

Appendix 01

Water Supply Assessment

RESOLUTION NO. 021 150

WHEREAS, Los Angeles Department of Water and Power (LADWP) constitutes a public water system pursuant to California Water Code Section 10912, subdivision (c); and

WHEREAS, the 4th and Hewitt Project (Project) meets the criteria in subdivision (a) (3) of California Water Code Section 10912; and

WHEREAS, the Project is located in the service area of LADWP's water supply system, and LADWP would serve the area of the Project development; and

WHEREAS, on January 2, 2018, the City of Los Angeles (City) Department of City Planning (Planning Department) requested LADWP to perform a Water Supply Assessment (WSA) for the Project. On March 24, 2020, Planning Department submitted an amended WSA request with a revised scope, and LADWP has prepared a WSA for the Project in compliance with California Water Code Sections 10910-10915; and

WHEREAS, the Project would redevelop approximately 1.3 acres within the Central City North Community Plan area of the City; and

WHEREAS, LIG – 900, 910, and 926 East 4th Street, 405-411 South Hewitt Street, LLC has agreed to implement additional conservation measures, as described in WSA, that are in addition to those required by law; and

WHEREAS, LADWP staff performed the water demand analysis and determined the net increase in total water demand for the Project is 49 acre-feet per year; and

WHEREAS, the Project is determined by Planning Department to be consistent with the demographic projections for the City from both the 2012 and 2016 Regional Transportation Plans by the Southern California Association of Governments; and

WHEREAS, LADWP anticipates that its projected water supply that is available during normal, single-dry, and multiple-dry water years as included in the 25-year projection contained in its adopted 2015 Urban Water Management Plan can accommodate the projected water demand associated with the Project, in addition to the existing and planned future demands on LADWP; and

WHEREAS, in accordance with California Water Code Section 10910 (g) (1) the Board has the responsibility for approval and certification of WSAs prepared by LADWP; and the Board has independently reviewed and considered the WSA and documentation making up the administrative record; and

WHEREAS, a publicly noticed Board hearing was held with respect to this item, and the Board considered evidence presented by LADWP's Water Resources Division staff, the staff recommendation to approve the WSA, and other comments from interested parties at the public hearing.

NOW, THEREFORE, BE IT RESOLVED that the Board finds that LADWP can provide sufficient domestic water supplies to the Project area and approves the WSA prepared for the Project, now on file with the Secretary of the Board, and directs that WSA and a certified copy of Resolution be transmitted to Planning Department.

BE IT FURTHER RESOLVED that the Board finds that LADWP's total projected water supplies available during normal, single-dry, and multiple-dry water years during a 20-year projection will meet the projected water demands associated with the Project in addition to existing and planned future uses including agricultural and industrial uses.


BE IT FURTHER RESOLVED that the Board has considered the WSA prior to making a decision to approve the WSA, and finds that the WSA is adequate and was prepared in accordance with California Water Code Section 10910 (c) (2), and meets the requirements of California Water Code Section 10910 (d), (e), (f), and (g).

I HEREBY CERTIFY that the foregoing is a full, true, and correct copy of a Resolution adopted by the Board of Water and Power Commissioners of the City of Los Angeles at its meeting held **FEB 23 2021**


Secretary

APPROVED AS TO FORM AND LEGALITY
MICHAEL N. FEUER, CITY ATTORNEY

JANUARY 25, 2021



BY _____

TINA SHIM
DEPUTY CITY ATTORNEY



Los Angeles
Department of
Water & Power

RESOLUTION NO. _____

BOARD LETTER APPROVAL

A blue ink signature of Richard F. Harasick, written in a cursive style.

RICHARD F. HARASICK
Senior Assistant General Manager
Water System

A blue ink signature of Martin L. Adams, written in a cursive style.

MARTIN L. ADAMS
General Manager and Chief Engineer

DATE: January 27, 2021

SUBJECT: Water Supply Assessment – 4th and Hewitt Project

SUMMARY

The Water Supply Assessment (WSA) is for the 4th and Hewitt Project (Project) located within the City of Los Angeles (City). LADWP staff determined the net additional water demand for the Project is 49 acre-feet per year (AFY) and has concluded that this additional water demand can be accommodated by the City's water supply. The Project's base water demand was further reduced by 6 AFY through implementation of the conservation ordinance and code requirements and an additional 1 AFY through the project implementing additional voluntary conservation measures. The WSA will meet the requirements of California Water Code Sections 10910-10915. The governing body of each public water system is required to make a determination on WSAs for major projects.

City Council approval is not required.

RECOMMENDATION

It is recommended that the Board of Water and Power Commissioners (Board) adopt the attached Resolution authorizing the WSA for the Project.

ALTERNATIVES CONSIDERED

LADWP is required by state law, as set forth in California Water Code Sections 10910-10915, to prepare this WSA for the Project. There are no other alternatives.

FINANCIAL INFORMATION

LIG – 900, 910, and 926 East 4th Street, 405-411 South Hewitt Street, LLC (Applicant) paid \$17,000 to cover LADWP's expenses for preparation of this WSA.

BACKGROUND

WSAs are prepared in conformance with California law and the City ordinances to ensure proposed projects that utilize water resources are consistent with the City's conservation goals and long-term water supply availability, as detailed in LADWP's 2015 Urban Water Management Plan (UWMP). The UWMP is the water supply planning document for the City and is prepared by LADWP.

