City of Lakewood

Water Shortage Contingency Plan

[This page intentionally left blank]

RESOLUTION NO. 2021-35

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LAKEWOOD ADOPTING THE CITY OF LAKEWOOD WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the Urban Water Management Planning Act requires all water purveyors serving more than 3,000 customers or supplying more that 3,000 acre-feet of water annually to prepare a stand-alone Water Shortage Contingency Plan; and

WHEREAS, the primary purpose of the Water Shortage Contingency Plan is to plan for the conservation and efficient use of water supplies in the event of a water shortage; and

WHEREAS, the City is an urban water purveyor serving over 59,000 customers; and

WHEREAS, the Water Shortage Contingency Plan must be adopted before July 1, 2021 after public review and public hearing, and filed with the State of California Department of Water Resources within thirty days of adoption; and

WHEREAS, the Water Shortage Contingency Plan, was reviewed by the Water Resources Committee on April 22, 2021 and June 15, 2021 meetings as part of the 2020 Urban Water Management Plan Update; and

WHEREAS, said Water Resources Committee recommends that said Plan be submitted to public review and approved by the City Council following a public hearing; and

WHEREAS, said Plan has been available for public review beginning April 27, 2021;

NOW, THEREFORE, the City Council of the City of Lakewood does hereby resolve as follows:

SECTION 1. The Water Shortage Contingency Plan is hereby adopted and filed with the City Clerk. The City Council finds that said Water Shortage Contingency Plan, has been submitted to a public review and a public hearing before the City Council.

SECTION 2. The Water Shortage Contingency Plan is hereby approved, and the Mayor is authorized and directed to file the same with the California Department of Water Resources within thirty (30) days.

Resolution No. 2021-35
Page 2

ADOPTED AND APPROVED THIS 22ND DAY OF JUNE, 2021.

Mayor

ATTEST:

City Clerk

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

Section 1
Introduction and Overview

1.1 Introduction

The City's water supply sources include local groundwater and recycled water supplies. The City maintains ten water wells, a 2,500 gallons-per-minute water treatment facility, three water storage facilities, two connections to Metropolitan Water District of Southern California import supplies through Central Basin Municipal Water District, and four emergency interconnections with Golden State Water Company (GSWC), the City of Cerritos, the City of Long Beach, and the City of Signal Hill. Based on updated information, it is assumed that the City's water supply is reliable and 100% available during normal, single, and multiple drought conditions.

The 2019 Annual Progress Report by the Metropolitan Water District (Appendix C) assessed the conditions for both the Central and West Coast Basins of Los Angeles County. Their comprehensive analysis included analyzing groundwater levels, water quality, and future plans for preserving groundwater resources. This comprehensive analysis indicates that the groundwater supply will continue to be a reliable source for the foreseeable future due to artificial replenishment, natural replenishment, and controlled pumping.

The City of Lakewood expects the availability of groundwater supplies to remain constant over the next 20 years in this managed basin. The supply estimates are based on the annual allowable pumping rights and carryover from the previous year. A severe single dry year or several consecutive dry years would not impact the City's ability to meet water demand.

Prolonged drought, more than multiple dry years, could result in a water supply shortfall. The City's ability to maintain reliable water supplies hinges on the maintenance of the groundwater basin. The Los Angeles County Department of Public Works operates two recharge spreading grounds in the Central Basin: Rio Hondo and San Gabriel River. The ability to "stockpile" water during wet years increases the reliability in dry years.

A prolonged drought without recharge of the groundwater table could eventually lower the groundwater table and impact the ability to pump water from the basin. A significant drop in the groundwater table could mean the loss in groundwater production wells. The City estimates that a 50 percent loss in the groundwater supply would have to occur to affect the City's water production. If the drought lasted more than several years and no groundwater recharge occurred for at least two years, the City could lose two or three production facilities; that is the groundwater table would drop to a level that the water bearing strata would lay below the well perforations. In such situations the Watermaster could reduce the amount of allowed pumping allocation for local groundwater producers.

A change in the Central Groundwater Basin Judgment also allows greater flexibility for the groundwater producer. The City is now able to carryover up to 60 percent in excess of our annual water allowance beginning in 2016. This allows us to bank water during wet years and for extractions during periods of drought without harming the overall operation of the basin.

The long-term solution to water supply reliability lies in the ability to develop methods to reduce the amount of import water used for groundwater recharge. The Water Replenishment District of Southern California (WRD) has finished their Groundwater Reliability Improvement Program (GRIP) and Water Independence Now (WIN) program that develop local, sustainable sources of water including recycled and storm water for use in groundwater replenishment.

The GRIP Recycled Water Project includes the development of a new water supply for groundwater replenishment. This program is a major component of WRD's Water Independence Now (WIN) strategy to become completely independent from imported water supplies and establish local sustainability for the groundwater basins. For GRIP, WRD is to use an additional 21,000 acre-foot per year (AFY) of recycled water for groundwater recharge via surface spreading in the Montebello Forebay Spreading Grounds (MFSG). The 21,000 AFY of new replenishment supply has been online since 2019.

