schools located in the community. Appendix C provides a detailed list of all nonconfidential facilities identified by the LHMP Team. The risk assessment prepared for this plan is based solely on the facilities listed in Table 9.

2.8 Disaster and Evacuation Routes

In the event of a significant emergency, clear routes are needed to ensure that emergency responders and supplies can be transported to the disaster and that community members can be evacuated away from the disaster. The County of Los Angeles designates official disaster routes. Disaster routes in or near the planning area include Interstate 710 and 105, as well as Alameda Street, Long Beach Boulevard, Imperial Highway, Garfield Avenue, and Florence Avenue. The City of South Gate designates its own evacuation routes, which include Firestone Boulevard, Tweedy Boulevard, Southern Avenue, Gardendale Street, Atlantic Avenue, Otis Street, and California Avenue. Figure 4 displays these disaster and evacuation routes.

Figure 3. South Gate Critical Facilities and Bridges



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: City of South Gate (2015); Los Angeles County (2015); ESRI basemap

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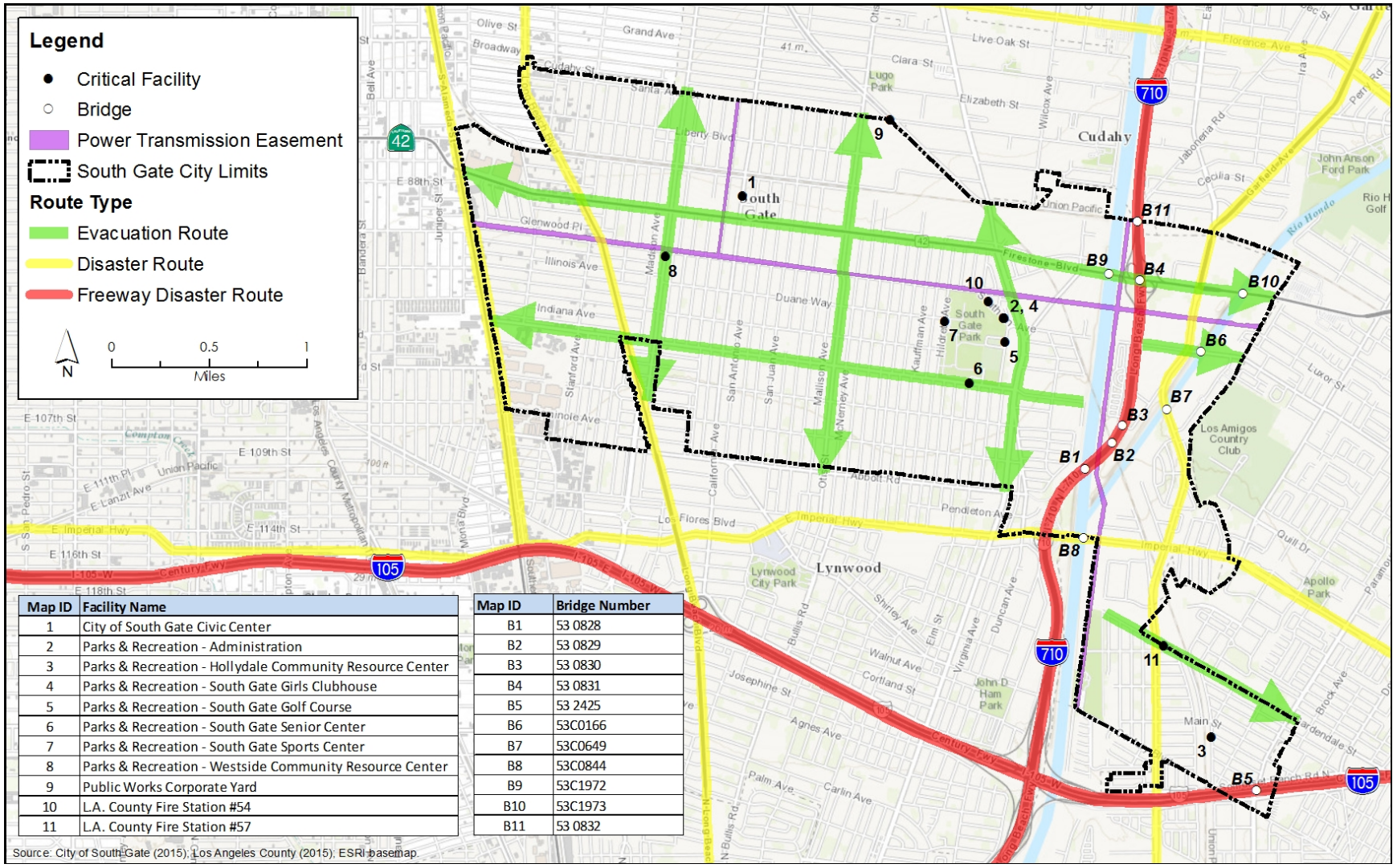
Figure 4. South Gate Evacuation Routes



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
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Source: City of South Gate (2015); Los Angeles County (2015); ESRI basemap.

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CHAPTER 3: HAZARD PROFILES

3.1 Hazard Identification and Prioritization

Hazard Identification

FEMA identifies 21 different hazards that local governments may wish to consider when conducting hazard mitigation planning efforts. Some of these events effectively cannot occur in South Gate because the community does not have the necessary attributes for these events to occur (avalanches, for example). Other potential hazards may potentially occur in South Gate but the chance of such events is low enough that planning for these occurrences is not an effective use of resources (hurricanes, for example). The LHMP Team discussed a comprehensive list of natural hazards during the kickoff meeting on July 14, 2015. This discussion resulted in identification of the hazards that pose a potential risk to the City of South Gate. Table 11 summarizes the LHMP Team's discussion for each of the natural hazards and shows which were identified for inclusion in this LHMP. Hazards that have been excluded from further consideration are shaded gray. This table is consistent with the hazards identified as part of FEMA's hazard mitigation planning guidance.

Table 11. City of South Gate Hazard Identification, 2015

List of Hazards	Include in City LHMP?	Discussion Summary
Dam Failure	Yes	The City is susceptible to inundation caused by dam failure of Garvey, Whittier narrows, and Hansen Dams along the Los Angeles and Rio Hondo Rivers.
Disease and Pest Management	Yes	Trees in the City are susceptible to invasive insects and fungi.
Drought	Yes	The City depends on groundwater and imported surface water, both of which are susceptible to drought.
Seismic Hazards (Ground Shaking and Liquefaction)	Yes	South Gate is susceptible to earthquake ground shaking and liquefaction.
Extreme Heat	Yes	Due to economic considerations and the relative lack of shade trees in parts of the City, the City is vulnerable to extreme heat events.
Flood	Yes	The City has 100- and 500-year flood zones, as mapped by FEMA.
Hailstorm	Yes	Though rare, the City has experienced substantial hail damage in the past. The hazard will be combined with similar hazards and identified as "severe weather."
Hazardous Materials Spills	Yes	The City contains properties and transportation corridors with the potential for hazardous materials spills.

List of Hazards	Include in City LHMP?	Discussion Summary
Tornado	Yes	Tornados are rare, but have occurred near the City. The hazard will be combined with similar hazards and identified as "severe weather."
Wind	Yes	The City has experienced damage from wind events. The hazard will be combined with similar hazards and identified as "severe weather."
Windstorm	Yes	The City has experienced damage from wind events. The hazard will be combined with similar hazards and identified as "severe weather."
Climate Change	Yes	Climate change is not profiled as a distinct hazard, but rather a phenomenon that could exacerbate hazards. Climate change will be considered as a factor for relevant identified hazards.
Agricultural Pests	No	Not applicable. There is no agriculture in South Gate.
Avalanche	No	Not applicable. The conditions for avalanche are not present in South Gate.
Coastal Erosion/Bluff Failure	No	Not applicable. South Gate is not a coastal community.
Coastal Storm	No	Not applicable. South Gate is not a coastal community.
Expansive Soils	No	Not applicable. There are no expansive soil issues in South Gate.
Hurricane	No	Not applicable. There are no historical or expected occurrences of hurricane in South Gate.
Land Subsidence	No	Not applicable. There are no historical or expected occurrences of subsidence in South Gate.
Landslide and Mudflow	No	Not applicable. The conditions for landslides and mudflows are not present in South Gate.
Human Caused Hazards	No	Except for hazardous materials spills, this plan focuses on natural hazards, per FEMA requirements.
Severe Winter Storm	No	Not applicable. Although severe winter storms do happen in South Gate, their impacts are adequately captured in other hazards reviewed in this plan and do not include those impacts typically associated with winter storms elsewhere in the nation such as snow, blizzards, sleet, etc.
Tsunami	No	Not applicable. South Gate is not a coastal community.
Volcano	No	Not applicable. There are no volcanoes in or near South Gate.
Wildfire	No	Not applicable. South Gate is a built-out urban community, surrounded by built-out urban communities; there are no wildfire risks in the City.
Sea Level Rise	No	Not applicable. South Gate is not a coastal community.

Some of the hazards listed in this plan combine FEMA-identified hazards for organizational purposes. For example, this plan discusses "severe weather," which includes wind/windstorms, hailstorm, and tornados. City staff identified and prioritized eight hazards that may impact South Gate:

- Drought
- Seismic Hazards
- Extreme Heat
- Hazardous Materials
- Severe Weather
- Flood
- Disease/Pest Management
- Dam Failure

Prioritization

The LHMP Team used a Microsoft Excel-based tool to prioritize the identified hazards by assigning each hazard a ranking based on probability of occurrence and potential impact. These rankings were assigned based on group discussion, knowledge of past occurrences, and familiarity with the City's infrastructure vulnerabilities. Four criteria were used to establish priority. A value of 1–4 was assigned for each criterion, with 4 being the most severe and 1 being the least.

- Probability (likelihood of occurrence).
- Location (size of potentially affected area)
- Maximum Probable Extent (Primary Impact, or intensity of damage)
- Secondary Impacts (severity of impacts to community)

The four criteria were weighted based on the LHMP Team's opinion of each criterion's importance. Table 12 shows the scores for each criterion. Table 13 presents the results and includes only those hazards that achieved a "medium" or "high" score. The hazards in Table 13 are consistent with the hazards identified in Table 11. Note that for organizational purposes, hailstorm, wind/windstorm, and tornado have been combined into a single category referred to here as "severe weather."

Table 12. Hazard Ranking Scores and Weighing Factors

Probability		Maximum Probable Extent (Primary Impact)	
Based on estimated likelihood of occurrence from historical data	Weighing Factor: 2.0	Based on percentage of damage to typical facility in community	Weighing Factor: 0.7
Probability	Score	Impact	Score
Unlikely. Less than a 1 percent chance of occurring in a given year.	1	Weak – little to no damage	1
Occasional. A 1 to 10 percent chance of occurring in a given year.	2	Moderate – some damage, loss of service for days	2
Likely. A 10 to 90 percent chance of occurring in a given year.	3	Severe – devastating damage, loss of service for months	3
Highly likely. More than a 90 percent chance of occurring in a given year.	4	Extreme – catastrophic damage, uninhabitable conditions	4

Location		Secondary Impacts	
Based on size of geographical area of community affected by hazard	*Weighing Factor: 0.8*	*Based on estimated secondary impacts to community at large*	*Weighing Factor: 0.5*
Affected Area	Score	Impact	Score
Negligible. Affects less than 10 percent of the planning area.	1	Negligible – no loss of function, downtime, and/or evacuations	1
Limited. Affects 10 to 25 percent of the planning area.	2	Limited – minimal loss of function, downtime, and/or evacuations	2
Significant. Affects 25 to 75 percent of the planning area.	3	Moderate – some loss of function, downtime, and/or evacuations	3
Extensive. Affects more than 75 percent of the planning area.	4	High – major loss of function, downtime, and/or evacuations	4

Table 13. South Gate Hazard Ranking Worksheet Outcomes

Hazard Type	Probability	Impact			Total Weighted Score	Hazard Planning Consideration
		Location	Primary Impact	Secondary Impacts		
Drought	4	4	4	4	64.00	High
Seismic Hazards	4	4	4	4	64.00	High
Extreme Heat	4	4	3	2	50.40	High
Hazardous Materials	3	4	3	4	43.80	High
Severe Weather	3	4	3	4	43.80	High
Flood	3	2	3	4	34.20	Medium
Disease/Pest Management	4	2	1	2	26.40	Medium
Dam Failure	1	4	3	4	14.60	Medium

3.2 Climate Change Considerations

Climate change is expected to exacerbate existing hazards in the City. As such, the LHMP Team determined that it would be best to discuss climate change considerations throughout all applicable hazard profiles. To address potential climate change impacts, the City has identified climate change considerations in each hazard profile. This discussion is intended to supplement, but not replace, the "Risk of Future Hazards" discussion.

3.3 Vulnerability/Risk Assessment Method

The critical facilities listed in Section 2.7 were mapped in GIS and overlaid with mapped hazard areas to determine which assets are located within each hazard area. Hazard area and critical facility overlays were conducted for seismic hazards (liquefaction), hazardous materials, flood, and dam failure.

Hazard and critical facility overlays were not conducted for drought, extreme heat, severe storms, or disease/pest management. These hazards affect the entire City and therefore all facilities listed in the critical facility inventory could be potentially susceptible to damage from them.

Each hazard profile in the following section includes a Vulnerability/Risk Assessment section that presents the results of the method described above. Replacement and contents values for the facilities that fall within the hazard areas are tallied in each vulnerability table to estimate the total potential losses to each facility. It should be noted that the actual losses will depend on the type and extent of the hazard event.

3.4 Hazard Profiles

Drought

Hazard Description

A drought is a long-term shortage of water, usually caused by extended periods with little or no precipitation. Unlike the other emergencies discussed here, droughts develop over a lengthy period of time. It generally takes multiple dry years to develop a drought, and similarly it can take multiple wet years to alleviate one. In urban areas, drought conditions can cause a decrease in available water supplies, which may lead to increases in water rates or restrictions in water use. Communities may need to seek alternative water supplies to meet demand, which can be a costly and lengthy process. Vegetation, including street trees and landscaped areas in public parks, can become water stressed if it is not adapted to drought conditions, which may result in plant disease or death.

There are multiple scales for measuring the severity of droughts. The US Drought Monitor Classification Scheme combines many of these scales into a single index, shown in Table 14.

Table 14. US Drought Monitor Classification Scheme

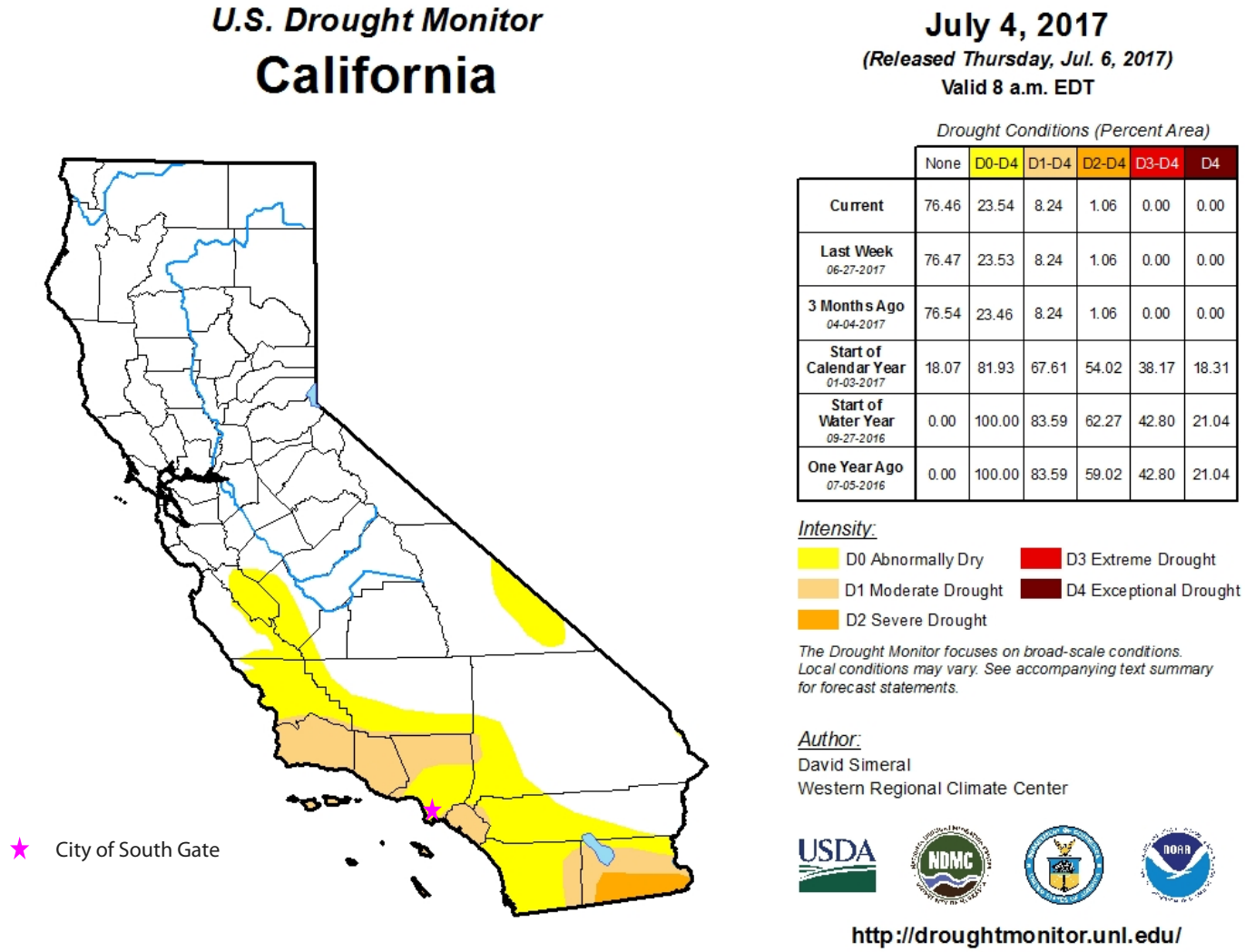
Category	Description	Possible Impacts
D0	Abnormally dry	Slower growth of crops and pastures compared to normal activities.
D1	Moderate drought	Some damage to crops and pastures. Streams, reservoirs, or wells low. Some water shortages may be developing or imminent.
D2	Severe drought	Likely crop and pasture losses. Water shortages are common, leading to restrictions.
D3	Extreme drought	Major crop and pasture losses. Widespread water shortages.
D4	Exceptional drought	Exceptional and widespread crop and pasture losses. Emergency shortages develop.

Source: US Drought Monitor, http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx

Hazard History

Droughts are a relatively frequent event in California, and many native plants and animals have evolved strategies to deal with long-term water shortages. Due to California's extensive water infrastructure networks, a drought in one part of the state may have a relatively small impact if the water supply in the affected area comes from another location that is not under drought conditions. Occasionally the state may experience a widespread drought that lasts for multiple years. A drought from 1928 to 1937 affected all parts of the state and was the longest drought in California's recorded history. Since 2012, California has been experiencing drought conditions statewide. This drought is among the most severe in the state's history (by some measures it is the most severe in 1,200 years) and sparked widespread restrictions on water use. As of July 2017, a majority of the state was out of this drought with portions of southern California experiencing (including South Gate) abnormally dry conditions (Figure 5).

Figure 5. California Drought Conditions, July 2017



Risk of Future Hazards

Because South Gate lacks any substantive agricultural activities, the primary impact of drought conditions in the City is on the local water supply. South Gate has two water providers: most of the community receives its water from the City-owned network, while a small portion, home to over 1,400 service connections, receives water from the private Golden State Water Company's Hollydale System. In most years the City supplies water from its existing groundwater allocation of 11,183 acre-feet (AF). Only in rare occasions does the City rely on water sources outside of their current groundwater allocation and hasn't relied upon outside sources for a number of years. The City's 2015 Urban Water Management Plan identifies eleven groundwater wells, seven of which are active. Of the four remaining wells, three are reserved for standby use and the remaining well is currently inactive due to contamination and reliability issues. The City's groundwater allocation is currently pumped through these seven active wells, which has generally proven sufficient to

meet City needs. If additional water is needed, it would be supplied by the Metropolitan Water District (MWD) of Southern California. MWD's water is imported from the Colorado River and the northern Sierra Nevada, and supplemented by groundwater and other local sources. Since the City's current water demand is less than their groundwater allocation, on a yearly basis, the City regularly stores, leases, and rolls over groundwater supplies to ensure adequate future water supplies are available for future years. This active management conducted by both the City and the Water Replenishment District (groundwater management entity) ensure that groundwater supplies within the City are more resilient than other jurisdictions throughout California.

As most of South Gate's water supply comes from local groundwater sources, local drought conditions have the greatest impact to the community. A long-term lack of precipitation within southern California reduces the amount of water that filters through the soil and becomes groundwater, potentially reducing available groundwater supplies. However, the efforts of the City and WRD are ensuring that these impacts are reduced to the greatest extent possible through groundwater replenishment, water conservation, and additional projects that reduce groundwater vulnerability in the region. Although the City is less dependent on imported water supplies and therefore less vulnerable to droughts in other areas, such droughts may still pose challenges during times when South Gate must supplement its water supply with water purchased from MWD. All parts of the community face a generally equal risk of drought conditions.

Climate Change Considerations

Scientific evidence suggests that precipitation levels in California will decrease as a result of climate change. At the same time, warmer temperatures brought on by climate change are expected to increase the rate of evaporation from bodies of water, further decreasing the amount of available water. It is likely that drought conditions will become more frequent and more severe as a result of climate change. Research linking a specific weather event to climate change has been sparse; however, some studies have found that there may be a connection between climate change and the drought conditions in California since 2012.

Vulnerability/Risk Assessment

As described above, the City of South Gate obtains potable water primarily from locally pumped groundwater. The entire City, and the county as a whole, is highly vulnerable to drought, however through active management, the City's groundwater basin has proven to be resilient to the most recent drought, with groundwater elevations increasing over the past couple of years. The 2015 Urban Water Management Plan sets forth a path for the City to reduce per capita water use 20 percent by 2020, which would make the City more resilient to drought. Since droughts are not likely to cause physical or structural damage to critical facilities, potential losses were not quantified. However, it should be noted that loss of water supplies as a result of drought could exacerbate the effects of other hazards like extreme heat and disease/pest management, and response to hazard events in general. Given the current water demand in the City (and the excess water supply available), this vulnerability is anticipated to be effectively managed for years to come by the programs and initiatives implemented by WRD.

Seismic Hazards

Hazard Description

Seismic hazards occur when accumulated stress between portions of the earth's crust is released, resulting in the sudden ground movement that is perceived as an earthquake. Primary seismic hazards are the direct result of this released stress, and include earthquake fault rupture (the displacement of the ground surface at the site of the earthquake) and seismic shaking (the ground movement itself, which occurs over a wide area beyond the site of the earthquake). Earthquakes can also cause secondary seismic hazards, such as liquefaction and landslides, which are triggered by the fault rupture or seismic shaking.

Description of Primary Seismic Hazards

Seismic activity is most commonly connected with faults, which are areas where large sections of earth's crust called tectonic plates move past each other. The movement of the tectonic plates causes the stress and strain that leads to earthquakes. Deformation of the plates and accumulated stress between them can cause faults and earthquakes to occur over a much broader area than the precise boundary between the plates. In California, the Pacific and North American plates are sliding horizontally past each other, creating what is known as a "strike-slip fault." The boundary between the two plates is known as the San Andreas Fault, although the stress caused by this movement has created thousands of fault areas throughout the state. Most of California lies on the North American plate, although the coastal areas of Central and Southern California, including South Gate, sits on the Pacific plate.

Major earthquakes in California occur less frequently than some other disasters; for the years 1950 to 2012, the state Multi-Hazard Mitigation Plan identifies 178 fire emergencies, 129 flood emergencies, and 23 earthquake emergencies. Although they are the third-largest cause of emergency-related death during this period (with 193 deaths, or approximately 20 percent of all state emergency-related deaths), earthquakes were the largest source of emergency-related injuries and costs.

There are two scales commonly used by scientists to measure earthquakes: the moment magnitude scale and the Mercalli intensity scale. The moment magnitude scale is based on the now largely unused Richter scale and measures the amount of energy released by the earthquake. The Mercalli intensity scale measures the effects of the earthquake, and is based on qualitative observations rather than a rigorous quantitative calculation. Table 15 shows the different categories of the Mercalli intensity scale.

Table 15. Mercalli Intensity Scale

Scale	Intensity	Description
I	Instrumental	Not felt, except by a very few people under especially favorable conditions.
II	Feeble	Felt only by a few people at rest, especially on the upper floors of buildings.
III	Slight	Noticeable by people indoors, especially on the upper floors of buildings, although it is not widely recognized as an earthquake. Parked vehicles may move slightly.
IV	Moderate	Felt indoors by many and felt outdoors by some. May awaken sleeping people. Dishes, windows, and doors disturbed. Parked vehicles move noticeably.
V	Slightly Strong	Felt by almost everyone. Sleeping people awakened, and some dishes and windows broken. Unstable objects overturned, and pendulum clocks may stop.
VI	Strong	Felt by everyone. Some heavy furniture moved, and some instances of falling plaster. Damage slight, although many people may be frightened.
VII	Very Strong	Considerable damage in poorly built or badly designed structures, slight to moderate damage in well-built ordinary structures, and negligible damage in buildings of good design and construction. Some chimneys broken.
VIII	Destructive	Great damage in poorly built structures, considerable damage and partial collapse in well-built ordinary structures, and slight damage in specially designed structures. Chimneys, factory stacks, columns, monuments, and walls fall. Heavy furniture overturned.
IX	Ruinous	Well-designed structures thrown out of plum, considerable damage in specially designed structures. Substantial buildings suffer great damage and partial collapse. Buildings shifted off of foundations.
X	Disastrous	Some well-built wood structures destroyed. Most masonry and frame structures and foundations destroyed. Rails bent.
XI	Very Disastrous	Few if any masonry structures remain standing. Bridges destroyed and rails greatly bent.
XII	Catastrophic	Total damage. Lines of sight and level are distorted. Objects thrown into the air.

Source: US Geological Survey, http://earthquake.usgs.gov/learn/topics/mag_vs_int.php

The moment magnitude and Mercalli intensity scales measure different elements of an earthquake. They do not precisely correlate to each other, although an approximate comparison is given in Table 16.

Table 16. Comparison of Moment Magnitude and Mercalli Intensity Scales

Moment Magnitude	Mercalli Intensity
1.0 to 3.0	I
3.0 to 3.9	II to III
4.0 to 4.9	IV to V
5.0 to 5.9	VI to VII
6.0 to 6.9	VII to IX
7.0 and greater	VIII and greater

Source: US Geological Survey, http://earthquake.usgs.gov/learn/topics/mag_vs_int.php

Description of Secondary Seismic Hazards

Beyond the direct damage from the ground shaking posed by an earthquake, these events can also result in a seismic hazard called liquefaction, which occurs when the force of an earthquake's shaking causes groundwater to mix with the soil. This mixture temporarily becomes a fluid and loses its strength, which may in turn cause buildings and other structures built on or in it to tilt, collapse, or otherwise suffer damage. Liquefaction can also occur independently of an earthquake, if any other sudden and significant stress causes the mixing of groundwater and soil. The risk of liquefaction depends on many different factors, including the height of the groundwater table and the types of soil in an area. There is no scale for measuring liquefaction events.

Earthquakes can also cause landslides, either directly as a consequence of the ground shaking or indirectly when soil loses its structural integrity due to liquefaction. Landslides can occur under multiple conditions, but they are most likely in areas with steep slopes with highly fractured rocks, areas with loose and weak soils, and areas on or near deposits of material caused by previous landslides. There is no standard scale for measuring landslide events, as they are commonly described using criteria such as the volume of sliding material or the amount of damage.

Damage caused by seismic hazards, either primary or secondary, can create other hazardous conditions. Seismic hazards can damage natural gas pipelines, causing gas leaks that can ignite and cause an urban fire. Broken water lines can cause localized flooding, and damages to wastewater pipes may create a public health hazard. Earthquakes may also damage containers that hold hazardous materials, leading to a hazardous materials release emergency.

Hazard History – Primary Seismic Hazards

Four large earthquakes have occurred around South Gate in recent history:

- In 1933, an earthquake off the coast of Long Beach measured an estimated 6.4 on the moment magnitude scale with an estimated Mercalli intensity of VIII. This earthquake killed 115 people, largely in southern Los Angeles and Long Beach, although five people were killed in South Gate and multiple buildings were destroyed.

- The 1971 San Fernando earthquake in the San Gabriel Mountains measured 6.5 on the moment magnitude scale and XI on the Mercalli intensity scale, killing 64 people and causing extensive damage to freeway structures and buildings.
- In 1987, an earthquake near Rosemead in the San Gabriel Valley, with a moment magnitude of 5.9 and a Mercalli intensity of VIII, killed three people and was widely felt throughout Southern California.
- The Northridge earthquake in 1994 measured 6.7 on the moment magnitude scale with a Mercalli intensity of IX. It killed 57 people, caused over 5,000 injuries, and spawned multiple strong aftershocks. This earthquake caused an estimated $20 billion or more in damages.

Hazard History – Secondary Seismic Hazards

The California Department of Conservation has not definitively noted historic instances of liquefaction in South Gate. However, such events were observed in the nearby City of Compton during the 1933 Long Beach earthquake. It is possible that some of the damage that occurred in South Gate and other nearby communities during the 1933 earthquake was linked to liquefaction. Liquefaction has caused significant damage as part of many earthquakes in California history, including the 1971 San Fernando earthquake and the 1994 Northridge earthquake. There are no historic instances of landslides in South Gate or in the immediate vicinity.

Risk of Future Primary Seismic Hazards

South Gate is located in a seismically active area. The Alquist-Priolo Act requires that the California Geologic Survey identify faults in the state that may pose a risk of fault rupture. These faults, known as Alquist-Priolo faults, are also capable of creating a significant ground shaking event, and include most of the major faults present in California. While there are no Alquist-Priolo faults within the City, there are a number of these faults in the surrounding area. The following active faults, most of which are designated as Alquist-Priolo faults, are located within 60 miles of the community and are capable of producing significant earthquakes:

- The Newport-Inglewood Fault Zone is made up of three distinct segments and several faults and fractures, running approximately from the Santa Monica Mountains near Beverly Hills to Newport Beach. It passes approximately 4 miles from South Gate at its closest point. The last major event along this fault was the 1933 Long Beach earthquake. The Southern California Earthquake Center estimates that a future major event along this fault could measure 6.0 to 7.4 on the moment magnitude scale. [1]
- The Palos Verdes Fault Zone extends from the Palos Verdes peninsula south into the Pacific Ocean, running approximately 12 miles from South Gate at its closest point. It has not produced a significant earthquake in recorded history. While not a major Alquist-Priolo fault, The Southern California Earthquake Center estimates that substantial activity from the fault has occurred within the past 10,000 years, and that this fault is capable of producing an earthquake measuring 6.0 to 7.0 or more on the moment magnitude scale. [2]

[1] http://scedc.caltech.edu/significant/newport.html
[2] http://scedc.caltech.edu/significant/palosverdes.html

- The Whittier-Elsinore Fault Zone runs from the Chino Hills region to the California-Mexico border, and is approximately 8 miles from South Gate at its closest point. Near Chino Hills it splits into two separate segments, the Chino Fault and the Whittier Fault. The last major event along this fault was a 1910 earthquake measuring an estimated 6.0 on the moment magnitude scale. This fault is believed to cause a major event approximately every 250 years with a probable magnitude of 6.5 to 7.5 on the moment magnitude scale. [3]
- The Sierra Madre Fault Zone runs along the southern edge of the San Gabriel Mountains from La Cañada-Flintridge to Claremont, approximately 15 miles from South Gate at its closest point. It is made up of five segments; scientists are unclear if any event along this fault could be limited to one segment or if events along multiple segments are possible. The Southern California Earthquake Center estimates that the last major event along the fault zone happened within the past 10,000 years (although no specific event is known), and suggests that it is capable of producing an event measuring 6.0 to 7.0 on the moment magnitude scale. It is not a major Alquist-Priolo fault. [4]
- The San Andreas Fault, the largest and most well-known of California's faults, runs from Cape Mendocino to the Salton Sea. It is approximately 40 miles from South Gate at its closest point. It has caused numerous major earthquakes throughout California's history, including the 1857 Fort Tejon earthquake, which had an estimated moment magnitude of 7.9 and is the strongest earthquake in California's recorded history. Approximately 225 miles of the fault ruptured during this event, including areas near the Los Angeles region. The Southern California Earthquake Center estimates that a future major event along the southern part of the San Andreas Fault, including a potential repeat of the 1857 earthquake, could measure 6.8 to 8.0 on the moment magnitude scale.[5] The recent third Uniform California Earthquake Rupture Forecast estimates that there is at least a 19 percent chance of the southern portion of the San Andreas Fault causing a major earthquake by 2044.[6]
- The San Jacinto Fault Zone runs from San Bernardino to the Superstition Mountains south of the Salton Sea, and is approximately 45 miles from South Gate at its closest point. The last major event along this fault was the Borrego Mountain earthquake on April 9, 1968, which measured 6.8 on the moment magnitude scale. The Southern California Earthquake Center estimates that major events along this fault could measure 6.5 to 7.5 on the moment magnitude scale. [7]

The list above describes the faults most likely to produce a significant earthquake near or in South Gate. Additionally, there is a risk of earthquakes from faults that have not yet been discovered. The 1994 Northridge earthquake, which caused more property damage than any other earthquake in the United States and was the ninth most damaging earthquake in history, occurred along a then-undiscovered fault. A major earthquake along any of these faults could cause significant damage to South Gate. Figure 6 presents the City in relation to major faults, specifically the Newport-Inglewood – Rose Canyon fault zone.

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[3] http://scedc.caltech.edu/significant/elsinore.html
[4] http://scedc.caltech.edu/significant/sierramadre.html
[5] http://scedc.caltech.edu/significant/sanandreas.html
[6] http://pubs.usgs.gov/fs/2015/3009/pdf/fs2015-3009.pdf
[7] http://scedc.caltech.edu/significant/sanjacinto.html

Figure 7 identifies the potential for ground shaking in the City. This map shows the level of ground motion from an earthquake which has a 2 percent chance of being exceeded in the next 50 years (i.e., there is a 2 percent chance that an earthquake in the next 50 years will cause ground motion greater than what is shown in the figure). This map shows the level of ground motion in short periods (0.2 second intervals), which is applicable to short, relatively stiff buildings such as the ones present in South Gate. The force of the shaking is measured as a percentage of earth's normal gravity (e.g., a shaking of 1.55 g is 155 percent that of normal gravity).

Risk of Future Secondary Seismic Hazards

The soil under South Gate is alluvial deposits, which is material (often sand, silt, or gravel) deposited by a river. This soil type can be susceptible to liquefaction. The California Department of Conservation identifies all of South Gate being at an elevated risk for liquefaction due to these soil types and a high water table (less than 40 feet below the surface). However, South Gate City staff identifies the water table as being 80–100 feet below the surface, and does not consider liquefaction as a substantial risk in the community.

The generally flat topography of South Gate means that there are no designated zones at an elevated risk of landslides. However, there is a possibility of small landslides along the Los Angeles River, drainage channels, or other areas where steep slopes occur. Small landslides can occur during grading and other earth-moving activities if appropriate mitigation techniques are not taken. Additionally, areas such as South Gate that are at an elevated risk of liquefaction may experience a phenomenon called lateral spreading, when the liquefied soil spreads out across shallow slopes and behaves very much like a low-angle landslide. Figure 8 illustrates the liquefaction potential in the City.

Climate Change Considerations

Climate change is not expected to have any direct influence on the likelihood, size, and/or severity of any future seismic-related event. It is possible that anticipated changes to precipitation levels and storm intensity may affect areas subject to liquefaction. However, at this point, the relationship between climate change and liquefaction is too uncertain to include in this document. Since the field of climate change science is dynamic, the City will review and summarize new research that occurs on this topic during the next update cycle.