Each WSA performed by LADWP is carefully evaluated within the context of LADWP's most recent UWMP and current conditions, such as the federal and state restrictions on State Water Project (SWP) and Central Valley Project pumping from the Sacramento-San Joaquin River Delta (Delta). The Metropolitan Water District of Southern California (MWD), from who the City purchases its SWP and Colorado River water supplies, has also been actively developing plans and making efforts to provide additional water supply reliability for the entire Southern California region. LADWP coordinates closely with MWD to ensure implementation of MWD's water resource development plans.

Part of MWD's planning effort is the update and implementation of its Integrated Water Resources Plan (IRP) and its UWMP, which are designed to address potential reductions in water supply due to the effects of variable hydrologic conditions and regulatory restrictions on exports from the Delta and Colorado River. The 2015 IRP update resulted in the development of the following six main findings and conclusions:

1. Action is needed to minimize unacceptable level of shortage allocation frequency in the future.
2. Maintain Colorado River supplies.
3. Stabilize SWP supplies.
4. Develop/protect local supplies and water conservation.
5. Maximize effectiveness of storage and transfers.
6. Continue with adaptive management approach.

The UWMP contains a water shortage contingency plan for multi-year dry hydrological periods. This water shortage contingency plan was implemented on June 1, 2009, when the Board adopted Shortage Year Rates and the City Council implemented the landscape irrigation and prohibited use restrictions contained in the City's Water Conservation Ordinance. The City's Water Rate Ordinance, adopted June 1995, was last amended by the Board, effective April 15, 2016. The new water

rate structure increases the number of tiers from two to four for single-family residential customers. The goal is to incentivize conservation while recovering the higher costs of providing water to high volume users. In keeping with cost of service principles, the incremental pricing for the tiers is based on the cost of water supply and, for the third and fourth tiers, added pumping and storage costs.

Projected Water Use and Conservation

On January 2, 2018, the Los Angeles Department of City Planning (Planning Department), lead agency for the Project, requested LADWP to perform a WSA. On March 24, 2020, the Planning Department submitted an amended WSA request with a revised scope. The Project's scope of work includes the redevelopment of approximately 1.3 acres within the Central City North Community Plan area of the City. The Project's site is generally bounded by 4th Street to the north, Hewitt Street to the east, commercial and industrial buildings to the south, and Colyton Street to the west.

The Project site includes an Architecture and Design Museum, offices, and storage. As part of the Project, approximately 7,030 square-foot (sf) of the existing floor area will be demolished. The demolished areas are 3,515 sf of office space, 2,515 sf of office garage/storage, and 1,000 sf of museum storage. The existing water demand associated with the demolished spaces is approximately 0.5 AFY. Only the existing 7,800 sf Architecture and Design Museum will remain.

The Project will develop a new 17 story high-rise building. The building will include 8,149 sf of restaurant space and 327,976 sf of office space. The building will also include approximately 254,881 sf of covered vehicle parking and 8,955 sf of landscaping.

LADWP staff recommended implementation of additional voluntary water conservation measures to maximize the potential water-use efficiency for the Project. The recommended voluntary conservation measures are in addition to those required by the City's current codes and ordinances. Based on LADWP staff recommendations, the Applicant has voluntarily committed to implement additional measures for the entire project. The Applicant's written commitment of the Project's planned voluntary water conservation measures is attached with the WSA in Appendix B:

- Fixtures
 - High Efficiency Toilets with a flush volume of 1.1 gallons per flush, or less
 - Showerheads with a flow rate of 1.5 gallons per minute, or less

- Landscape and irrigation
 - Drip/Subsurface Irrigation (Micro-Irrigation)
 - Drought Tolerant Plants
 - Proper Hydro-zoning/Zoned Irrigation

- Utilities
 - Domestic Water Heating System located close proximity to point(s) of use

With the addition of these voluntary water conservation measures, which yield additional savings of approximately 1 AFY, the total net additional water demand is approximately 49 AFY.

The Applicant has also committed to comply with the City of Los Angeles Low Impact Development Ordinances (City Ordinance Nos. 181899 and 183833) and to implement Best Management Practices that have stormwater recharge or reuse benefits for the entire Project as applicable:

- Pursue infiltration of the 85th percentile rain event through the use of a drywell system

The Planning Department has indicated that a General Plan Amendment is required for the Project to conform with the City's General Plan. The Planning Department has determined that the Project is consistent with the demographic projections for the City from both the 2012 and 2016 Regional Transportation Plans (RTP) by the Southern California Association of Governments. The City's water demand projection in 2015 UWMP was developed based on the 2012 RTP demographic projection using the 2010 U.S. Census for the City. LADWP used a modified-unit-use approach to develop its service area-wide water demand projections. This methodology does not rely on individual development demands to determine area-wide growth. 2015 UWMP concluded there are adequate water supplies to meet projected water demand through 2040. Therefore, projected water supply available during normal, single-dry, and multiple-dry water years as included in the 25-year projection of 2015 UWMP is sufficient to meet the projected water demand associated with the Project, in addition to the existing and planned future demand on LADWP.