1.2 Water Shortage Contingency Plan

The Water Shortage Contingency Plan (WSCP) outlines the City's planned response to water supply shortages. The water conservation measures and progressive restrictions on water use outlined in this WSCP are designed to provide a measure of certainty to water users and enable the City to control water use, provide a consistent water supply, and accurately plan and implement water management measures that will benefit the public.

This WSCP describes the measures to be implemented during declared water shortages, or declared water emergencies by either City, State, or Federal government. The WSCP outlines six stages of drought response actions to be implemented in times of shortage, with water use restrictions that increase in direct response to decreasing water supply.

1.3 Current Water Supply Reliability

As a groundwater producer, Lakewood benefits from the security associated with an adjudicated groundwater basin. The three-year minimum water supply would be based on the adjudicated groundwater extraction rights held by the utility. Lakewood currently owns 9,432 acre-feet of extraction rights and 1,500 acre-feet in drought carryover. The Watermaster, which oversees the execution of the judgment, controls the extraction of water from the Central Groundwater Basin, and could call for a reduction in groundwater extraction during prolonged drought. Though this type of restriction has not occurred since the adjudication of the basin, a long-term cessation of recharge could trigger such action. The purchase of recycled water is based on customer demand, which varies based on local rainfall.

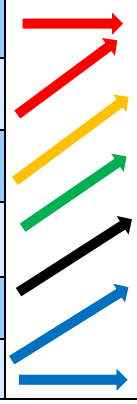
This scenario is not likely unless the number of dry years continues past three years, and the Water Replenishment District is unable to provide sufficient replenishment to sustain an adequate water supply of the basin at levels currently approved by the Court.

1.4 Six Standard Water Shortage Phases

The City's Water Shortage Contingency Plan outlines six specific phases of water conservation that closely resemble the new requirements of this Urban Water Management Plan. These phases are designed to be implemented during times of water supply shortage to ensure that the demand for water by consumers is met while maintaining control over water use and water supply. The City's WSCP includes both voluntary and mandatory water shortage contingencies which vary according to the severity of the water shortage. These phases may be implemented by Council action in the event of a City, State or Federal water conservation mandate, as well as any unforeseen water emergency.

The six phases in the City's WSCP are summarized in Table 1-1 below.

Table 1-1: Water Shortage Contingency Plan Levels

Phases in City of Lakewood Water Shortage Contingency Plan			Crosswalk	2020 WSCP Mandated Shortage Levels			
Phase	Percent Supply Reduction	Water Supply Condition		Stage	Percent Supply Reduction	Water Supply Condition	Compliance with water savings measures
Voluntary	Up to 10%	Declaration of Drought by State or Regional Agency calling for 10% reduction		1	Up to 10%	Normal	Voluntary
I	Up to 10%	Declaration of Drought by State or Regional Agency calling for 10% reduction		2	Up to 20%	Slightly Restricted	Mandatory
II	Up to 20%	Declaration of Drought by State or Regional Agency calling for 20% reduction		3	Up to 30%	Moderately Restricted	Mandatory
III	Up to 30%	Declaration of Drought by State or Regional Agency calling for 30% reduction		4	Up to 40%	Restricted	Mandatory
IV	Up to 40%	Halt of artificial recharge of groundwater basin over 3 year period		5	Up to 50%	Severely Restricted	Mandatory
V	Up to 50%	Halt of artificial recharge of groundwater basin over 5 year period		6	>50%	Extremely Restricted	Mandatory

Section 2
2020 UWMP Water Supply Reliability Assessment

In accordance with CWC Section 10632(a), the water supply reliability analysis from the 2020 UWMP is provided herein.

2.1 Service Area Reliability Assessment

In order to determine the Average Year, Single-Dry Year, and Five-consecutive dry years, the City reviewed the historical rainfall data from Los Angeles County Department of Public Works Climatological Record Montana Station 225. These defined conditions are used to forecast the corresponding level of water supply availability.

Table 2-1 identifies each Year Type and the corresponding supply available to serve the demands during historical average, single, and multiple dry year conditions. The Volume Available combines both potable and recycled water and is presented as 100% reliable for all year types.

Table 2-1: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location_____
		☑	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2020	9,882	100%
Single-Dry Year	2018	9,882	100%
Consecutive Dry Years 1st Year	2012	9,882	100%
Consecutive Dry Years 2nd Year	2013	9,882	100%
Consecutive Dry Years 3rd Year	2014	9,882	100%
Consecutive Dry Years 4th Year	2015	9,882	100%
Consecutive Dry Years 5th Year	2016	9,882	100%

2.2 Normal Year

A normal water-year can be described as a year that most closely represents median local runoff levels and patterns. The City selected the year 2020 to represent the normal year or average year. The average rainfall level in the City of Lakewood for 2020 was 14.22 inches.

