1 Introduction

1.1 Purpose of the Groundwater Sustainability Plan

The Santa Monica Basin Groundwater Sustainability Agency (GSA), which comprises the City of Santa Monica, the City of Los Angeles via its Department of Water and Power, the City of Culver City, the City of Beverly Hills, and the County of Los Angeles, has prepared this Groundwater Sustainability Plan (GSP) for the non-adjudicated portion of the Santa Monica Subbasin (Subbasin) of the Los Angeles Plain Groundwater Basin (DWR Basin 4-011.01). This GSP was prepared in compliance with the 2014 Sustainable Groundwater Management Act (SGMA), which is codified in California Water Code (CWC), Part 2.75 (Sustainable Groundwater Management), §10720 et seq.[1] This GSP has been developed in accordance with the Department of Water Resources (DWR) GSP Regulations[2] to apply to the entirety of the Subbasin that is not adjudicated[3] (Plan Area; Figure 1-1).

SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained over a 50-year planning and implementation horizon without causing undesirable results. Under SGMA, undesirable results occur when significant and unreasonable effects for any of six sustainability indicators are caused by groundwater conditions occurring throughout the Subbasin.[4] The definition of significant and unreasonable effects is left to each GSA to define. The six sustainability indicators defined in SGMA are:

- Chronic lowering of groundwater levels
- Groundwater storage
- Seawater intrusion
- Degraded water quality
- Land subsidence
- Depletions of interconnected surface water

As described in Chapter 2, Basin Setting, of this GSP, the Subbasin has experienced historical degradation of groundwater quality as a result of industrial development and activities dating back to the mid-1900s as well as from leaking underground storage tanks at gas stations located adjacent to and upgradient from the primary groundwater production wells in the Subbasin. The City of Santa Monica is engaged in multiple programs to remediate the degraded groundwater in the Subbasin (see Chapter 2). These programs are overseen by the Division of Drinking Water (DDW), the Regional Water Quality Control Board (RWQCB), and the State Water Resources Control Board (SWRCB). Degradation of water quality that occurred before 2015, the year in which SGMA became effective, is not required to be addressed in this GSP (SWRCB 2019). Water quality in the Subbasin was degraded prior to 2015, the extent of degradation is well characterized, the City of Santa Monica is actively treating the groundwater under programs overseen by DDW, the RWQCB, and the SWRCB, and the degradation

1 Specific sections of the CWC are cited in this GSP as "CWC § […]."

2 GSP Regulations refers to the emergency regulations adopted by DWR as California Code of Regulations (CCR), Title 23 (Waters), Division 2 (Department of Water Resources), Chapter 1.5 (Groundwater Management), Section 350 et seq. Specific sections of the CCR are cited in the GSP as "23 CCR §[…]"

3 CWC Section 10720.8 states that SGMA does not apply to adjudicated basins. Slivers of both the West Coast and Central Basin adjudications overlap with the boundaries of the Santa Monica Subbasin, likely resulting from mapping inconsistencies through time. This GSP consists of a "single plan covering the entire basin developed and implemented by one groundwater sustainability agency," per CWC Section 10727(b)(1), with the Santa Monica GSA acting as the multi-agency GSA for the Subbasin.

4 As defined in SGMA (CWC Section 10721), "basin" means a groundwater basin or subbasin identified and defined in Bulletin 118, or as modified pursuant to basin boundary modification approved by DWR

was not caused by groundwater production. Therefore, this GSP does not address undesirable results relating to water quality degradation. Undesirable results within the Subbasin are not currently occurring with respect to any of the other sustainability indicators.

Historically, groundwater level declines and concurrent reduction of storage have not been documented in the Subbasin (DWR 2019). Portions of the Subbasin have experienced seawater intrusion in the past but shifting groundwater production away from the coast and to deeper aquifers have prevented further seawater intrusion (DWR 2019). Land subsidence due to groundwater withdrawal from the principal aquifers and aquitards that compose the Subbasin has not been documented (Bawden 2003; DWR 2014). Depletions of interconnected surface water have not occurred historically in the Subbasin because Ballona Creek, the primary surface water drainage, has been maintained as a lined and grouted flood-control channel since the 1950's (ACOE 1982; DWR 2019). Details of the historical groundwater conditions for each sustainability indicator are discussed in Chapter 2.

The purpose of this GSP is to define the conditions under which the groundwater resources of the Plan Area, which support municipal, industrial, and environmental uses, will continue to be managed sustainably over the next 50 years. The publication of this GSP represents the commitment of the Santa Monica Basin GSA to maintaining long-term, sustainable use of groundwater resources within the Subbasin, as required by SGMA. Over the next 20 years, data will continue to be gathered and used to refine the estimated sustainable yield discussed in the following chapters. As the understanding of the Subbasin improves, the findings of this GSP will be evaluated and updated as necessary. This GSP documents a viable approach, determined by the GSA in collaboration with stakeholders and informed by the best available information, to maintaining the long-term sustainability of the groundwater resources within the Subbasin.