ENVIRONMENTAL DETERMINATION

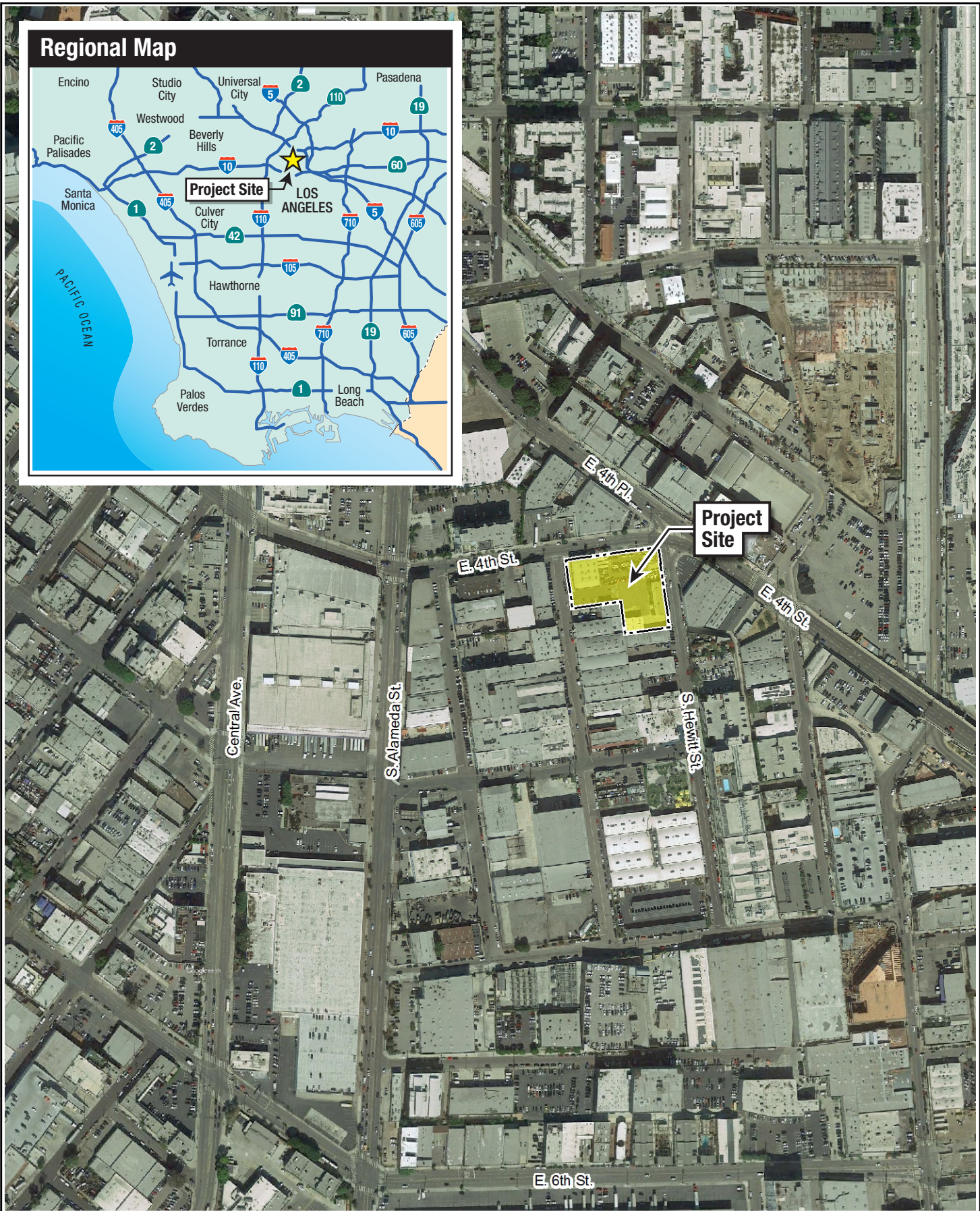
Determine item is exempt pursuant to the California Environmental Quality Act (CEQA) Guidelines 15268 (b) (4). In accordance with Section 15268 (b) (4) of the CEQA Guidelines, ministerial projects such as approval of individual utility service connections and disconnections are statutorily exempt from the requirements of CEQA.

CITY ATTORNEY

The Office of the City Attorney reviewed and approved the Resolution as to form and legality.

ATTACHMENTS

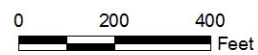
- Map of Proposed Project
- Resolution
- Water Supply Assessment



Aerial GoogleEarth Pro, Oct. 18, 2016.

4TH AND HEWITT PROJECT

Site and Regional Location Map



RESOLUTION NO. _____

WHEREAS, Los Angeles Department of Water and Power (LADWP) constitutes a public water system pursuant to California Water Code Section 10912, subdivision (c); and

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WHEREAS, the Project is located in the service area of LADWP's water supply system, and LADWP would serve the area of the Project development; and

WHEREAS, on January 2, 2018, the City of Los Angeles (City) Department of City Planning (Planning Department) requested LADWP to perform a Water Supply Assessment (WSA) for the Project. On March 24, 2020, Planning Department submitted an amended WSA request with a revised scope, and LADWP has prepared a WSA for the Project in compliance with California Water Code Sections 10910-10915; and

WHEREAS, the Project would redevelop approximately 1.3 acres within the Central City North Community Plan area of the City; and

WHEREAS, LIG – 900, 910, and 926 East 4th Street, 405-411 South Hewitt Street, LLC has agreed to implement additional conservation measures, as described in WSA, that are in addition to those required by law; and

WHEREAS, LADWP staff performed the water demand analysis and determined the net increase in total water demand for the Project is 49 acre-feet per year; and