These future demand projections are based on the estimated population levels in Lakewood over the next twenty years and the projected per capita water demands described for the same twenty years. Future supply projections are based on the reasonably available groundwater volumes for this same period. Based on the City's current/projected water supply, the City has more than sufficient available resources to serve future water demands.

Table 2-2 summarizes the City's projected supply and water demands through 2040.

Table 2-2: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040
Supply totals (*from Table 6-9 of 2020 UWMP Update*)	9,882	9,882	9,882	9,882
Demand totals (*from Table 4-3 of 2020 UWMP Update*)	7,138	7,071	7,005	6,939
Difference	2,744	2,811	2,877	2,943

2.3 Single Dry Year

A single-dry year can be described as a year that shows below average rainfall for one year. The City chose the year 2018 to represent the single dry year. The average rainfall level in the City of Lakewood for 2018 was 3.65 inches.

Table 2-3 summarizes the City's projected supply and demand through 2040 for a single dry year.

Table 2-3: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040
Supply totals	9,882	9,882	9,882	9,882
Demand totals	7,071	7,005	6,939	6,874
Difference	2,811	2,877	2,943	3,008

2.4 Five-Consecutive-Year Drought Water Supply Years

Five consecutive dry years can be described as a five-year period that shows below average rainfall. The City chose the year 2012 to 2016 to represent five consecutive dry years. The average rainfall levels in the City of Lakewood for calendar years 2012 to 2016 were 8.31 inches, 7.55 inches, 5.04 inches, 10.12 inches, and 6.48 inches respectively.

Table 2-4 summarizes the City's projected supply and demand through 2040 for multiple dry years.

Table 2-4: Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040
First year	Supply totals	9,882	9,882	9,882	9,882
	Demand totals	7,071	7,005	6,939	6,874
	Difference	2,811	2,877	2,943	3,008
Second year	Supply totals	9,882	9,882	9,882	9,882
	Demand totals	7,005	6,939	6,874	6,810
	Difference	2,877	2,943	3,008	3,072

		2025	2030	2035	2040
Third year	Supply totals	9,882	9,882	9,882	9,882
	Demand totals	6,939	6,874	6,810	6,746
	Difference	2,943	3,008	3,072	3,136
Fourth Year	Supply Totals	9,882	9,882	9,882	9,882
	Demand Totals	6,874	6,810	6,746	6,683
	Difference	3,008	3,072	3,136	3,199
Fifth Year	Supply Totals	9,882	9,882	9,882	9,882
	Demand Totals	6,810	6,746	6,683	6,621
	Difference	3,072	3,136	3,199	3,261

2.5 Five-Year Drought Risk Assessment

Historically, water demands have increased in dry years due to climate conditions, but recently dry years have shown a decrease in water demands due to both voluntary and mandatory conservation efforts. This Drought Risk Assessment takes both of these assumptions into account and the City will make the conservative assumption that water demand will not increase dramatically during the five-year drought period but will see a slight decrease as we experienced in the 5-year drought during 2012-2016.

For this Drought Risk Assessment (as well as the 2020 UWMP as a whole), the supply of water to the City will remain the same for the five-year period as the 2019 Regional Groundwater Monitoring Report by the Metropolitan Water District indicates that the groundwater supply will continue to be a reliable source for the foreseeable future due to artificial replenishment, natural replenishment, and controlled pumping.

Using the assumptions and methodology discussed above, the Drought Risk Assessment shows no anticipated shortages over a five-year drought period beginning in 2021 (summarized in Table 2-5).

Table 2-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2021	Total
Total Water Use	7,190
Total Supplies	9,882
Surplus/Shortfall w/o WSCP Action	2,692
Planned WSCP Actions (Use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/Shortfall	2,692
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	7,177
Total Supplies	9,882
Surplus/Shortfall w/o WSCP Action	2,705
Planned WSCP Actions (Use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/Shortfall	2,705
Resulting % Use Reduction from WSCP action	0%
2023	**Total**
Total Water Use	7,164
Total Supplies	9,882
Surplus/Shortfall w/o WSCP Action	2,718
Planned WSCP Actions (Use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/Shortfall	2,718
Resulting % Use Reduction from WSCP action	0%
2024	**Total**
Total Water Use	7,151
Total Supplies	9,882
Surplus/Shortfall w/o WSCP Action	2,731
Planned WSCP Actions (Use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/Shortfall	2,731
Resulting % Use Reduction from WSCP action	0%
2025	**Total**
Total Water Use	7,138
Total Supplies	9,882
Surplus/Shortfall w/o WSCP Action	2,744
Planned WSCP Actions (Use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/Shortfall	2,744
Resulting % Use Reduction from WSCP action	0%

Section 3
Annual Water Demand and Supply Assessment

CWC Section 10632(a)(2) requires that urban water suppliers conduct an annual water supply and demand assessment. This section describes the procedures in place to (1) conduct the Annual Assessment, and (2) prepare and submit an Annual Assessment Report to the State. In addition to these procedures, this section outlines the key inputs and methodology needed to evaluate the City of Lakewood's annual assessment of water demand and supplies to help determine water shortage levels.