Figure 6. Proximity to Major Faults

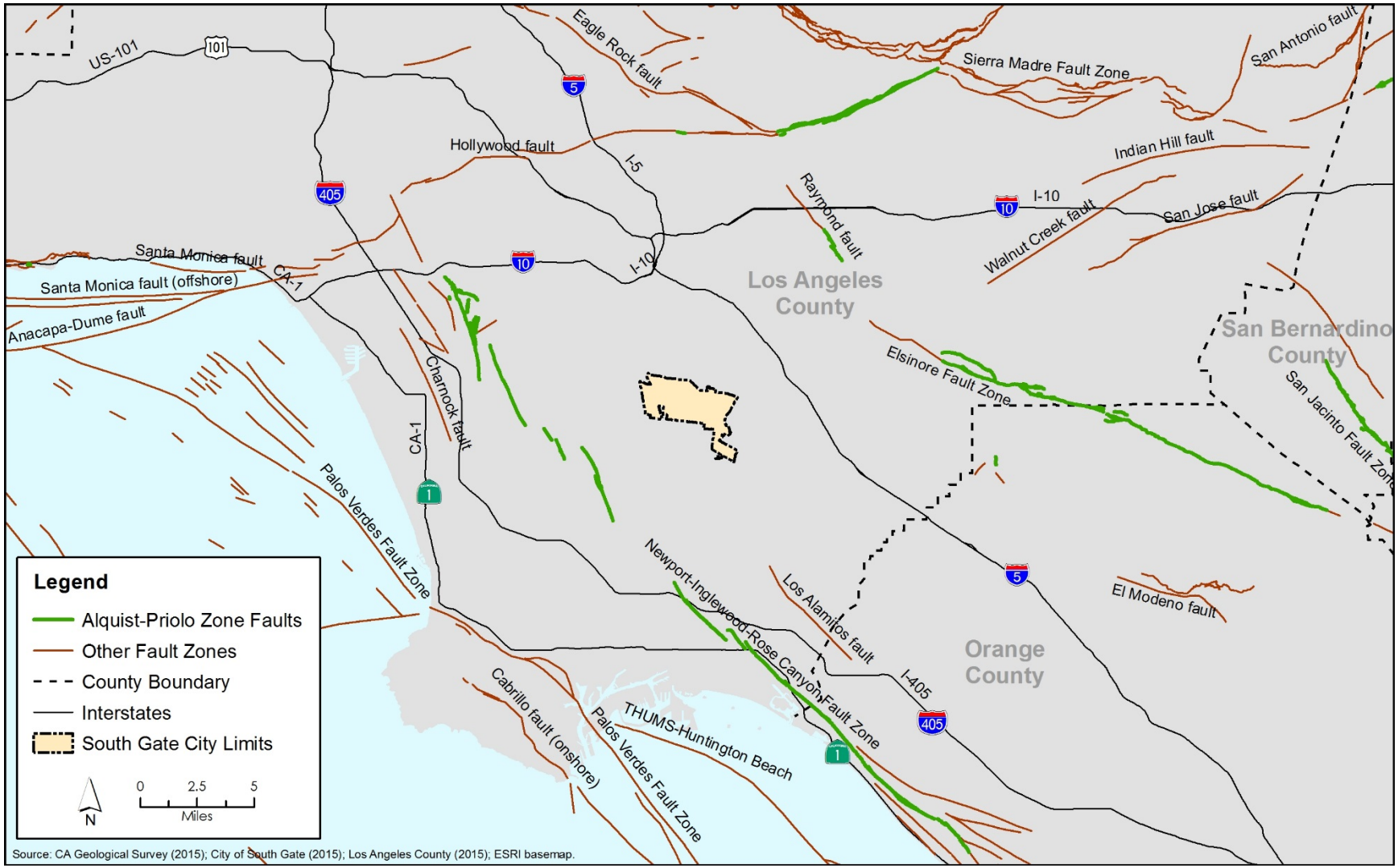

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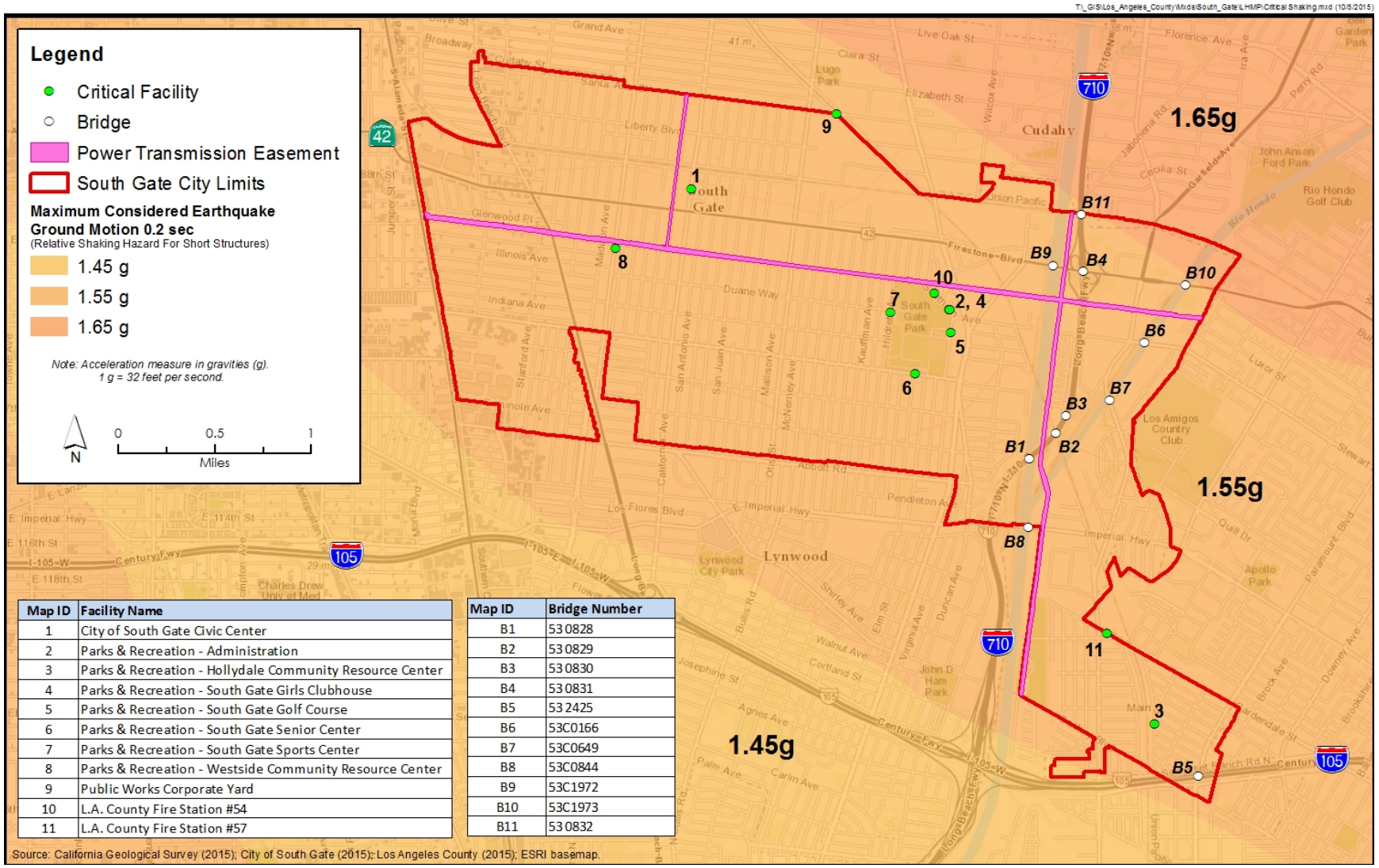
Figure 7. Potential Ground Shaking



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	530828
B2	530829
B3	530830
B4	530831
B5	532425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	530832

Source: California Geological Survey (2015); City of South Gate (2015); Los Angeles County (2015); ESRI basemap.

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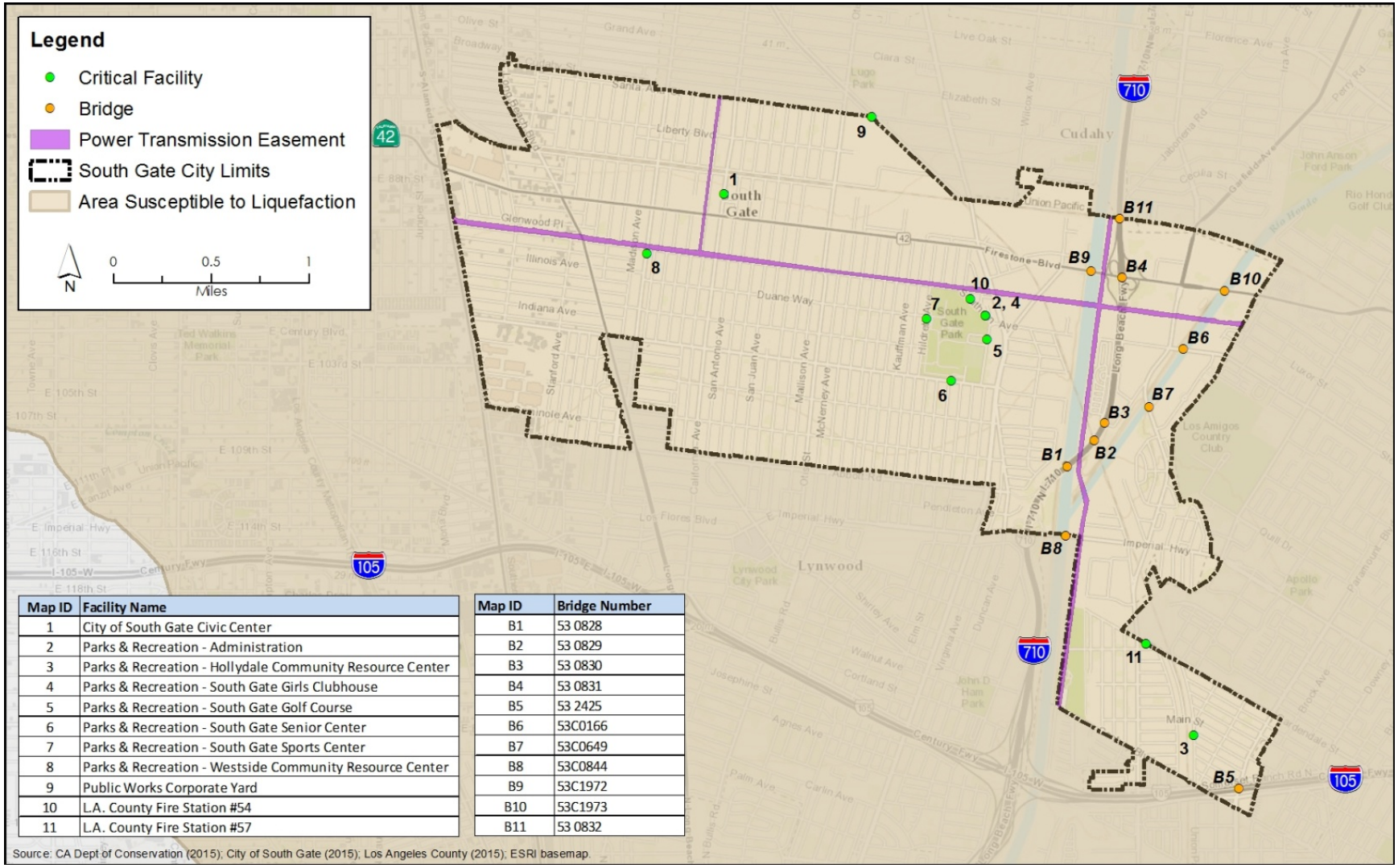
Figure 8. Area Susceptible to Liquefaction



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
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5	Parks & Recreation - South Gate Golf Course
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7	Parks & Recreation - South Gate Sports Center
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9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: CA Dept of Conservation (2015); City of South Gate (2015); Los Angeles County (2015); ESRI basemap.

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Vulnerability/Risk Assessment

Based on Figures 6, 7, and 8, all 11 of the City's critical facilities are susceptible to damage from seismic shaking and liquefaction. Table 17 reports the potential loss that could result from a seismic event. Regarding liquefaction potential, analysis of the liquefaction overlay shows that the populated area affected by liquefaction is a total of 4,706 acres. Approximately 95,000 residents, or 100 percent of the City's total population, could be affected in the event of liquefaction. In addition, 37,816 employees, or 100 percent of the people that work in South Gate, could be affected.

Table 26 at the end of the chapter provides a summary of residents and employees affected by hazard. It should be noted that although the City is located in a state liquefaction zone, based on discussion with South Gate City staff, water tables are deep enough (between 80 and 100 feet) that despite being in a liquefaction zone, liquefaction does not pose a substantial threat.

Table 17. Critical Facilities Susceptible to Seismic Shaking and Liquefaction

Map Number	Facility Name	Replacement Value	Contents Value	Potential Loss
1	City of South Gate Civic Center	$18,942,341	$2,399,619	$21,341,960
2	Parks & Recreation - Administration	$5,527,027	$343,609	$5,870,636
3	Parks & Recreation - Hollydale Community Resource Center	$1,063,646	$199,154	$1,262,800
4	Parks & Recreation - South Gate Girls Clubhouse	$2,547,566	$143,044	$2,690,610
5	Parks & Recreation - South Gate Golf Course	$135,221	$19,645	$154,866
6	Parks & Recreation - South Gate Senior Center	$1,369,861	$87,801	$1,457,662
7	Parks & Recreation - South Gate Sports Center	$19,078,910	$597,246	$19,676,156
8	Parks & Recreation - Westside Community Resource Center	Not available	Not available	Not available
9	Public Works Corporate Yard	$11,319,189	$2,383,013	$13,702,202
10	L.A. County Fire Station #54	Not available	Not available	Not available
11	L.A. County Fire Station #57	Not available	Not available	Not available
	Total Potential Losses			$66,156,892

Extreme Heat

Hazard Description

While there is no universal definition for an extreme heat event, a common definition for planning in California identifies an extreme heat day as a day where the high temperature exceeds the average high temperatures of 98 percent of the historic days between April and October. Five extreme heat days in a row is considered a heat wave. The threat of extreme heat can be higher in urban areas, where dark-colored roofs and paving materials cause the air temperature to be hotter than in surrounding, less developed areas; this is known as the urban heat island effect. Extreme heat events are measured based on the temperature and duration of the event, although there is no standardized scale.

The greatest risk from extreme heat events are health-related. While some heat-related illnesses are often minor and/or temporary, including heat rash, heat cramps, and heat exhaustion, extreme heat can overwhelm the body's ability to maintain a safe internal temperature (an ability called thermoregulation), which can cause a person's body temperature to reach dangerous levels. If a person's internal temperature rises from a normal level of 98.6°F to 104°F or above, heatstroke, the most serious heat-related illness, can occur. Heatstroke can cause fainting, seizures, and mental impairment. If left untreated, it may lead to permanent organ damage, coma, or death.

The risks of extreme heat are higher for some individuals, including the elderly, lower-income individuals, and outdoor workers. Elderly persons, especially those 85 years of age or older, are more likely to suffer potentially fatal respiratory and cardiovascular complications during heat events. They are also more likely to take medication that already reduces their thermoregulatory capability, and may be less likely to take care of themselves during emergency situations. Lower-income individuals are more likely to live in housing without adequate cooling capacity, such as an air conditioner, which can make them more vulnerable to heat-related illnesses. They may also lack access to effective transportation that allows them to reach cooling centers, seek medical help, or obtain other assistance as needed. Outdoor workers, such as construction workers, are more exposed to extreme heat conditions than many other people and therefore are also at risk of extreme heat.

Infrastructure-related complications can also result from extreme heat. Power lines can become stressed during extreme heat, due to a combination of equipment being less efficient in high temperatures and increased demand for electricity during extreme heat (generally to run air conditioners). This combination of factors can overwhelm electricity infrastructure and make it more likely to fail, which can cause power outages and in turn result in increased health risks. In particularly extreme heat events, roads and railways may be damaged by the high temperatures, creating transportation delays or closures.

Hazard History

The worst heat event in California history occurred in the Los Angeles area in 1955, when an eight-day heat wave resulted in temperatures as high as 108°F in downtown Los Angeles and killed 946 people. A heat wave in July 2006 killed 147 people throughout the state, although the Los Angeles region was less impacted than the Central Valley.

According to Cal Adapt (the State of California Climate Adaptation date portal), an extreme heat event in South Gate occurs when temperatures in the area rise above 92°F, which on average occurs four times each year.

Risk of Future Hazards

The risk of extreme heat events is likely to rise in South Gate and throughout California, and all parts of South Gate face an equal risk. An increase in extreme heat events is one of the primary threats posed by climate change. Future extreme heat events are likely to be more frequent and more intense, and potentially longer-lasting. The California Energy Commission forecasts that by 2050, South Gate could see up to 31 extreme heat days each year, potentially rising to as high as 77 extreme heat days by the end of the century. In addition to direct health impacts, this may cause street trees and other vegetation in South Gate to suffer further stress, making them more vulnerable to disease or death. This is of particular concern since street trees help provide necessary shade, reducing the urban heat island effect.

Climate Change Considerations

As noted above, climate change is likely to cause an increase in the frequency and severity of extreme heat events throughout California. Although the greatest increases are likely to occur in more inland areas, scientists have identified moderate-temperature areas such as South Gate as being at an elevated risk because people in these areas are not used to extreme heat. There is a wide range of potential frequency and severity of extreme heat events as a result of climate change, but scientific consensus is that extreme heat will pose a greater risk in future years than it currently does due to climate change.

Vulnerability/Risk Assessment

Like other communities in the region, South Gate is at an elevated risk of extreme heat. Urbanized areas experience higher temperatures than rural communities (known as the urban heat island effect[8]), which could further elevate temperatures in and around the City. South Gate has a somewhat greater rate of poverty than Los Angeles County as a whole, and so may have a greater proportion of lower-income residents with elevated vulnerability than surrounding communities.

Hazardous Materials

Hazard Description

The category of "hazardous materials" covers a large range of natural and artificial substances that can be a risk to the public, such as toxic metals and chemicals, flammable or explosive materials, corrosive material, infectious substances, and radioactive materials. These materials can create health problems if inhaled, touched, or ingested. Alternatively, these materials can be relatively harmless by themselves but can create dangerous conditions (e.g., explosives).

[8] According to the US EPA, the urban heat island effect is a measurable increase in ambient urban air temperatures resulting primarily from the replacement of vegetation with buildings, roads, and other heat-absorbing infrastructure. The heat island effect can result in significant temperature differences between rural and urban areas.

Hazardous materials can also escape from containment vessels and contaminate groundwater, soil, or air, which may result in further impacts. There is also concern about the long-term public health and environmental impacts that may result from the sustained use of or exposure to such materials.

Hazardous material emergencies can occur in a number of ways. An unrelated disaster such as an earthquake or flood may damage storage tanks or pipes, causing the material to leak out. Even if buildings or containment structures suffer minimal damage, hazardous materials can be released. Accidents can also occur independently of other disasters, such as from human error or malfunctioning or broken equipment. There is no standardized scale for hazardous material releases, as these events are usually measured based on the volume and type of released material or materials.

Transportation accidents are another way that hazardous materials may pose a risk to people and property. Road vehicles, trains, and (more rarely) aircraft are all used to transport these materials, and accidents involving these vehicles may involve the release of hazardous materials. One of the most prominent examples of a transportation accident involving hazardous materials occurred in 1973 in the City of Roseville, near Sacramento. A freight train entering the City's rail yard suffered a brake accident, setting a wooden boxcar carrying 250-pound bombs on fire. The resulting explosion destroyed the rail yard and injured approximately 100 people, although there were no fatalities.

Hazard History

There is no history of significant hazardous material-related emergency events in South Gate, although there have been a few substantial events in the vicinity. The 1994 Northridge earthquake led to over 15,000 natural gas leaks and 60 hazardous material releases that required an off-site response. More recently, an overpressurized piece of equipment at an oil refinery in Torrance caused an explosion that released particles of fiberglass and glass wool into the surrounding neighborhoods.

Risk of Future Hazards

In South Gate, a prime area of concern for hazardous material releases is via rail accidents. There are two rail lines in South Gate, both owned by the Union Pacific Railroad. The Spur Line runs along the northern portion of the City in an east–west direction north of Firestone Boulevard, while the San Pedro Subdivision runs diagonally through the eastern portion of South Gate in a generally north–south alignment. According to South Gate's 2009 General Plan, both lines handle approximately four to six trains each day. There are no grade-separated rail crossings in South Gate, except for where the San Pedro Subdivision runs underneath Interstate 710. A third freight rail line, called the Alameda Corridor, runs along Alameda Avenue at the City's western border and connects the Ports of Los Angeles and Long Beach to the national rail network near downtown Los Angeles. In 2015, the Alameda Corridor carried an average of 41 trains each day. Trains carrying hazardous materials may use any of these three rail lines, and an accident involving hazardous materials on any of these rail lines may create a health and safety risk in South Gate.

South Gate may also be at risk from sites previously contaminated with hazardous or potentially hazardous materials. The California Department of Toxic Substances Control maintains a list of stationary hazardous material facilities with

known or potential soil contamination. This list, called the Cortese List, identifies four such sites in South Gate. All four were previously used for various industrial activities, including manufacturing, machine repair, and recycling. These four sites are currently undergoing cleanup activities. Table 18 identifies these sites and the potential sources of contaminants.

Table 18.Cortese List Sites in South Gate

Address	Oversight Agency	Potential Contaminants
5211 Southern Avenue	US Environmental Protection Agency	Metals (cadmium, copper, lead, nickel, chromium, and/or zinc) Volatile organic compounds (VOCs)
2525 East Firestone Boulevard	California Department of Toxic Substances Control	Dry-cleaning fluid Industrial solvents
9301 Rayo Avenue	US Environmental Protection Agency	Industrial solvents
8440 Alameda Street	California Department of Toxic Substances Control	Metals (cadmium, copper, lead, nickel, chromium, and/or zinc) Gasoline and/or diesel Volatile organic compounds (VOCs)

Source: California Department of Toxic Substances Control, http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

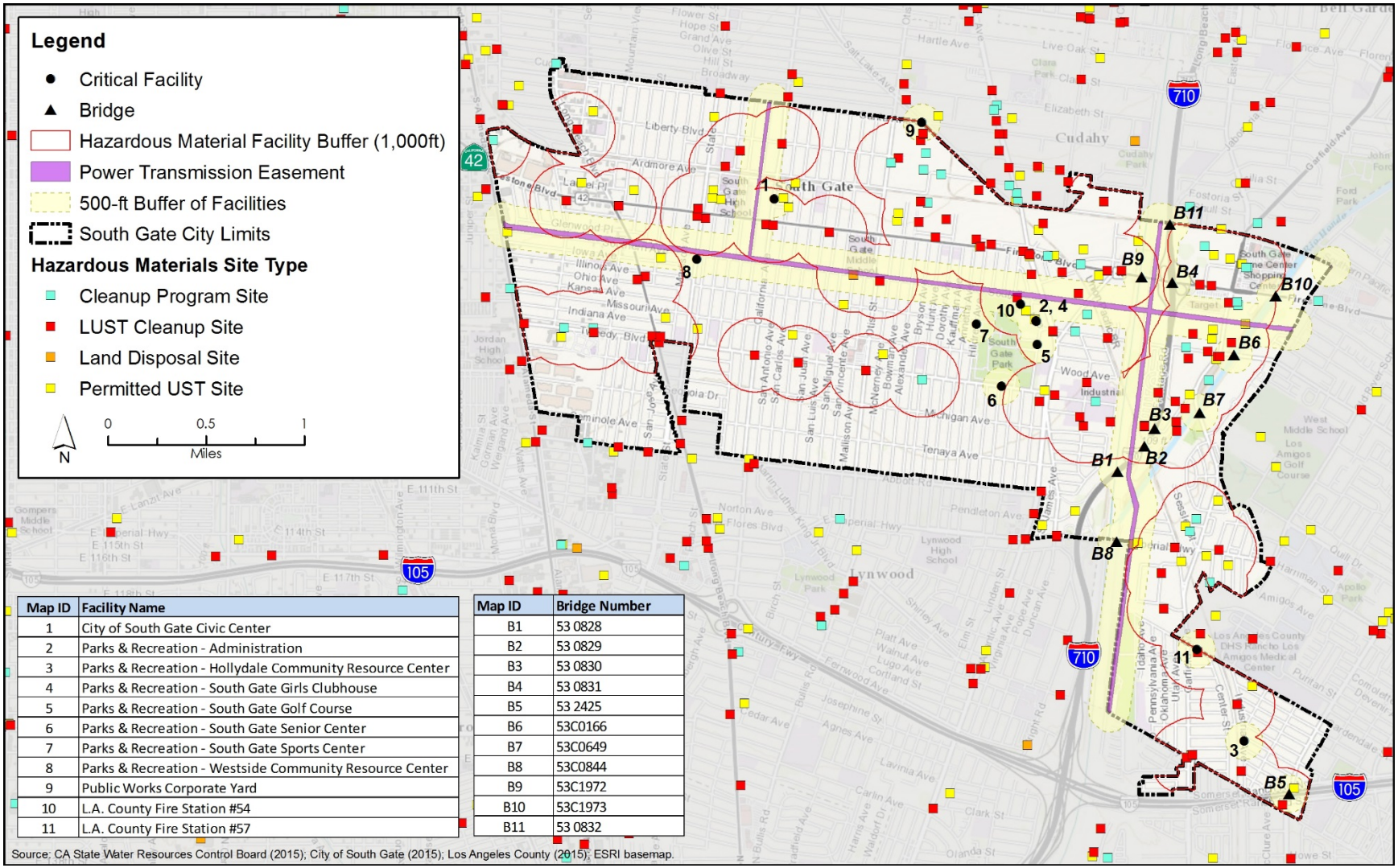
In addition to the facilities on the Cortese List, the State Water Resources Control Board maintains a record of all sites in California that are regulated to help prevent contamination to water bodies and groundwater supplies. There are 155 such sites in South Gate, most of which are underground storage tanks. However, many of these sites are closed and all cleanup activities have been completed. Table 19 shows the number of sites in South Gate by status. While some risk does remain, only a handful of sites are in a position that could result in hazardous materials release. Figure 9 illustrates all hazardous material sites in the City.

Table 19.Regulated Groundwater Contaminant Sites in South Gate by Status

Status	Number of Sites	Description
Active – WDR	2	The site is currently active and regulated under the Waste Discharge Requirements program.
Completed – Case Closed	110	A formal closure decision document has been issued.
Historical – WDR	4	The site was previously regulated under the Waste Discharge Requirements program but no longer is.
Never Active – WDR	2	The site is regulated under the Waste Discharge Requirements program, but has never been active.
Open – Assessment and Interim Remedial Action	2	Interim remediation is ongoing, and other investigative or analytical actions are occurring.
Open – Eligible for Closure	5	All corrective action is done.
Open – Inactive	7	There are no regulated activities at the site.
Open – Remediation	7	A remediation strategy has been selected and is being implemented.
Open – Reopen Case	1	The site has been reopened for further analysis or remediation.
Open – Site Assessment	14	The site is being analyzed.
Open – Verification Monitoring	1	Remediation is complete, and a monitoring program is in place to confirm the successful conclusion of these activities.
Total	155	

Source: California State Water Resources Control Board, https://geotracker.waterboards.ca.gov/

Figure 9. Hazardous Material Locations



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: CA State Water Resources Control Board (2015); City of South Gate (2015); Los Angeles County (2015); ESRI basemap.

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Climate Change Considerations

While climate change is not directly linked to the risk of hazardous material releases, it does pose an indirect risk. Climate change is expected to increase the number of intense storm events in and around South Gate, which may result in an increase in flooding and severe wind. Both types of events could damage hazardous material storage containers, increasing the risk of potential release.

Vulnerability/Risk Assessment

Table 20 identifies critical facility locations that could be exposed to hazardous materials releases during a disaster event. These locations only take into consideration the proximity to existing hazardous materials facilities and do not include potential exposure associated with the movement/transport of hazardous materials. The maximum potential loss shown in the table is based on the assumption that all facilities within 500 feet of a hazardous materials facility would be impacted during a hazardous materials release/event. While this is possible, actual losses will vary based on the location and magnitude of the event.

Table 20. South Gate Critical Facilities Located Adjacent to Hazardous Materials Sites

Map #	Facility	Replacement Value	Contents Value	Potential Loss
1	City of South Gate Civic Center	$18,942,341	$2,399,619	$21,341,960
2	Parks & Recreation - Administration	$5,527,027	$343,609	$5,870,636
4	Parks & Recreation - South Gate Girls Clubhouse	$2,547,566	$143,044	$2,690,610
9	Public Works Corporate Yard	$11,319,189	$2,383,013	$13,702,202
10	L.A. County Fire Station #54	Not available	Not available	Not available
11	L.A. County Fire Station #57	Not available	Not available	Not available
	Total Potential Losses	$38,336,123	$5,269,285	$43,605,408

Analysis of the hazardous materials overlay shows that the populated area within 1,000 feet of a hazardous materials facility is a total of 2,868 acres. A total of 48,288 residents (51 percent of the City's total population) could be exposed to a hazardous materials release. In addition, 19,026 employees, or about 50 percent of the people that work in South Gate, could be exposed. Table 26 at the end of the chapter provides a summary of residents and employees affected by hazard.

Severe Weather

Hazard Description

Severe weather, as defined in this Plan, includes hail, tornadoes, and wind/windstorms. Other weather and climate-related hazards, including flooding, drought, and extreme heat, are discussed in their respective sections.

Hail is a type of precipitation that involves rough spheres or lumps of ice. It forms within strong thunderstorms, when water droplets are forced upward in the thundercloud by strong winds called updrafts. As the droplets rise, the air temperature drops below freezing, causing the drops to freeze and stick together. Eventually the weight of the hailstone becomes too heavy for the updraft to hold it up, and it falls to the surface.[9] Hailstones are generally larger than 0.2 inches across, and can pose a hazard when they grow larger than 0.8 inches. At this size, they can damage roofs, break windows, and damage plant leaves. Particularly large hailstones can knock branches off of trees, causing further damage. In very rare instances, people struck by massive hailstones can suffer concussions or other head trauma. Hail events are often measured by the size of the hailstones involved, although there is no standard scale.

Tornadoes are rotating columns of air reaching from the ground's surface to a cloud, usually a thundercloud. Although scientists do not fully understand how tornadoes form, tornadoes typically start when rapidly descending wind within a thunderstorm (a downdraft) drags a rotating part of the thunderstorm called the mesocycle down below the base of the cloud and focuses the mesocycle's base over a relatively small area. At the same time, the mesocycle causes air currents of different temperature and humidity to mix, which creates an area of low pressure directly below the mesocycle. This low-pressure area pulls the focused mesocycle to the ground, where it becomes a tornado. The threat caused by tornadoes is due to very high wind speeds, which can directly damage objects and structures. Additionally, tornadoes can pick up heavy objects and smash them into other objects or buildings, causing further damage. The strength of a tornado is measured using the Enhanced Fujita scale, which estimates wind speeds by the observed damage. The Enhanced Fujita scale is shown in Table 21.

Table 21. Enhanced Fujita Scale

Rating	Wind Speeds [1]	Description
F0	65 to 85 mph	Light damage: Some damage to chimneys. Branches broken off trees. Shallow-rooted trees pushed over. Sign boards damaged.
F1	86 to 110 mph	Moderate damage: Surfaces peeled off roofs. Mobile homes pushed off foundations or overturned. Moving vehicles blown off roads.
F2	111 to 135 mph	Considerable damage: Roofs torn off frame houses. Mobile homes demolished. Box cars overturned. Large trees snapped or uprooted. Light objects become missiles. Cars lifted off ground.
F3	136 to 165 mph	Severe damage: Roofs and some walls torn off well-constructed buildings. Trains overturned. Most trees uprooted. Heavy cars lifted off the ground and thrown.
F4	166 to 200 mph	Devastating damage: Well-constructed buildings leveled. Structures with weak foundations blown away. Large objects become missiles.
F5	More than 200 mph	Incredible damage: Strong frame buildings leveled and swept away. Automobile-sized missiles fly through the air in excess of 100 meters. Incredible phenomena will occur.

[9] Hail is sometimes confused with sleet, which is made of much smaller balls or pellets of ice. While hail is formed in thunderstorms, sleet is created when snow melts and then refreezes, and thus only occurs in very cold weather.

1. These are the estimated wind speeds of a three-second gust, based on the type of damage. The wind speeds are not observed measurements.
Source: NOAA Storm Prediction Center, http://www.spc.noaa.gov/efscale/

Independent of tornadoes, very high winds can also pose a threat by directly damaging property or by causing indirect damage such as spreading or intensifying a fire, creating airborne debris and missiles, or blowing over trees. Severe winds may occur in a storm system, where the differences in air pressure, temperature, and humidity can create strong gusts, or they may occur independently. The intensity of wind events is measured in the Beaufort scale, shown in Table 22.

Table 22. Beaufort Scale

Beaufort Scale	Wind speed	Description
0: Calm	Less than 1 mph	Smoke rises vertically.
1: Light air	1 to 3 mph	Direction shown by smoke drift but not by wind vanes.
2: Light breeze	4 to 7 mph	Wind felt on face; leaves rustle; wind vane moved by wind.
3: Gentle breeze	8 to 12 mph	Leaves and small twigs in constant motion; light flags extended.
4: Moderate breeze	13 to 18 mph	Raises dust and loose paper; small branches moved.
5: Fresh breeze	19 to 24 mph	Small trees in leaf begin to sway; crested wavelets form on inland waters.
6: Strong breeze	25 to 31 mph	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.
7: Near gale	32 to 38 mph	Whole trees in motion; inconvenience felt when walking against the wind.
8: Gale	39 to 46 mph	Twigs break off trees; generally impedes progress.
9: Strong gale	47 to 54 mph	Slight structural damage (chimney pots and slates removed).
10: Storm	55 to 63 mph	Seldom experienced inland; trees uprooted; considerable structural damage.
11: Violent storm	64 to 72 mph	Very rarely experienced; accompanied by widespread damage.
12: Hurricane	73 mph and above	Devastation.

Source: Royal Meteorological Society, http://www.rmets.org/weather-and-climate/observing/beaufort-scale

Hazard History

Hail is a relatively uncommon event in the Los Angeles region, and any such events that do occur are usually fairly harmless. However, a few rare significant hail events in the area have created a hazard for people and property. In 1986, a series of thunderstorms created hail that caused traffic accidents in Pasadena and caused classes to be cancelled at California State University, Northridge. Hail events are somewhat more common in the desert areas of Southern California, which are more likely to see thunderstorms than the coastal regions. In 1960, hail 2.75 inches in diameter fell in Riverside County, the largest size hail to hit Southern California. More recently, a 2008 hailstorm in the San Jacinto

Mountains injured two people (the only known event in California of people being injured by hail) and forced a helicopter to make an emergency landing. South Gate staff also reported localized hail events causing damage to property in the City within the last 10 years.

Tornadoes are most common in the Great Plains and Midwest regions of the United States, between the Rocky and Appalachian Mountain ranges. However, tornado events can occur in all parts of the United States, including California. The California Multi-Hazard Mitigation Plan identifies 316 tornadoes that have struck the state from 1950 to 2006, most of which measured F0 on the Enhanced Fujita scale. The state has seen two F3 tornadoes in recorded history: one in Riverside County in 1973, and one in Orange County in 1978 that injured three people. The Tornado Project identifies 42 tornadoes that have struck Los Angeles County since 1950, including an F2 tornado in 1983 that injured 30 people and damaged 50 homes near western Los Angeles. South Gate staff reported the presence of one tornado south of the City near the Los Angeles River channel within the last 20 years.

High winds are an occasional event in the Los Angeles region. A common type of high wind event involves Santa Ana winds, which occur when areas of high pressure form in the Great Basin and northern Mojave Desert regions, both of which sit at high elevation. The pressure forces the air out of these regions toward the California coast, causing it to heat up and dry out as it descends toward sea level. Santa Ana winds can have gusts of 70 to 80 mph or more, and often are responsible for spreading wildfires. Santa Ana events have also toppled trees and knocked out power multiple times in the region in recent years; for example, a 2011 event destroyed multiple buildings and left over 340,000 people without power. Strong wind events can also be associated with thunderstorms. A strong thunderstorm in 2000 caused winds up to 100 mph in the Gateway Cities and southern San Gabriel Valley regions, including causing severe damage to factories and mobile homes in Paramount.

Risk of Future Hazards

South Gate is likely to be at continued risk from these types of events, and there is an equal chance of all severe weather events occurring at any individual location in the community. High winds, including Santa Ana events, are expected to continue to be the primary type of severe weather in the City. Given the severity of these events and the frequency at which they occur, most damage associated with severe weather is likely to be the result of high winds. Hailstorms are expected to remain a more uncommon event, and ones capable of causing substantial damage are likely to be more uncommon still. Tornadoes capable of causing significant damage are rare in California and the odds of one posing a threat to South Gate are low, albeit present.

Climate Change Considerations

Climate change is expected to cause an increase in the number of intense storms that affect California. As hail, tornadoes, and some types of high wind events are all linked to strong thunderstorms, it is possible that an increase in the number of intense storms may also cause an increase in the number of these severe weather events. Scientists have not yet identified any clear relationship between climate change and the frequency or intensity of Santa Ana events, although research into this subject remains ongoing.