WHEREAS, the Project is determined by Planning Department to be consistent with the demographic projections for the City from both the 2012 and 2016 Regional Transportation Plans by the Southern California Association of Governments; and

WHEREAS, LADWP anticipates that its projected water supply that is available during normal, single-dry, and multiple-dry water years as included in the 25-year projection contained in its adopted 2015 Urban Water Management Plan can accommodate the projected water demand associated with the Project, in addition to the existing and planned future demands on LADWP; and

WHEREAS, in accordance with California Water Code Section 10910 (g) (1) the Board has the responsibility for approval and certification of WSAs prepared by LADWP; and the Board has independently reviewed and considered the WSA and documentation making up the administrative record; and

WHEREAS, a publicly noticed Board hearing was held with respect to this item, and the Board considered evidence presented by LADWP's Water Resources Division staff, the staff recommendation to approve the WSA, and other comments from interested parties at the public hearing.

NOW, THEREFORE, BE IT RESOLVED that the Board finds that LADWP can provide sufficient domestic water supplies to the Project area and approves the WSA prepared for the Project, now on file with the Secretary of the Board, and directs that WSA and a certified copy of Resolution be transmitted to Planning Department.

BE IT FURTHER RESOLVED that the Board finds that LADWP's total projected water supplies available during normal, single-dry, and multiple-dry water years during a 20-year projection will meet the projected water demands associated with the Project in addition to existing and planned future uses including agricultural and industrial uses.

BE IT FURTHER RESOLVED that the Board has considered the WSA prior to making a decision to approve the WSA, and finds that the WSA is adequate and was prepared in accordance with California Water Code Section 10910 (c) (2), and meets the requirements of California Water Code Section 10910 (d), (e), (f), and (g).

I HEREBY CERTIFY that the foregoing is a full, true, and correct copy of a Resolution adopted by the Board of Water and Power Commissioners of the City of Los Angeles at its meeting held

Secretary

APPROVED AS TO FORM AND LEGALITY
MICHAEL N. FEUER, CITY ATTORNEY

JANUARY 25, 2021



BY _____

TINA SHIM
DEPUTY CITY ATTORNEY



WATER SUPPLY ASSESSMENT FOR THE 4TH AND HEWITT PROJECT

Prepared by:
Water Resources Division

Prepared on
January 20, 2021

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References

California Department of Water Resources California's Groundwater Bulletin 118 Update 2003

Upper Los Angeles River Area Watermaster Report for 2017/2018
Dated December 2019

Los Angeles Department of Water and Power 2015 Urban Water Management Plan
Metropolitan Water District of Southern California Integrated Water Resources Plan
2015 Update

Metropolitan Water District of Southern California 2015 Urban Water Management
Water Plan

California Code of Regulations Title 23. Waters, Division 2. Department of Water
Resources, Chapter 2.7. Model Water Efficient Landscape Ordinance

City of Los Angeles Department of Public Works Bureau of Sanitation (LASAN) Sewer
Generation Rates Table

Appendix

- A. Los Angeles Department of City Planning letter, Request for Water Supply Assessment, received on January 2, 2018 and amended on March 24, 2020, and Scope Confirmation e-mail received on December 21, 2020
- B. Water Conservation Commitment Letter
- C. Project Location Maps
- D. Adjudicated Groundwater Basin Judgments
- E. Water Supply Assessment Provisions – California Water Code Section 10910-10915
- F. MWD of Southern California (Appendix A)
- G. Water Supply Assessment Checklist

Introduction

Proposed major projects subject to certain requirements in the California Water Code Sections 10910-10915 require that a city or county identify any public water system that may supply water to the 4th and Hewitt Project (Project) and request the public water system provide a Water Supply Assessment (WSA). The WSA is a determination by the water supplier that the demands associated with the Project were included in its most recently adopted 2015 Urban Water Management Plan (2015 UWMP) showing that there is an adequate 20-year water supply. The UWMP serves as the City of Los Angeles' (City) master plan for reliable water supply and resources management.

The City of Los Angeles Department of City Planning (Planning Department), serving as the lead agency as prescribed by the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.), for the Project, has identified Los Angeles Department of Water and Power (LADWP) as the public water system that will supply water. In response to Planning Department's request for a WSA, LADWP has performed the assessment contained herein.

LADWP has supplied the City with a safe and reliable water supply for over a century. Over time, the City's water supplies have evolved from primarily local groundwater to predominantly imported supplies. As of Fiscal Year Ending (FYE) 2020, the City relies on over 85 percent of its water from imported sources. To reduce the City's dependence on purchased imported supplies, LADWP's 2015 UWMP outlines the City's strategy to achieve its goals and policy objectives. In April 2019, LADWP, in conjunction with the City, developed short-term and long-term sustainability targets through LA's Green New Deal (Green New Deal), to form a more reliable and resilient water supply. LADWP is committed to meet all the City's water needs while increasing supply reliability, stabilizing imported water purchases, and increasing locally produced water. The Green New Deal is available for download at http://plan.lamayor.org/sites/default/files/pLAN_2019_final.pdf.

The WSA is prepared to meet the applicable requirements of state law as set forth in California State Water Code Sections 10910-10915. Significant references and data for WSA are from the City's 25-year water resource plan 2015 UWMP, adopted by the Board of Water and Power Commissioners (Board) on June 7, 2016. LADWP's 2015 UWMP is incorporated by reference and is available for review through LADWP's Web site, www.ladwp.com/uwmp.