3.1 Data and Methodologies

The key data inputs and methodologies that the City will use to determine the reliability of its water supply for the current year and one dry year include:

- Current year unconstrained demand, considering weather patterns, population growth/decline, or other factors that would influence consumer demand
- Current year available supply, taking into consideration hydrological and regulatory conditions that would affect the City's available water supply
- Existing infrastructure needs and capabilities, including a project list and/or schedule to determine which projects could increase or reduce the City's water supply
- A finite set of evaluation criteria that can be relied on for consistency for each annual water supply and demand assessment
- A detailed description of each of the City's water supply sources

3.2 Decision Making Process

In accordance with CWC 10632, the City will conduct an annual water supply and demand assessment, or annual assessment, by July 1st of each year, beginning in the year following the adoption of the current UWMP (July 1, 2022). The result from this assessment will determine how the City declares water shortage levels and corresponding phases of response actions.

The City will compile and prepare a written report that addresses the results of this annual assessment. The annual report will be presented to the City Council for review. The City Council can vote to approve and implement the recommendations during their regularly scheduled meetings.

City staff will be responsible for working with other departments, as well as working closely with state and regional agencies to draft and prepare the annual water supply and demand assessment, recommending possible actions, presenting the assessment to City Council, and submitting the assessment to State DWR on an annual basis.

Section 4
Penalties, Charges, and Other Enforcement of Prohibitions

4.1 Failure to Comply With Mandatory Water Conservation Measures

Pursuant to the provisions set forth in the City of Lakewood Municipal Code Section 7511.1.L, "any person who fails to comply with any of the mandatory water conservation measures imposed by the implementation of this section shall be subject to an improper water users fee or charge as hereinafter set forth."

Table 4.1 delineates the City imposed penalties for failing to comply with mandatory water conservation measures

Table 4-1: Water Waste Penalties & Charges

Violation	Penalty or Charges	Stage When Penalty Is In Effect
First Violation	Written Warning Notice	Phase I-V
Second Violation	Written Notice of Violation and $100.00 fine	Phase I-V
Third Violation	Written Notice of Violation and$100.00 fine	Phase I-V
Fourth Violation	Written Notice of Violation, $200.00 fine & Installation of Flow Restrictor (Restrictor shall be in place for no less than 24 hours and customer must pay fees prior to removal)	Phase I-V
Fifth and Subsequent Violations	Written Notice of Violation, $500.00 fine & Installation of Flow Restrictor (Restrictor shall be in place for no less than 48 hours and customer must pay fees prior to removal)	Phase I-V

4.2 Violation Misdemeanor

Pursuant to the provisions set forth in the City of Lakewood Municipal Code Section 7511.2, "Any person violating any of the provisions of Section 7511.1 or any Resolution adopted pursuant thereto or failing to comply with any of the mandatory requirements of Section 7511.1 or any of the Resolutions adopted pursuant thereof shall be guilty of a misdemeanor. Upon conviction thereof, such person shall be punished by imprisonment in the County Jail for not more than thirty (30) days or by a fine not exceeding $1,000.00, or both."

4.3 Hearing for Violations

Pursuant to the provisions set forth in the City of Lakewood Municipal Code Section 7511.1.M "Any customer receiving a fourth (4) or subsequent violation notice shall be entitles to a hearing with the City Manager or his designee within fifteen (15) days of delivery of the violation notice. The following steps shall be taken to process a request for hearing:

1. The customer shall provide a written request for hearing. A prompt request for hearing shall automatically stay installation of a flow restricting device or shut off on the customers water service until the decision is rendered by the City Manager or his designee.

2. The customer's request for a hearing shall not stay the imposition of a fee. If it is determined that a fee is wrongly assessed, the City will refund any fee paid by the customer.

3. The decision of the City Manager or his designee shall be final except for judicial review. Any and all measures of the provisions stated herein shall be implemented throughout the judicial appeal process."

Section 5
Shortage Response Actions

Per CWC Section 10632 (a)(4), the City of Lakewood has developed a list of supply shortage mitigation tools that can be utilized in the event of a possible water supply shortage. The four major shortage response actions defined by this statute are:

1. Supply augmentation: Any action designed to increase the existing supply availability.

2. Consumption reduction actions: Any action designed to decrease the consumption of water by consumer/agency.

3. Operational changes: Any actions taken to alter the method in which existing water supply is used within a service area.

4. Mandatory water use prohibitions: Any action taken to implement mandatory water use prohibitions in addition to State-mandated prohibitions.