Vulnerability/Risk Assessment

The entire City and all critical facilities are susceptible to storm damage. A majority of windstorm damage that occurs is associated with fallen trees/tree limbs. Facilities located in close proximity to large trees may be more susceptible to windstorm damage as a result. While the City is at risk to severe weather (particularly strong winds), there is no effective way of determining potential losses at this time. Future implementation actions by the City should include tree inventories and overhead powerline assessments associated with critical facilities after a severe weather event, to better assess existing and project future losses.

Flood

Hazard Description

Flood events occur whenever water covers what is normally considered dry land. They often occur during heavy precipitation events, when the amount of rainwater exceeds storm drains or flood control channel capacity. Flood event severity depends on the local topography and the ability of the soil in the area to absorb water. Floods can also happen when infrastructure such as levees, dams, or culverts fail. These failures can be linked to precipitation events (e.g., when water erodes a levee, allowing water to escape and flood nearby areas) or be a consequence of other emergency situations (e.g., a dam collapsing due to an earthquake). There is no standardized scale for flood events. Floods are usually measured by the volume of precipitation and the resulting damage. In South Gate most flood events occur and are contained within local roadways. Flood depths of these past events have not been collected in the past.

The force of a flood is sufficient to carry away large objects and smash them into structures, causing considerable damage to buildings and infrastructure. In severe instances, floodwaters themselves can destroy structures or move them off their foundation. Floods can saturate and weaken soil, potentially making structures built on them more susceptible to damage or collapse. Floods are among the most common types of disaster in California according to the state Multi-Hazard Mitigation Plan, second only to fires. From 1950 to 2012, floods have killed 292 people, more than any other type of disaster. The state has suffered approximately $4.8 billion in costs due to flooding events.

Hazard History

In the 1800s and early 1900s, South Gate and other communities along the Los Angeles River were subject to frequent and often significant flooding. A major flood in 1914 resulted in the first widespread flood control efforts along the Los Angeles River, which accelerated after a 1938 flood that killed approximately 115 people. The Los Angeles River and other waterways in the area have been largely channelized, which helps to control the rivers but does not remove the risk of flood events. From 1950 to 2012, Los Angeles County had 32 state- and federally declared flood disasters, the second highest of any county in the state. As of 2000, approximately 390,000 people in Los Angeles County lived in areas at elevated risk of flooding.

Risk of Future Hazards

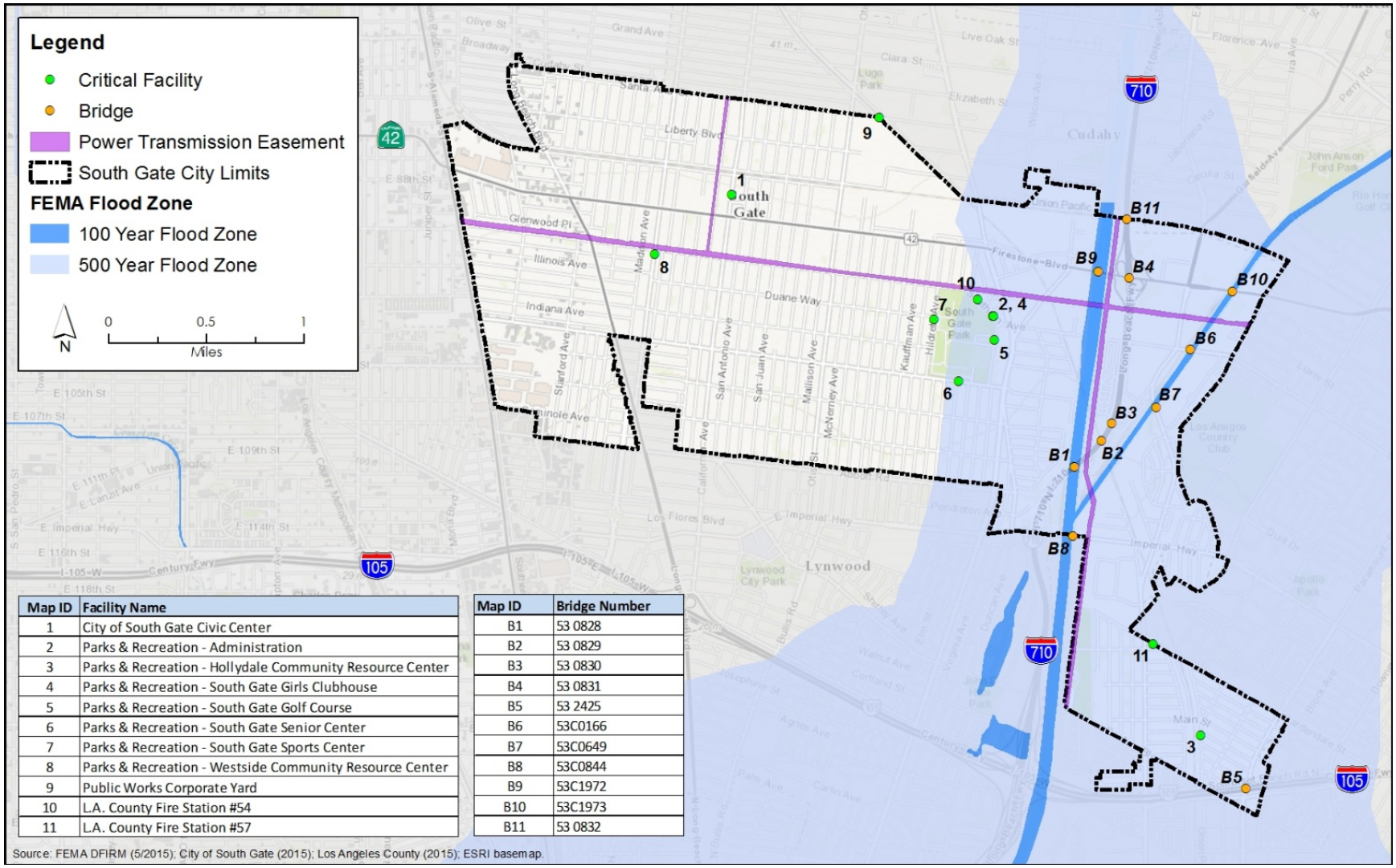
South Gate generally receives an average of 14.5 inches of rainfall a year, although this amount can vary widely from year to year. Like most of California, much of South Gate's rainfall occurs during winter, late autumn, and early spring. On average, the City receives 13.5 inches of rain between November and April, and only about an inch of rain the other half of the year.

Periods of intense rain can happen occasionally in California, usually as a result of a meteorological phenomenon called an "atmospheric river," which is a narrow band of very moist air that can deliver a strong winter storm. The atmospheric river was likely the cause of the Great Flood of 1862, which caused 35 inches of rain to fall in Los Angeles for four weeks, turned large portions of modern Los Angeles and Orange Counties into shallow lakes, and destroyed an estimated 25 percent of all taxable real estate in California. Scientists have forecasted that a repeat of such an event, known as the ARkStorm scenario, could cause $400 billion in damage and another $325 billion in lost economic productivity.[10] Strong storms are also linked to El Niño events, which occur when the surface of the eastern tropical Pacific is warmer than normal and result in various climate extremes around the globe, often including increased precipitation in California.

FEMA flood maps indicate that the eastern portion of South Gate near the Los Angeles River and the Rio Honda drainage channel are at an elevated risk of flooding. The parts of the City east of Jackson Avenue and Burke Avenue are within the 500-year floodplain, meaning that there is a 0.2 percent chance (one in 500) that the area will be subjected to flooding in any given year. The only parts of South Gate within the 100-year floodplain are the Los Angeles River and the Rio Honda drainage channel itself, although land in northeastern Lynwood (immediately south of South Gate) is in the 100-year floodplain. Figure 10 identifies flood zones in the City.

[10] http://pubs.usgs.gov/of/2010/1312/

Figure 10. South Gate Flood Zones



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

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Climate Change Considerations

Climate change is expected to cause an overall decrease in precipitation levels and a general increase in drought conditions throughout much of California. However, evidence suggests climate change may also result in an increase in the number of more intense storms. These two changes may contribute to an increased flooding risk. More intensive storms are likely to drop a larger amount of water in a shorter period of time, increasing the risk of the volume of water overwhelming the ability of the soil or infrastructure to drain it away, and thus creating flooding. The overall drier conditions are expected to dry out the soil, which makes it more difficult for water to soak into the ground, further increasing the risk of flooding. It is not yet known if climate change will affect the frequency or severity of El Niño events.

Vulnerability/Risk Assessment

As discussed above and as shown in Figure 10, nearly half of the City is located within the 500-year flood zone, with very small portions, mostly river channels, located in the 100-year flood zone. Seven critical facilities are located in the FEMA 500-year flood plains; no facilities are located within a 100-year flood plain. Of the facilities located in the 500 year floodplain, total losses to these facilities could exceed $10.2 million based on currently available information. This estimate could be larger if more accurate information regarding replacement costs become available in the future.

Analysis of the flood zone overlays shows that the populated area within 500 feet of a 100-year flood zone is a total of 502 acres. A total of 944 residents (1 percent of the City's total population) would be affected by a 100-year flood not related to dam failure inundation. In addition, 352 employees, or 1 percent of the people that work in South Gate, could be affected. Table 26 at the end of the chapter provides a summary of residents and employees affected by hazard.

Disease/Pest Management

Hazard Description

Disease and pest management hazards are caused by an undesirable organism (insects, bacteria, viruses, etc.) that causes serious harm to plants, animals, or humans. These organisms can threaten human health by infecting people with a number of diseases, some of which are potentially fatal. Pathogenic or disease-carrying organisms may also cause widespread devastation to forests, creating safety hazards and causing environmental damage in addition to economic impacts. There are some specialized scales for certain types of disease or pest outbreaks, but no standardized scale is used across multiple types of disease and pest management hazard events. Events are often measured by the number of human cases or the size of the affected area.

One disease of concern is West Nile virus. Birds are often a host for the virus, which can be spread when a mosquito bites an infected bird and then later bites a person. As a result, many agencies will test the blood of wild or domestic birds to look for the presence of West Nile virus. Approximately 80 percent of people infected with West Nile virus will not show any symptoms, while 20 percent of people will experience fever, nausea, headache, or other symptoms

resembling the common cold or a mild case of influenza. In less than 1 percent of infected people, the virus attacks the central nervous system, potentially causing meningitis or encephalitis.

For many urban areas, diseases and pests that impact street trees are a concern, as most types of street trees are susceptible to diseases. Insects called aphids are among the most common pest, sucking sap from the tissue of trees and other plants. This can weaken the tree by depriving it of nutrients, and may also introduce other pathogens such as fungi or viruses. Another type of insect, the bark beetle, burrows into the inner bark of trees, weakening and often killing them. At times, massive outbreaks of bark beetles can kill vast swaths of forests. A fungal disease called sudden oak death has devastated a large number of oak trees in California and Oregon. Since it was first observed in 1995, it is estimated to have killed over 100 million trees, primarily in the coastal areas of Central and Northern California.

Hazard History

Since the predominant strains of influenza and their virulence change each year, the number of influenza cases also changes significantly each year. In the most recent flu pandemic of 2009–2010, confirmed cases of influenza killed 135 people in Los Angeles County and sent another 247 people to intensive care units. By contrast, in the following 2010–2011 flu season, 10 people died and another 3 required intensive care. In the 2013–2014 flu season, Los Angeles County saw 83 deaths and another 27 intensive care patients. Specific numbers for South Gate are not available.

The number of West Nile virus cases also varies substantially from year to year. The virus first appeared in California in 2003, and had been observed in all counties in the state by 2004. As of the end of 2014, California had reported 4,805 cases of West Nile virus, with 176 fatalities. In 2014, Los Angeles County saw 253 human cases of the disease, although the number of cases in South Gate is unavailable. As of July 2015, one swimming pool in South Gate has tested positive for mosquitoes infected with West Nile virus.

In South Gate, the predominant type of street tree is sycamore, which is vulnerable to various diseases and pests. A fungal disease called anthracnose or sycamore blight can affect California sycamores, as well as a number of other trees. Although it generally does not kill the tree or cause permanent damage on its own, it does cause the trees to shed leaves, which can weaken the tree and make it more susceptible to other diseases or pests. The disease has infected trees throughout the Los Angeles area, and appears to be more common in years with a wet late winter or spring.

Risk of Future Hazards

All of South Gate faces a generally equal risk from disease and pest management hazards. A number of preventative actions can reduce the risk of diseases such as influenza and West Nile virus. Vaccination and basic hygiene can significantly decrease the odds of a person catching influenza. Similarly, individuals can reduce the risk of mosquito bites (and by extension, the risk of West Nile virus), by draining pools of stagnant water, using screens and protective clothing, and wearing insect repellant. However, eradicating these diseases is extremely unlikely in the short term. It is likely that they will continue to affect South Gate and surrounding communities. While various health organizations and

scientific outlets have spoken about the risk of pandemics, it is difficult to say to what extent South Gate specifically may be at risk from any future pandemic events.

It is also likely that anthracnose will continue to infect trees in South Gate. While fungicides are available to control the spread of the disease, they can be very toxic and may not be the best choice in all instances. While the City and property owners may not be able to eradicate anthracnose and other tree diseases or pests, basic preventative measures such as inspections, quarantines, and monitoring, in coordination with the Los Angeles County Agricultural Commissioner's office, can help to minimize their impact.

Climate Change Considerations

There is no firmly established link between climate change and influenza. However, as the influenza virus changes rapidly, it is possible that changes in animal migration patterns or other factors brought on by climate change may create additional opportunities for the virus to mutate, potentially into more virulent forms. Climate change is expected to cause a rise in West Nile virus, as warmer temperatures mean that mosquitoes are likely to remain more active for a longer period of the year, increasing the opportunities for infected mosquitoes to bite people.

The changes in temperature and precipitation brought on by climate change may make conditions more favorable for certain pests or pathogens. For example, decreases in precipitation linked to climate change are making pine trees drought-stressed throughout wide areas of the western United States, increasing their vulnerability to pests such as the bark beetle. It is possible that trees in South Gate and the wider Los Angeles area may become more susceptible to diseases or pest infestations as a result.

Vulnerability/Risk Analysis

The entire City of South Gate is vulnerable to influenza, the West Nile virus, and certain tree diseases. South Gate does not have any unique conditions that make the community more or less vulnerable to the impacts of these diseases.

Dam Failure

Hazard Description

Dam failure occurs when a dam is damaged, partially or completely compromising its ability to hold back water. This can occur as a result of earthquakes or other seismic activity, erosion of the dam face or foundation, or rapidly rising floodwaters that weaken the dam or overwhelm its capacity to drain excess water, or if the rock or ground the dam is built on is flawed. Dam failure can also occur as a result of human error, such as construction or design flaws that were not properly addressed. Dam failure results in sudden, fast-moving floods that can damage or destroy property, cause injury or loss of life, and displace large numbers of people in the flood's path. A dam failure event can also damage regional infrastructure such as transportation and energy networks, causing impacts outside of the immediate inundation zone.

The US Army Corps of Engineers has developed a five-degree rating system for dam safety, called the Dam Safety Action Classification (DSAC) system, shown in Table 23.

Table 23.Dam Safety Action Classification System

DSAC Rating	Description
DSAC-I	Very High Urgency: Progression toward failure is confirmed to be taking place under normal operations, and the dam is almost certain to fail under normal operations without intervention within a few years, potentially immediately. Alternatively, the life or economic consequences given the probability of failure is extremely high.
DSAC-II	High Urgency: Failure could begin under normal operations or as the result of an event, and the likelihood of failure before intervention is too high to assure public safety. Alternatively, the life or economic consequences given the probability of failure is very high.
DSAC-III	Moderate Urgency: The dam has issues indicating that it is significantly inadequate. Alternatively, the life or economic consequences given the probability of failure is moderate to high.
DSAC-IV	Low Urgency: The dam has issues indicating that it is inadequate and it may not meet all essential engineering guidelines. However, the life, economic, and/or environmental consequences given the probability of failure is low.
DSAC-V	Normal: The dam is considered adequately safe and meets all essential guidelines. The risk is considered tolerable.

Source: US Army Corps of Engineers, http://www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram/ProgramActivities.aspx

Hazard History

Dam failure events are very rare, as dams that are large enough to hold back massive quantities of water are designed to very high safety standards. During floods, dam operators will often release more water than normal from the dam, reducing the risk of incoming water exceeding the dam's capacity. Nevertheless, the Los Angeles region has experienced dam failures before. In 1928, the St. Francis Dam, constructed approximately 45 miles northwest of South Gate as part of the Los Angeles Aqueduct system, failed catastrophically due to weak foundations and a leak which had eroded part of the dam structure; modern analysis suggests a landslide may also have been involved. The collapse caused a wave of water as high as 140 feet, which steadily decreased as it rushed 54 miles to the ocean over a period of 5.5 hours. The disaster killed an estimated 431 people (although some estimates are over 600), damaged several towns, and knocked out power to parts of the San Fernando Valley and downtown Los Angeles. In 1963, the Baldwin Hills Dam approximately 10 miles northwest of South Gate experienced a partial collapse due to geologic conditions. The resulting flood killed 5 people and destroyed 277 homes.

Risk of Future Hazards

All of South Gate is within the potential dam inundation zone for at least one dam. Hansen Dam, which was built in 1940 as a flood control measure in response to the Los Angeles River floods of 1938, threatens the largest portion of the City;

all of South Gate except for the extreme northeastern corner near the South Gate Town Center shopping center is within the Hansen Dam inundation zone. Hansen Dam is located approximately 23 miles northwest of South Gate, in the San Fernando Valley. The US Army Corps of Engineers gives Hansen Dam a DSAC-III rating. Due to this rating, the dam's Emergency Action and Notification Plan is updated annually, and special inspections are triggered if the water level reaches a certain height. Hansen Dam's DSAC rating and breadth of inundation zone make it the primary dam failure hazard in South Gate.

The part of South Gate near the Los Angeles River and Rio Honda drainage channel is within the inundation zone for the Whittier Narrows Dam, located on the San Gabriel River approximately 7 miles northeast of South Gate in the City of Montebello. The gates of Whittier Narrows Dam are normally left open and so there is no reservoir behind the dam that could cause an emergency if the dam fails; the dam's gates are only closed and a reservoir allowed to build during flood events. The dam is rated DSAC-II.

A third dam, Garvey Dam, threatens a relatively small part of northeastern South Gate. It is located 8 miles northeast of South Gate in Monterey Park, and is operated by MWD. While current safety information is not available, earthquakes caused cracks to appear in the reservoir, which resulted in flooding several nearby homes in 1989. Figure 11 illustrates South Gate's dam failure inundation zones.

Climate Change Considerations

Climate change is expected to cause more frequent periods of intense precipitation, leading to a potential rise in flood events. It is possible that floodwaters may damage dams or erode the ground that they are built on, increasing the risk of dam failure.

Vulnerability/Risk Assessment

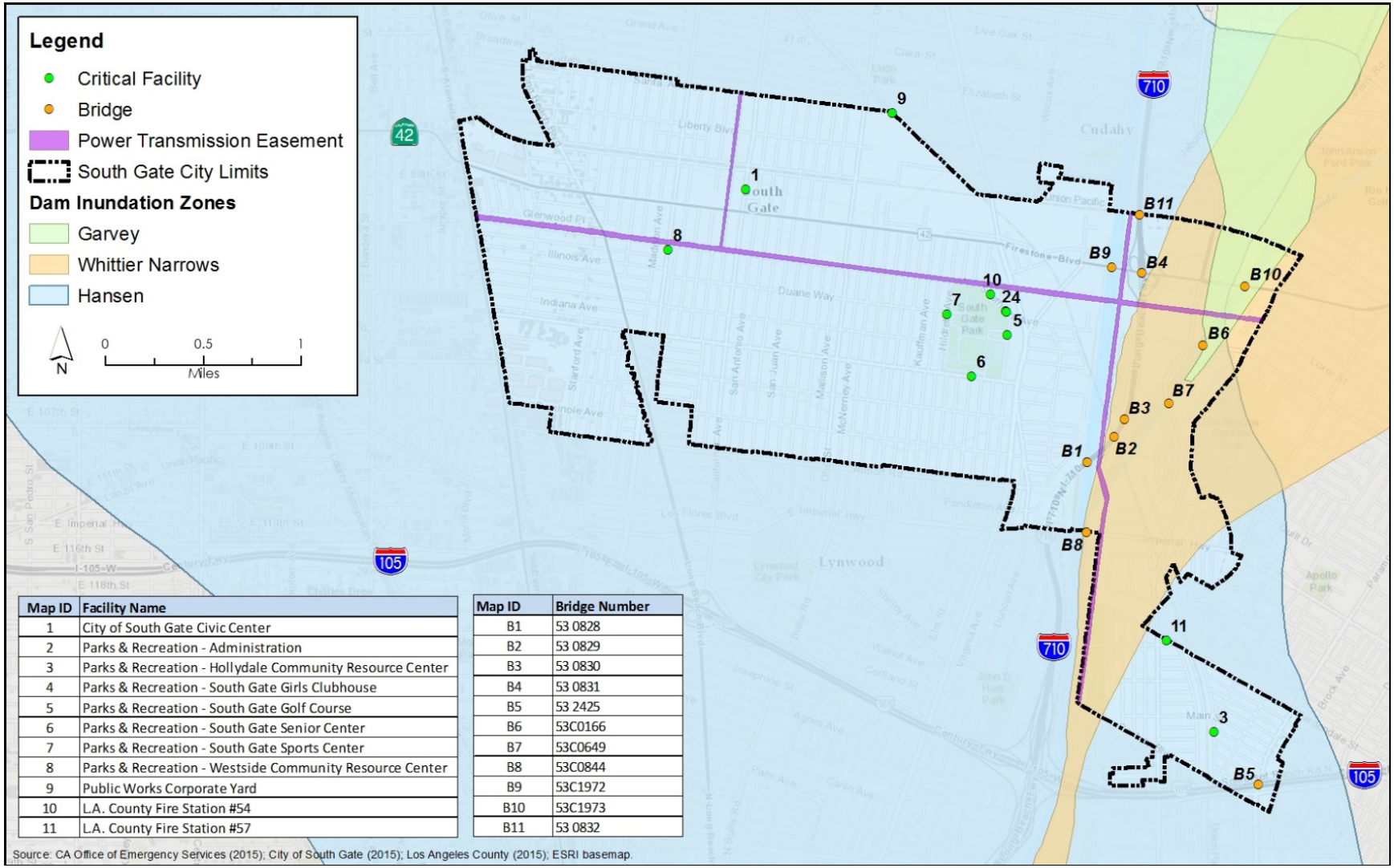
As noted in Table 24, all critical facilities in the City could be inundated as a result of dam failure. The total potential loss shown in the table is based on the assumption that structures are completely destroyed. It should be noted that this assumption is the best available, and intended to be a conservative estimate. However, complete facility destruction is unlikely given the City's proximity to the dams.

Table 24.South Gate Critical Facilities at Risk of Inundation from Dam Failure

Map Number	Facility Name	Replacement Value	Contents Value	Potential Loss
1	City of South Gate Civic Center	$18,942,341	$2,399,619	$21,341,960
2	Parks & Recreation - Administration	$5,527,027	$343,609	$5,870,636
3	Parks & Recreation - Hollydale Community Resource Center	$1,063,646	$199,154	$1,262,800
4	Parks & Recreation - South Gate Girls Clubhouse	$2,547,566	$143,044	$2,690,610
5	Parks & Recreation - South Gate Golf Course	$135,221	$19,645	$154,866
6	Parks & Recreation - South Gate Senior Center	$1,369,861	$87,801	$1,457,662
7	Parks & Recreation - South Gate Sports Center	$19,078,910	$597,246	$19,676,156
8	Parks & Recreation - Westside Community Resource Center	Not available	Not available	Not available
9	Public Works Corporate Yard	$11,319,189	$2,383,013	$13,702,202
10	L.A. County Fire Station #54	Not available	Not available	Not available
11	L.A. County Fire Station #57	Not available	Not available	Not available
	Total Potential Losses	$59,983,761	$6,173,131	$66,156,892

Analysis of the dam inundation overlay shows that the populated area vulnerable to inundation as a result of dam failure is a total of 4,706 acres. A total of approximately 95,000 residents (100 percent of the City's total population) could be affected in the event of dam inundation. In addition, 37,816 employees, or 100 percent of the people that work in South Gate, could be affected. Table 26 at the end of the chapter provides a summary of residents and employees affected by hazard.

Figure 11. South Gate Dam Failure Inundation Zones



Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
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Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: CA Office of Emergency Services (2015); City of South Gate (2015); Los Angeles County (2015); ESRI basemap.

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3.5 Vulnerability Summary

Table 25 shows a summary of critical facilities that intersect with hazard areas in the City of South Gate. Those facilities that intersect with a hazard area are indicated with a "Y" and a red-shaded cell. Facilities that do not fall within the hazard area are designated by an "N" and a blue-shaded cell. The risks of drought, extreme heat, severe weather, and disease and pest management hazards are equal throughout the community and, as a result, hazard and critical facility overlays were not conducted for these profiles. Overlays were conducted for seismic hazards (including liquefaction), hazardous materials, flood, and dam failure.

Table 26 shows the populated area by acreage potentially affected, broken out by hazard, and the number of residents and employees that would potentially be affected by each hazard based on the hazard locations mapped throughout this document.

Significant Hazards

The vulnerability/risk assessments in each hazard profile are used to understand the varying levels of risk to critical facilities in the City of South Gate. Based on these assessments, the planning team concluded that the hazards that pose the greatest risk to the City are drought, seismic hazards, extreme heat, and severe weather.

Table 25. Risk Assessment Summary Table

	Facility	Drought	Seismic Hazards (Liquef-action)	Extreme Heat	Hazardous Materials (500 ft of hazmat site)	Severe Weather (Wind)	Flood (500 ft of 100-year floodplain)	Disease / Pest Manage-ment	Dam Failure
1	City of South Gate Civic Center	Y	Y	Y	Y	Y	N	Y	Y
2	Parks and Recreation - Administration	Y	Y	Y	Y	Y	N	Y	Y
3	Parks and Recreation - Hollydale Community Resource Center	Y	Y	Y	N	Y	N	Y	Y
4	Parks and Recreation - South Gate Girls Clubhouse	Y	Y	Y	Y	Y	N	Y	Y

	Facility	Drought	Seismic Hazards (Liquef-action)	Extreme Heat	Hazardous Materials (500 ft of hazmat site)	Severe Weather (Wind)	Flood (500 ft of 100-year floodplain)	Disease / Pest Manage-ment	Dam Failure
5	Parks and Recreation - South Gate Golf Course	Y	Y	Y	N	Y	N	Y	Y
6	Parks and Recreation - South Gate Senior Center	Y	Y	Y	N	Y	N	Y	Y
7	Parks and Recreation - South Gate Sports Center	Y	Y	Y	N	Y	N	Y	Y
8	Parks and Recreation - Westside Community Resource Center	Y	Y	Y	N	Y	N	Y	Y
9	Public Works Corporate Yard	Y	Y	Y	Y	Y	N	Y	Y
10	L.A. County Fire Station #55	Y	Y	Y	Y	Y	N	Y	Y
11	L.A. County Fire Station #57	Y	Y	Y	Y	Y	N	Y	Y

Y denotes that the critical facility intersects the hazard layer

N denotes that the critical facility does not intersect the hazard layer

Table 26. Populated Area and Number of Residents and Employees Affected

	Drought	Seismic Hazards (Liquefaction)	Extreme Heat	Hazardous Materials (1,000 ft)	Severe Weather (Wind)	Flood (500 ft of 100-year flood zone)	Disease and Pest Mgmt	Dam Failure
Total Populated Area Affected (Acres)	4,706	4,706	4,706	2,868	4,706	502	4,706	4,706
Total Number of Residents Affected (% of City population)	95,000 (100%)	95,000 (100%)	95,000 (100%)	48,288 (51%)	95,000 (100%)	944 (1%)	95,000 (100%)	95,000 (100%)
Total Number of Employees Affected	37,816 (100%)	37,816 (100%)	37,816 (100%)	19,026 (50%)	37,816 (100%)	352 (1%)	37,816 (100%)	37,816 (100%)

Potential Losses

Table 27 ranks the critical facilities by value (combination of building replacement and contents value) in the City. Should a hazard completely destroy these facilities, their replacement will be the most costly compared to other critical facilities identified in Appendix C.

Table 27. Most Costly South Gate Critical Facilities

Map Number	Facility	Total (Replacement and Contents) Value*
1	City of South Gate Civic Center	$21,341,960
7	Parks & Recreation South Gate Sports Center	$19,676,156
9	Public Works Corporate Yard	$13,702,202
2	Parks & Recreation - Administration	$5,870,636
4	Parks & Recreation - South Gate Girls Clubhouse	$2,690,610
6	Parks & Recreation - South Gate Senior Center	$1,457,662
3	Parks & Recreation - Hollydale Community Resource Center	$1,262,800
5	Parks & Recreation - South Gate Golf Course	$154,866
8	Parks & Recreation - Westside Community Resource Center	Not available
10	L.A. County Fire Station #54	Not available
11	L.A. County Fire Station #57	Not available

***Replacement value information based on City-insured values for each facility.**

CHAPTER 4: MITIGATION ACTIONS

Hazard mitigation measures are strategies and policies to reduce the impacts of hazard events on South Gate residents, businesses, public infrastructure, and facilities. This section of the Plan is informed by the physical and socioeconomic conditions in South Gate, as well as the scope and severity of potential hazard events. These measures also support implementation of regional emergency plans, including the Los Angeles County 2014 All-Hazard Mitigation Plan.

4.1 Hazard Mitigation Overview

National Flood Insurance Program

In 1968, the US Congress created the National Flood Insurance Program (NFIP) to help reduce the economic impacts of flood emergencies. Communities that elect to participate in the NFIP agree to develop policies to reduce flooding risks in flood-prone areas. In exchange, the federal government makes flood insurance available to landowners in participating communities.

The City of South Gate participates in the NFIP, and development in the flood plain is governed by the City's floodplain management ordinance (Title 7, Chapter 7.47 of the South Gate Municipal Code). Under this ordinance, all new construction in flood hazard areas must comply with special development standards (as defined in the ordinance) to reduce the risk of damage from flooding. The City of South Gate will continue to enforce its floodplain management ordinance, and will make updates to this ordinance as needed. These updates may be driven by changes to flood conditions, new development and changing land use patterns, changes in demographics, or other factors. The City will ensure that all future planning documents, including updates to this LHMP, will reflect any changes to floodplain mapping. The City will also continue to monitor the need for flood mitigation activities within its jurisdictional boundaries and in coordination with neighboring communities, and will develop new strategies to respond to changing conditions as situation demand.

Communities participating in the NFIP may elect to participate in another voluntary program called the Community Rating System (CRS), which was established in 1990. Communities which participate in the CRS agree to take further steps to reduce flood damage, support NFIP insurance, and develop a comprehensive floodplain management effort. Communities receive a rating for these efforts, from 10 to 1 (with 1 being the best). If the community's rating is 9 or better, NFIP policy holders in the community receive a discount on their insurance premiums proportional to the CRS rating, from 5 percent to 45 percent. The City of South Gate does not currently participate in the CRS.

Repetitive Loss Properties

Some properties insured under NFIP are known as "Repetitive Loss Properties", which means that the owners have filed claims for property damage from flooding more than once. At this time, the City of South Gate is not aware of any Repetitive Loss Properties under the NFIP.

Hazard Mitigation Goals

The goals of this Plan, as identified in Section 1.1, establish desired end states in regard to public safety through hazard mitigation in South Gate. These goals guide future activities to reduce risk associated with natural disasters, and serve as checkpoints for the implementation of hazard mitigation actions.

The actions in this Plan are the strategies and policies that the City of South Gate will use to reduce the risk of potential hazards. The LHMP Team developed these measures through data collection efforts, research, and collaboration with members of the public and other agencies. The City may pursue funding to implement these actions, including the use of state and federal grant sources. Some measures work to reduce the risk from multiple hazards, while others are focused on individual hazards.

Cost-Benefit Analysis

FEMA requires that local governments analyze the benefits and costs of mitigation actions. This cost-benefit analysis is used to determine if the benefits to life and property (monetary and nonmonetary) exceed the cost of the mitigation activity. This analysis can assist communities in determining whether a mitigation measure is worth pursuing now, as a way of avoiding future impacts. The cost-benefit analysis relies on the frequency and severity of hazard situations, the future damage or impacts avoided by the measure, and the risk involved.

The cost-benefit analysis in an LHMP should, at minimum, consider the following questions:

- How many people will benefit from the action?
- How large an area of the City is affected?
- How critical are the facilities and infrastructure that benefit from the action?
- Does the action make sense for the community from an environmental perspective?

Hazard Mitigation Action Prioritization (STAPLE/E Analysis)

The LHMP Team reviewed the STAPLE/E (Social, Technical, Administrative, Political, Legal, Economic, Environmental) criteria during mitigation action development, which require that all such considerations be taken into account when considering and prioritizing the most appropriate hazard mitigation actions. This process helps ensure that the hazard mitigation measures in this Plan are the most equitable, cost-effective, and otherwise feasible for South Gate, given the unique physical and socioeconomic conditions in the community. It also incorporates the cost-benefit analysis as required by FEMA. The specific criteria used in the STAPLE/E method are included in Table 28.

Table 28.STAPLE/E Review and Selection Criteria

Issue	Criteria
Social	- Is the proposed measure socially acceptable to South Gate and surrounding communities? - Would the measure result in one segment of South Gate and/or surrounding communities being treated unfairly? - Will the measure result in social disruption?
Technical	- If fully implemented, is the measure likely to effectively reduce the risk? - Will the measure create more problems than it fixes? - Will the measure reduce a risk from a hazard, or only reduce a symptom of the risk? - Is the measure the most useful course of actions, given South Gate's goals?
Administrative	- Does South Gate have the administrative capabilities to implement the measure? - Is someone available to coordinate and lead measure implementation? - Is there sufficient funding, staff, and technical support for measure implementation? - Are there ongoing administrative requirements that need to be met?
Political	- Is the measure politically acceptable? - Is there public support to implement and maintain the measure?
Legal	- Does South Gate have the authority to implement the measure? - Are there legal side effects to implement the measure (e.g., could it be construed as a taking?) - Will South Gate be liable for any action or lack of action? - Will the measure face legal challenges?
Economic	- What are the economic costs and benefits of the measure, and do the benefits exceed the cost? - Are start-up, maintenance, and administrative costs taken into account? - Has funding for the measure been secured? If not, what are the potential funding sources? - How will the measure affect South Gate's fiscal capability? - What sort of burden, if any, will the measure place on the local economy or tax base? - What, if any, are the budget and revenue effects of the measure?
Environmental	- How will the measure affect the environment? - Will the measure need environmental regulatory approvals? - Will the measure meet local and state regulatory requirements? - Is the measure likely to affect any endangered or threatened species?

4.2 Hazard Mitigation Measures

Table 29 identifies the proposed mitigation actions for South Gate, based on the risk assessment in Chapter 3, the capabilities assessment discussed later in this chapter, the Los Angeles County 2014 All-Hazards Mitigation Plan, discussion among the LHMP Team, and public outreach. This table also identifies the City department responsible for implementation, potential funding source(s), opportunities for integration with other City policy or planning frameworks, the target completion year, and priority ranking for each action. Priority rankings for mitigation actions were developed by the LHMP Team during Meeting #3. At this meeting, Team members used a dot prioritization exercise to establish the priorities identified. The more votes a measure received, the higher its prioritization. If the LHMP Team determined that a proposed measure was not important, if the costs were greater than the benefit to South Gate, or if the measure was inappropriate, the measure was removed from the list of items. Images of the dot prioritization activity are included in Appendix A (pages A-125 to A-128).