Findings

The Project is estimated to increase the total net water demand within the site by 49 acre-feet (AF) annually based on review of information submitted by Planning Department. The total net water demand included additional water use efficiency

measures that LIG – 900, 910, and 926 East 4th Street, 405-411 South Hewitt Street, LLC (Applicant) has committed to include in the Project. Therefore, LADWP finds adequate water supplies will be available to meet the total additional water demand of 49 AF annually for the Project. LADWP anticipates the projected water demand from the Project can be met during normal, single-dry, and multiple-dry water years, in addition to the existing and planned future demands on LADWP.

The basis for approving WSAs for developments is LADWP's most recently adopted UWMP. LADWP's water demand forecast, as contained in LADWP's 2015 UWMP, uses long-term demographic projections for population, housing, and employment. The California Urban Water Management Planning Act requires water suppliers to develop a UWMP every five years to identify short-term and long-term water resources management measures to meet growing water demands during normal, single-dry, and multiple-dry years. If the projected water demand associated with the Project was not accounted for in the most recently adopted LADWP 2015 UWMP, WSA must include a discussion with regard to whether LADWP's total projected water supplies available during normal, single-dry, and multiple-dry water years during a 20-year projection will meet the projected water demand associated with the Project, in addition to LADWP's existing and planned future uses.

The City's water demand projection in LADWP's 2015 UWMP was developed based on the 2012 Regional Transportation Plan (RTP) demographic projection by the Southern California Association of Governments (SCAG) using the 2010 United States (U.S.) Census for the City. LADWP's 2015 UWMP identified water supplies to meet projected water demands through 2040. Therefore, the City's water supply projections in LADWP's 2015 UWMP are sufficient to meet the water demand for projects that are determined by the CEQA lead agency to be consistent with both the 2012 and subsequent 2016 RTPs adopted by SCAG.

The Planning Department has indicated that a General Plan Amendment is required for the Project to conform with the City's General Plan. The Planning Department has determined that the Project is consistent with the demographic projections for the City from both the 2012 and 2016 RTPs. Based on the information provided by Planning Department, anticipated water demand for the Project is within LADWP's 2015 UWMP's projected water supplies for normal, single-dry, and multiple-dry years through the year 2040 and is within the LADWP 2015 UWMP's 25-year water demand growth projection. This WSA can be approved based on the fact that the Project's water demand falls within the LADWP 2015 UWMP's projected increase in citywide water demands, while anticipating multi-dry year water supply conditions occurring at the same time.

Additionally, LADWP's 2015 UWMP contains a water shortage contingency plan for multi-year dry hydrological periods. This water shortage contingency plan was implemented on June 1, 2009, when the Board adopted Shortage Year Rates, and the City Council implemented the landscape irrigation and prohibited use restrictions contained in the City's Water Conservation Ordinance. This water shortage contingency plan helps to ensure sufficient use of water during multi-year dry periods.

The City's Water Rate Ordinance, originally adopted in June 1995, was last amended by the Board, became effective April 15, 2016. The revised rate ordinance restructured the rates to help further promote conservation, which is reflected in the 25-year water demand projections. For example, single family rates switched to a four-tier system that sends a strong price signal to deter against wasteful water use. The Board finds that the price signals contained in the Water Rate Ordinance encourage conservation and support further reduction in City-wide demand. Past and current implementation of water rate price signals and higher ordinance phases have resulted in reducing the total customer water usage.

This WSA approval addresses the City's long-term water supply and demand forecasts to accommodate the Project. It is not an approval for water service connection. A separate request shall be made to LADWP requesting an evaluation of water service connection for the Project.

The 4th and Hewitt Project Description

The following project information was obtained from Planning Department's Amended WSA Request Letter and the scope confirmation e-mail (Appendix A):

Project Name: 4th and Hewitt
Lead Agency: Planning Department
Community Plan: Central City North Community Plan

The Project will redevelop approximately 1.3 acres within the Central City North Community Plan area of the City. The Project's site is generally bounded by the 4th Street to the north, Hewitt Street to the east, commercial and industrial buildings to the south, and Colyton Street to the west.

The Project will retain the existing 7,800 square-foot (sf) Architecture and Design Museum. The Project will add approximately 8,149 sf of restaurant space and 327,976 sf of office space. The Project will also include approximately 254,881 sf of covered vehicle parking and 8,955 sf of landscaping. The Project will demolish approximately 7,030 sf of the existing floor area, which includes 3,515 sf of office space, and 3,515 sf of storage. The existing water demand associated with the demolished space is approximately 0.5 acre-feet per year (AFY).

LADWP staff performed the water demand analysis and determined the net increase in water demand for the Project is 49 AFY.

A subsequent revised WSA may be required if one or more of the following occurs:

1. changes in the Project result in a substantial increase in water demand for the Project

2. changes in the circumstances or conditions substantially affecting the ability of LADWP to provide a sufficient supply of water for the Project
3. significant new information becomes available which was not known and could not have been known at the time when WSA was prepared.

If deemed necessary, the Applicant may request a revised WSA through lead agency.

The 4th and Hewitt Project Water Demand Estimate

Projected total net water demand increase for the Project is estimated to be 49 AF annually. This amount takes into account savings due to water conservation ordinances which are approximately 6 AFY, and savings due to additional voluntary conservation measures which are approximately 1 AFY.