5.1 General Water Conservation Practices

General Water Conservation practices are in effect at all times in the City of Lakewood's service area. Lakewood City Council has found that using water wisely should become a way of life for the Lakewood resident and that water is a precious resource that should not be wasted even in the times when water supply meets normal demand. Section 7511.1.C.1.a-g and Section 7511.1.c.2.a-e delineate the following conservation practices:

7511.1.C.1.a-g:

- Decorative fountains or other structures using water for aesthetic purposes shall be shut off unless such fixture operates on a recirculating system.
- No person shall permit leaks or waste of water. A leak shall be defined as any water not used for beneficial use that wastes more than 0.5 gallons of water per minute. All known leaks from indoor and outdoor plumbing fixtures shall be repaired within seven (7) days upon receipt of written notice of observed water leak.
- Drinking water shall not be served at any restaurant, motel, café, or other drinking or eating establishment unless expressly requested.
- Installation of single pass cooling systems shall be prohibited in buildings requesting new water service.
- Hotels, motels, and other commercial lodging establishments must provide customers the option to refuse daily towel and linen service. Commercial lodging establishments shall prominently display notice of this option in each guest room.
- Installation of non-re-circulating commercial car washes and laundry systems shall be prohibited.
- New eating and drinking establishments and existing eating and drinking establishments that remodel more than 50 percent of the kitchen area shall install water conserving dish wash spray valves.

7511.1.C.2.a-e:

- The use of water to wash walkways, driveways, parking areas and other hard surfaces should occur only as necessary to alleviate safety or sanitary hazards, and then only with a hose equipped with a positive shut off nozzle, a handheld bucket or similar container, or a low volume/high pressure water broom. Excessive water runoff into gutters is discouraged.
- Washing of vehicles and any other mobile equipment should be done only with a bucket or a hose equipped with a positive shut off nozzle for quick rinses. Commercial car washes are exempt from this provision.
- Voluntary water conservation field examination, herein referred to as water audits, are encouraged for all Lakewood water customers.
- The retrofit of water conserving devices, including but not limited to ultra flow toilets and low flow

showerheads, is encouraged.
- The installation of water efficient landscapes and irrigation devices, such as drip irrigation and moisture sensors, is encouraged. A drip irrigation system shall be defined as an irrigation system consisting of individual emitters installed at permanent plantings with a capacity to emit no more than two (2) gallons of water per hour of operation.

5.2 Shortage Response Actions

In addition to the general water conservation practices which are always in effect, the City can implement various types of response actions based on the level of water supply shortage and in compliance with any State-mandated conservation prohibitions. These actions are detailed in the City's Municipal Code, Sections 7511.1.D-I (Appendix A).

The shortage response actions that must be taken include actions related to the reduction of demand for water as well as the suggested actions that would help augment the supply of water to consumers in the event of a water shortage.

The combination of shortage response actions that are associated with each phase of the Water Shortage Contingency Plan are considered the proposed actions that can be taken in order to reduce the supply gap during each phase of the Plan. The first two phases focus on actions that would have the least amount of impact on consumer's quality of life but while helping reduce the supply gap. Shortage response actions from previous phases are assumed to remain in effect as the water shortage increases.

The following subsections summarize each phase of the Lakewood Water Shortage Contingency Plan and the shortage response actions that correspond with each phase. The categories of "high", "medium", or "low" are assigned to each shortage response action based on the estimated extent each action can aid in reducing the water supply gap.

5.2.1 Voluntary Phase Water Conservation Plan: No Shortage

The Voluntary Phase of the Water Conservation Plan constitutes the general water conservation practices that are always in effect in the City. This phase may be declared by Resolution of the City Council finding it necessary to conserve up to ten percent (10%) of the City's water supply.

Table 5-1 summarizes the response actions in place during this voluntary phase.

Table 5-1: Voluntary Phase Response Actions

Shortage Response Actions	Estimate of Extent to Which Supply Gap Reduced	Response Action Type
Voluntary Conservation Phase (see Appendix A for more detail) • Leaks from indoor and outdoor plumbing fixtures shall be repaired within six (6) days upon receipt of written notice of observed water leak • Water used to wash sidewalks, driveways, parking lots, building exteriors, streets and gutters should be minimized and should be limited to no more than two (2) times during a calendar month to alleviate safety or sanitary hazards, and then only with a hose equipped with a positive shut off nozzle, a handheld bucket or similar container, or a low volume/high pressure water broom • Watering lawns and landscaped areas should be limited to between the hours of 5:00 p.m. and 9:00 a.m.	High	Voluntary

5.2.2 Phase I Mandatory Water Conservation Plan: Moderate Shortage

Measures instituted during a Phase I water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve ten percent (10%) or greater of the City's water supply.

Table 5-2 summarizes the response actions in place during this mandatory phase.