Table 29. Hazard Mitigation Actions

Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
1. Multiple Hazards					
1.1 Update and expand the City's Street Tree Master Plan to cover the following topics: • Attaining "Tree City USA" designation. • Tree maintenance including canopy and root maintenance with an emphasis on maintaining buffers between canopies and critical infrastructure. • Drought-tolerant and shade-providing tree palettes. • Tree vulnerability to high winds, with direction to replace vulnerable trees with more resilient species. • Mitigating tree pest and disease impacts. • Actions and funding sources expand the City's shade tree stock. • Best practices for private property plant selection and tree maintenance. *Hazards mitigated: drought, extreme heat, severe weather*	Public Works	General Fund, grant funding, development fees	Street Tree Master Plan	2019	High
1.2 Work with utility companies and non-City agencies, including Southern California Edison, Southern California Gas Company, Los Angeles Metro, and telecommunication providers, to harden infrastructure to be more resilient to hazard situations, helping to provide safe service during emergency situations and to quickly fix any service interruptions. *Hazards mitigated: seismic hazards, severe weather, flood*	Community Development, Public Works	General Fund	N/A	2020	Medium

Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
1.3 Expand participation in the NotifyMe program to notify the community in the event of an occurring or imminent hazardous situation, including a need to evacuate. The program should support all commonly spoken languages and can be advertised through multiple methods (door-to-door notifications, phone, television, radio, and online/social media). Coordinate with the Los Angeles County Operational Area for best practices and for consistency with notification systems for surrounding communities. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	City Manager, Police	General Fund, grant funding	N/A	2020	Medium
1.4 Conduct a comprehensive and ongoing education campaign to improve awareness of hazard threats and ways to reduce risks. The campaign should include mailings, in-person workshops and events, and media notifications (television, radio, online/social media, etc.). The campaign should be designed to reach all members of the community, and should include materials in commonly spoken languages in the community, including English and Spanish. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	City Manager, Police	General Fund, grant funding	N/A	2019	Medium

Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
1.5 Update all emergency-related planning documents every five years to ensure consistency with state and federal law, best practices, local conditions, and recent science. Integrate the hazards research findings and actions in this Local Hazard Mitigation Plan with all City emergency planning efforts and programs. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	Community Development and Police Department	General Fund, grant funding	Emergency Operations Plan, Hazard Mitigation Plan, Safety Element	2019	Medium
1.6 Adopt, implement, and actively enforce the current state building code. *Hazards mitigated: drought, seismic hazards, extreme heat, flood*	Community Development	General Fund, development fees	Municipal Code	Ongoing	Low
1.7 Adopt a policy to avoid siting new critical public facilities and infrastructure in areas of elevated vulnerability to flooding and seismic hazards. If siting such facilities in areas of elevated vulnerability is unavoidable, design facilities to remain operable during emergency situations to the greatest extent feasible. *Hazards mitigated: seismic hazards, flood*	City Manager	General Fund, bonds, Capital Improvement funds	N/A	2019	Low
1.8 Coordinate with LA County Public Works to designate Firestone Boulevard as an official County Disaster Route. *Hazards mitigated: seismic hazards, hazardous materials, severe weather, flood, dam failure*	Public Works	General Fund	N/A	2019	Low

Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
1.9 Monitor and pursue hazard mitigation funding opportunities. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	Community Development, Police, Public Works	General Fund	N/A	Ongoing	Low
2. Drought					
2.1 Identify and pursue alternative sources of water in coordination with WRD to support potential shortages of deliveries from the Metropolitan Water District.	Public Works	Water Funds	N/A	Ongoing	Medium
2.2 Work with regional partners, including the Los Angeles Unified School District and the Central Basin Water District, to develop a recycled water master plan, with the intention of identifying financially feasible approaches to expanding recycled water infrastructure throughout the City.	Public Works	Water Funds	N/A	2019	Low
2.3 Construct additional or upgrade existing water storage/ conveyance facilities.	Public Works	Water Funds	N/A	2019	Low
2.4 Offer reduced-cost or free water audits for residents and businesses.	Public Works	Water Funds	N/A	Ongoing	Low
2.5 Publicize available rebates and other financial incentives for equipment that reduces water use.	Public Works	Water Funds	N/A	Ongoing	Low
2.6 As part of discretionary review, encourage new residential buildings in a recycled water service area to include dual plumbing for potable and nonpotable water sources.	Community Development	Water Funds	Project Review Process	Ongoing	Low
2.7 Continue retrofitting publicly landscaped areas with artificial turf or drought-tolerant landscaping.	Parks and Recreation, Public Works	Water Funds	N/A	Ongoing	Low

	Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
2.8	Require Urban Water Management Plan updates to consider more severe and long-lasting drought scenarios.	Public Works	Water Funds	Urban Water Management Plan	2020	Low
	3. Seismic Hazards					
3.1	Retrofit City-owned facilities and infrastructure, including water storage tanks, to increase resiliency to seismic hazards and to remain operable immediately after seismic events.	City Manager, Public Works	General Fund, bonds, Capital Improvement funding	N/A	2019	High
3.2	If deemed necessary, conduct a seismic study for public buildings and infrastructure and retrofit facilities based on findings and available funding.	Community Development, Public Works	General Fund, grant funding	N/A	2020	Medium
3.3	Conduct a seismically vulnerable private building inventory, with a focus on unreinforced masonry and "soft-story" buildings, and develop a prioritized list of recommended phasing for retrofits.	Community Development	General Fund, grant funding, development fees	N/A	2020	Medium
3.4	Adopt a phased ordinance for seismic retrofits to require existing unreinforced buildings to meet current seismic standards. Identify and secure to the extent possible funding to assist property owners with retrofit costs.	Community Development	General Fund, development fees	Municipal Code	2020	Medium
3.5	In coordination with state and regional agencies, conduct seismic evaluations of infrastructure owned by other agencies in the City, including electrical wires and natural gas pipelines, and identify funding sources to conduct seismic retrofits of vulnerable infrastructure.	Public Works	General Fund	N/A	2020	Medium

	Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
	4. Extreme Heat					
4.1	On public facilities, conduct energy-efficiency audits, retrofit buildings to increase efficiency, and install solar panels to reduce demand on the electrical grid (increasing its resiliency during heat waves) and to save money and generate municipal revenue.	City Manager, Public Works	General Fund, grant funding, bonds, Capital Improvement funding	N/A	2019	Medium
4.2	Encourage solar panels on new and existing developments by widely publicizing available incentives and financing options, working with local PACE providers to expand outreach to lower-income and non-English-speaking neighborhoods, and participating in programs to reduce the cost of solar panels for residents.	Community Development	General Fund	N/A	2018	Medium
4.3	Require new nonresidential and multifamily development to incorporate high-reflectivity roofing and surface materials, shade trees, shade structures, and/or other infrastructure features to reduce human exposure to extreme heat and to mitigate the urban heat island effect.	Community Development	General Fund, development fees	Municipal Code	2018	Medium
4.4	Upon discretionary review for significant remodels, require owners of existing parking lots to install infrastructure features to increase shade and reduce the urban heat island effect.	Community Development	General Fund, development fees	Project Review Process	2018	Medium
4.5	Work with community groups to identify and secure funding to install energy-efficient air conditioner units for homes without AC access, particularly for homes of lower-income residents, the elderly, and persons with disabilities.	Community Development	General Fund, grant funding	N/A	2021	Low

	Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
4.6	Educate all outdoor City workers, including construction, landscaping, maintenance, and recreation staff, about the risks posed by extreme heat and how to reduce them.	Administrative Services	General Fund	N/A	2021	Low
4.7	Include extreme heat as a hazard in the City's Emergency Operations Plan with clear guidelines to: • Designate public buildings and other community facilities as cooling centers that are easily accessible by all residents in all parts of South Gate, including individuals with limited mobility. • Distribute information about cooling centers. • Establish a temperature threshold as a minimum standard for opening and operating cooling centers.	Police	General Fund	Emergency Operations Plan	2021	Low
	5. Hazardous Materials					
5.1	As part of the development review process, require all hazardous material storage tanks meet or exceed all required and recommended safety standards, including resiliency to natural hazards such as flooding and seismic hazards.	Community Development	General Fund, development fees	Project Review Process	2019	Medium
5.2	Consult with Union Pacific Railroad (UPRR) on potential land use issues and safety concerns associated with the railroad rights-of-way in the City. As part of the consultation, UPRR should provide the City with its emergency response and recovery plans for assets located in the City.	Community Development	General Fund	N/A	2019	Medium

	Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
5.3	As part of the development review process, continue to require soil testing for hazardous materials prior to construction activity, and to deny permits if risks from any hazardous materials are not mitigated to a generally safe level.	Community Development	General Fund, development fees	Project Review Process	2021	Low
5.4	Review the zoning ordinance and map and amend allowed uses to prevent siting facilities which may manufacture, store, use, transport, or allow hazardous materials near residential areas or other sensitive uses.	Community Development	General Fund	Municipal Code; Zoning Map	2021	Low
	6. Flooding					
6.1	Upgrade storm drain infrastructure in areas that frequently pond during strong rains.	Public Works	General Fund, bonds, Capital Improvement funding	N/A	Ongoing	High
6.2	Analyze the flood potential associated with elevated reservoir failure in the community.	Community Development, Public Works	General Fund	N/A	2019	High
6.3	Monitor the effectiveness of current requirements for new developments to handle stormwater on-site, to the extent possible, through the use of permeable paving and other low-impact development strategies, and update the requirements as needed.	Community Development, Public Works	General Fund, development fees	N/A	2020	Medium
6.4	Retrofit public spaces to reduce stormwater runoff, including using permeable paving for sidewalks and parking lots.	Public Works	General Fund, bonds, Capital Improvement funding	N/A	Ongoing	Medium
6.5	Provide educational materials to existing property owners about the benefits of installing low-impact development stormwater components.	Public Works	General Fund	N/A	2019	Low

	Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
6.6	Continue to participate in the National Flood Insurance Program and maintain an effective and up-to-date Flood Plain Management Ordinance.	Community Development	General Fund	N/A	Ongoing	Low
6.7	Continue and expand the regular cleaning and maintenance of City storm drains to ensure they are functioning at full capacity.	Public Works	General Fund, Capital Improvement funding	N/A	Ongoing	Low
6.8	Continue requiring new development projects to reduce potential and existing flooding hazards as part of the development process.	Community Development	General Fund, development fees	Project Review Process	Ongoing	Low
	7. Severe Weather					
7.1	Design future key infrastructure to withstand severe weather events beyond minimum code specifications.	City Manager	General Fund, bonds, Capital Improvement funding	N/A	2020	Low
7.2	Monitor trees and other vegetation near power lines, and promptly inform utility companies if any vegetation may threaten power service during severe weather and/or requires trimming.	Public Works	General Fund	N/A	Ongoing	Low
	8. Disease and Pest Management					
8.1	Coordinate with the Los Angeles County Department of Public Health to ensure South Gate residents have access to affordable flu vaccinations, and that community members are notified about the availability of flu vaccines.	City Manager	General Fund	N/A	2020	Low

	Mitigation Action	Responsible Department	Potential Funding Sources	Policy Integration Opportunities	Target Completion Date	Priority
8.2	Work with the Greater Los Angeles County Vector Control District to implement pest management strategies to reduce health risks from disease vectors, to treat/reduce areas of standing water where mosquitoes may breed, and to support additional mosquito mitigation actions as needed.	City Manager	General Fund	N/A	2020	Low
	9. Dam Inundation					
9.1	Work with the US Army Corps of Engineers and the Metropolitan Water District to support retrofit activities for dams that may pose an inundation risk for South Gate.	Community Development, Public Works	General Fund	N/A	2019	Medium

4.3 Capabilities Assessment

The capabilities assessment identifies existing local agencies, personnel, planning tools, public policy and programs, technology, and funding resources that can support the hazard mitigation measures in this Plan. This assessment helps determine the current ability of South Gate to reduce damage from hazard events, providing a foundation to develop, consider, and prioritize future hazard mitigation measures.

Key Resources

Table 30 summarizes the existing capabilities available to support the City's implementation of mitigation actions.

Table 30. South Gate Capabilities Assessment

Supporting Resource Type	Supporting Resource Name	Ability to Support Local Hazard Mitigation Activities
Personnel	Police Department staff	Staff helps to develop and implement actions to improve emergency preparedness, including conducting education and outreach. Staff also conducts emergency response activities and contributes to disaster recovery. In the future staff can work with the planning department during community outreach and education events.
Personnel	Code Enforcement Division staff	The Code Enforcement Division works to ensure that all property in the city complies with adopted codes. This includes ensuring that property in South Gate meets or exceeds minimum standards for safety and resiliency to hazards. In the future staff can identify potential code updates to reduce hazard vulnerability.
Personnel	Building and Safety Division staff	Staff reviews all proposals for new development in South Gate to ensure it meets all applicable laws and ordinances. As part of this review process, staff can ensure that new development complies with all hazard-related requirements.
Personnel	South Gate Housing Authority staff	Staff helps residents find and maintain decent and affordable housing in South Gate, including housing that meets minimum safety requirements. In the future staff can refer properties that may not meet code requirements to Building and Safety.
Personnel	Planning Commission	The South Gate Planning Commission meets twice a month to review land use, development, planning, and environmental issues. The body can approve and guide development of new projects, as well as new policies related to land use issues.
Personnel	City Council	The South Gate City Council meets twice a month and serves as the primary legislative body for the community. The City Council can establish and revise laws, approve plans and policy directions, and allocate funding.
Personnel	City Manager	The City manager allocates and manages City resources to carry out City policy and operations as directed by the City Council, including allocating and managing staff and funding to support implementation of hazard mitigation activities.

Supporting Resource Type	Supporting Resource Name	Ability to Support Local Hazard Mitigation Activities
Personnel	Finance Department staff	Finance Department staff monitors and analyzes City revenue and expenses, and drafts budget documents in accordance with City Council directions. This can include proposing funds for hazard mitigation activities and securing funding for these activities from external sources, such as state and federal grants. In the future this Department can report out on the amount of grant funds secured for hazard mitigation purposes.
Personnel	Public Works Department staff	Staff in the Public Works Department is responsible for building and maintaining South Gate's publicly owned infrastructure, including the City's water service. Staff can construct and retrofit infrastructure to reduce hazard risks in the community, or to be more resilient to hazard events.
Personnel	Human Resources Division staff	The Human Resources/Risk Management Division is responsible for establishing policies related to City personnel, including training on hazard events, emergency response protocols, and hazardous materials.
Personnel	City Attorney	The City Attorney reviews proposed ordinances and resolutions, and ensures that City activities (including hazard mitigation actions) comply with all applicable laws.
Personnel	Waste Management, Inc. staff	The City contracts with Waste Management to provide collection and disposal services for solid waste in the community. The responsibilities of Waste Management staff include providing services for the safe disposal of some types of hazardous material. In the future the City can collaborate with Waste Management on debris removal plans and agreements to reduce conflicts in the future, post-disaster.
Personnel	Southern California Edison staff	Southern California Edison is responsible for providing safe and reliable electricity to South Gate community members. Staff responsibilities include restoring electrical service if it has been interrupted by an emergency situation, and repairing and maintaining electrical infrastructure to reduce the risk of hazard events. Future efforts can focus on reducing the risk to loss of power during and after a disaster event.
Personnel	Southern California Gas Company staff	The Southern California Gas Company provides natural gas service in South Gate. Staff is responsible for maintaining the natural gas infrastructure in safe conditions to minimize the risk of leaks, fires, or explosions. This includes repairing natural gas infrastructure following emergency situations and upgrades to the system to reduce vulnerabilities to hazards in the community.
Personnel	Los Angeles County Fire Department staff	The Los Angeles County Fire Department provides fire services to South Gate. Staff is responsible for conducting safety training and preparedness activities, responding to emergency situations, and supporting emergency recovery. Staff also responds to hazardous material emergencies and conducts activities to reduce the risk of hazardous material-related events. Future efforts can focus on collaboration with other City Departments on community outreach events.

Supporting Resource Type	Supporting Resource Name	Ability to Support Local Hazard Mitigation Activities
Plan	General Plan	The General Plan is the main policy document for development and change in South Gate. It identifies the overarching policies and programs that affect land use, public services, housing, natural resources, and safety, among other items. The General Plan can be updated to include information and mitigation measures identified in this Plan.
Plan	Urban Water Management Plan	The South Gate Urban Water Management Plan identifies the community's current and forecasted water sources and demands and discusses supply reliability and contingency planning, demand management, and recycled water. In accordance with state law, the plan is updated every five years and can help address drought conditions in the future.
Plan	South Gate Emergency Operations Plan	Overall emergency management plan for the City of South Gate that identifies the procedures and protocols for disaster and emergency situations within the City and roles and responsibilities for City Departments/Personnel to assist with response activities. Future efforts to update this plan can look at the changing nature of hazards in the future.
Plan	Los Angeles County Operational Area Emergency Response Plan	This plan establishes the protocols for responding to emergency situations in Los Angeles County, including how South Gate staff should coordinate response activities with other jurisdictions. The plan works to reduce loss of life, injuries, and property damage during and immediately after emergency situations. Future efforts can focus on collaboration with County staff during updates to these plans.
Plan	Los Angeles County All-Hazard Mitigation Plan	This plan identifies hazards and establishes mitigation activities for unincorporated areas of Los Angeles County and for County agencies (including the Los Angeles County Fire Department, which provides services to South Gate).
Policy	Floodplain Management ordinance	The ordinance establishes additional standards for development activities in the floodplain, enforced by the Building and Safety Division staff. This ordinance can be amended to implement additional flood mitigation strategies.
Policy	Building code	The building code specifies how all new construction in the City shall be built. These requirements can be amended to require new construction to be more resilient to emergency situations.
Policy	Fire code	The fire code contains specific fire safety requirements for all structures. These requirements can be modified to require increased fire safety measures.
Policy	City Budget	The South Gate City Council adopts a budget every fiscal year, which identifies sources of revenue for the City and how this money will be spent. The budget can direct funding toward hazard mitigation activities, including increased staffing, planning efforts, and capital improvements.

Supporting Resource Type	Supporting Resource Name	Ability to Support Local Hazard Mitigation Activities
Policy	Development code	The code contains land use regulations, including requirements for all new construction. The code can be used to implement hazard mitigation measures related to land use and development.
Policy	Water Conservation ordinance	South Gate's Water Conservation ordinance establishes mandatory and permanent water conservation activities for all South Gate residents and businesses, as well as additional mandatory standards for various stages of water shortage events. These standards help mitigate the impact of drought-related emergency events.
Policy	Tree Preservation and Protection ordinance	South Gate's Tree Preservation and Protection ordinance regulates the planting, maintenance, and removal of public trees in the community. Public trees can help to mitigate some types of hazards, and this ordinance can be amended to support additional mitigation activities.
Policy	Storm Drains ordinance	The Storm Drains ordinance governs the use and maintenance of the storm drain system in South Gate. This infrastructure can help mitigate damage from flood-related emergency situations.

Fiscal Capabilities

This section summarizes South Gate's fiscal capabilities, as determined by the City's financial resources and allocated budget. According to budget summaries for recent fiscal years, South Gate receives most of its revenue from sales and property taxes. The greatest share of the City's General Fund (approximately half) is allocated to the Police Department, followed by the Parks & Recreation Department and various administrative functions (including the Finance Department, City Council, City Manager, Treasurer, and City Clerk), with smaller amounts going to the Public Works and Community Development Departments.

City of South Gate Department Overview

City departmental budgets are used to employ City staff members who are an integral part of the mitigation planning process. The following list describes City leadership and staff positions by department:

- The City Council comprises a Mayor, Vice Mayor, and three City Council members and is supported by the City Manager, City Treasurer, and support staff.
- The Parks and Recreation Department includes the Director, Deputy Parks Director, Parks Superintendent, and support staff.
- The Administrative Services Department includes the Director, and two Deputy Directors and support staff.
- The Community Development Department includes a Director, Senior Planner, Building Official, Code Enforcement Manager, Housing Administrator, and supporting staff.

- The Public Works Department includes a Director of Public Works/ City Engineer, Field Operations Manager, Assistant City Engineer, Sewer Superintendent, Equipment Superintendent, Electrical Superintendent, Water Division Manager, and support staff.
- The Police Department employs a Chief, command staff, police officers, an emergency manager, and public safety staff.

Capital Improvement Program (FY 2016–17)

The Capital Improvement Program budget is an important part of the City's budget. The FY 2016/2017 budget presents over 50 capital improvement projects with expenditures totaling over $70 million. These projects provide funding for needed repairs, replacements, and improvements to streets, water infrastructure, parks, public buildings, vehicles, and equipment.

Los Angeles County Fire Department

The City of South Gate is part of the Consolidated Fire Protection District of Los Angeles County, which is served by the Los Angeles County Fire Department. In addition, the fire department provides public education programs to schools, businesses, community associations, child care providers, and other members of the community. It also coordinates the inspection of commercial buildings, investigates fires, and enforces hazardous materials regulation. Fire services are paid through a special tax assessment on each property in the City.

CHAPTER 5: PLAN MAINTENANCE

This Plan must remain up-to-date in order to continue to help protect the community against hazards and to remain eligible for federal and state funding. To that end, this chapter contains a schedule for plan monitoring, evaluation, and revision. It describes how the City will incorporate mitigation actions in the Plan into existing policies and programs, including the South Gate General Plan and City Budget.

Public participation was an integral component of developing this Plan, and it will continue to be critical during Plan maintenance activities. This chapter also describes how public participation will be involved in Plan maintenance.

5.1 Coordinating Body

The South Gate LHMP Team will continue to be responsible for Plan maintenance. As noted in Chapter 1, the LHMP Team is made up of representatives from the following departments:

- City of South Gate Administrative Services Department
- City of South Gate Community Development Department
- City of South Gate Parks & Recreation Department
- City of South Gate Police Department
- City of South Gate Public Works Department
- Los Angeles County Fire Department
- Los Angeles County Office of Emergency Management

Representatives from these agencies will coordinate the maintenance of this Plan, including undertaking a formal review and update of the Plan as specified. The City of South Gate Community Development Department will facilitate meetings of the LHMP Team and will coordinate required tasks among the participating agencies. All members of the LHMP Team have a shared responsibility for the implementation and evaluation of this Plan.

5.2 Plan Evaluation

The LHMP Team will meet at least once annually, beginning one year after adoption, to evaluate implementation progress and integration of mitigation actions into other documents. As part of this evaluation process, members of the LHMP Team should look at the following:

- Any hazard events that occurred in South Gate within the past year, and the scope of their impacts.
- Mitigation activities in the Plan which have been implemented and are achieving success.
- The timeline for implementation of mitigation activities, and whether the timeline should be amended.

- Any mitigation activities prioritized for the past year which have not been completed, and why.
- The need for any new or revised mitigation actions.
- Any changes or potential for changes in funding options for mitigation activities.
- Any new scientific data or mapping that informs the information in the Plan.
- Any new or revised planning programs or other initiatives applicable to South Gate that involve hazard mitigation.

The LHMP Team will prepare an annual progress report, which will be distributed to City department heads for review, and will be presented to the City Council. It will be posted on the City of South Gate website, with the ability for members of the public to provide comments. This annual report will also be provided to local media as a press release. The plan evaluation process will commence one year after City Council adoption.

5.3 Method and Schedule for Plan Update

Title 44 of the Code of Federal Regulations, Section 201.6(d)(3), requires that local hazard mitigation plans be reviewed, revised if necessary, and resubmitted to FEMA for approval in order for the community to remain eligible for the benefits awarded under the DMA. The City intends to update the Plan on a five-year cycle from the date of the initial plan adoption. This update process should occur one year prior to the expiration of the existing plan, although it may be accelerated to less than five years based on the following triggers:

- A state or federal declaration disaster that impacts the City of South Gate.
- A hazard event that results in the loss of life.

The update process will allow the City to add new planning process methods, community profile data, hazard data and events, vulnerability analyses, mitigation actions, and goals to the Plan. Due to this update process, the Plan should always be current and up-to-date.

The LHMP Team will carry out the update process, which will include the following steps:

- Review and update the risk assessment based on the best and most recent available information and technologies.
- Evaluate the mapping and lists of critical structures, and update and improve as necessary and as funding becomes available.
- Review and revise the list of mitigation actions to account for any actions that are completed, postponed, changed to account for revisions in the risk assessment, or changed to account for new or revised City policies identified by other planning mechanisms.
- Send the draft update to the appropriate agencies for review and comment.
- Provide members of the public an opportunity to comment on the draft update, and revise the draft as appropriate based on public comment.

- Transmit the draft update to the California Office of Emergency Services (Cal OES) and FEMA for review and approval.

The South Gate City Council is responsible for the final adoption of the Plan, following notification from FEMA that the Plan is Approved Pending Adoption (APA). The South Gate Community Development Department will transmit the Plan to FEMA following adoption by the City Council.

5.4 Implementation through Existing Programs (Plan Integration)

The effectiveness of this Plan depends on the implementation of the mitigation actions, and incorporating these actions into other City plans, policies, and programs. These mitigation actions provide the framework for activities that the City can implement over the next five years. The City has prioritized the actions in this Plan, which will be implemented through existing plans, policies, and programs as resources become available. The LHMP Team is responsible for implementing the mitigation actions in the Plan.

The information on hazards and risks, vulnerability, and mitigation in this LHMP is based on the best and most recent available information, technology, and resources available at the time this LHMP was prepared. The following documents will be the primary mechanisms that will be used to integrate the analysis and outcomes of this LHMP:

City of South Gate's General Plan – this document contains the overarching goals and policies that govern development within the City. A key element of this plan is the Land Use Element, which designates the types of uses within the City and where they are located. Integration of the LHMP into the Land Use Element would focus on changes to land uses within areas of high risk due to natural hazard issues.

City of South Gate General Plan Safety Element – this element of the General Plan identifies the natural hazards goals and policies relevant to the City. Integration of the LHMP and Safety Element are important elements of the City's approach to reducing hazard vulnerabilities. Upon adoption of the LHMP, tracking of progress will coincide with annual general plan reporting that currently occurs within the Planning Department.

City of South Capital Improvement Program – this program focuses on the capital projects undertaken by the City to repair/improve infrastructure within the City. Integration of the LHMP into this plan will be an important element of hazard mitigation within the City, since existing projects may be enhanced by the addition of mitigation grant funds, and new projects can be added to the program because of the hazard mitigation planning process and future monitoring and implementation. Its recommended that this integration occur on an annual basis as part of the City's budgeting process.

5.5 Continued Public Involvement

The residents and businesses of South Gate will continue to be informed of and involved in the LHMP update process. When the LHMP update process begins, a new public involvement strategy will be developed based on guidance from the LHMP Team. This involvement strategy will be based on the needs and capabilities of the City at the time of the

update. This strategy will at least include the use of the City's website and local media to inform the public and to gather public feedback.

5.6 Point of Contact

The preparation and future update of South Gate's LHMP will be carried out by the LHMP Team, with participation by and support from the City's Community Development Department. The primary contact for this department is:

Alvie Betancourt

Email: abetancourt@sogate.org

Phone: 323-563-9500

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APPENDIX A – LHMP TEAM DOCUMENTS

1. LHMP TEAM MEETING DOCUMENTATION

Invitation to LHMP Team

Greetings,

The City of South Gate is currently updating its Local Hazard Mitigation Plan and Safety Element of the General Plan. In support of this project, the City will be convening a Hazard Mitigation Planning Team and we need your support by designating a participant from your respective departments. As a Planning Team member, he/she will have an opportunity to work closely with other City staff and discuss the natural and man-made hazards that impact your daily work and life in the City of South Gate. With an approved plan in place the City can pursue FEMA grants as they become available for preemptive safeguard measures from natural and man-made hazards. FEMA grants can pay for up to 75% of future improvement efforts that can often include capital improvement projects.

We have hired a consultant to assist the City with this process. During this update, you will be expected to participate in the following way:

- Attend 4 meetings with your other Hazard Mitigation Planning Team member over a 3-4 month period. Meetings will last a maximum of 2 hours.
- Provide input on critical City facilities that could be vulnerable to hazards, such as severe weather, flooding, and earthquakes.
- Review materials drafted by the City's consultant.
- Provide recommendations and priorities for hazard mitigation projects, programs, and policies to reduce the City's vulnerability.

The participation of every departments is vitally important to this effort. I will follow up in the coming weeks to finalize a list of participants. Please contact me for more information or questions.

Sincerely, Alvie

Alvie Betancourt, Senior Planner
City of South Gate
Community Development Department
8650 California Avenue South Gate, CA 90280
abetancourt@sogate.org
323.563.9526 direct
323.567.0725 fax

Meeting Materials

South Gate Local Hazard Mitigation Plan and Safety Element Update Project Management Team

Kickoff Meeting: July 14, 2015

Included Materials:

- Meeting agenda
- Project Overview
- Hazard Mitigation Planning Team
- LHMP Technical Advisory Committee
- Project Schedule
- Sign-In Sheet
- Presentation

City of South Gate

Local Hazard Mitigation Plan and Safety Element Update

Kick-off Meeting

Tuesday July 14th, 1:00 – 3:00 p.m.
South Gate City Hall, 8650 California Ave

Agenda

1. Introductions (5 minutes)
2. Project Goals & Expectations (10 minutes)
3. Staffing & Communication Protocols (5 minutes)
4. Project Overview (25 minutes)
    a. Local Hazard Mitigation Plan
    b. Safety Element
5. Engagement & Outreach (30 minutes)
    a. LHMP/Safety Element Planning Team
    b. Public Outreach Approach
6. Data Collection & Critical Facilities (20 minutes)
7. Work Plan & Schedule Review (10 minutes)
    a. Overview of work program, key tasks, and schedule
    b. Wrap-up and next steps

Project Overview

The City of South Gate is initiating a planning effort to prepare a Local Hazard Mitigation Plan (LHMP) and updated General Plan Safety Element. This integrated planning effort will maximize the City's eligibility for future grant funding.

Local Hazard Mitigation Plan

DMA 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for State, local, and Indian Tribal entities to closely coordinate mitigation planning and implementation efforts. The requirement for a State mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the State level through the establishment of requirements for two different levels of state plans. DMA 2000 also established a new requirement for local mitigation plans and authorized up to 7 percent of HMGP funds available to a State for development of State, local, and Indian Tribal mitigation plans.

Completion and acceptance of the City's LHMP by FEMA opens up access to the following competitive FEMA grant programs for the next 5 years:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)

Under these programs up to 75% of the cost of an implementation project could be covered by a FEMA grant.

Safety Element

Assembly Bill 2140 amended California Government Code Sections 8685.9 and Section 65302.6 to enable local jurisdictions to receive additional post-disaster funding if the LHMP is linked to the General Plan Safety Element and consistent with the Disaster Mitigation Act of 2000. To maximize this potential benefit to the City, the project includes preparation of a Safety Element that is linked to the LHMP.

California Government Code Section 65302(g)(1) requires that a general plan include a safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. Consistent with Assembly Bill (AB) 739 (California Government Code Sections 8685.9 and 65302.6), and in order to maximize the benefits of public safety planning, the Safety Element will integrate the background research and policy recommendations contained in the LHMP update.

Preliminary Goals of the Project

At the kick-off meeting, the project team will have the opportunity to discuss and confirm project goals. Based on the initial project kickoff¸ discussion with City staff, and guidance from the General Plan, preliminary goals to consider include the following:

1. Achieve certification of the LHMP by FEMA for Pre-Disaster Mitigation grant funding eligibility.
2. Encourage appropriate flood control and prevent negative impacts of new development on flood-control efforts (South Gate General Plan, Green City Element, Objective GC 4.1).
3. Promote coordination between land-use planning and urban design, and law enforcement (South Gate General Plan, Public Facilities Element, Objective PF 1.2).
4. Ensure that all new development includes adequate provision for fire safety (South Gate General Plan, Public Facilities Element, Objective PF 2.2).

Project Objectives as discussed with City Staff

The PMC project manager and key City staff participated in an initial kickoff on June 8, 2015. The management team identified the following objectives during the June 8 kickoff:

A. Continued coordination with key stakeholders and other agencies.
    a. Who are key stakeholders to contact?
B. A flexible and engaging public outreach campaign.
    a. What are the lessons learned from previous outreach events?
C. Foster better communication and coordination within the City and surrounding areas.
    a. What Cities/Agencies should be contacted regarding this project?
D. Address aging infrastructure issues to reduce/minimize future hazards and disasters.
    a. What infrastructure is at risk in your opinion?

South Gate Hazard Mitigation Planning Team

This core team of City staff members will participate in actively reviewing and commenting on the City's Local Hazard Mitigation Plan and Safety Element. The following is a listing of City departments that should be involved. At least one staff member from each department should be in attendance for any meetings scheduled for the project.

- Administrative Services - Finance
- City Clerk
- City Manager
- Community Development
- Fire (Los Angeles County Fire Department)
- Parks & Recreation
- Police
- Public Works

LHMP Technical Advisory Committee

In addition to the HMP Team, the City will convene a larger Technical Advisory Committee to review and comment on the plan/process. This Team will include all Planning Team members from above, as well as stakeholders selected by the City.

- California Highway Patrol
- City of Cudahy
- City of Downey
- City of Huntington Park
- City of Lynwood
- City of Paramount
- County of Los Angeles Public Library – South Gate Branch, Leland R. Weaver Library
- Koos Manufacturing (employer)
- Los Angeles County Regional Planning Office
- Los Angeles County Fire Department
- Los Angeles County Flood Control District
- Los Angeles Department of Water and Power
- Los Angeles Unified School District
- Water Boards
- Southern California Association of Governments
- Schultz Steel (employer)
- Southern California Edison
- South Gate Chamber of Commerce

Schedule

Draft Schedule, updated June 2015

Key	Activity	Start	End
HMP	Gather Existing Data and Documentation	7/1/2015	7/19/2015
HMP	Preparation of Critical Facilities List	7/1/2015	7/19/2015
HMP	Preparation of GIS Base Mapping	7/1/2015	7/19/2015
HMP	Kickoff Meeting/Field Reconnaissance -	7/14/2015	7/14/2015
HMP	Initiate Agency Outreach/Consultation	7/15/2015	7/31/2015
SE	Preparation of LHMP/Safety Element Document Templates	7/15/2015	7/21/2015
HMP	Administrative Draft LHMP - Hazards Profiles	7/21/2015	8/7/2015
HMP	LHMP Planning Team Meeting #1	8/12/2015	8/12/2015
SE	Safety Element Kickoff Meeting	8/12/2015	8/12/2015
SE	Review of applicable Existing General Plan Goals and Policies for Safety Element	8/10/2015	8/14/2015
HMP	Administrative Draft LHMP - Risk Assessment	8/1/2015	8/31/2015
CO	Public Outreach Survey (Online)	7/21/2015	9/1/2015
SE	Development of Safety Element Policy Framework	8/31/2015	9/14/2015
HMP	LHMP Planning Team Meeting #2	9/9/2015	9/9/2015
HMP	Administrative Draft LHMP - Mitigation Actions	9/15/2015	10/1/2015
HMP	LHMP Planning Team Meeting #3	10/07/2015	10/07/2015
HMP	Administrative Draft LHMP - Capabilities Assessment (Complete Administrative Draft LHMP)	10/12/2015	10/19/2015
SE	Administrative Draft CEQA Documents	10/1/2015	11/1/2015
SE	Administrative Draft Safety Element	9/14/2015	11/1/2015
SE	Prepare Draft Safety Element	11/15/2015	12/1/2015
SE	Draft Safety Element - Public Review Period	1/05/2016	2/05/2016
HMP	Public Review Draft LHMP	11/15/2015	12/15/2015
SE	Circulation of Draft CEQA Documents	1/05/2016	2/05/2016
HMP	Draft LHMP - Cal OES Review/FEMA Review	1/05/2016	TBD
HMP	Final LHMP		TBD
SE	Final Safety Element		3/01/2016
	Planning Commission Hearing		April 2016
	City Council Hearing		April 2016
CO	LHMP Public Outreach Meeting #1		TBD
CO	LHMP Public Outreach Meeting #2		TBD

Key:

- HMP = Local Hazard Mitigation Plan
- SE = Safety Element
- CO = Community Outreach

Attendee Sign-In Sheet

City of South Gate: LHMP and Safety Element Update

Kick-off Attendee Sign-In Sheet

Name	Department/Company	Telephone	Email
RICHARD J. LUNA	ADMINISTRATION DEPT.	323 - 563 - 9508	RJLUNA@SOGATE.ORG
Glenn Massey	Parks+Recreation	323 563-5448	gmassey@sogate.org
Jessica Jimenez	Community Development	—	jjimenez@sogate.org
Nick Berkuta	Fire	323 - 585 - 5857	nberkuta@fire.lacounty.gov
Guillermo Reyes	Public Works	(323) 357 - 9614	greyes@sogate.org

Kick-off Attendee Sign-In Sheet

Name	Department/Company	Telephone	Email
SHERI KOOMEN	POLICE DEPT	323) 563-5483	skoomen@sogate
Rosemary Vivero	LACoFD	(213) 215-2193	rosemary.vivero@fire.lacounty.gov
Kim Saeo	Finance/Admin	(562)999-2980	
EDWARD PEREZ	POLICE DEPT	(323) 864-7281	EPEREZ@SOGATE.ORG
Jim TEEPLES	POLICE DEPT.	(323)563-5453	JTEEPLES@SOGATE.ORG
CHRIS CASTILLO	PUBLIC WORK WATER	323-595-9627	ccastillo@sogate.org

Kickoff Presentation

Michael Baker
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Meeting Objectives

- Project Objective/Project Goals
- Hazard mitigation plan development overview
- Review engagement and outreach process
- Finalize critical facilities list
- Discuss past hazard events
- Review Work Plan and schedule

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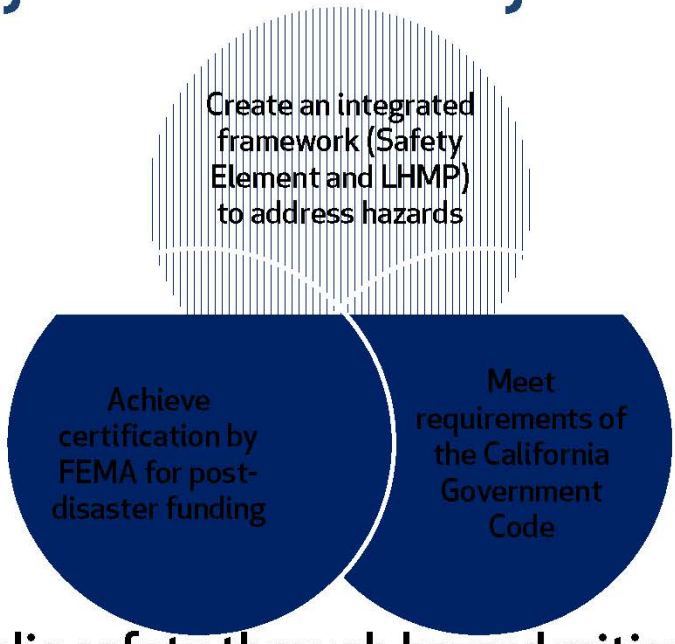
Project Goal and Objectives



Enhance public safety through hazard mitigation and comprehensive planning

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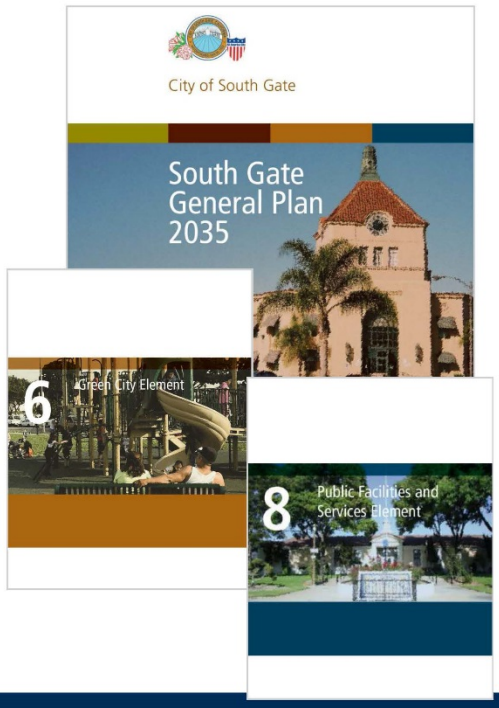
Safety Element Requirements and Opportunity

- The California Government Code requires a Safety Element (SE)
  - Must be part of the General Plan
  - Must address certain issues, including fire and flood hazards
- Integration of the LHMP with the SE qualifies jurisdictions for additional post-disaster funding



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Goals for Hazard Mitigation Planning

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LHMP Goals

- Encourage appropriate flood control and prevent negative impacts of new development on flood-control efforts (South Gate General Plan, Green City Element, Objective GC 4.1).
- Promote coordination between land-use planning and urban design, and law enforcement (South Gate General Plan, Public Facilities Element, Objective PF 1.2).
- Ensure that all new development includes adequate provision for fire safety (South Gate General Plan, Public Facilities Element, Objective PF 2.2).