In evaluating the Project's water demand, the Sewer Generation Factors (SGF), published by the City of Los Angeles Department of Public Works Bureau of Sanitation (LASAN) in 2012, are applied to the Project scope for calculating indoor water use. SGFs are factors of how much wastewater is generated (gallons per day) per unit (per sf, per dwelling unit, per seat, etc.). LASAN publishes a list of SGFs for approximately 175 different building use types in the City, and updates factors to make necessary adjustments due to water conservation efforts and increased efficiencies in new appliances and plumbing fixtures. Outdoor landscape water demand is estimated per California Code of Regulations Title 23 Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance. Historical billing records are used to establish existing baseline water demand on the property. LADWP also encouraged the Project to implement additional water conservation measures above and beyond the current water conservation ordinance requirements.

The net increase in water demand, which is the projected additional water demand of the Project, is calculated by subtracting the existing baseline water demand and water saving amount from the total proposed water demand.

Table I shows a breakdown of the existing and proposed new types of uses for the Project, and the corresponding estimated volume of water usage with the implementation of the required and voluntary conservation measures for this project.

Types of use were derived from the WSA Request Letter and the scope confirmation e-mail in Appendix A.

Table II shows an estimate of the total volume of water conservation based on conservation measures the Applicant has committed to for the Project (Appendix B).

TABLE I 4th and Hewitt Project Calculated Total Additional Water Demand							
Existing Use to be Removed ¹	Quantity	Unit	Water Use Factor ² (gpd/unit)	Existing Water Use to be Removed			
				(gpd)	(af/y)		
Existing Office	3,515	sf	0.12		422		
Existing to be Removed Total³					422		0.47
Proposed Use ¹	Quantity	Unit	Water Use Factor ⁴ (gpd/unit)	Base Demand (gpd)	Required Ordinances Water Savings ⁵ (gpd)	Proposed Water Demand	
						(gpd)	(af/y)
Office	327,976	sf	0.12	39,357			
Restaurant	272	seat	30	8,160			
Base Demand Adjustment ⁶				1,213			
Commercial Office/Restaurant Total				48,730	4,649	44,081	49.38
Landscaping⁷	8,955	sf		850	468	382	0.43
Covered Parking⁸	254,881	sf	0.02	168	0	168	0.19
Proposed Subtotal				49,748	5,117	44,631	50.00
Less Existing to be Removed Total						-422	-0.47
Less Additional Conservation ⁹						-466	-0.52
Net Additional Water Demand						43,743 gpd	49.01 af/y

¹ Provided by City of Los Angeles Department of City Planning in the Request for Water Supply Assessment letter and Scope Confirmation e-mail. See Appendix A.

² Estimated based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table.

³ Total of 7,030 sf of existing space will be demolished. 1,000 sf Museum Storage and 2,515 sf Office Garage/Storage are assumed to have no water demand and are not shown here.

⁴ Proposed indoor water uses are based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table available at <http://www.lacitysan.org/fmd/pdf/sfceeerates.pdf>.

⁵ The proposed development land uses will conform to City of Los Angeles Ordinance No. 186488, 184248, 2020 Los Angeles Plumbing Code, and 2020 Los Angeles Green Building Code.

⁶ Base Demand Adjustment is the estimated savings due to Ordinance No. 180822 accounted for in the current version of Bureau of Sanitation Sewer Generation Rates.

⁷ Landscaping water use is estimated per California Code of Regulations Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

⁸ Auto parking water uses are based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table, and 12 times/year cleaning assumption.

⁹ Water conservation due to additional conservation commitments agreed by the Applicant. See Table II.

Abbreviations:

sf- square feet du - dwelling unit gpd - gallons per day af/y - acre feet per year

TABLE II 4th and Hewitt Project Estimated Additional Water Conservation						
Conservation Measures ¹	Quantity ²	Units	Water Saving Factor ³ (gpd/unit)	Water Saved		
				(gpd)	(af/y)	
Toilet	6	ea	3.92	23	0.03	
Restaurant/Bar Conservation Total				23	0.03	
Toilet	81	ea	3.92	317	0.36	
Office Conservation Total				317	0.36	
Toilet	5	ea	3.92	20	0.02	
Showerhead	6	ea	7.50	45	0.05	
Other Conservation Total				65	0.07	
Landscaping Total Conservation⁴				61	0.07	
Total Additional Water Conserved =				466	0.52	

¹ Water conservation measures agreed to by the Applicant. See Appendix B.

² Plumbing fixture quantities were provided by the Applicant.

³ Based on LADWP estimates.

⁴ Landscaping water conservation is estimated per California Code of Regulations Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

Abbreviations: gpd - gallons per day af/y - acre feet per year ea – each

Water Demand Forecast

LADWP's 2015 UWMP projects yearly water demand to reach 675,700 AF by fiscal-year-ending (FYE) 2040 with passive water conservation, or an increase of 31.6 percent from FYE 2015 actual water demand. Water demand projections in five-year increments through FYE 2040 are available in LADWP's 2015 UWMP for each of the major customer classes: single-family, multifamily, commercial/governmental, and industrial. Demographic data from the Southern California Association of Government's 2012 RTP, as well as billing data for each major customer class, weather, conservation, price of water, personal income, family size, economy, and drought conservation effect were factors used in forecasting future water demand growth.