Table 5-2: Phase I Mandatory Response Actions

Shortage Response Actions	Estimate of Extent to Which Supply Gap Reduced	Response Action Type
Mandatory Conservation Phase I (see Appendix A for more detail) • Leaks from indoor and outdoor plumbing fixtures shall be repaired within five(5) days upon receipt of written notice of observed water leak • Water used to wash sidewalks, driveways, parking lots, building exteriors, streets and gutters shall be limited to no more than two (2) times during a calendar month to alleviate safety or sanitary hazards, and then only with a hose equipped with a positive shut off nozzle, a handheld bucket or similar container, or a low volume/high pressure water broom • Washing of vehicles and any other mobile equipment shall be done with a bucket or a hose equipped with a positive shut off nozzle for quick rinses • Sprinklers shall be adjusted to minimize water runoff from landscape on to hardscape areas. No person shall allow excess water runoff after notice from the City to desist therefrom • Landscape irrigation is recommended during the early morning hours for no more than 10 minutes at a time. Irrigation should be avoided between the hours of 9:00 a.m. and 5:00 p.m.	High	Mandatory Restriction
Increase public education efforts to promote water conservation	Medium	Demand Reduction
Increase outreach efforts for high-volume customers and provide one on one assessments	Low	Demand Reduction
Increase water rebates and incentives	Low	Demand Reduction

5.2.3 Phase II Mandatory Water Conservation Plan: Significant Shortage

Measures instituted during a Phase II water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve up to twenty percent (20%) of the City's water supply.

Table 5-3 summarizes the response actions in place during this mandatory phase.

Table 5-3: Phase II Mandatory Response Actions

Shortage Response Actions	Estimate of Extent to Which Supply Gap Reduced	Response Action Type
Mandatory Conservation Phase II (see Appendix A for more detail) • Leaks from indoor and outdoor plumbing fixtures shall be repaired within four (4) days upon receipt of written notice of observed water leak • Residential and commercial landscape areas shall be watered no more than three (3) times during a seven (7) day period for no more than ten (10) minutes at a time during the months of June through September, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. • Landscape irrigation shall be restricted to two (2) times during a seven (7) day period for no more than ten (10) minutes at a time during the months of October through May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. • Non-residential water customers with a consumption in excess of 25,000 cubic feet in any billing period during the prior year, shall prepare a written water conservation plan within sixty (60) days of the effective date of a declared water shortage	High	Mandatory Restriction
Increase public education efforts to promote water conservation	Medium	Demand Reduction
Increase outreach efforts for high-volume customers and provide one on one assessments	Low	Demand Reduction
Increase water rebates and incentives	Low	Demand Reduction

5.2.4 Phase III Mandatory Water Conservation Plan: Severe Shortage

Measures instituted during a Phase III water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve up to thirty percent (30%) of the City's water supply.

Table 5-4 summarizes the response actions in place during this mandatory phase.

Table 5-4: Phase III Mandatory Response Actions

Shortage Response Actions	Estimate of Extent to Which Supply Gap Reduced	Response Action Type
Mandatory Conservation Phase III (see Appendix A for more detail) • Leaks from indoor and outdoor plumbing fixtures shall be repaired within three (3) days upon receipt of written notice of observed water leak • Residential and commercial landscape areas shall be watered no more than two (2) times during a seven (7) day period for no more than ten (10) minutes at a time during the months of June through September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. • Landscape irrigation shall be restricted to one (1) time during a seven (7) day period for no more than ten (10) minutes at a time during the months of October through May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. • Irrigation of commercial nurseries and growers, active parks and playing fields, school grounds, golf course greens, landscaping for fire and erosion protection, protecting endangered species, environmental mitigation projects, shall be restricted to no more than three (3) times during a seven (7) day period for no more than ten (10) minutes at a time. Irrigation shall be prohibited during the hours of 9:00 a.m. and 4:00 p.m.	Medium	Mandatory Restriction
Increase conservation messaging (print, social media, education events)	Medium	Demand Reduction
Increase outreach efforts for high-volume customers and provide one on one assessments	Low	Demand Reduction

5.2.5 Phase IV Mandatory Water Conservation Plan: Critical Shortage

Measures instituted during a Phase IV water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve up to forty percent (40%) of the City's water supply.

Table 5-5 summarizes the response actions in place during this mandatory phase.

Table 5-5: Phase IV Mandatory Response Actions

Shortage Response Actions	Estimated of Extent to Which Supply Gap Reduced	Response Action Type
Mandatory Conservation Phase IV (see Appendix A for more detail) • Leaks from indoor and outdoor plumbing fixtures shall be repaired within two (2) days upon receipt of written notice of observed water leak • Residential and commercial landscape areas shall be watered no more than one (1) time during a seven (7) day period for no more than ten (10) minutes at a time during the months of June through September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. • Landscape irrigation shall be restricted to one (1) time during a fourteen (14) day period for no more than ten (10) minutes at a time during the months of October through May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. • Irrigation of commercial nurseries and growers, active parks and playing fields, school grounds, golf course greens, landscaping for fire and erosion protection, protecting endangered species, environmental mitigation projects, shall be restricted to no more than two (2) times during a seven (7) day period for no more than ten (10) minutes at a time. Irrigation shall be prohibited during the hours of 9:00 a.m. and 4:00 p.m.	Medium	Mandatory Restriction
Increase conservation messaging (print, social media, education events)	Medium	Demand Reduction
Reduce water pressure in water lines	Medium	Supply Augmentation

5.2.6 Phase V Mandatory Water Conservation Plan: Supercritical Shortage

Measures instituted during a Phase V water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve up to fifty percent (50%) of the City's water supply.