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LHMP Project Objectives

- Continued coordination with key stakeholders and other agencies.
  - Who are key stakeholders to contact?
- A flexible and engaging public outreach campaign.
  - What are the lessons learned from previous outreach events?
- Foster better communication and coordination within the City and surrounding areas.
  - What Cities/Agencies should be contacted regarding this project?
- Address aging infrastructure issues to reduce/minimize future hazards and disasters.
  - What infrastructure is at risk in your opinion?

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Local Hazard Mitigation Plan (LHMP) Development

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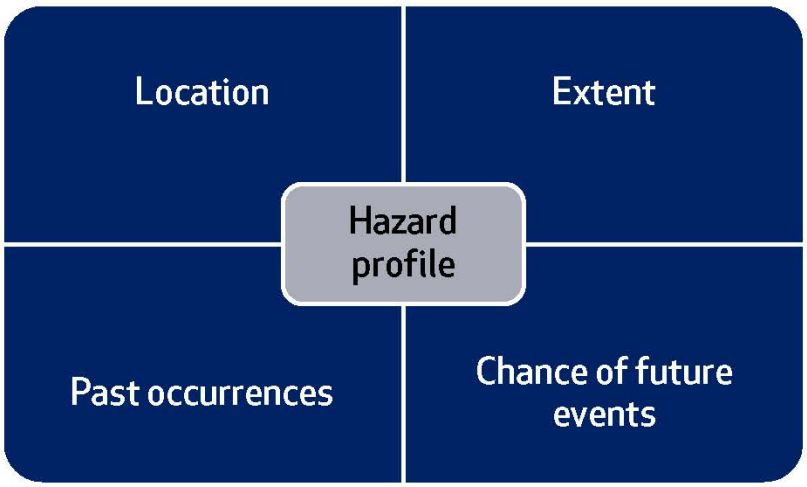
Plan Requirements – Hazard Identification and Risk Assessment

- Describe all hazards that affect the community.
- Provide rationale for excluding recognized hazards.



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Plan Requirements – Hazard Identification and Risk Assessment

Vulnerability Assessment

- City's vulnerability to each hazard
- Potential impacts of each hazard (number and importance of affected structures and areas)
- Identifies repetitive loss properties
- Includes potential dollar losses

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Plan Requirements – Mitigation Strategy

- Goals
- Identification and analysis of mitigation actions
  - Comprehensive
  - Focus on built environment
- Action Plan
  - Prioritizes actions
  - Describes implementation and administration
  - Includes cost-benefit review

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Plan Requirements – Mitigation Strategy

- Strategy identifies existing authorities, policies, programs, and resources to mitigate hazards
- Includes description of participation in National Flood Insurance Program

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Plan Requirements – Planning Process

- Describe:
  - How the plan was prepared
  - Who was involved
  - Opportunities for public and stakeholder involvement
  - Review and inclusion of existing plans, reports, studies, etc.
  - Continual public participation
  - Monitoring and updating of the plan
- Stakeholders must include:
  - Local and regional agencies involved in hazard mitigation
  - Agencies that regulate development
  - Neighborhood communities

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LHMP Planning Team

- Agency representatives to advise and contribute to plan preparation
- Three LHMP Planning Team meetings:
  - Meeting 1 – Review and discuss hazard mitigation process, and identification and ranking of hazards
  - Meeting 2 – Review and discussion of the hazard profiles and risk assessment
  - Meeting 3 – Review and discussion of the draft mitigation actions

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Plan Requirements – Planning Process
LHMP Planning Team

- Administrative Services - Finance
- City Clerk
- City Manager
- Community Development
- Fire (Los Angeles County Fire Department)
- Parks & Recreation
- Police
- Public Works

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Technical Advisory Committee (LHMP Planning Team)

- California Highway Patrol
- City of Cudahy
- City of Downey
- City of Huntington Park
- City of Lynwood
- City of Paramount
- County of Los Angeles Public Library – South Gate Branch, Leland R. Weaver Library
- Kuz Manufacturing (employer)
- Los Angeles County Regional Planning Office
- Los Angeles County Fire Department
- Los Angeles County Flood Control District
- Los Angeles Department of Water and Power
- Los Angeles Unified School District
- Water Boards
- Southern California Association of Governments
- Schultz Steel (employer)
- Southern California Edison
- South Gate Chamber of Commerce

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Responsibilities

Our job

- Facilitate the process
- Provide technical expertise
- Do the heavy work

Your job

- Participate
- Make final decisions
- Ensure plan is feasible and meets needs
- Groundtruthing the plan

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Data Needs

- Every person can provide vital data
  - GIS data
  - Information and experience about past events
  - Institutional knowledge
- If you have useful data, please contact *Alvie Betancourt*
  (323) 563-9526
  abetancourt@sogate.org

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Engagement and Outreach

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Public Outreach Strategy

Outreach Options

Original Proposal	Option 1	Option 2
Online Survey	2 PMC staff @ 1 community event	PMC Project Manager @ 1 traditional workshop
Two public workshops	Outreach training for City staff	1 PMC staff member @ 1 community event
	1,000 ½ page, color project flyers and booth materials	Reduced quantity of ½ page, color project flyers and booth materials
	Press release	
	1 project PPT and talking points for additional City staff outreach	

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Critical Facilities

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Critical Facilities, Part I

- City Facilities
  - City of South Gate City Hall
  - Parks & Recreation – Administration
  - Parks & Recreation - South Gate Girls Clubhouse
  - Parks & Recreation - South Gate Golf Course
  - Parks & Recreation - South Gate Senior Center
  - Parks & Recreation - South Gate Sports Center
  - Parks & Recreation - South Gate Swim Stadium
  - Parks & Recreation - Hollydale Community Resource Center
  - Parks & Recreation - Westside Community Resource Center
  - Police Information Center

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Critical Facilities, Part II

- County Facilities
  - L.A. County Fire Station #57
  - South Gate Senior High School
  - Odyssey Continuation School
  - Faith Christian Academy
  - Academia Betel
  - South Gate Middle School
  - State Street Elementary School
  - Victoria Avenue Elementary School
  - Stanford Avenue Elementary School
  - San Miguel Elementary School
  - Liberty Boulevard Elementary School
  - Hollydale Elementary School
  - Bryson Avenue Elementary School
  - San Gabriel Avenue Elementary School
  - Independent Elementary School
  - St. Helen Elementary School
  - Redeemer Lutheran School
  - Lollypop Lane Pre-School and Kindergarten

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Hazard Identification and Prioritization

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FEMA-Suggested Hazards

Avalanche	Flood	Seismic hazards
Climate change	Geological hazards	Severe winter storm
Coastal erosion	Hailstorm	Tornado
Coastal storm	Hazardous materials	Tsunami
Dam failure	Human-caused hazards	Volcano
Disease/pest management	Hurricane	Wildfire
Drought	Land subsidence	Wind
Earthquake fault rupture	Landslide and mudflow	Windstorm
Expansive soils	Liquefaction	
Extreme heat	Sea level rise	

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Relevant Hazards

Avalanche	Flood	Seismic hazards
Climate change	Geological hazards	Severe winter storm
Coastal erosion	Hailstorm	Tornado
Coastal storm	Hazardous materials	Tsunami
Dam failure	Human-caused hazards	Volcano
Disease/pest management	Hurricane	Wildfire
Drought	Land subsidence	Wind
Earthquake fault rupture	Landslide and mudflow	Windstorm
Expansive soils	Liquefaction	
Extreme heat	Sea level rise	

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Hazard Prioritization

- Four criteria [Weightings]
  - Probability (likelihood of occurrence) [2.0]
  - Location (size of potentially affected area) [0.8]
  - Maximum Probable Extent (intensity of damage) [0.7]
  - Secondary Impacts (severity of impacts to community) [0.5]
- A value of 1-4 is assigned for each criteria
- Every criteria has an Importance Score
  - Can be used to weigh the influence of an individual criterion
  - Criteria and Importance values are combined to calculate a Total Score

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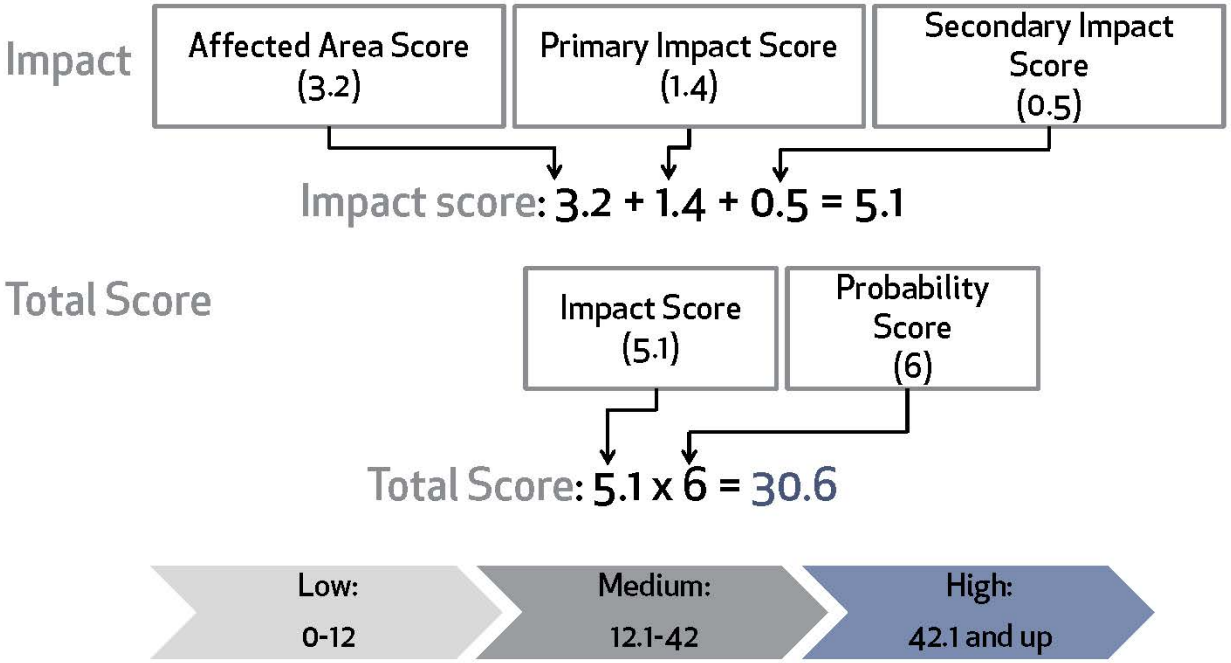
Score Example: Windstorm



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Timeline

Task	Timeframe
Kick-off meeting	July 14, 2015
Data Collection, Hazards Profiles, and Risk Assessment	July - August 2015
Initiate LHMP Planning Team and Public Outreach	August 2015
SE Policy Framework	August - September 2015
Draft LHMP complete	October 2015
Draft SE and CEQA documents complete	November 2015
Public Review Draft LHMP, SE, CEQA documents complete	November - December 2015
Draft LHMP submitted to FEMA	January 2016
FEMA review	To be determined
City Council adoption	By April 2016, following FEMA review

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Questions/Comments?

Alvie: abetancourt@sogate.org
Aaron: apfannenstiel@mbakerintl.com
Chris: cread@mbakerintl.com

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Meeting Materials

South Gate Local Hazard Mitigation Plan and Safety Element Update Project Management Team

Meeting 1: August 12, 2015

Included Materials:

- Meeting agenda
- Preliminary Goals of the Project
- LHMP Stakeholders
- Critical Facilities
- Public Outreach Strategy
- Sign-In Sheet
- Presentation

City of South Gate

Local Hazard Mitigation Plan and Safety Element Update

LHMP Meeting #1

Wednesday August 12th, 1:00 – 3:00 p.m.
South Gate City Hall, 8650 California Ave

Agenda

1. Introductions (5 minutes)
2. Preliminary Project Goals (10 minutes)
3. Review LHMP Stakeholders (5 minutes)
4. Review Critical Facilities (10 minutes)
5. Review Public Outreach Strategy (10 minutes)
6. Review Hazard Profiles Information (30 minutes)
7. Hazard Prioritization Exercise (30 minutes)
8. Next Steps

Preliminary Goals of the Project

1. Encourage appropriate flood control and prevent negative impacts of new development on flood-control efforts (South Gate General Plan, Green City Element, Objective GC 4.1).
2. Promote coordination between land-use planning and urban design, and law enforcement (South Gate General Plan, Public Facilities Element, Objective PF 1.2).
3. Ensure that all new development includes adequate provision for fire safety (South Gate General Plan, Public Facilities Element, Objective PF 2.2).

LHMP Stakeholders

1. City of Bell Gardens
2. City of Cudahy
3. City of Downey
4. City of Huntington Park
5. City of Los Angeles - Council District Representative
6. City of Lynwood
7. City of Paramount
8. County of Los Angeles Public Library (Administrative Office)
9. East LA Community College (Satellite Campus)
10. Golden State Water Company
11. Hollydale Library
12. Los Angeles County Fire Department
13. Los Angeles County Flood Control District
14. Los Angeles County Operational Area E
15. Los Angeles County Regional Planning (Westmont/West Athens)
16. Los Angeles County Supervisor Office (District 1)
17. Los Angeles Department of Water and Power
18. Los Angeles Unified School District
19. MTA
20. MWD
21. South Gate Chamber of Commerce
22. Southeast Area Animal Control Authority (SEAACA)
23. Southern California Association of Governments
24. Southern California Edison
25. Southern California Gas Company
26. Tweedy Mile Association (TMA)
27. Walnut Mutual Water
28. Waste Management

Critical Facilities

	Facility	Address
City Facilities	City of South Gate City Hall	8650 California Avenue
	Public Works Corporate Yard	4244 Santa Ana Street
	Parks & Recreation - Administration	4900 Southern Avenue
	Parks & Recreation - South Gate Girls Clubhouse	4940 Southern Avenue
	Parks & Recreation - South Gate Golf Course	9615 Pinehurst Avenue
	Parks & Recreation - South Gate Senior Center	4855 Tweedy Boulevard
	Parks & Recreation - South Gate Sports Center	9520 Hildreth Avenue
	Parks & Recreation - Hollydale Community Resource Center	12221 Industrial Avenue
	Parks & Recreation - Westside Community Resource Center	9200 State Street
County Facilities	LA County Fire Station #54	4867 Southern Pl
	L.A. County Fire Station #57	5720 Gardendale Avenue
Other Facilities	High Tension Power Lines	
	Water Infrastructure (Well Sites and Reservoirs)	Confidential
Schools	Bryson Avenue Elementary School	4470 Missouri Avenue, South Gate, CA 90280
	Hollydale School	5511 Century Boulevard, South Gate, CA 90280
	Independence Elementary School	8435 Victoria Avenue, South Gate, CA 90280
	Liberty Boulevard Elementary School	2728 Liberty Boulevard, South Gate, CA 90280
	Madison Elementary School	9820 Madison Avenue, South Gate, CA 90280
	Montara Avenue Elementary School	10018 Montara Avenue, South Gate, CA 90280
	San Gabriel Avenue Elementary School	8628 San Gabriel Avenue, South Gate, CA 90280
	San Miguel Elementary School	9801 San Miguel Avenue, South Gate, CA 90280
	South Gate Community Adult School	2525 Firestone Boulevard, South Gate, CA 90280
	Stanford Avenue Elementary School	2833 Illinois Avenue, South Gate, CA 90280
	Stanford Primary Center School	3020 Kansas Avenue, South Gate, CA 90280

	State Street Elementary School	3211 Santa Ana Street, South Gate, CA 90280
	Tweedy Elementary School	9724 Pinehurst Avenue, South Gate, CA 90280
	Victoria Avenue Elementary School	3320 Missouri Avenue, South Gate, CA 90280
	South Gate Middle School	4100 Firestone Boulevard, South Gate, CA 90280
	Southeast Middle School	2560 Tweedy Boulevard, South Gate, CA 90280
	Odyssey Continuation School	8693 Dearborn Avenue, South Gate, CA 90280
	South East High School	2720 Tweedy Boulevard, South Gate, CA 90280
	South Gate Senior High School	3351 Firestone Boulevard, South Gate, CA 90280
	International Studies Learning Center School	2701 Sequoia Drive, South Gate, CA 90280
	Saint Helen School	9329 Madison Ave, South Gate, CA
	Redeemer Lutheran Church & School	2626 Liberty Blvd, South Gate, CA
	South Gate Montessori Preschool	10108 California Ave, South Gate, CA
	Aspire Firestone Academy	8929 Kauffman Ave, South Gate, CA 90280
	Willow Elementary	2777 Willow Place, South Gate, CA 90280
	Valiente Elementary College Prep	8691 California Ave, South Gate, CA 90280
	Soledad Charter School	3616 Missouri Ave, South Gate, CA 90280
	Kid's Forum	4513 Tweedy Boulevard, South Gate, CA 90280
	Great Commission Baptist School	8420 South Gate Avenue, South Gate, CA 90280
	Kiddie Crest Academy	13067 Paramount Blvd, South Gate, CA 90280
	Pilgrim Baptist Academy	2702 Glenwood Pl, South Gate, CA 90280
	Legacy High School	5225 Tweedy Blvd, South Gate, CA 90280

Public Outreach Strategy

- Disseminate information via a website page, through the City's quarterly newsletter, flyers in City water bill, and email distribution.
- Develop an email distribution list from existing sources and allow members to opt in to this process.
- Allow opportunities for new stakeholders to opt in via the website.
- Distribute an online survey to gather feedback from potential stakeholders.
- Conduct one community workshop to review hazards information and the hazard mitigation planning process with community members.

Attendee Sign-In Sheet

Name	Department/Company	Telephone	Email
Richard J. Luna	Administration Department	323-563-9508	rjluna@sogate.org
Glenn Massey	Parks and Recreation Department	323-563-5448	gmassey@sogate.org
Jessica Jimenez	Community Development Department		jjimenez@sogate.org
Nick Berkuta	LA County Fire	323-585-5857	nberkuta@fire.lacounty.gov
Guillermo Petra	Public Works	323-357-9614	gpetra@sogate.org
Sheri Koomen	Police Department	323-563-5483	skoomen@sogate.org
Rosemary Vivero	LA County Fire Department	213-215-2193	Rosemary.vivero@fire.lacounty.gov
Kim Sao	Finance Department	562-999-2980	ksao@sogate.org
Edward Perez	Police Department	323-864-7281	eperez@sogate.org
Jim Teeples	Police Department	323-563-5453	jteeples@sogate.org
Chris Castillo	Public Works Water	323-595-9627	ccastillo@sogate.org
Alvie Betancourt	Community Development	323-563-9526	abetancourt@sogate.org

Meeting 1 Presentation

Michael Baker
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City of South Gate

Local Hazard Mitigation Plan

Meeting 1

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Meeting Objectives

- Present draft hazard profiles
- Prioritize hazards
- Confirm additional data needs

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City of South Gate
Hazard Profiles

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Hazard Profile Components

- Identification of the Hazard
- Profile of the Hazard
  - Location
  - Extent
- Past Occurrences
- Probability of Future Occurrences
- Climate Change Considerations
- Vulnerabilities/ Risk Assessment
- Utilities Considerations

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FEMA-Suggested Hazards

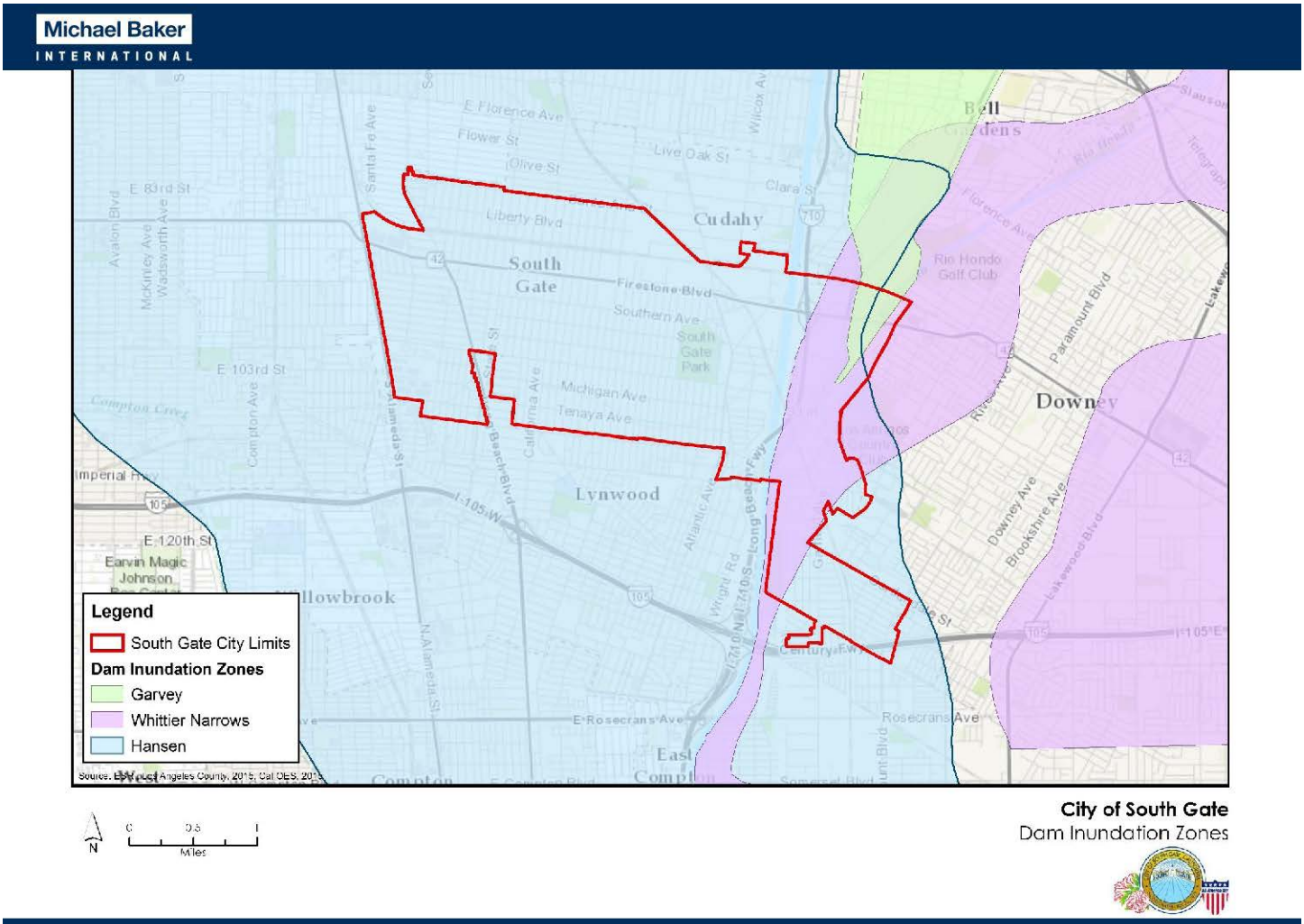
Avalanche	Flood	Seismic hazards
Climate change	Geological hazards	Severe winter storm
Coastal erosion	Hailstorm	Tornado
Coastal storm	Hazardous materials	Tsunami
Dam failure	Human-caused hazards	Volcano
Disease/pest management	Hurricane	Wildfire
Drought	Land subsidence	Wind
Earthquake fault rupture	Landslide and mudflow	Windstorm
Expansive soils	Liquefaction	
Extreme heat	Sea level rise	

South Gate – Identified Hazards

Dam failure	Extreme heat	Seismic hazards
Disease/pest management	Flood	Severe weather
Drought	Hazardous materials	

Dam Failure

- Location and Extent
  - The entire city (see dam inundation zones)
- Past Occurrences
  - Two dam failures occurred since 1900 (Southern California)
- Probability of Future Occurrences
  - Low, modern dams are highly unlikely to fail. However, extreme seismic shaking could cause dam failure.
- Climate Change Considerations
  - More frequent periods of intense precipitation, leading to a potential rise in flood events and increased vulnerability to steams/dams.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Cudahy
South Gate
Lynwood
Downey
Bell Gardens
Legend
South Gate City Limits
Dam Inundation Zones
Garvey
Whittier Narrows
Hansen
Miles
City of South Gate
Dam Inundation Zones
We Make a Difference

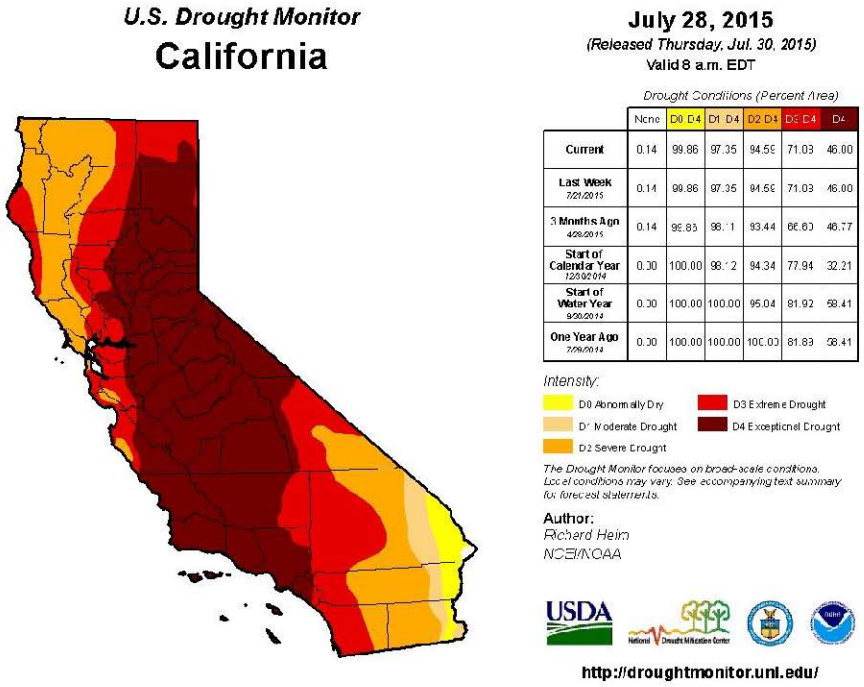
Disease/Pest Management

- Location and Extent
  - The entire City
- Past Occurrences
  - Data on West Nile currently unavailable; data on diseased trees needed; other concerns?
- Probability of Future Occurrences
  - Likely, especially as climate conditions change (see below)
- Climate Change Considerations
  - Climate change is expected to increase instances of West Nile Virus and diseased trees

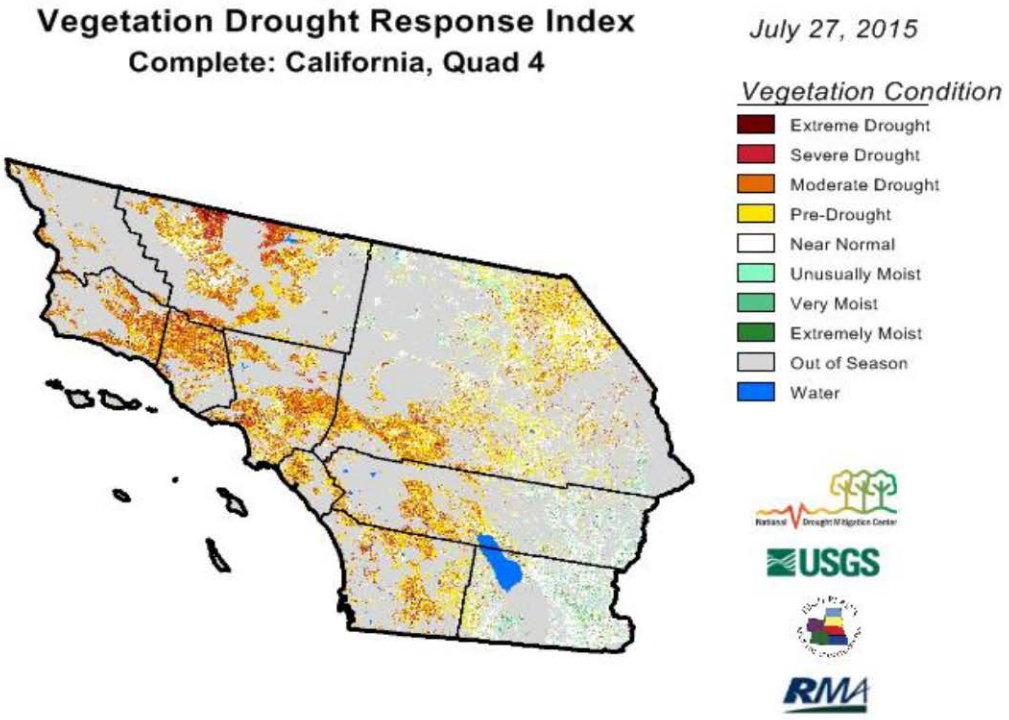
Drought

- Location and Extent
  - The entire city
- Past Occurrences
  - 10 events since 1917, average three to five years in duration.
- Probability of Future Occurrences
  - High probability given the prevalence of drought throughout the state over the last 100 years.
- Climate Change Considerations
  - Anticipated changes in precipitation regimes may reduce groundwater levels within the City, further increasing risks to drought.

Drought


U.S. Drought Monitor
California
July 28, 2015
(Released Thursday, Jul. 30, 2015)
Valid 8 a.m. EDT
Drought Conditions (Percent Area)
None D0-D4 D1-D4 D2-D4 D3-D4 D4
Current 0.14 99.86 97.35 94.59 71.03 46.00
Last Week 7/21/2015 0.14 99.86 97.35 94.59 71.03 46.00
3 Months Ago 4/28/2015 0.14 99.83 98.11 93.44 66.63 46.77
Start of Calendar Year 12/30/2014 0.30 100.00 98.12 94.34 77.94 32.21
Start of Water Year 9/30/2014 0.30 100.00 100.00 95.04 81.92 58.41
One Year Ago 7/29/2014 0.30 100.00 100.00 100.00 81.83 58.41
Intensity:
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
Author:
Richard Heim
NCEI/NOAA
http://droughtmonitor.unl.edu/

Drought

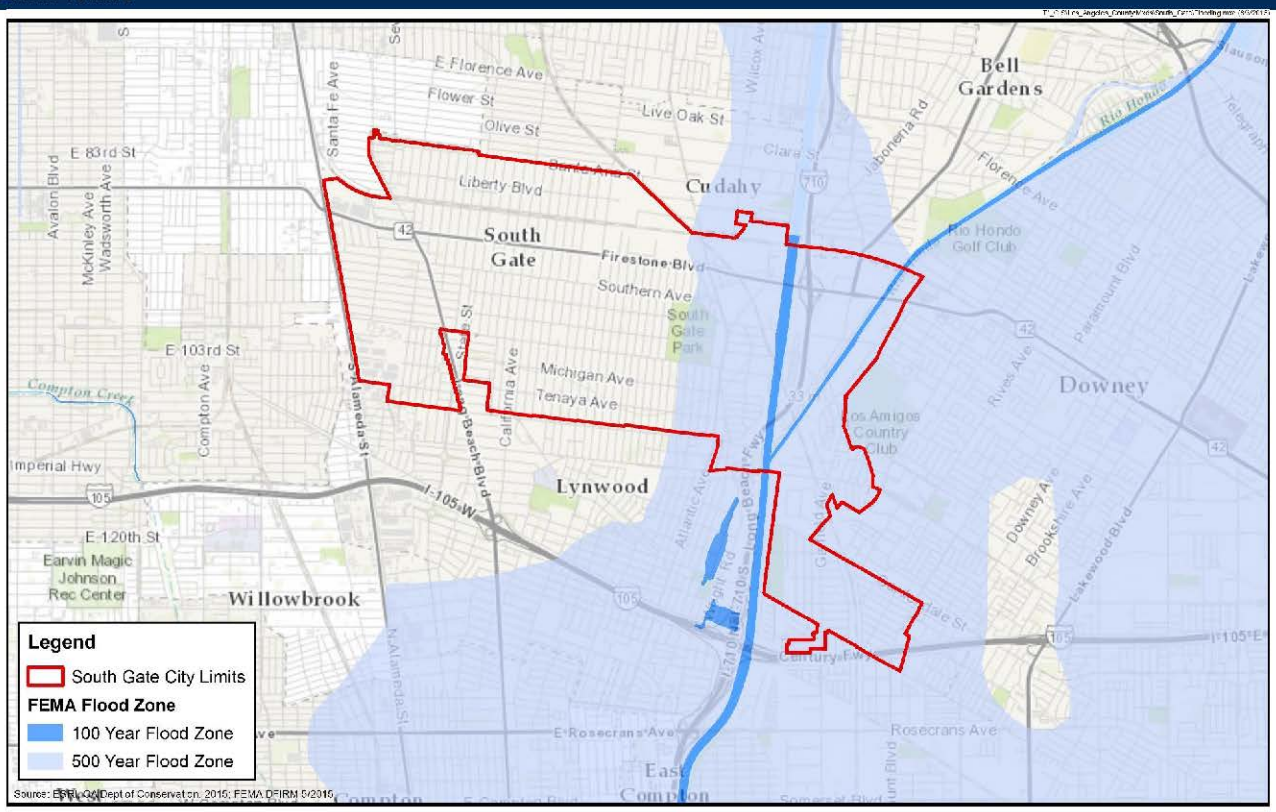

Vegetation Drought Response Index
Complete: California, Quad 4
July 27, 2015
Vegetation Condition
Extreme Drought
Severe Drought
Moderate Drought
Pre-Drought
Near Normal
Unusually Moist
Very Moist
Extremely Moist
Out of Season
Water
USGS
RMA

Extreme Heat

- Location and Extent
  - The entire city
- Past Occurrences
  - On average 4 extreme heat days per year
  - On average 0-1 heat wave per year
- Probability of Future Occurrences
  - High certainty that extreme heat conditions will occur in the future.
- Climate Change Considerations
  - Future climate conditions could increase the number of extreme heat events.
  - 15-35 extreme heat days expected by 2050.