LADWP's 2015 UWMP used a modified-unit-use approach to develop its service area-wide water demand projections. This methodology does not rely on individual development demands to determine area-wide growth, because such an inventory in LADWP service area in the next 25 years is only a subset of the total development potential. Therefore, the growth or decline in population, housing units, and employment for the entire service area was considered in developing long-term water projections for the City through FYE 2040. The historical water demand for a unit of customer class, such as gallons-per-day per single family, is modified to account for future changes, including water conservation, and applied to the 2012 RTP demographic projections by

SCAG. This modified-unit-use-approach has proven to be a reliable forecast historically, when compared with actual consumption, excluding the effects of conservation.

Collaboration between LADWP and MWD is critical in ensuring that the City's anticipated water demands are incorporated into the development of Metropolitan Water District of Southern California's long-term Integrated Water Resources Plan (MWD's IRP). MWD's IRP is a continuous regional effort to develop regional water resources involving all of MWD's member agencies including the City. Successful implementation of MWD's IRP has resulted in reliable supplemental water supplies for the City from MWD.

Los Angeles Department of Water and Power – 2015 UWMP

The California Urban Water Management Planning Act (first effective on January 1, 1984) requires every urban water supplier prepare and adopt a UWMP every five years. The main goals of UWMPs are to forecast future water demands and water supplies under average and dry year conditions, identify future water supply projects such as recycled water, provide a summary of water conservation Best Management Practices (BMP), and provide a single and multi-dry year management strategy.¹

LADWP's 2015 UWMP, available for reference through www.ladwp.com/uwmp, serves two purposes: (1) achieve full compliance with requirements of California's Urban Water Management Planning Act; and (2) serve as a master plan for water supply and resources management consistent with the City's goals and policy objectives.²

A number of important events have occurred since LADWP prepared its 2010 UWMP:

- The year 2012 marked the start of the historic five-year drought in California.
- In January 2014 – Governor Jerry Brown proclaimed a drought state of emergency.
- July 2014 – The State Water Resources Control Board (SWRCB) implemented its Emergency Water Conservation Regulation (Emergency Regulation), as directed by Governor Brown, to take actions to reduce water use by 20 percent Statewide, which was later increased to 25 percent statewide.
- October 2014 – Mayor Eric Garcetti issued Executive Directive No. 5 (ED5) Emergency Drought Response which set goals to reduce per capita water use, reduce purchases of imported potable water by 50 percent, and create an integrated water strategy to increase local supplies and improve water security considering climate change and seismic vulnerability.

A number of new requirements have been added to the Urban Water Management Planning Act since completion of LADWP's 2010 UWMP, including: an extension of the

¹ *City of Los Angeles Department of Water and Power 2015 Urban Water Management Plan*, at ES-2.

² *Id.* at ES-2.

submittal deadline from December 31, 2015 to July 1, 2016, a narrative description of water demand measures implemented over the past five years and future measures planned to meet 20 percent demand reduction targets by 2020, implementation of a standard methodology for calculating system water loss, a mandatory electronic filing of UWMPs, a voluntary reporting of passive conservation savings, energy intensity, and climate change, and a requirement to analyze and define water features that are artificially supplied with water. Currently, LADWP has implemented a Water Loss Task Force to develop strategies to reduce water losses and increase efficiencies in the water distribution system, continue to track the energy intensity of water, update its climate change study, and the daily per capita water use is below the 2020 target of 142 gallons per capita per day (gpcd). The 142 gpcd target meets the Senate Bill X7-7 requirement to achieve 20 percent reduction in urban per capita water use by December 31, 2020.

Near-Term Conservation Strategies

Enforcing prohibited uses of water. Prohibited uses of water are intended to eliminate waste and increase awareness of the need to conserve water. In effect at all times, prohibited uses have been in place since the early 1990s. Under enforcement, failure to comply would be subject to penalties, which can range from a written warning for a first violation to monetary fines and water service shutoff for continued non-compliance.

Prohibited uses of water. The City's Emergency Water Conservation Plan Ordinance (No. 181288, 183608, and 184250) prohibits uses of water, sets certain water conservation requirements, and contains phases of conservation depending on the severity of water shortages. This Ordinance is expected to improve the City's ability to comply with current regulations and respond to the ongoing drought conditions. Some of the prohibited uses in effect at all times (Phase I) include³:

- Outdoor irrigation between the hours of 9 a.m. to 4 p.m.
- Outdoor irrigation during and 48 hours after rain events

Currently, LADWP is in Phase II of the Water Conservation Ordinance, which was enacted in August 2010. All prohibited uses in Phase I apply to Phase II. In addition, prohibited uses in Phase II include:

- Outdoor irrigation is restricted to three days a week with different watering days assigned to odd-numbered and even-numbered street addresses.

For a full list of water conservation Phases and prohibited uses, please refer to LADWP's 2015 UWMP.

³ *Id.* at 3-11.

On January 17, 2014, with California facing water shortfalls in the driest year in recorded state history, Governor Brown proclaimed a Drought State of Emergency. Responding to the executive order, in 2015, SWRCB imposed mandatory cutbacks ranging from four percent to 36 percent. LADWP was required to reduce its water use by 16 percent compared to the 2013 levels. LADWP met the state mandated reduction goal and saved 16.1 percent between June 2015 and May 2016.