Appendix A includes the *Preparation Checklist for GSP Submittal*, which identifies where in this GSP each of the statutory requirements under SGMA are addressed.

1.2 Sustainability Goal

The sustainability goal for the Subbasin is to ensure the long-term health and availability of groundwater resources for current and future stakeholders through ongoing, proactive stewardship. Long-term health and availability include:

- Maintaining sufficient groundwater in storage to allow for continued groundwater production that meets the operational demands and regulatory commitments of the City of Santa Monica, as well as other groundwater producers and stakeholders.
- Ensuring groundwater conditions in the Subbasin support sufficient seaward flow of fresh water to prevent significant and unreasonable seawater intrusion in the Silverado aquifer[5].
- Continuing groundwater production at rates and in aquifers that do not impact the ability of groundwater dependent ecosystems to access groundwater.

[5] The Silverado aquifer is the primary production aquifer in the Subbasin and is the aquifer from which the majority of the groundwater production occurs (see Section 2.3.2). In addition to the Silverado aquifer, the Subbasin also contains the Ballona aquifer, Sunnyside aquifer, and Bellflower aquitard.

1.3 Agency Information

Appendix B contains documentation, in reverse chronological order, of the formation of the GSA and initiation of the GSP in compliance with SGMA. Appendix B includes the Notice of the GSA formation published in multiple local newspapers by each member agency of the GSA, documentation of the public hearing on GSA formation, which was conducted on April 12, 2017, and notification of GSA formation provided to DWR, dated June 13, 2017. The SMBGSA website (https://www.santamonica.gov/gsp) contains updated information regarding the SMBGSA, development of this GSP, and SGMA compliance. The information includes public meeting agendas and minutes, and recordings of meeting conducted via webinar as a result of COVID-19 health protection measures.

The contact information for the GSA is:

Santa Monica Basin Groundwater Sustainability Agency
Attn: Dr. Lisette Gold
1212 5th Street, 3rd Floor
Santa Monica, California 90401

Lisette.Gold@santamonica.gov

1.3.1 Organization and Management Structure of the Groundwater Sustainability Agency

The five member agencies of the SMBGSA signed a Memorandum of Understanding for the formation of the SMBGSA in May 2017 and signed the first amendment to the Memorandum of Understanding in 2019 (Appendix B). The amendment outlined the cost-sharing agreement between the member agencies for preparation of this GSP.

The City of Santa Monica is the coordinating agency for the SMBGSA and is the point of contact for DWR. All actions undertaken by the SMBGSA must receive unanimous consent from the member agencies.

1.3.2 Legal Authority of the Groundwater Sustainability Agency

The SMBGSA notified DWR of its intent to become a GSA for the Santa Monica Subbasin in 2017, following public outreach to ensure that the interests of all beneficial uses and users of groundwater would be considered in the process of forming the GSA, and in the development and implementation of this GSP. The agencies that compose the SMBGSA have water supply, water management, or land use responsibilities within the Subbasin. The City of Santa Monica is the only local agency that currently produces groundwater from the Subbasin. The City has been producing groundwater from the Subbasin since the 1930's and has been actively managing groundwater in the Charnock, Olympic, and Arcadia well fields since the 1950s. More recently, this management has included coordination with the SWRCB, the DDW, and the RWQCB to remove industrial pollutants that have contaminated the groundwater in the Subbasin.

The SMBGSA assumes responsibility for ensuring ongoing sustainable management of the groundwater resources of the Subbasin under the sustainable management criteria described in Chapter 3 of this GSP. In order to manage groundwater conditions, the SMBGSA may require metering of all groundwater extractions, excluding those from *de*

minimis extractors. In this GSP *de minimis* extractors are defined as a person or persons who extract(s), for domestic purposes, two acre-feet or less per year (CWC 10721 [e]).

Although the analyses conducted as part of this GSP suggest that the current and planned future groundwater production are within the estimated sustainable yield of the Subbasin, future demands not anticipated in the GSP may necessitate the adoption of measures to restrict groundwater production. These measures may include, but are not limited to, regulating, limiting, or suspending groundwater extraction from individual wells or wells in-aggregate, imposing extraction fees on groundwater producers in the GSA area, and developing a groundwater allocation (Chapter 4, Projects and Management Actions).