Flood

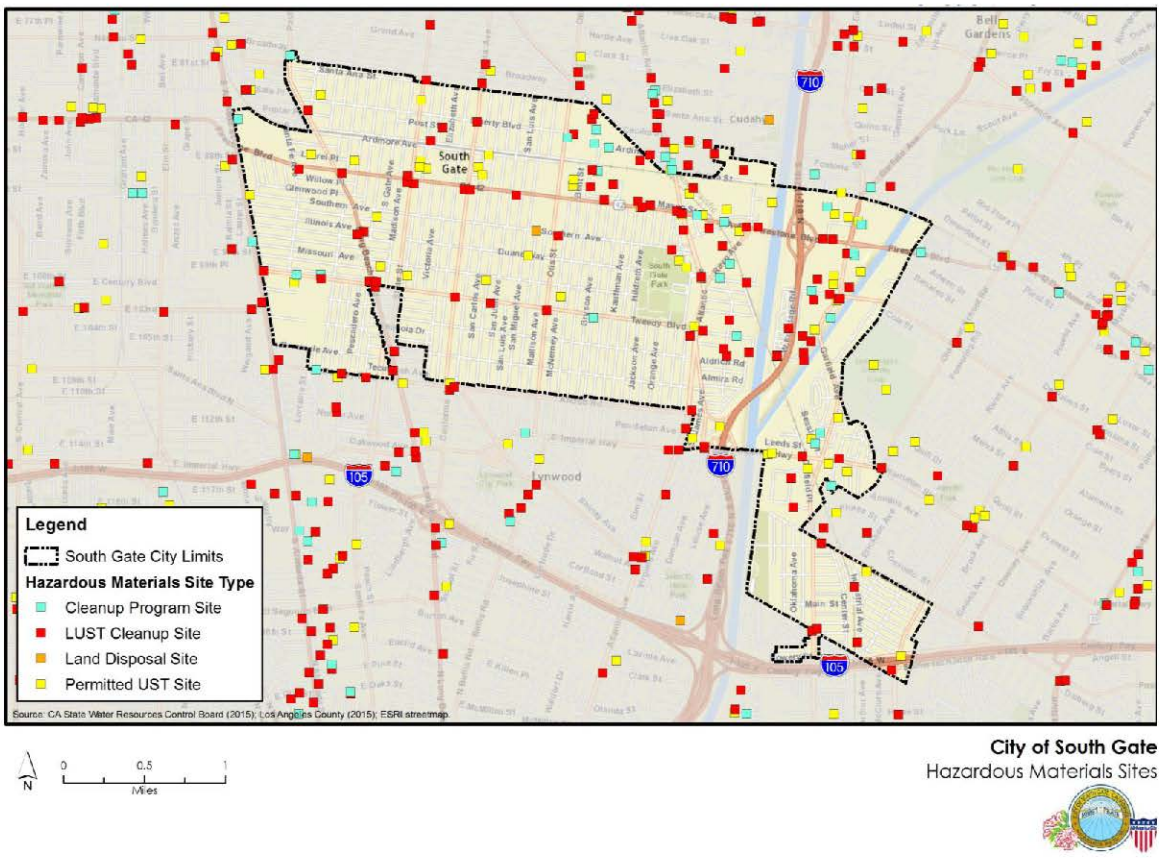
- Location and Extent
  - Nearly all of the city east of South Gate park located in 500-year floodplain. LA River and Rio Hondo identified as 100-year floodplain.
- Past Occurrences
  - From 1950 to 2012, Los Angeles County had 32 state and federally-declared flood disasters, the second highest of any county in the state (local data needed).
- Probability of Future Occurrences
  - It is anticipated that urban flooding will continue to occur during wet winter storms.
- Climate Change Considerations
  - Increase storm intensity could increase urban flooding issues within the City.



City of South Gate
Flood Hazards

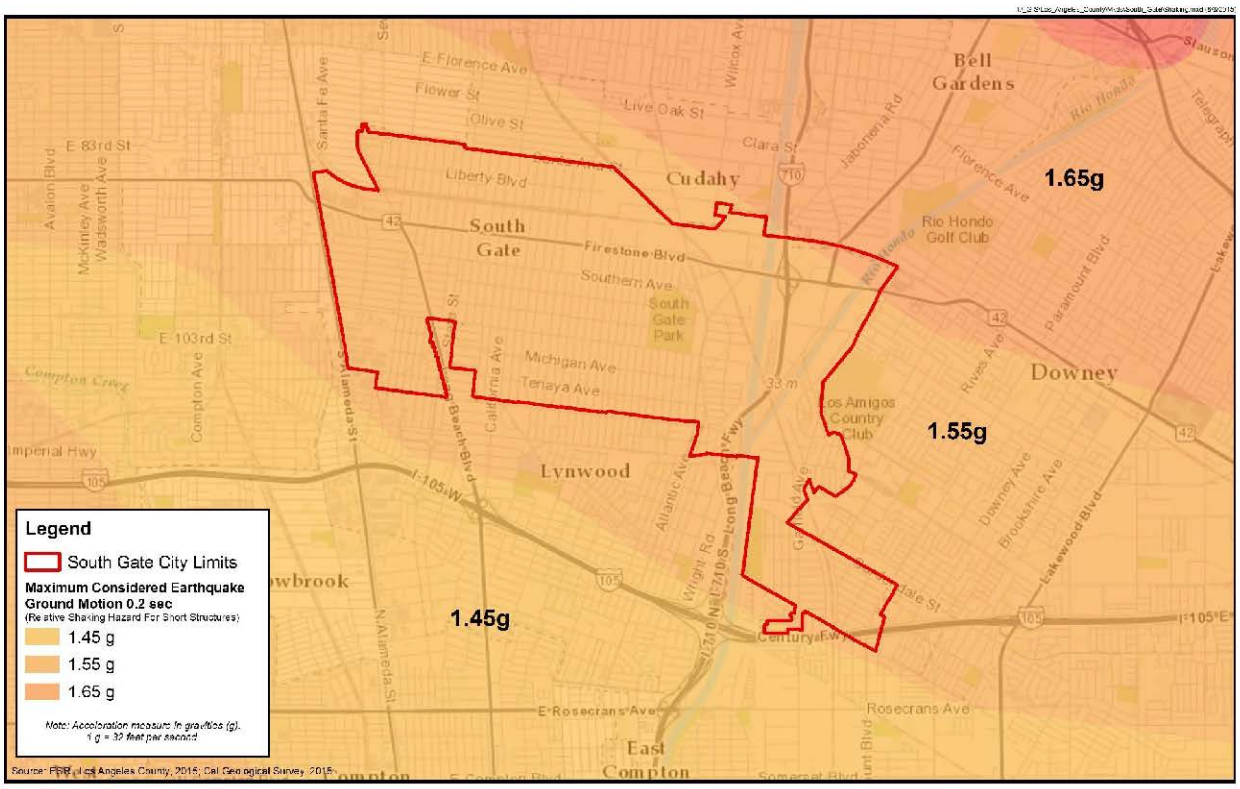
Hazardous Materials

- Location and Extent
  - Many places in the City currently store or have previously stored hazardous materials. Rail corridors likely carry hazardous materials through the City.
- Past Occurrences
  - No history of significant hazardous material-related emergency events in South Gate, although there have been a few substantial events in the vicinity. (confirm)
- Probability of Future Occurrences
  - Unknown
- Climate Change Considerations
  - Unknown

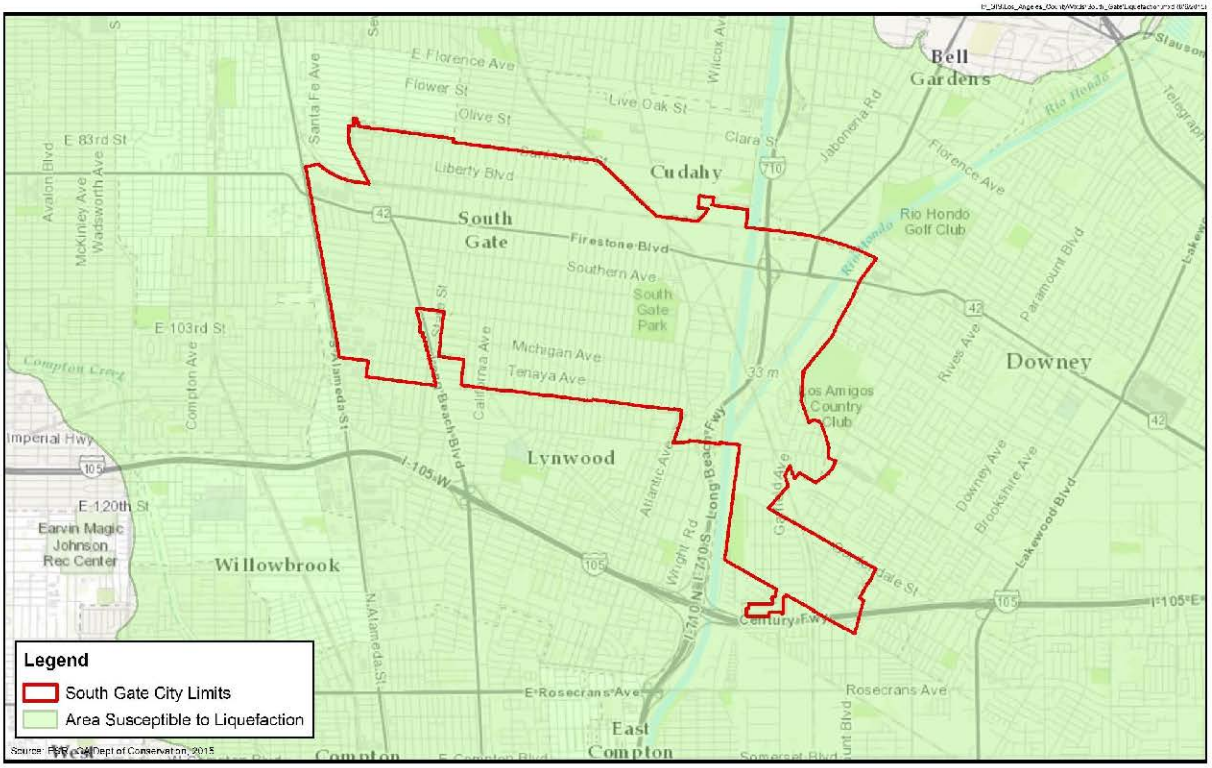

Legend
South Gate City Limits
Hazardous Materials Site Type
Cleanup Program Site
LUST Cleanup Site
Land Disposal Site
Permitted UST Site
Source: CA State Water Resources Control Board (2015); Los Angeles County (2015); ESRI streetmap
N
0
0.5
1
Miles
City of South Gate
Hazardous Materials Sites

Seismic Hazards

- Location and Extent
  - The entire city (for ground shaking and liquefaction)
- Past Occurrences
  - Multiple, including 1933, 1971, 1987,and 1994 earthquakes (Local Damage?)
- Probability of Future Occurrences
  - 100% chance of 6.0 or greater quake in Southern California by 2044 (75% of 7.0 or above)
- Climate Change Considerations
  - No effect on primary hazards
  - Potential but unknown effect on secondary hazards



City of South Gate
Seismic Shaking



City of South Gate
Liquifaction

Severe Weather

- Location and Extent
  - The entire city
- Past Occurrences
  - High wind events (e.g. Santa Anas) occur frequently
  - Hail and tornadoes are rare, but not unknown
- Probability of Future Occurrences
  - Likely, greater chance for severe wind events
- Climate Change Considerations
  - Unknown impact on severe wind events
  - Possible increase in severe storms (hail and/or tornadoes)

Hazard Prioritization

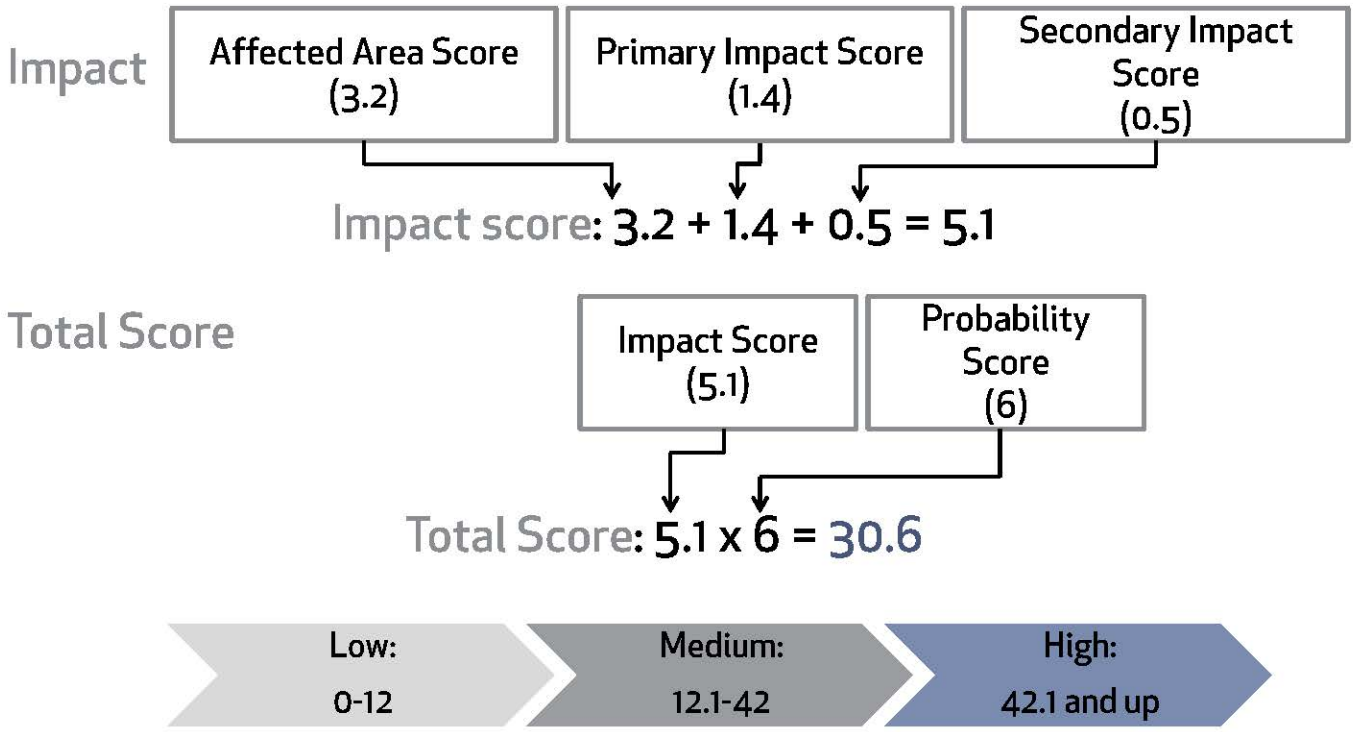
Hazard Prioritization

- Four criteria [Weightings]
  - Probability (likelihood of occurrence) [2.0]
  - Location (size of potentially affected area) [0.8]
  - Maximum Probable Extent (intensity of damage) [0.7]
  - Secondary Impacts (severity of impacts to community) [0.5]
- A value of 1-4 is assigned for each criteria
- Every criteria has an Importance Score
  - Can be used to weigh the influence of an individual criterion
  - Criteria and Importance values are combined to calculate a Total Score

Hazard Prioritization Example

- Four criteria [Weightings]
  - 3 Probability (likelihood of occurrence) [2.0]
  - 4 Location (size of potentially affected area) [0.8]
  - 2 Maximum Probable Extent (intensity of damage) [0.7]
  - 1 Secondary Impacts (severity of impacts to community) [0.5]

Score Example: Windstorm



Timeline

Task	Timeframe
Meeting #2	August 12, 2015
Data Collection, Hazards Profiles, and Risk Assessment	July - August 2015
Initiate Public Outreach	August 2015
SE Policy Framework	August - September 2015
Draft LHMP complete	October 2015
Draft SE and CEQA documents complete	November 2015
Public Review Draft LHMP, SE, CEQA documents complete	November - December 2015
Draft LHMP submitted to FEMA	January 2016
FEMA review	To be determined
City Council adoption	By April 2016, following FEMA review

Questions/Comments?

Alvie: abetancourt@sogate.org
Aaron: apfannenstiel@mbakerintl.com

Meeting Materials

South Gate Local Hazard Mitigation Plan and Safety Element Update Project Management Team

Meeting 2: September 16, 2015

Included Materials:

- Mitigation Action Worksheet
- Sign-In Sheet
- Presentation

Hazard Issues and Mitigation Action Development

Hazard	Issues	Possible Mitigation Actions
Drought	•Water Supply: •Water Demand: •Water Quality: •Landscaping: •Other: •Other: •Other:	
Seismic Hazards	•Vulnerable Public Structures: •Vulnerable Private Structures: •Awareness and Outreach: •Soil Studies / Building Code Compliance: •Other: •Other: •Other:	
Extreme Heat	•Access to Cooling Centers: •Cost of Electricity: •Urban Forest: •Other: •Other: •Other:	
Hazardous Materials	•Education and Awareness •Proximity to Train Lines •Sensitive Receptors •Other: •Other:	

Hazard	Issues	Possible Mitigation Actions
Severe Weather	•Property Maintenance •Landscape and Tree Maintenance •Public Awareness •Other: •Other:	
Flood	•Flood Infrastructure: •Stormwater: •Water Quality: •Non-Flood Zone Ponding: •Other: •Other:	
Disease/Pest Management	•Diseased Trees •West Nile Virus •Other: •Other:	
Dam Failure	•Evacuation Routes •Public Awareness and Education •Local Flood Control Infrastructure •Other: •Other:	

Attendee Sign-In Sheet

Name	Department/Company	Telephone	Email
Richard J. Luna	Administration Department	323-563-9508	rjluna@sogate.org
Glenn Massey	Parks and Recreation Department	323-563-5448	gmassey@sogate.org
Jessica Jimenez	Community Development Department		jjimenez@sogate.org
Nick Berkuta	LA County Fire	323-585-5857	nberkuta@fire.lacounty.gov
Guillermo Petra	Public Works	323-357-9614	gpetra@sogate.org
Sheri Koomen	Police Department	323-563-5483	skoomen@sogate.org
Rosemary Vivero	LA County Fire Department	213-215-2193	Rosemary.vivero@fire.lacounty.gov
Kim Sao	Finance Department	562-999-2980	ksao@sogate.org
Edward Perez	Police Department	323-864-7281	eperez@sogate.org
JimTeeples	Police Department	323-563-5453	jteeples@sogate.org
Chris Castillo	Public Works Water	323-595-9627	ccastillo@sogate.org
Alvie Betancourt	Community Development	323-563-9526	abetancourt@sogate.org

LHMP Meeting 2

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Meeting Objectives

- Confirm hazard prioritization
- Review draft risk assessment
- Discuss LHMP goals
- Develop initial mitigation actions

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Hazard Prioritization Review

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Hazard Prioritization

- Four criteria [Weightings]
  - Probability (likelihood of occurrence) [2.0]
  - Location (size of potentially affected area) [0.8]
  - Maximum Probable Extent (intensity of damage) [0.7]
  - Secondary Impacts (severity of impacts to community) [0.5]
- A value of 1-4 is assigned for each criteria
- Every criteria has an Importance Score
  - Used to weight the influence of an individual criterion
  - Criteria and Importance values are combined to calculate a Total Score

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Hazard Prioritization

Hazard Type	Probability	Impact			Total Score	Hazard Planning Consideration
		Location	Primary Impact	Secondary Impacts		
Drought	4	4	4	4	64.00	High
Seismic Hazards	4	4	4	4	64.00	High
Extreme Heat	4	4	3	2	50.40	High
Hazardous Materials	3	4	3	4	43.80	High
Severe Weather	3	4	3	4	43.80	High
Flood	3	2	3	4	34.20	Medium
Disease/Pest Management	4	2	1	2	26.40	Medium
Dam Failure	1	4	3	4	14.60	Medium

Risk Assessment

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Risk Assessment Method

- Quantitative assessment of how each hazard affects the city.
- Identifies the following for each hazard area:
  - Population (based on an average population factor)
  - Land area (portion of city affected by hazard)
  - Critical facilities
  - Potential damage / loss estimations (based on building and content replacement values)

Note: An appendix will be added to the document that contains the Facilities of Concern (school sites). As part of the appendix, these facilities will qualitatively be assessed for risk.

Note: Confidential facility risk assessment information is provided under separate cover for City review.

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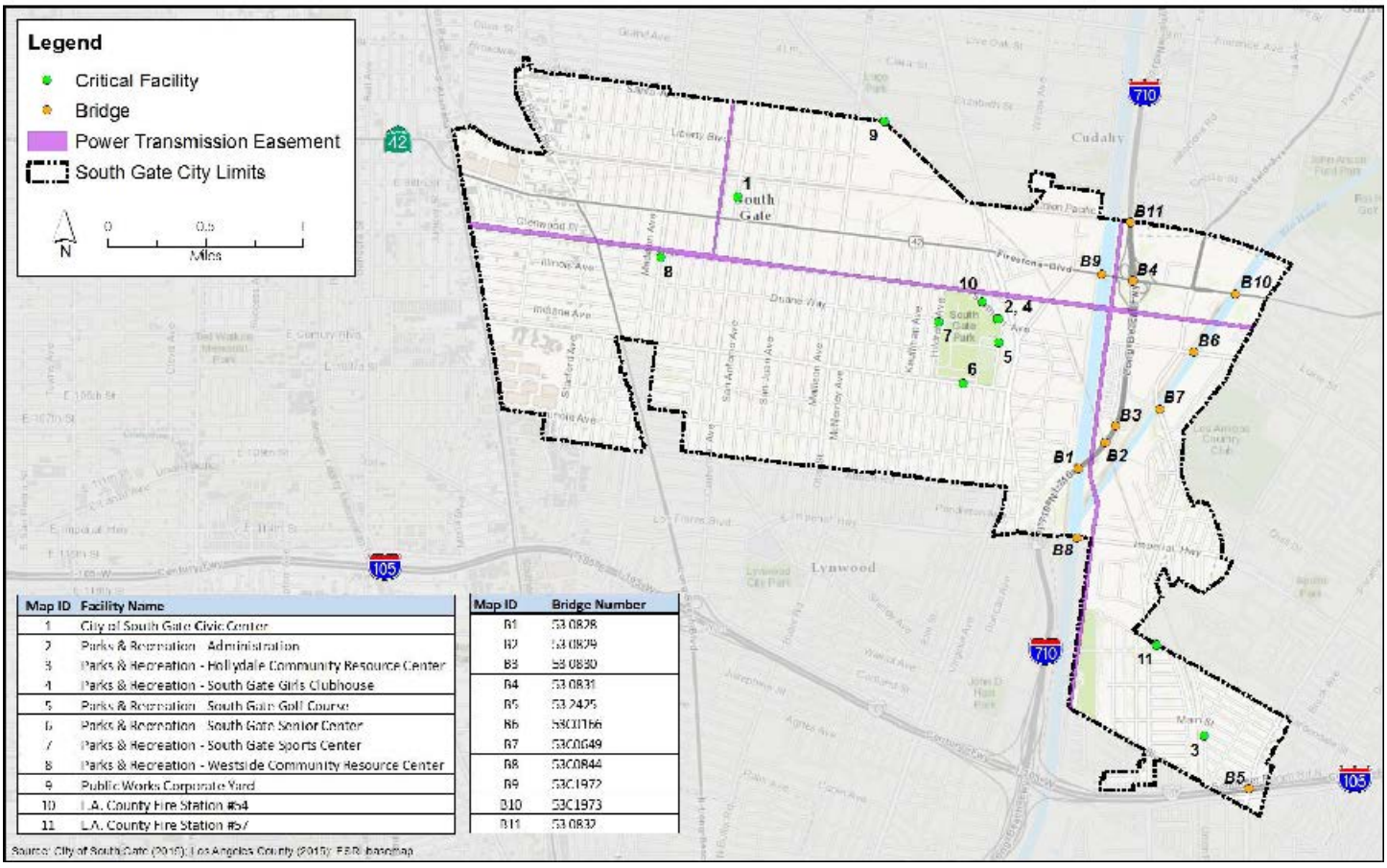
Critical Facilities

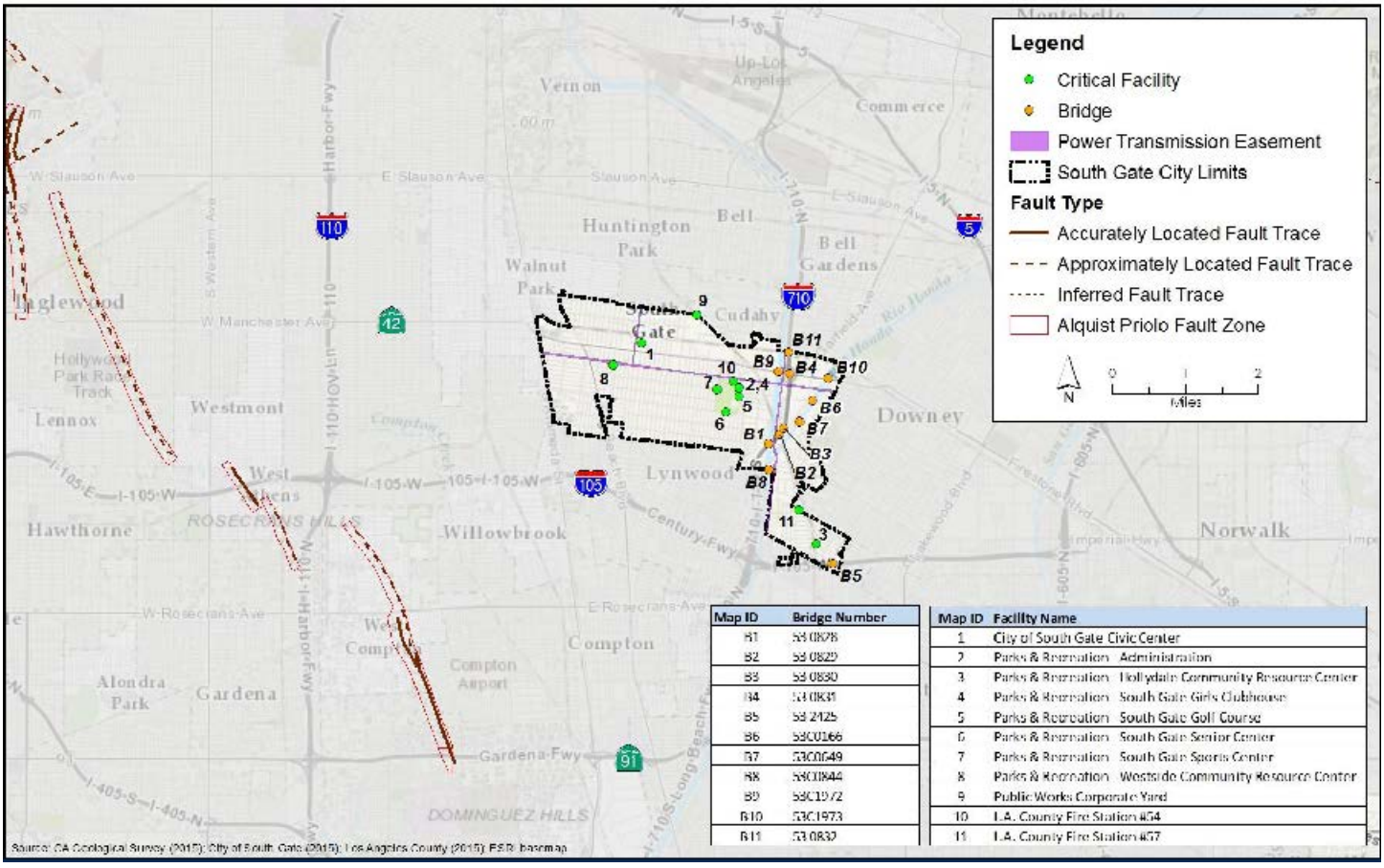


Map ID	Facility Name
1	City of South Gate Civic Center
2	Parks & Recreation - Administration
3	Parks & Recreation - Hollydale Community Resource Center
4	Parks & Recreation - South Gate Girls Clubhouse
5	Parks & Recreation - South Gate Golf Course
6	Parks & Recreation - South Gate Senior Center
7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0166
B7	53C0649
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: City of South Gate (2018); Los Angeles County (2015); ESRI basemap

Seismic Hazards



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7	Parks & Recreation - South Gate Sports Center
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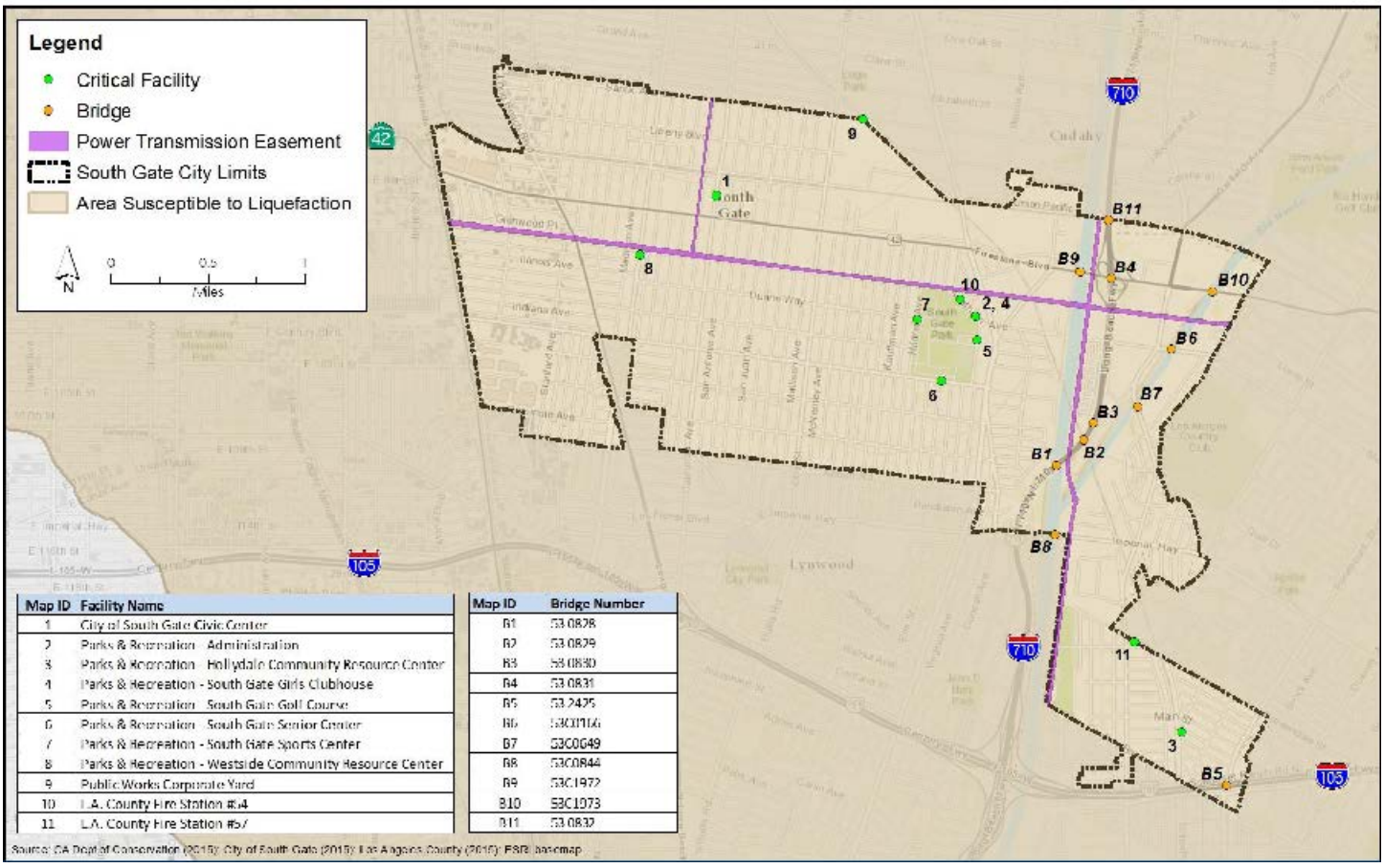
9	Public Works Corporate Yard
10	L.A. County Fire Station #54
11	L.A. County Fire Station #57

Liquefaction



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7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #34
11	L.A. County Fire Station #57

Map ID	Bridge Number
B1	53 0828
B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0706
B7	53C0949
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: CA Dept of Conservation (2015); City of South Gate (2015); Los Angeles County (2016); ESRI basemap

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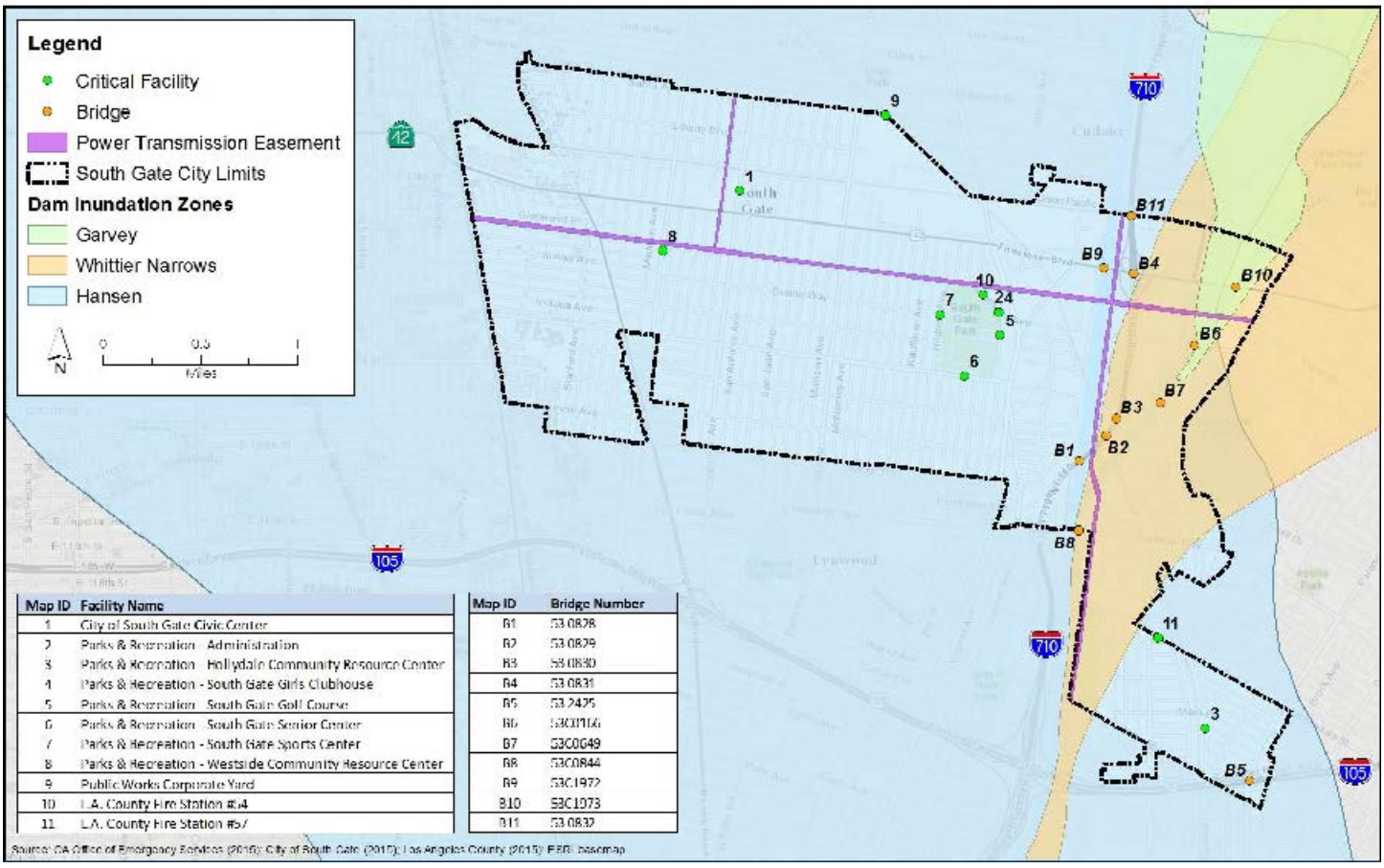
Dam Inundation



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7	Parks & Recreation - South Gate Sports Center
8	Parks & Recreation - Westside Community Resource Center
9	Public Works Corporate Yard
10	L.A. County Fire Station #24
11	L.A. County Fire Station #57

Map ID	Bridge Number
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B2	53 0829
B3	53 0830
B4	53 0831
B5	53 2425
B6	53C0706
B7	53C0049
B8	53C0844
B9	53C1972
B10	53C1973
B11	53 0832

Source: CA Office of Emergency Services (2016); City of South Gate (2017); Los Angeles County (2015); ESRI basemap