Table 5-6 summarizes the response actions in place during this mandatory phase.

Table 5-6: Phase V Mandatory Response Actions

Shortage Response Actions	Estimated of Extent to Which Supply Gap Reduced	Response Action Type
Mandatory Conservation Phase V (see Appendix A for more detail) • Leaks from indoor and outdoor plumbing fixtures shall be repaired within 24 hours upon receipt of written notice of observed water leak • Residential and commercial landscape areas shall be restricted to watering only permanent trees and shrubs with a handheld bucket or similar container, or a drip irrigation system with emitters producing no more than two (2) gallons per hour one (1) time during a seven (7) day period during the months of June through September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. • Landscape irrigation shall be restricted to watering only permanent trees and shrubs with a handheld bucket or similar container, or a drip irrigation system with emitters producing no more than two (2) gallons per hour one (1) time during a fourteen (14) day period during the months of October through May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. • Irrigation of commercial nurseries and growers shall be restricted to one (1) time during a seven (7) day period for no more than ten (10) minutes at a time and prohibited during the hours of 9:00 a.m. and 6:00 p.m. • Irrigation of active parks and playing fields, school grounds, golf course greens, landscape for fire protection, and the support of protected species, and environmental mitigation projects shall be restricted to no more than two (2) times during a seven (7) day period for no more than ten (10) minutes at a time. Irrigation shall be prohibited during the hours of 9:00 a.m. and 4:00 p.m.	Medium	Mandatory Restriction
Reduce water pressure in water lines	Medium	Supply Augmentation
Reduce groundwater well production	High	Supply Augmentation

5.3 Emergency Rate Surcharge to Obtain Water Conservation

At such time that the City Council determines that a specific conservation effort is required, the City Council can adopt a resolution that would declare the specific phase water conservation. City Council by Resolution can also adopt an emergency water conservation rate structure with the revenue generated from these emergency water conservation rates to be used to offset revenue loss due to reduced water consumption.

5.4 Additional Water Conservation Measures

The City Council may order implementation of further water conservation measures in addition to those that are described in this Water Shortage Contingency Plan and set forth in the Lakewood Municipal Code. Such water conservation measures shall be instituted by the City Council with the adoption of a resolution.

Section 6
Determining Water Shortage Reductions

6.1 Monitoring and Reporting

In accordance with CWC 10632(a)(9), the City will monitor, analyze, and report on water production and consumption levels. Lakewood utilizes a full-AMI smart meter system for all customers across all account types, and uses the hourly data transmitted from these AMI meters to determine the consumption of water, possible internal leaks, and abnormal water uses throughout the City's service area.

In the event of a water shortage or the implementation of City, State, or Federal water conservation mandates, the City will analyze daily, weekly, and rolling four-week average consumption totals to measure the effectiveness of water conservation efforts in all phases of the WSCP.

6.2 Reevaluation and Improvement Procedures

The intent of the WSCP is to provide shortage mitigation strategies that can be employed should the need arise. The water shortage response actions that are listed in Section 5 will be routinely monitored in the event they are implemented.

The WSCP will be re-evaluated at least every five years in coordination with the Urban Water Management Plan update or when the need arises. An evaluation on the effectiveness of the water shortage response actions delineated in this plan will be conducted periodically to ensure that the plan and its contents are up to date and relevant.

All of the shortage response actions in the City's WSCP have the intended goal of reducing water demand to below the available supply of water at any given water shortage phase. In order to ensure that the shortage actions in place are effective in reaching the goal of reducing water demand, the City will closely analyze consumption trends on a daily, weekly, and monthly basis by utilizing the consumption data gleaned from their full-AMI metering system as described in Section 6.1.

After careful analysis by City staff, if it is found that the shortage response actions in place are ineffective in reaching the reduced water demand, the City will look to update the shortage response actions in place to achieve the desired results. The Lakewood City Council will have the authority to amend the Water Shortage Contingency Plan as is deemed necessary.

Section 7
Revenue and Expenditure Impacts

7.1 Financial Consequences of WSCP Activation

As water consumption decreases, there is a proportional decrease in the revenue generated though water sales. Based on the direct relationship between water consumption and water revenue, it is possible that unanticipated water shortages or mandated water conservation restrictions could result in a revenue shortfall.