1.4 Groundwater Sustainability Plan Organization

This GSP is organized according to the DWR guidance document for preparation of a GSP annotated outline (DWR 2016A – annotated outline). Chapter 1 provides information on the purpose of the GSP, the sustainability goal for the Plan Area, and information on the SMBGSA. Chapter 2 provides information on the SMBGSA setting, the hydrogeologic conceptual model for the Subbasin, and the water budget for the Subbasin. Chapter 3 provides information on the sustainable management criteria and monitoring network in the Subbasin. Chapter 4 provides information on the projects and management actions to ensure continued sustainable management of the Subbasin as defined by the sustainability goal. Chapter 5 provides information on the GSP implementation.

The Preparation Checklist for GSP Submittal can be found in Appendix A (DWR 2016B – preparation checklist).

1.5 References Cited

ACOE (Army Corps of Engineers). 1982. Ballona Creek and Tributaries, Los Angeles County Drainage Area, California. December.

Bawden, Gerald. 2003. *Separating Ground-Water and Hydrocarbon-Induced Surface Deformation from Geodetic Tectonic Contraction Measurements Across Metropolitan Los Angeles, California.* In: U.S. Geological Survey Subsidence Interest Group Conference, Proceedings of the Technical Meeting, Galveston, Texas, November 27-29, 2001.

DWR (Department of Water Resources). 2014. Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California.

DWR (California Department of Water Resources). 2016A. *Guidance Document for the Sustainable Management of Groundwater: Groundwater Sustainability Plan Annotated Outline*. December 2016.

DWR (California Department of Water Resources). 2016B. *Guidance Document for the Sustainable Management of Groundwater: Preparation Checklist for GSP Submittal*. December 2016.

DWR (Department of Water Resources). 2019. Sustainable Groundwater Management Act 2019 Basin Prioritization: Process and Results (excel spreadsheet). Downloaded from: https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization. Accessed February 2020.

SWRCB (State Water Resources Control Board). 2019. Sustainable Groundwater Management Act: Water Quality Frequently Asked Questions. October 2019. Downloaded from: https://www.waterboards.ca.gov/water_issues/programs/gmp/docs/sgma/sgma_wtr_qual.pdf. Accessed January 2021.

Legend

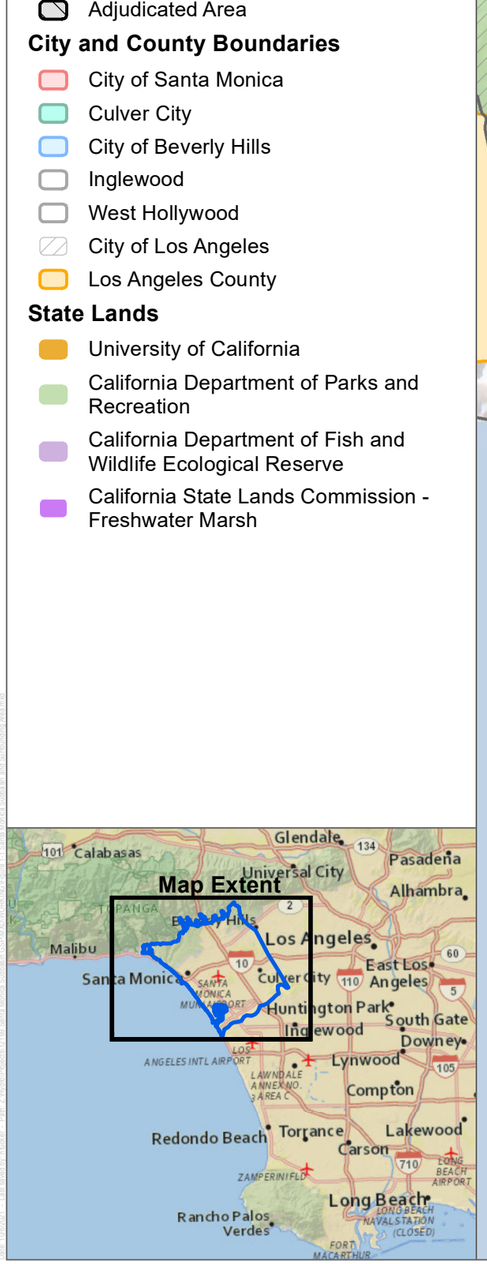
- Santa Monica Subbasin (4-011.01) and SMBGSA Boundary
- Santa Monica GSP Plan Area
- Adjudicated Area

City and County Boundaries

- City of Santa Monica
- Culver City
- City of Beverly Hills
- Inglewood
- West Hollywood
- City of Los Angeles
- Los Angeles County

State Lands

- University of California
- California Department of Parks and Recreation
- California Department of Fish and Wildlife Ecological Reserve
- California State Lands Commission - Freshwater Marsh



SOURCE: ESRI; DWR; USGS; Los Angeles County

DUDEK

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FIGURE 1-1

Santa Monica Subbasin and Surrounding Area

Groundwater Sustainability Plan for the Santa Monica Subbasin

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