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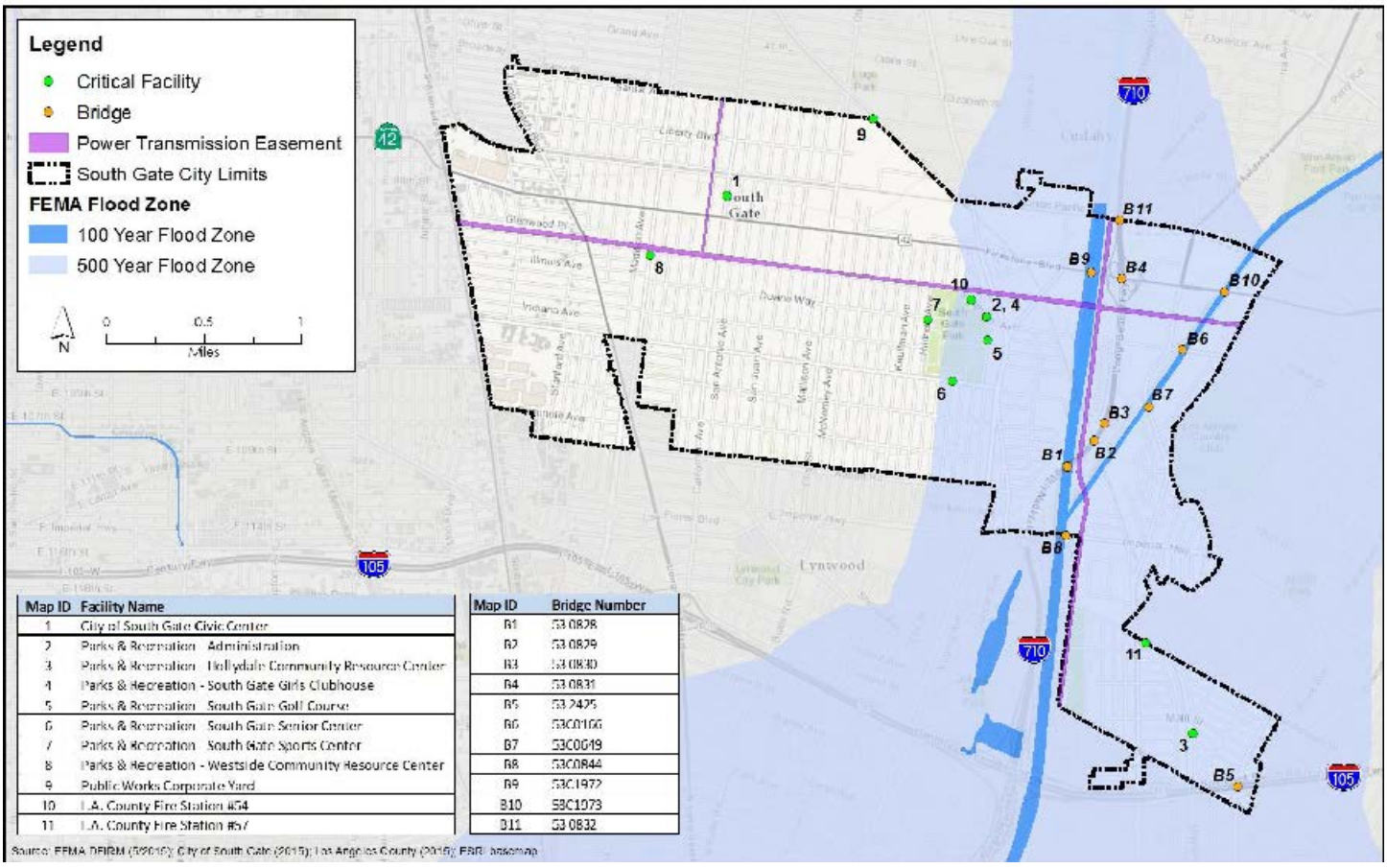
Flood Zones



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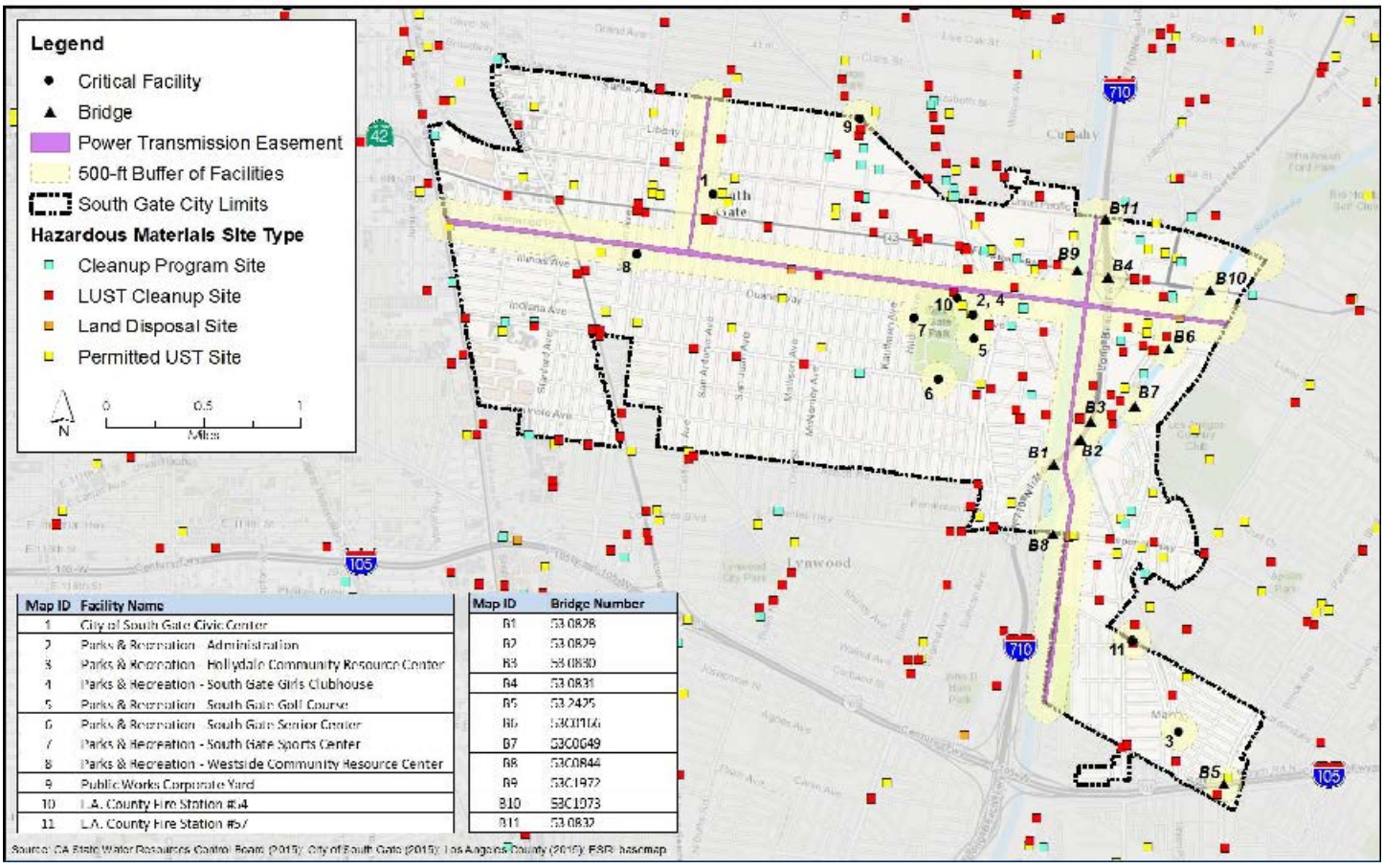
Source: FEMA DFIRM (5/2016); City of South Gate (2015); Los Angeles County (2015); ESRI basemap

Hazardous Materials



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B11	53 0832

Source: CA State Water Resources Control Board (2015); City of South Gate (2015); Los Angeles County (2015); ESRI basemap

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Risk Assessment Findings

	Facility	Drought	Seismic Hazards	Extreme Heat	Hazardous Materials (500 ft of a hazardous material site)	Severe Weather	Flood (500 ft of 100 year floodplain)	Disease / Pest Management	Dam Failure
1	City of South Gate Civic Center	Y	Y	Y	Y	Y	N	Y	Y
2	Parks and Recreation - Administration	Y	Y	Y	Y	Y	N	Y	Y
3	Parks and Recreation - Hollydale Community Resource Center	Y	Y	Y	N	Y	N	Y	Y
4	Parks and Recreation - South Gate Girls Clubhouse	Y	Y	Y	Y	Y	N	Y	Y
5	Parks and Recreation - South Gate Golf Course	Y	Y	Y	N	Y	N	Y	Y
6	Parks and Recreation - South Gate Senior Center	Y	Y	Y	N	Y	N	Y	Y
7	Parks and Recreation - South Gate Sports Center	Y	Y	Y	N	Y	N	Y	Y
8	Parks and Recreation - Westside Community Resource Center	Y	Y	Y	N	Y	N	Y	Y
9	Public Works Corporate Yard	Y	Y	Y	Y	Y	N	Y	Y
10	L.A. County Fire Station #55	Y	Y	Y	Y	Y	N	Y	Y
11	L.A. County Fire Station #57	Y	Y	Y	Y	Y	N	Y	Y

Y denotes that the critical facility intersects the hazard layer

N denotes that the critical facility does not intersect the hazard layer

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Risk Assessment Findings

	Drought	Seismic Hazards	Extreme Heat	Hazardous Materials	Severe Weather	Flood	Disease / Pest Management	Dam Failure
Total Populated Area Affected (Acres)								
Total Number of Residents Affected (% of City population)								
Total Number of Employees Affected (% of City workforce)								

Work in Progress

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Draft Mitigation Goals

Mitigation Goals

- Will appear at the "goal" level in the Safety Element of the General Plan
- Provides a desired end state that occurs as a result of the plan
- Provides a framework to organize and identify hazard mitigation projects

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Mitigation Goals

1. The built environment protects life and property from natural hazard impacts.
2. Municipal and emergency operations are fully functional during natural disasters.
3. Hazard mitigation partnerships exist within the community and throughout the region.
4. The public knows how hazards could affect their property and families.

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Mitigation Action Working Session

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Mitigation Actions

The Plan must 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 (Code of Federal Regulations §201.6(c)(3)(ii)).

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Sample Mitigation Organization

Mitigation Action	Responsible Department	Potential Funding Source(s)	Policy Integration Opportunities	Target Completion Date	Priority
1. Multiple Hazards-Related Actions					
1.1					
1.2					
2. Drought					
2.1					
2.2					
2.3					
Etc.					

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Drought Issues

- Water Supply
- Water Demand
- Water Quality
- Landscaping
- Other:

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Seismic Hazard Issues

- Vulnerable Public Structures
- Vulnerable Private Structures
- Awareness and Outreach

- Soil Studies / Building Code Compliance
- Other:

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Extreme Heat Issues

- Access to Cooling Centers
- Cost of Electricity
- Urban Forest
- Other:

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Hazardous Materials Issues

- Education and Awareness
- Proximity to Train Lines
- Sensitive Receptors
- Other:

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Severe Weather Issues

- Property Maintenance
- Landscape and Tree Maintenance
- Public Awareness
- Other:

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Flood Issues

- Flood Infrastructure
- Stormwater
- Water Quality
- Non-Flood Zone Ponding
- Other:

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Disease / Pest Management Issues

- Diseased Trees
- West Nile Virus
- Other:

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Dam Failure Issues

- Evacuation Routes
- Public Awareness and Education
- Local Flood Control Infrastructure
- Other:

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INTERNATIONAL

Questions/Comments?

Alvie: abetancourt@sogate.org
Aaron: apfannenstiel@mbakerintl.com

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Meeting Materials

South Gate Local Hazard Mitigation Plan and Safety Element Update Project Management Team

Meeting 3: November 4, 2015

Included Materials:

- Draft Mitigation Actions
- StapleE Table
- Sign-In Sheet
- Images from Dot Voting activity

Mitigation Goals

1. Enhanced protection of life and property from hazard impacts.
2. Municipal and emergency operations are fully functional during disasters.
3. Strengthened partnerships within the community and throughout the region that enhance hazard mitigation, preparation, response, and recovery capabilities.
4. Educated and empowered community members prepare for, mitigate, respond to, and recover from hazards that affect their family and property.

Mitigation Action	Priority
1. Multiple Hazards	
1.10 Adopt, implement, and actively enforce the current state building code. *Hazards mitigated: drought, seismic hazards, extreme heat, flood*	
1.2 Adopt a policy to avoid siting new critical public facilities and infrastructure in areas of elevated vulnerability to flooding and seismic hazards. If siting such facilities in areas of elevated vulnerability is unavoidable, design facilities to remain operable during emergency situations to the greatest extent feasible. *Hazards mitigated: seismic hazards, flood*	
1.3 Work with utility companies and non-city agencies, including Southern California Edison, Southern California Gas Company, Los Angeles Metro, and telecommunication providers, to harden infrastructure to be more resilient to hazard situations, helping to provide safe service during emergency situations and to quickly fix any service interruptions. *Hazards mitigated: seismic hazards, severe weather, flood*	
1.4 Expand participation in the NotifyMe program to notify the community in the event of an occurring or imminent hazardous situation, including a need to evacuate. The program should support all commonly spoken languages and can be advertised through multiple methods (door-to-door notifications, phone, television, radio, and online/social media). Coordinate with the Los Angeles County Operational Area for best practices and for consistency with notification systems for surrounding communities. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	

Mitigation Action	Priority
1.5 Conduct a comprehensive and ongoing education campaign to improve awareness of hazard threats and ways to reduce risks. The campaign should include mailings, in-person workshops and events, and media notifications (television, radio, online/social media, etc.). The campaign should be designed to reach all members of the community, and should include materials in commonly spoken languages in the community, including English and Spanish. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	
1.6 Update and expand the City's Street Tree Master Plan to cover the following topics: • Attaining "Tree City USA" designation. • Tree maintenance including canopy and root maintenance with an emphasis on maintaining buffers between canopies and critical infrastructure. • Drought-tolerant and shade-providing tree palettes. • Tree vulnerability to high winds, with direction to replace vulnerable trees with more resilient species. • Mitigating tree pest and disease impacts. • Actions and funding sources expand the City's shade tree stock. • Best practices for private property plant selection and tree maintenance. *Hazards mitigated: drought, extreme heat, severe weather*	
1.7 Coordinate with LA County Public Works to designate Firestone Boulevard as an official County Disaster Route.	

Mitigation Action	Priority
Hazards mitigated: seismic hazards, hazardous materials, severe weather, flood, dam failure	
1.8 Update all emergency-related planning documents every five years to ensure consistency with state and federal law, best practices, local conditions, and recent science. Integrate the hazards research findings and actions in this Local Hazard Mitigation Plan with all City emergency planning efforts and programs. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	
1.9 Monitor and pursue hazard mitigation funding opportunities. *Hazards mitigated: drought, seismic hazards, extreme heat, hazardous materials, severe weather, flood, disease/pest management, dam failure*	
2. Drought	
2.1 Adopt and enforce the State Model Water Efficient Landscaping Ordinance.	
2.2 Work with regional partners, including the Los Angeles Unified School District and the Central Basin Water District, to develop a recycled water master plan, with the intention of identifying financially feasible approaches to expanding recycled water infrastructure throughout the city.	
2.3 Amend the Municipal Code to require that water fixtures in new buildings be more efficient than otherwise required by state law.	

Mitigation Action	Priority
2.4 Construct additional water storage facilities.	
2.5 Identify and pursue alternative sources of water to support potential shortages of deliveries from the Metropolitan Water District.	
2.6 Work with the Golden State Water Company to help ensure a sufficient long-term supply of water to the southeast portion of the community.	
2.7 Offer reduced-cost or free water audits for residents and businesses.	
2.8 Publicize available rebates and other financial incentives for equipment that reduces water use.	
2.9 Amend the Municipal Code to require new nonresidential buildings in a recycled water service area to include dual plumbing for potable and nonpotable water sources.	

Mitigation Action	Priority
2.10 As part of discretionary review, encourage new residential buildings in a recycled water service area to include dual plumbing for potable and nonpotable water sources.	
2.11 Continue retrofitting publicly landscaped areas with artificial turf or drought-tolerant landscaping.	
2.12 Require Urban Water Management Plan updates to consider more severe and long-lasting drought scenarios.	
3. Seismic Hazards	
3.1 Conduct a seismic study for public buildings and infrastructure and retrofit facilities based on findings and available funding.	
3.2 Conduct a seismically vulnerable private building inventory, with a focus on unreinforced masonry and "soft-story" buildings, and develop a prioritized list of recommended phasing for retrofits.	
3.3 Adopt a phased ordinance for seismic retrofits to require existing unreinforced buildings to meet current seismic standards. Identify and secure to the extent possible funding to assist property owners with retrofit costs.	
3.4 In coordination with state and regional agencies, conduct seismic evaluations of infrastructure owned by other agencies in the city, and identify funding sources to conduct seismic retrofits of vulnerable infrastructure.	

Mitigation Action	Priority
3.5 Retrofit City-owned facilities and infrastructure, including water storage tanks, to increase resiliency to seismic hazards and to remain operable immediately after seismic events.	
4. Extreme Heat	
4.1 On public facilities, conduct energy-efficiency audits, retrofit buildings to increase efficiency, and install solar panels to reduce demand on the electrical grid (increasing its resiliency during heat waves) and to save money and generate municipal revenue.	
4.2 Encourage solar panels on new and existing developments by widely publicizing available incentives and financing options, working with local PACE providers to expand outreach to lower-income and non-English-speaking neighborhoods, and participating in programs to reduce the cost of solar panels for residents.	
4.3 Work with community groups to identify and secure funding to install energy-efficient air conditioner units for homes without AC access, particularly for homes of lower-income residents, the elderly, and persons with disabilities.	
4.4 Require new nonresidential and multifamily development to incorporate high-reflectivity roofing and surface materials, shade trees, shade structures, and/or other infrastructure features to reduce human exposure to extreme heat and to mitigate the urban heat island effect.	

Mitigation Action	Priority
4.5 Upon discretionary review for significant remodels, require owners of existing parking lots to install infrastructure features to increase shade and reduce the urban heat island effect.	
4.6 Educate all outdoor City workers, including construction, landscaping, maintenance, and recreation staff, about the risks posed by extreme heat and how to reduce them.	
4.7 Include extreme heat as a hazard in the City's Emergency Operations Plan with clear guidelines to: • Designate public buildings and other community facilities as cooling centers that are easily accessible by all residents in all parts of South Gate, including individuals with limited mobility. • Distribute information about cooling centers. • Establish a temperature threshold as a minimum standard for opening and operating cooling centers.	
5. Hazardous Materials	
5.1 As part of the development review process, require all hazardous material storage tanks meet or exceed all required and recommended safety standards, including resiliency to natural hazards such as flooding and seismic hazards.	

Mitigation Action	Priority
5.2 As part of the development review process, continue to require soil testing for hazardous materials prior to construction activity, and to deny permits if risks from any hazardous materials are not mitigated to a generally safe level.	
5.3 Review the zoning ordinance and map and amend allowed uses to prevent siting facilities which may manufacture, store, use, transport, or allow hazardous materials near residential areas or other sensitive uses.	
5.4 Consult with Union Pacific Railroad (UPRR) on potential land use issues and safety concerns associated with the railroad rights-of-way in the city. As part of the consultation, UPRR should provide the City with its emergency response and recovery plans for assets located in the city.	
6. Flooding	
6.1 Monitor the effectiveness of current requirements for new developments to handle stormwater on-site, to the extent possible, through the use of permeable paving and other low-impact development strategies, and update the requirements as needed.	
6.2 Provide educational materials to existing property owners about the benefits of installing low-impact development stormwater components.	

Mitigation Action	Priority
6.3 Upgrade storm drain infrastructure in areas that frequently pond during strong rains.	
6.4 Retrofit public spaces to reduce stormwater runoff, including using permeable paving for sidewalks and parking lots.	
6.5 Continue to participate in the National Flood Insurance Program and maintain an effective and up-to-date Flood Plain Management Ordinance.	
6.6 Continue and expand the regular cleaning and maintenance of City storm drains to ensure they are functioning at full capacity.	
6.7 Continue requiring new development projects to reduce potential and existing flooding hazards as part of the development process.	
6.8 Analyze the flood potential associated with elevated reservoir failure in the community.	

Mitigation Action	Priority
7. Severe Weather	
7.1 Design future key infrastructure to withstand severe weather events beyond minimum code specifications.	
7.2 Monitor trees and other vegetation near power lines, and promptly inform utility companies if any vegetation may threaten power service during severe weather and/or requires trimming.	
8. Disease and Pest Management	
8.1 Coordinate with the Los Angeles County Department of Public Health to ensure South Gate residents have access to affordable flu vaccinations, and that community members are notified about the availability of flu vaccines.	
8.2 Work with the Greater Los Angeles County Vector Control District to implement pest management strategies to reduce health risks from disease vectors, to treat/reduce areas of standing water where mosquitoes may breed, and to support additional mosquito mitigation actions as needed.	
9. Dam Failure	
9.1 Work with the US Army Corps of Engineers and the Metropolitan Water District to support retrofit activities for dams that may pose an inundation risk for South Gate.	

Mitigation Action	Priority

Mitigation Actions Discussion

Mitigation actions are the steps the City will take over the next five years in reducing or preventing the risks and hazards identified within this Plan. As part of the development of this Plan, the City used the STAPLE/E Criteria to establish the proposed actions for review by the TAC.

STAPLE/E Review and Selection Criteria

Social
• Is the proposed action socially acceptable to the jurisdiction and surrounding community? • Are there equity issues involved that would mean that one segment of the jurisdiction and/or community is treated unfairly? • Will the action cause social disruption?
Technical
• Will the proposed action work? • Will it create more problems than it solves? • Does it solve a problem or only a symptom? • Is it the most useful action in light of other jurisdiction goals?
Administrative
• Can the jurisdiction implement the action? • Is there someone to coordinate and lead the effort? • Is there sufficient funding, staff, and technical support available? • Are there ongoing administrative requirements that need to be met?
Political
• Is the action politically acceptable? • Is there public support both to implement and to maintain the project?
Legal
• Is the jurisdiction authorized to implement the proposed action? • Are there legal side effects? Could the activity be construed as a taking? • Will the jurisdiction be liable for action or lack of action? • Will the activity be challenged?
Economic
• What are the costs and benefits of this action? • Do the benefits exceed the costs? • Are initial, maintenance, and administrative costs taken into account? • Has funding been secured for the proposed action? If not, what are the potential funding sources (public, non-profit, and private)? • How will this action affect the fiscal capability of the jurisdiction? • What burden will this action place on the tax base or local economy? • What are the budget and revenue effects of this activity? • Does the action contribute to other jurisdiction goals? • What benefits will the action provide?

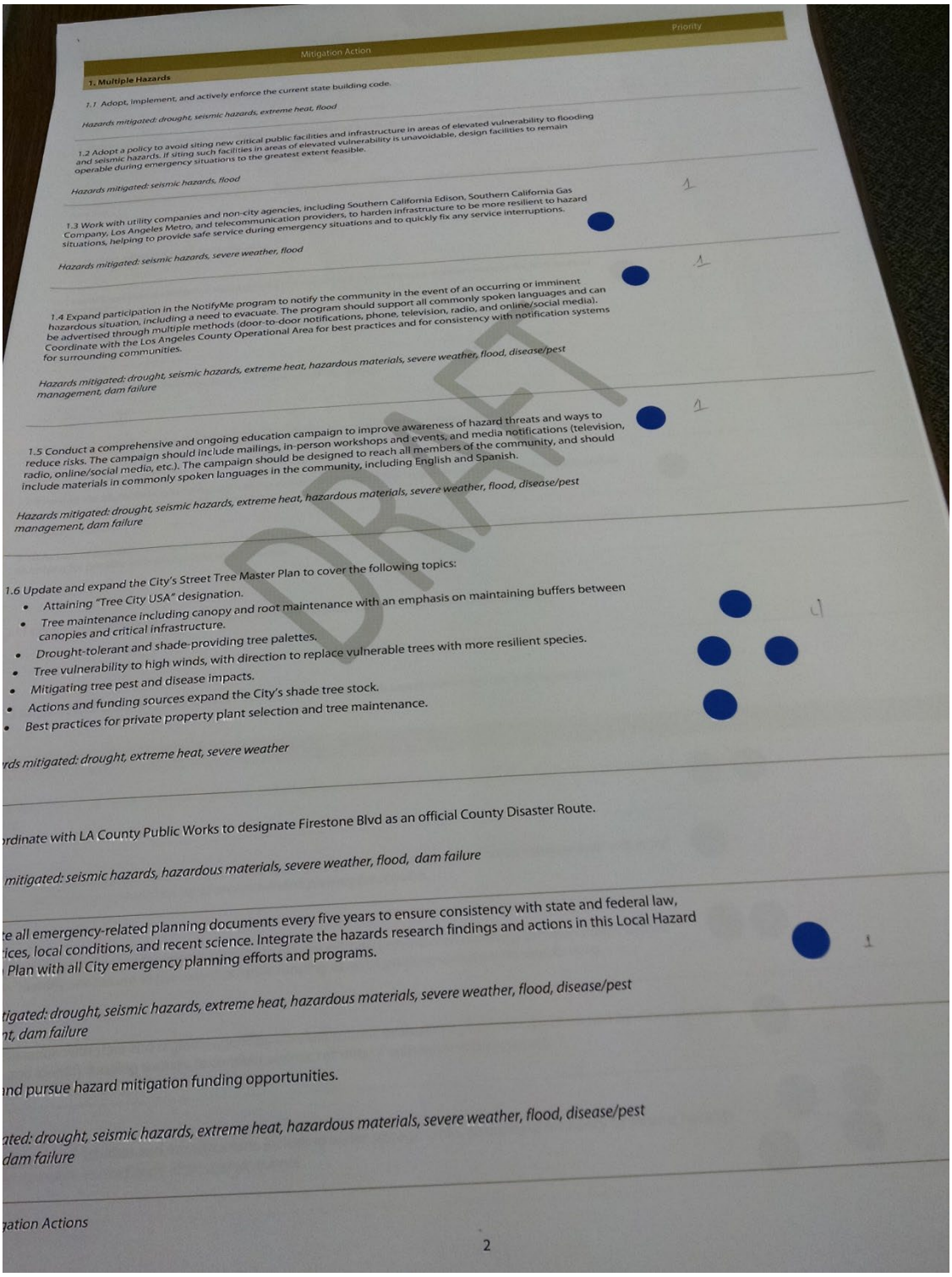
STAPLE/E Review and Selection Criteria

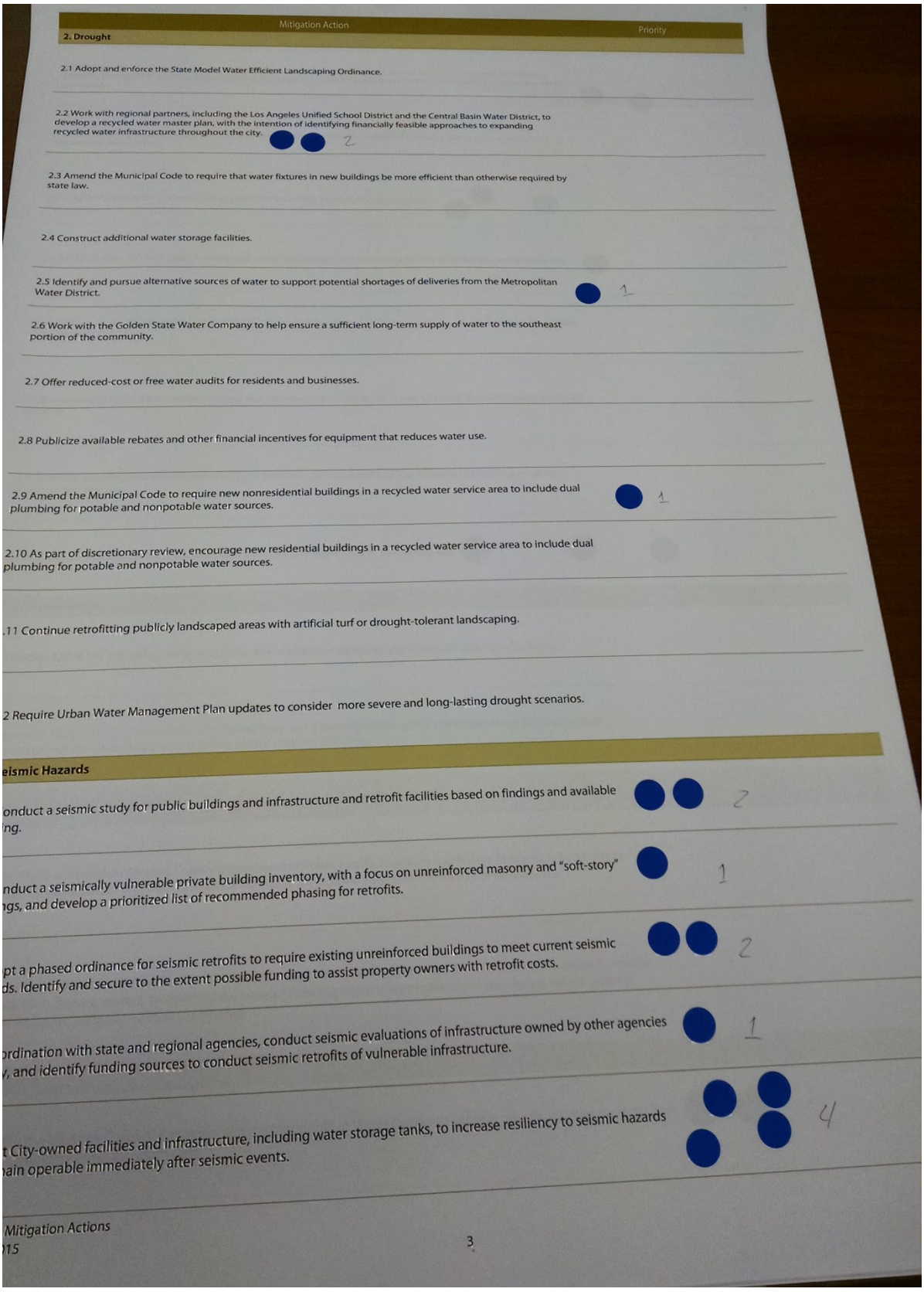
Environmental
• How will the action affect the environment? • Will the action need environmental regulatory approvals? • Will it meet local and state regulatory requirements? • Are endangered or threatened species likely to be affected?

Attendee Sign-In Sheet

Name	Department/Company	Telephone	Email
Richard J. Luna	Administration Department	323-563-9508	rjluna@sogate.org
Glenn Massey	Parks and Recreation Department	323-563-5448	gmassey@sogate.org
Jessica Jimenez	Community Development Department		jjimenez@sogate.org
Nick Berkuta	LA County Fire	323-585-5857	nberkuta@fire.lacounty.gov
Guillermo Petra	Public Works	323-357-9614	gpetra@sogate.org
Sheri Koomen	Police Department	323-563-5483	skoomen@sogate.org
Rosemary Vivero	LA County Fire Department	213-215-2193	Rosemary.vivero@fire.lacounty.gov
Kim Sao	Finance Department	562-999-2980	ksao@sogate.org
Edward Perez	Police Department	323-864-7281	eperez@sogate.org
JimTeeples	Police Department	323-563-5453	jteeples@sogate.org
Chris Castillo	Public Works Water	323-595-9627	ccastillo@sogate.org
Alvie Betancourt	Community Development	323-563-9526	abetancourt@sogate.org

Dot Voting Activity Images





Mitigation Action	Priority
2. Drought	
2.1 Adopt and enforce the State Model Water Efficient Landscaping Ordinance.	
2.2 Work with regional partners, including the Los Angeles Unified School District and the Central Basin Water District, to develop a recycled water master plan, with the intention of identifying financially feasible approaches to expanding recycled water infrastructure throughout the city.	2
2.3 Amend the Municipal Code to require that water fixtures in new buildings be more efficient than otherwise required by state law.	
2.4 Construct additional water storage facilities.	
2.5 Identify and pursue alternative sources of water to support potential shortages of deliveries from the Metropolitan Water District.	1
2.6 Work with the Golden State Water Company to help ensure a sufficient long-term supply of water to the southeast portion of the community.	
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Mitigation Actions
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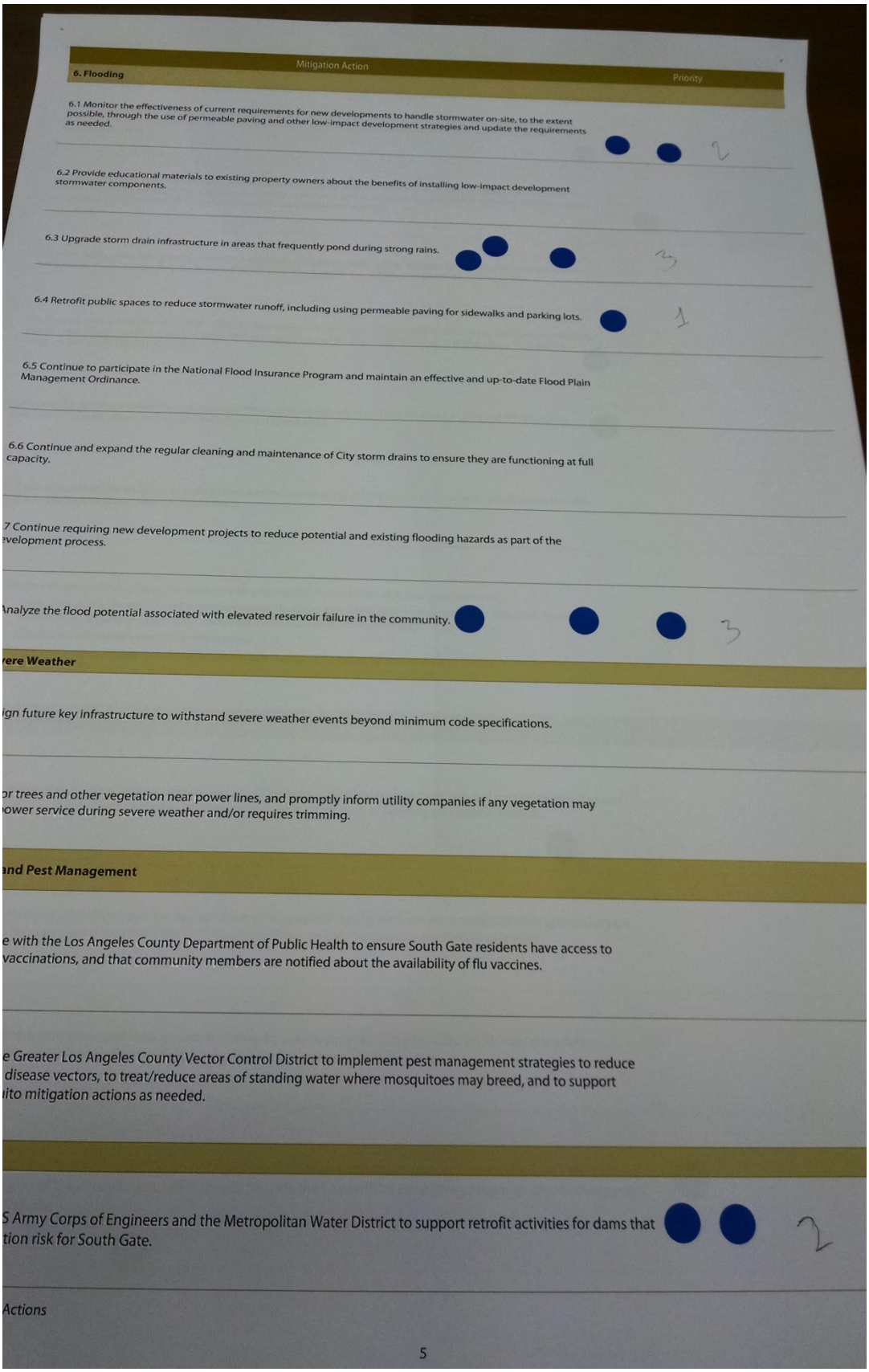

Mitigation Action	Priority
6. Flooding	
6.1 Monitor the effectiveness of current requirements for new developments to handle stormwater on-site, to the extent possible, through the use of permeable paving and other low-impact development strategies and update the requirements as needed.	2
6.2 Provide educational materials to existing property owners about the benefits of installing low-impact development stormwater components.	
6.3 Upgrade storm drain infrastructure in areas that frequently pond during strong rains.	3
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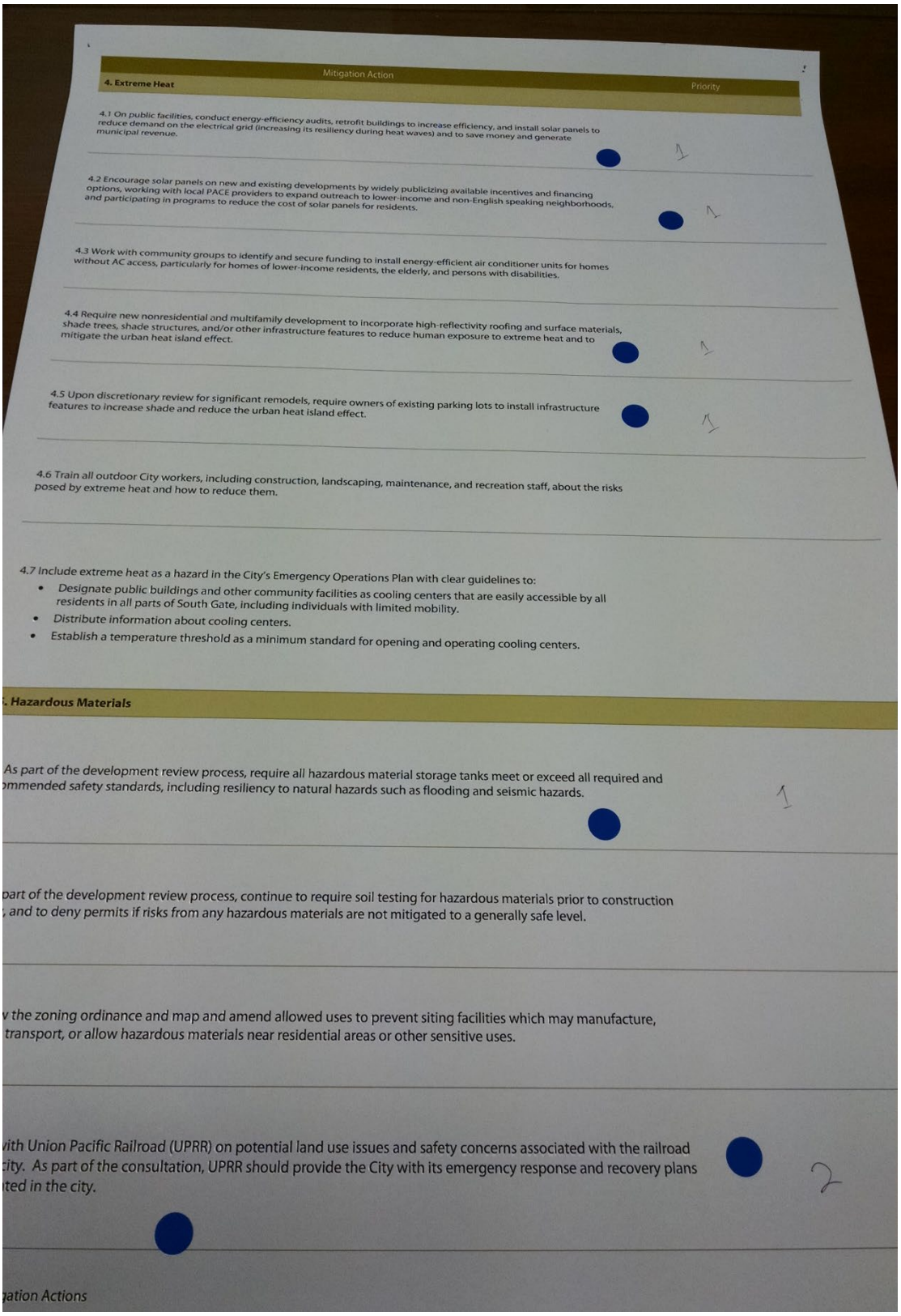

Mitigation Action	Priority
4. Extreme Heat	
4.1 On public facilities, conduct energy-efficiency audits, retrofit buildings to increase efficiency, and install solar panels to reduce demand on the electrical grid (increasing its resiliency during heat waves) and to save money and generate municipal revenue.	
4.2 Encourage solar panels on new and existing developments by widely publicizing available incentives and financing options, working with local PACE providers to expand outreach to lower-income and non-English speaking neighborhoods, and participating in programs to reduce the cost of solar panels for residents.	
4.3 Work with community groups to identify and secure funding to install energy-efficient air conditioner units for homes without AC access, particularly for homes of lower-income residents, the elderly, and persons with disabilities.	
4.4 Require new nonresidential and multifamily development to incorporate high-reflectivity roofing and surface materials, shade trees, shade structures, and/or other infrastructure features to reduce human exposure to extreme heat and to mitigate the urban heat island effect.	
4.5 Upon discretionary review for significant remodels, require owners of existing parking lots to install infrastructure features to increase shade and reduce the urban heat island effect.	
4.6 Train all outdoor City workers, including construction, landscaping, maintenance, and recreation staff, about the risks posed by extreme heat and how to reduce them.	
4.7 Include extreme heat as a hazard in the City's Emergency Operations Plan with clear guidelines to: • Designate public buildings and other community facilities as cooling centers that are easily accessible by all residents in all parts of South Gate, including individuals with limited mobility. • Distribute information about cooling centers. • Establish a temperature threshold as a minimum standard for opening and operating cooling centers.	
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APPENDIX B – PUBLIC OUTREACH MATERIALS AND OUTCOMES

1. LHMP Public Outreach and Engagement Summary
2. Webpages used for Public Outreach and Feedback
3. Planning Commission Agenda Bill (Public Review Period)

City of South Gate LHMP Public Engagement and Outreach Summary

The City of South Gate conducted several engagement and outreach efforts to introduce the Hazard Mitigation Plan and process to residents and businesses in the city. The following describes the efforts undertaken by South Gate during this process.