As the City progresses from Phase I to Phase V of the WSCP, a proportional decrease in water revenue will be realized and City Council could be forced to enact emergency water conservation rates in order to stabilize revenue. Steps can, however, be taken that would aid in alleviating some of the strain on water revenues caused by voluntary or mandatory water conservation.

Some of these steps include:

- The City can analyze and consider reducing current operation and maintenance expenses
- The City can analyze and consider reducing future projected operation and maintenance expenses
- The City can analyze and consider prioritizing and deferring specific capital improvement projects
- The City can analyze and consider enacting an emergency water conservation rate structure
- The City can implement the use of the Water Rate Stabilization Fund to help offset the decrease in revenue

Section 8
Catastrophic Supply Interruption Planning

8.1 Catastrophic Supply Interruption

A catastrophic supply interruption occurs when a disaster suddenly disrupts all or a large portion of the water supply that is available to meet the City's needs. As a requirement of the UWMP Act, the City of Lakewood must identify actions to take in the event of a catastrophic supply interruption, specifically including an interruption from a power outage, earthquake, or any other non-dry period related emergency.

The City has developed a plan for such emergencies and has also developed a Local Hazard Mitigation Plan in 2018, which addresses catastrophic events to the City. A copy of this plan is provided in Appendix B in compliance with CWC Section 10632.5.

8.2 Seismic Risk Assessment and Mitigation

The City of Lakewood's 2018 Hazard Mitigation Plan (Appendix B) has identified key areas within the City that would be most susceptible to damage during extraordinary emergencies including earthquakes, floods, windstorms, drought, and other hazards such as extreme temperatures, landslides, wildfires, subsidence, and volcanic events.

The Plan identified the high risk of earthquakes and seismic activity to all City facilities, with specific risk to Water infrastructure in the form of potential pipeline breaks, damage to City wells and treatment plants, and identified a high risk of City-wide water service interruption.

In the event of major seismic activity, if the City's water systems are damaged or disrupted and the City were unable to meet the demand placed upon it by customers due to such ban unforeseen emergency, the City could declare a water emergency and the City will follow protocols in place detailed in their Disaster Response Plan. Lakewood has identified, and will continue to identify, vulnerabilities to the water system to help mitigate any potential impacts to the ability to serve its customers.

8.3 Power Outages

Most of the City's pump stations are equipped with diesel-powered backup generators in the event a major power outage disrupts the primary energy system. These diesel-powered generators can keep the water system running for an extended period of time with reliable fueling from City of Lakewood Fleet Services.

In the event of a major power outage that affects the Lakewood service area, backup generators can be automatically switched on or activated manually. In addition, the City maintains an adequate storage supply that can maintain the water distribution system until power is restored.

Section 9
Legal Authorities

9.1 Legal Authorities

The City of Lakewood is governed by the City Council. The Council is made up of five (5) elected members, serving four (4) year terms. Lakewood's City Council has enacted previous water conservation ordinances and resolutions to prepare the City for any water shortages.

Per California Water Code Division 1, Section 350, "The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection", the City's Council will declare a water shortage.

In all water shortage cases, the shortage response actions to be implemented will be at the discretion of the City Council and will be based on the assessment of supply shortage, customer response, and the need for demand reductions.

Section 10
Communication Protocol

10.1 Communication Protocols

In the event of an emergency water shortage or any City, State, or Federal water conservation mandates, the City will inform customers, the public, and the necessary local, regional, and state government entities regarding these current or predicted events.

The City of Lakewood's communication protocol consists of the different channels of communication the City will use to convey important messages regarding water shortage allocations and/or regulations and any voluntary or mandatory actions that go along with any potential water shortages.

City public outreach programs can aid in increasing awareness of such shortages, while customer services and workshops can help encourage customers to actively participate in demand reduction strategies.

10.2 Coordination

In order to effectively communicate, avoid any confusion, and maintain credibility, City staff will work in coordination with the Mayor and City Council. During periods of drought or any other periods of limited supply, the frequency and extent of coordination and communication will increase to ensure that all outreach methods are consistent with the needs of the City and its customers.

10.3 Communication Objectives

Communication objectives during the various phases of water conservation include the following:

- Motivate water users to quickly increase conservation in ways that are consistent with any voluntary or mandatory shortage response actions
- Raise awareness and understanding of the dry period, regulatory, or other conditions that may be affecting water supplies and the need for water conservation
- Make water users feel appreciated for existing accomplishments in improving their water-use efficiency, and for helping support regional and local water conservation efforts
- Prepare City of Lakewood for any potential escalation (or de-escalation) of the WSCP based on trending supply conditions.

10.4 Current or Predicted Shortage

A current or predicted shortage, as determined by the City's Annual Assessment, will be communicated to the City Council prior to submittal of the Annual Assessment in June of any given year. City staff will monitor and evaluate the projected supply and demand for water by its customers on a regular basis and annually present their findings to the Council. The Council may order the appropriate phase of water conservation to be implemented.

[This page intentionally left blank]