Community Event

South Gate hosted a booth at Family Day at South Gate Park on Saturday, October 24, 2015. Community members who visited the booth were able to complete the survey in person. At the booth, posters showed the impacts that various hazards would have on the City's critical infrastructure to raise hazard awareness among community members. The results of the in-person survey are included in the Online Survey section. At the event, 22 surveys were completed in Spanish and 45 were completed in English.

Online Survey

The City developed a separate website for the development of the LHMP (http://southgatehmp.com/), which provided an overview of the project, relevant project documents, invitations to upcoming public events, mailing list sign-up, contact information for City staff, and a link to the online survey. The survey, which was posted on September 8, 2015, was available in both Spanish and English. The response period was closed on January 11, 2016, with a total of 143 responses; however, not all questions were answered by all respondents. Below is a summary of the questions and results of the online questionnaire.

Existing and Potential Hazards

Community members were asked about hazards that had already impacted their homes, as well as which potential hazards were of the most concern to them. Over 90 percent of community members had not been impacted by a disaster at their current residence. Of the nearly 10 percent that had been impacted, earthquakes, diseases or pests, and

extreme heat were the most common hazards. Earthquakes, diseases or pests, and drought were the three potential hazards that caused the most concern for community members. The potential of dam failure was of lowest concern to participants.

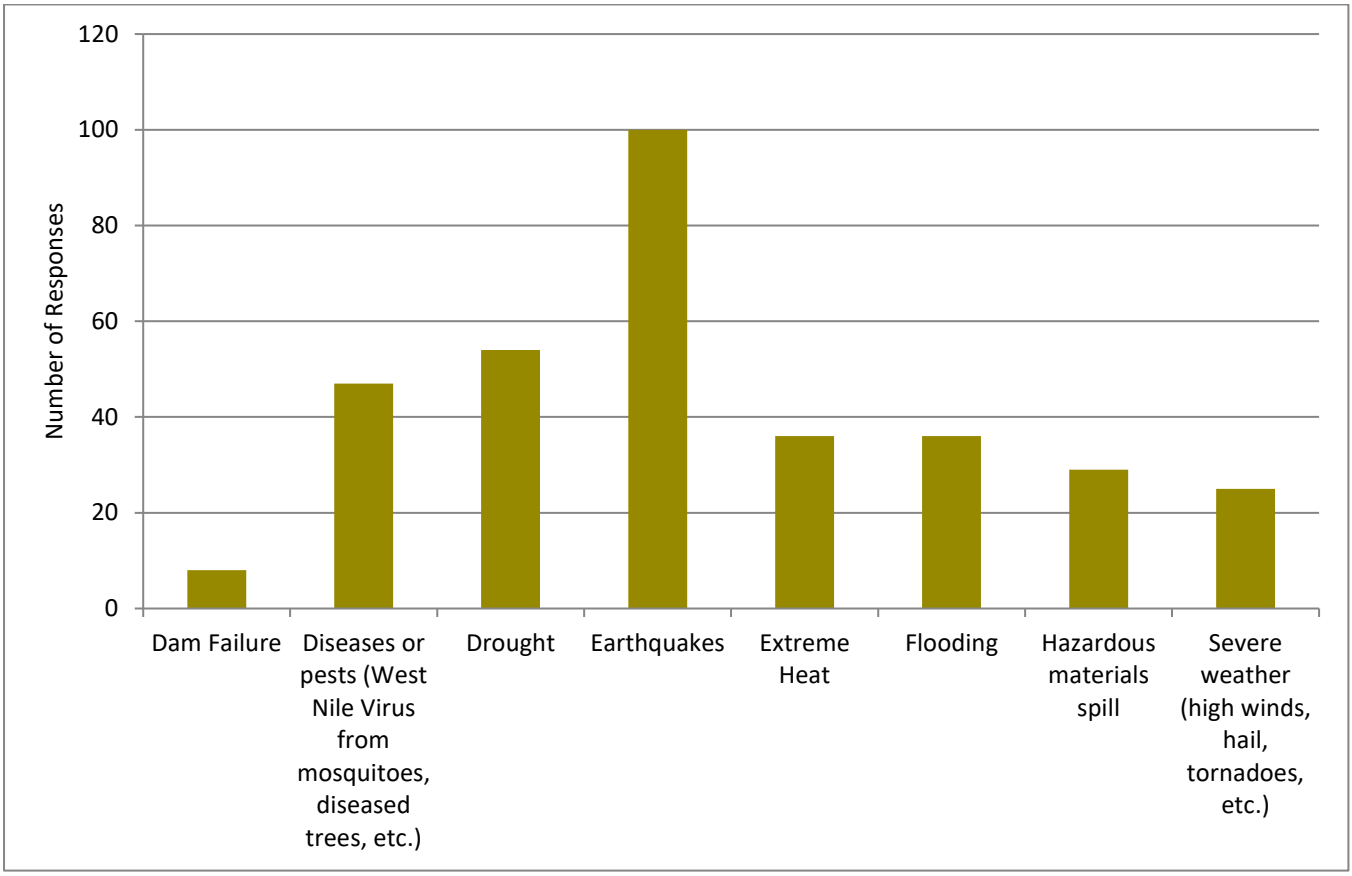
Table B-1. "Have you been impacted by a disaster in your current residence?"

	Total	Percent
Yes	11	9%
No	106	91%

Table B-2. "Select the disasters that you have been impacted by in your current residence"

	Total Reported Impacts
Diseases or pests (West Nile virus from mosquitoes, diseased trees, etc.)	3
Drought	2
Earthquakes	6
Extreme Heat	3
Flooding	2

Figure B-1. Hazards of most concern to your neighborhood



Personal Preparedness

In addition to identifying hazards of concern, participants were asked to explain individual steps they have taken toward increasing their individual preparedness for disaster. This understanding, while limited to the survey sample, can indicate the ability of the community to respond and recover from disaster. When asked about homeowners insurance, nearly 50 percent felt that their insurance was adequate to cover the hazards that could impact their home. Of community members who rented their homes, over three-fourths did not have renters insurance. While 24 percent of renters and homeowners surveyed had flood insurance, over 75 percent did not. Nearly half of the City is located within the 500-year flood zone, meaning that there is a 2 percent chance of a large flood occurring in that area each year.

Table B-3. "If you are a homeowner, do you have adequate homeowners insurance to cover the hazards that could impact your home?"

	Total	Percentage
Yes, my insurance coverage should be adequate.	44	47%
No, I don't believe my insurance coverage would be adequate for a major disaster.	15	16%
Unsure.	28	30%
I do not have an insurance policy.	7	7%

Table B-4. "If you rent your residence, do you have renters insurance?"

	Total	Percent
Yes	12	23%
No	40	77%

Table B-5. "Do you have flood insurance for your home?"

	Total	Percent
Yes	27	24%
No	85	76%

Most respondents have at least some of the basic supplies recommended to protect their well-being in the 72-hour period immediately after a disaster. Of the 18 items recommended, only six were owned by over half of the 143 respondents. The most commonly held item, a can opener, was only owned by 67 percent of participating community members. The least common item, a secondary source of heat, was possessed by only 12 community members.

Table B-6. "If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?"

	Total	Percent
Potable water (3 gallons per person)	86	60%
Cooking and eating utensils	80	56%
Can opener	96	67%
Canned/nonperishable foods (ready to eat)	87	61%
Gas grill/camping stove	58	41%
Extra medications	54	38%
First aid kit/supplies	73	51%
Portable AM/FM radio (solar powered, hand crank, or batteries)	48	34%
Handheld "walkie-talkie" radios (with batteries)	22	15%
Important family photos/documentation in a water and fireproof container	40	28%
Extra clothes and shoes	61	43%
Blanket(s)/sleeping bags	67	47%
Cash	45	31%
Flashlight (with batteries)	80	56%
Gasoline	15	10%
Telephone (with batteries)	44	31%
Pet supplies	38	27%
Secondary source of heat	12	8%

Community Preparedness

A connected community builds resiliency by providing neighbor-to-neighbor assistance on a short-term basis until emergency response personnel or supplies arrive. Identifying and understanding the needs of vulnerable neighbors (including the elderly, very, young, or disabled), allows community members to adequately assist those around them. In the survey, the City found that less than a third of respondents felt as though they were familiar with the special needs of their neighbors in the event of a disaster.

Table B-7. "Are you familiar with the special needs of your neighbors in the event of a disaster situation? (Special needs may include limited mobility, severe medical conditions, memory impairments.)"

	Total	Percent
Yes	38	29%
No	93	71%

Another way to improve community preparedness is to encourage community members be trained as part of South Gate's Community Emergency Response Team (CERT). CERT volunteers are trained in basic emergency response skills, including search and rescue, team organization, and evacuation safety procedures. During an emergency, community members who are CERT-trained can care for and protect others and assist and supplement emergency response professionals. Only about one-fifth of respondents were CERT-trained.

Table B-8. "Are you a trained member of your Community Emergency Response Team (CERT)?"

	Total	Percent
Yes	25	19%
No, but I would like to learn more about CERT.	72	55%
No, I am not interested in being a trained CERT member.	33	25%

Finally, community members were asked to identify which recommendations they would like to see the City pursue to improve resiliency and community engagement for future emergencies. Of the 143 participants in the survey, over half favored increased notifications and communication surrounding emergencies.

Table B-9. "How can the City help you become more prepared for a disaster?"

	Total	Percent
Provide effective emergency notifications and communication.	73	51%
Provide training and education to residents and business owners on how to reduce future damage.	66	46%
Provide community outreach regarding emergency preparedness.	61	43%
Create awareness of special needs and vulnerable populations.	53	37%

External Stakeholder Contact List

Metropolitan Water District
Attn: Mr. Kiernan Callahan
700 North Alameda Street
Los Angeles, CA 90012-2944
County of Los Angeles

Central Basin Municipal Water District
Attn: Lonnie Curtis
6252 Telegraph Road
Commerce, CA 90040

Department of Regional Planning
Attn: Mr. Richard Bruckner
320 West Temple Street, # 1390
Los Angeles, California 90012

Los Angeles County Fire Department
Attn: Mr. Daryl L. Osby, Fire Chief
1320 North Eastern Avenue
Los Angeles, CA 90063

Southern California Edison
Attention: Ms. Adeline Yoong
2800 East Willow Street
Long Beach, CA 90806

L.A.D.W.P
Attention: Mr. David Wright
P.O. Box 51111
Los Angeles, California 90051-0100

Gabrieleno Band of Mission Indians
1999 Avenue of the Stars Ste. 1100
Los Angeles, 90067

South Gate Chamber of Commerce
3350 Tweedy Boulevard
South Gate, CA 90280

SCAG - Environmental Planning Division
Attention: Mr. Jacob Lieb
818 W. Seventh Street, 12th Floor
Los Angeles, California 90017

Leland R. Weaver Public Library
Attn: Grisel Oquendo
4035 Tweedy Boulevard
South Gate, CA 90280

Aldo Schindler
Community Development Director
City of Downey
11111 Brookshire Avenue
Downey, CA 90241

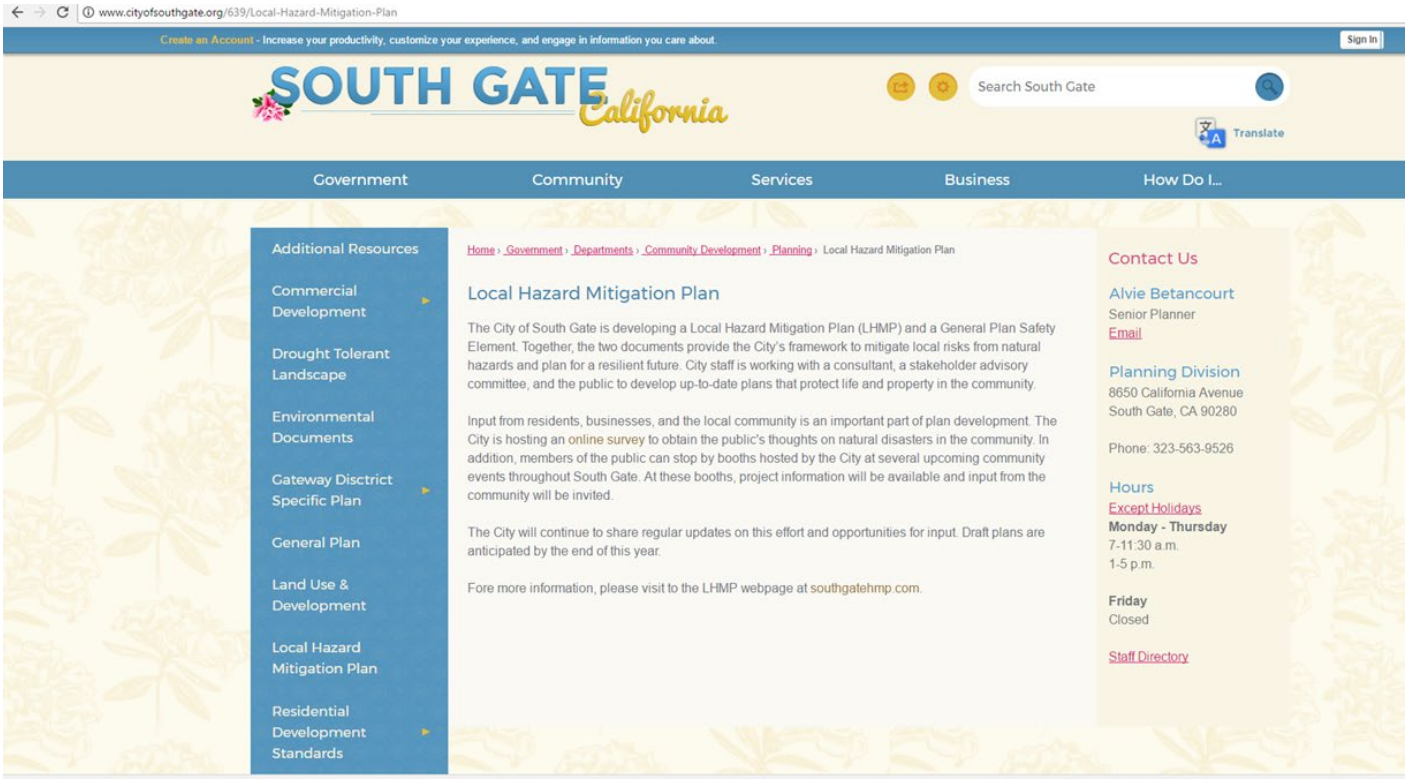
John King
Planning Manager
City of Paramount
16400 Colorado Avenue
Paramount, CA 90723

Michael Allen
Community Development Manager
5220 Santa Ana Street
Cudahy, California 90201

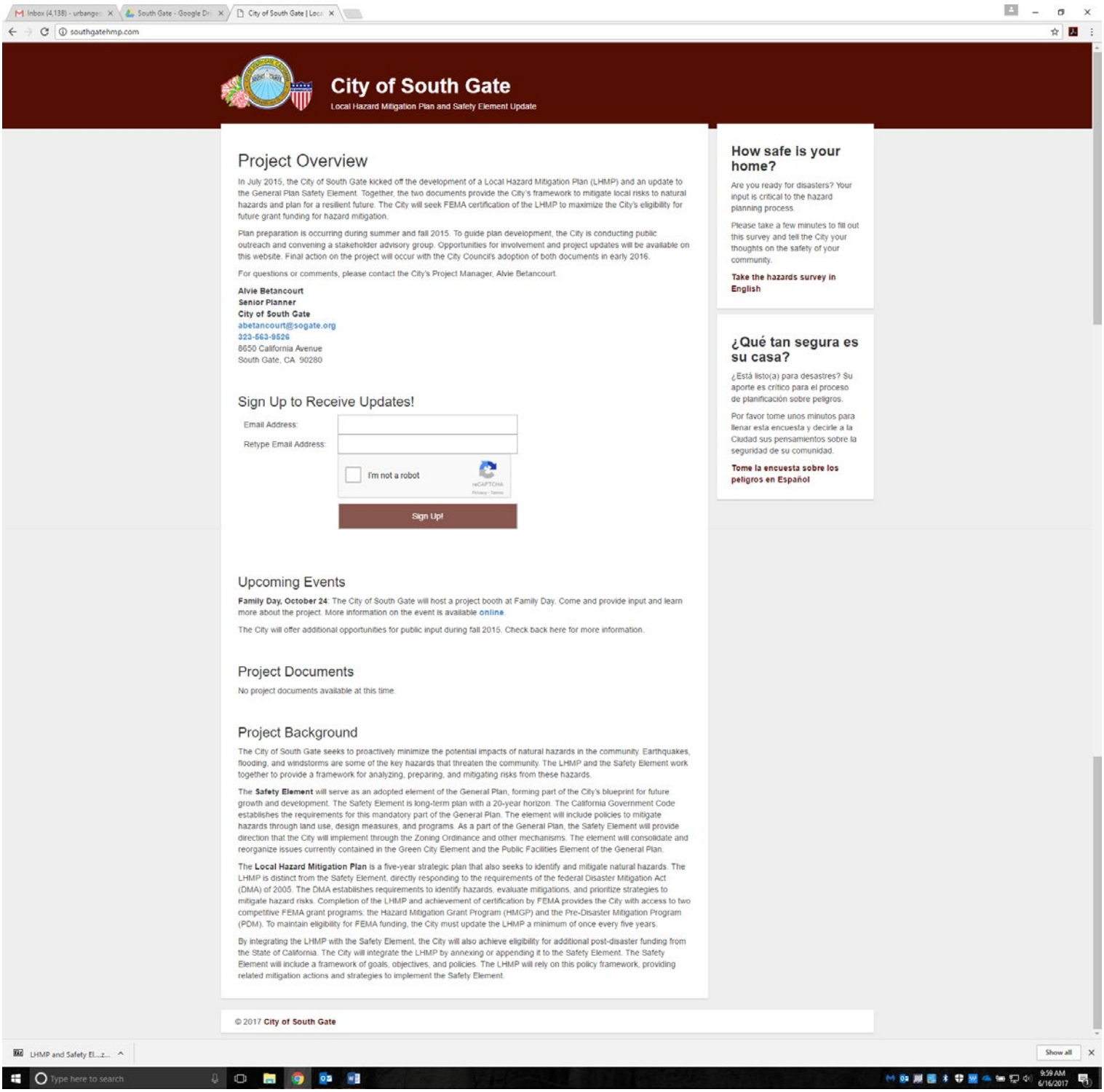
Carlos Luis
Senior Planner
City of Huntington Park
6550 Miles Avenue
Huntington Park, CA 90255

Mike Poland
Planning Manager
City of Lynwood
11330 Bullis Road
Lynwood, CA 90262

City of South Gate Webpage:



LHMP Project Website:



Planning Commission Agenda Bill:

ITEM NO. 3

City of South Gate
PLANNING COMMISSION

AGENDA BILL

For the Regular Meeting of: ***April 5, 2016***

Senior Planner: *Alvie Betancourt* ***Director Community Development:*** *Joe Perez*

SUBJECT: SAFETY ELEMENT AND LOCAL HAZARD MITIGATION PLAN - UPDATE

RECOMMENDED MOTION: Receive and File

NOTICING PROCEDURES: None. This is a discussion and preview of the upcoming Safety Element and Local Hazard Mitigation Plans. No decisions will be requested of the Planning Commission at this time.

REPORT SUMMARY: The Planning Division is in the process of updating the General Plan Safety Element and the Local Hazard Mitigation Plan (LHMP). City staff, with the support of the consultant team (Michael Baker International), has conducted three steering committee meetings this fiscal year with Finance, Police, Public Works, Parks and Recreation and County Fire participants. Furthermore, an interactive website where residents were able to contribute to the data gathering process was made available. We also conducted Federal Emergency Management Agency (FEMA) mandated public outreach by hosting a booth at the October 24, 2015 Family Day event at South Gate Regional Park; over 60 participants providing feedback toward both efforts and took part in survey and data collection efforts. Next steps include producing draft documents for staff review followed by public dissemination and submittal to FEMA for certification.

The Safety Element is a mandatory element of the General Plan required by Senate Bill (SB) 351, an act that became law on February 23, 1971. The purpose of the General Plan Safety Element is to identify natural or human activity-related hazards that exist in South Gate and to define policy objectives and implementation actions to address them. Some naturally occurring hazards may be unavoidable, but the potential impact on South Gate can be reduced through advance planning and preparation. The Safety Element addresses geologic, seismic, flood, and fire hazards, as well as hazards created by human activity such as hazardous materials and incidents that call for emergency protection. The Safety Element describes the City's efforts to prepare for and respond to emergencies. Public safety planning generally focuses on how an agency or community members will prepare for, respond to, or recover from a disaster. Hazard mitigation planning focuses on how the impact of a disaster might be lessened. The Local Hazard Mitigation Plan includes an assessment of the City's risk related to natural hazard impacts such as drought, seismic events, extreme heat, and flooding. The LHMP also includes a comprehensive set of actions the City will complete to mitigate, or reduce, the impacts of those hazards.

1

The LHMP is distinct from the Safety Element, directly responding to the requirements of the federal Disaster Mitigation Act (DMA) of 2005. The DMA establishes requirements to identify hazards, evaluate mitigations, and prioritize strategies to mitigate hazard risks. Completion of the LHMP and achievement of certification by FEMA provides the City with access to two competitive FEMA grant programs: the Hazard Mitigation Grant Program (HMGP) and the Pre-Disaster Mitigation Program (PDM). To maintain eligibility for FEMA funding, the City must update the LHMP a minimum of once every five years.

By integrating the LHMP with the Safety Element, the City will achieve eligibility for additional post-disaster funding from the State of California. The City will integrate the LHMP by annexing or appending it to the Safety Element. The Safety Element will include a framework of goals, objectives, and policies. The LHMP will rely on this policy framework, providing related mitigation actions and strategies to implement the Safety Element.

ATTACHMENTS: None at this time.

APPENDIX C – MASTER FACILITIES LIST

Table C-1 provides a master list of critical facilities and facilities of concern. Figure C-1 maps facilities of concern.

Table C-1. Master Facilities List

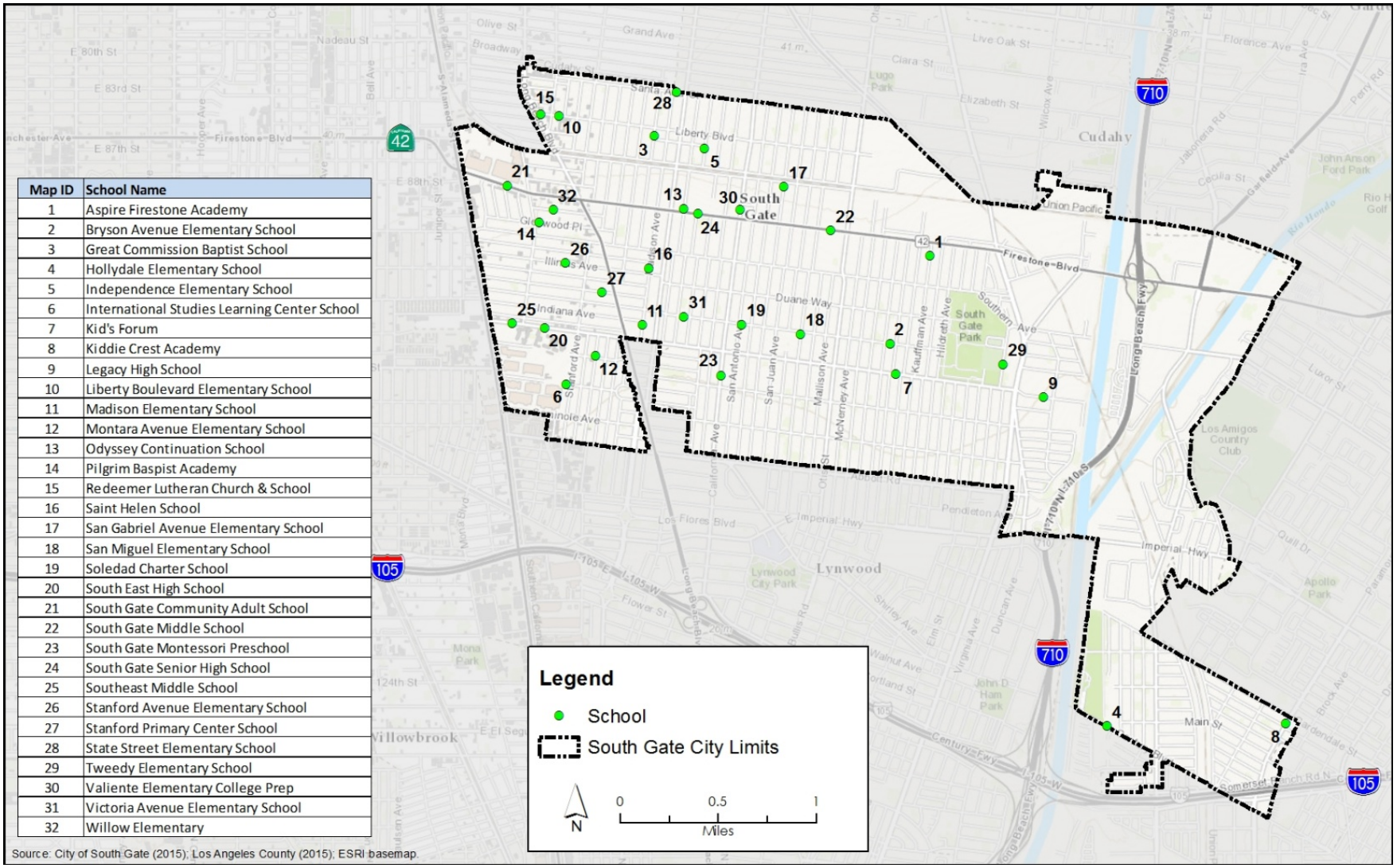
	Facility	Address	Owner
City Facilities	City of South Gate Civic Center	8650 California Avenue	City of South Gate
	Public Works Corporate Yard	4244 Santa Ana Street	City of South Gate
	Parks & Recreation - Administration	4900 Southern Avenue	City of South Gate
	Parks & Recreation - South Gate Girls Clubhouse	4940 Southern Avenue	City of South Gate
	Parks & Recreation - South Gate Golf Course	9615 Pinehurst Avenue	City of South Gate
	Parks & Recreation - South Gate Senior Center	4855 Tweedy Boulevard	City of South Gate
	Parks & Recreation - South Gate Sports Center	9520 Hildreth Avenue	City of South Gate
	Parks & Recreation - Hollydale Community Resource Center	12221 Industrial Avenue	City of South Gate
	Parks & Recreation - Westside Community Resource Center	9200 State Street	City of South Gate
County Facilities	LA County Fire Station #54	4867 Southern Pl	City of South Gate
	L.A. County Fire Station #57	5720 Gardendale Avenue	City of South Gate
Schools (Facilities of Concern)	Aspire Firestone Academy	8929 Kauffman Ave, South Gate, CA 90280	LA Unified School District
	Bryson Avenue Elementary School	4470 Missouri Avenue, South Gate, CA 90280	LA Unified School District
	Great Commission Baptist School	8420 South Gate Avenue, South Gate, CA 90280	LA Unified School District
	Hollydale Elementary School	5511 Century Boulevard, South Gate, CA 90280	Paramount School District
	Independence Elementary School	8435 Victoria Avenue, South Gate, CA 90280	LA Unified School District

Facility	Address	Owner
International Studies Learning Center School	2701 Sequoia Drive, South Gate, CA 90280	LA Unified School District
Kiddie Crest Academy	13067 Paramount Blvd, South Gate, CA 90280	LA Unified School District
Kid's Forum	4513 Tweedy Boulevard, South Gate, CA 90280	LA Unified School District
Legacy High School	5225 Tweedy Blvd, South Gate, CA 90280	LA Unified School District
Liberty Boulevard Elementary School	2728 Liberty Boulevard, South Gate, CA 90280	LA Unified School District
Madison Elementary School	9820 Madison Avenue, South Gate, CA 90280	LA Unified School District
Montara Avenue Elementary School	10018 Montara Avenue, South Gate, CA 90280	LA Unified School District
Odyssey Continuation School	8693 Dearborn Avenue, South Gate, CA 90280	LA Unified School District
Pilgrim Baptist Academy	2702 Glenwood Pl, South Gate, CA 90280	LA Unified School District
Redeemer Lutheran Church & School	2626 Liberty Blvd, South Gate, CA	LA Unified School District
Saint Helen School	9329 Madison Ave, South Gate, CA	LA Unified School District
San Gabriel Avenue Elementary School	8628 San Gabriel Avenue, South Gate, CA 90280	LA Unified School District
San Miguel Elementary School	9801 San Miguel Avenue, South Gate, CA 90280	LA Unified School District
Soledad Charter School	3616 Missouri Ave, South Gate, CA 90280	LA Unified School District
South East High School	2720 Tweedy Boulevard, South Gate, CA 90280	LA Unified School District
South Gate Community Adult School	2525 Firestone Boulevard, South Gate, CA 90280	LA Unified School District
South Gate Middle School	4100 Firestone Boulevard, South Gate, CA 90280	LA Unified School District
South Gate Montessori Preschool	10108 California Ave, South Gate, CA	LA Unified School District
South Gate Senior High School	3351 Firestone Boulevard, South Gate, CA 90280	LA Unified School District
Southeast Middle School	2560 Tweedy Boulevard, South Gate, CA 90280	LA Unified School District
Stanford Avenue Elementary School	2833 Illinois Avenue, South Gate, CA 90280	LA Unified School District

	Facility	Address	Owner
	Stanford Primary Center School	3020 Kansas Avenue, South Gate, CA 90280	LA Unified School District
	State Street Elementary School	3211 Santa Ana Street, South Gate, CA 90280	LA Unified School District
	Tweedy Elementary School	9724 Pinehurst Avenue, South Gate, CA 90280	LA Unified School District
	Valiente Elementary College Prep	8691 California Ave, South Gate, CA 90280	LA Unified School District
	Victoria Avenue Elementary School	3320 Missouri Avenue, South Gate, CA 90280	LA Unified School District
	Willow Elementary	2777 Willow Place, South Gate, CA 90280	LA Unified School District
Other Facilities	High Tension Power Lines	Powerline Easements	LA DWP
	Water Infrastructure (Well Sites and Reservoirs)	Confidential List	Confidential List
	MWD Water Line	Multiple	MWD
	Bridges	Multiple	Multiple

Source: City of South Gate

Figure C-1. Facilities of Concern



Map ID	School Name
1	Aspire Firestone Academy
2	Bryson Avenue Elementary School
3	Great Commission Baptist School
4	Hollydale Elementary School
5	Independence Elementary School
6	International Studies Learning Center School
7	Kid's Forum
8	Kiddie Crest Academy
9	Legacy High School
10	Liberty Boulevard Elementary School
11	Madison Elementary School
12	Montara Avenue Elementary School
13	Odyssey Continuation School
14	Pilgrim Baspist Academy
15	Redeemer Lutheran Church & School
16	Saint Helen School
17	San Gabriel Avenue Elementary School
18	San Miguel Elementary School
19	Soledad Charter School
20	South East High School
21	South Gate Community Adult School
22	South Gate Middle School
23	South Gate Montessori Preschool
24	South Gate Senior High School
25	Southeast Middle School
26	Stanford Avenue Elementary School
27	Stanford Primary Center School
28	State Street Elementary School
29	Tweedy Elementary School
30	Valiente Elementary College Prep
31	Victoria Avenue Elementary School
32	Willow Elementary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