On October 14, 2014, Mayor Garcetti issued his Executive Directive No. 5 (ED5) to set accelerated short-term conservation targets for the City to address the drought including per capita water use reduction goal of 20 percent by 2017. On January 1, 2017, the City was able to meet the short-term target of 20 percent reduction through drought response measures that dropped per capita water use to 104 gallons per day. While this extraordinary achievement will have lasting effects on the City's water use efficiency, LADWP continues to work together with residents and businesses to achieve additional permanent conservation savings and further reduce per capita water use. On April 7, 2017, Governor Brown issued Executive Order B-40-17 formally ending the drought emergency.

Extending outreach efforts. Over the last several years, LADWP has expanded conservation outreach and education. Some activities to promote conservation include: increased communication with ratepayers through Twitter, Facebook, newspapers, radio, television, bus benches/shelters, and movie theaters, among other types of media; outreach to Homeowner Associations and Neighborhood Councils; distribution of hotel towel door hangers and restaurant table tent cards; and ramping up marketing of expanded water conservation incentive and rebate programs.

On April 9, 2015, the "Save the Drop" Water Conservation Outreach Campaign was launched. This campaign is a partnership between LADWP and the Mayor's Office. Outreach materials include new public service announcements, radio spots, event handouts, and signage on the sides of LASAN trucks. The campaign has partnered with celebrities for public service announcements airing on TV, cinema, and radio.

Long-Term Local Supply Strategies

On May 31, 2018, Governor Brown signed two long-term water-use efficiency bills: Assembly Bill 1668 and Senate Bill 606. These bills are designed to help the State better prepare for droughts and climate change. They require that by January 1, 2025, the indoor residential use will reduce to 55 gallons per day (gpd), 52.5 gpd from 2025 to 2030, and 50 gpd beginning January 1, 2030.

While the State has these set goals, LADWP has and continues to implement various long-term strategies to develop and provide resilient and sustainable local water supplies for the City.

1.0 Increase Water Conservation Through Reduction of Outdoor Water Use and New Technology

Goal

Increase water conservation savings to improve water supply reliability while reducing costs, by cutting back on outdoor water use, expanding rebates and incentives, improving water efficiency at public facilities, and enhancing savings through review of new developments.

Action Plan

Conservation Rebates and Incentives. LADWP is continuing to expand rebates and incentives for homeowners and business owners to encourage them to purchase water-saving technology. Rebate and incentive programs include the following: Commercial Rebate Program, Residential Rebate Program, Direct Install Partnership Program, and Technical Assistance Program. For a full list of LADWP's rebate programs, please refer to www.ladwp.com.

Some highlights from the list of LADWP's numerous water conservation accomplishments are:

- LADWP's Water Conservation Program has achieved a total cumulative hardware water savings of over 150,000 AFY as of FYE 2020, through installation of conservation devices subsidized by rebates and incentives.
- Water conservation achievements have helped keep water demand flat for the last 45 years ago despite a population increase of over one million people.
- Turf Removal – Since FYE 2010, LADWP has rebated over 50 million square feet of turf replacements, saving over 2.3 billion gallons of water per year.

Enhancing Conservation through New Developments. LADWP continues to work with the City's Green Building Team to pursue desired changes in local codes and standards to promote water efficiency in new construction projects and major building renovations. The most updated revisions to local codes are 2020 Los Angeles Plumbing Code and 2020 Los Angeles Green Building Code, effective January 1, 2020. On April 8, 2015, the California Energy Commission adopted new efficiency standards for toilets, faucets and other appliances effective January 1, 2016. Also, on July 15, 2015, in response to Governor Brown's Executive Order B-29-15, the California Water Commission approved the revised Model Water Efficient Landscape Ordinance, which reduces the maximum amount of water allowed from the 2009 version of the ordinance. Also, Ordinance No. 184248, *Green Building Codes Revision, Use of Greywater Systems, Water Conservation Measures*, became effective June 6, 2016, and mandates a number of new fixture requirements and methods of construction for plumbing and irrigation systems. California Plumbing Code, Los Angeles City Plumbing Code and amending ordinances apply to all newly constructed buildings, additions and alterations

whenever new fixtures are installed in existing buildings. California Building Code, the LA Green Building Code and the amending ordinances also apply to new construction projects but are limited to additions and alterations that exceed the Building Code's valuation or increase the building's conditioned volume.

In addition, the City adopted Ordinance No. 181899, also known as the Low Impact Development Ordinance, and Ordinance No. 183833, entitled Stormwater and Urban Runoff Pollution Control. The purpose of these Ordinances includes rainwater harvesting and stormwater runoff management, water conservation, and recycled water reuse and gray water use. Ordinance No. 181899 was effective as of November 14, 2011, and Ordinance No. 183833 was effective October 3, 2015.

Future Programs⁴. In December 2014, LADWP started its Home Water Use Report Pilot Study, which provided 73,000 single family residential customers with bi-monthly home water use reports on their water usage, statistics on how they compare to similar households, customized water saving tips and rebate recommendations. In addition to the bimonthly home water reports, the recipients also have access to online historical water use, water use disaggregation estimates, and leak detection modules. LADWP plans to expand the availability of home water use reports to the entire single-family residential sector by mid-2021.

LADWP also started providing Hands on Workshops (HOWs) that provide attendees with the opportunity to take part in a landscape transformation at a residential home. Attendees learn how to remove turf, sheet mulch, grade for rainwater capture and install water efficient irrigation. LADWP has authorized an additional nine HOWs to be completed by mid-2021. Additionally, LADWP will be launching the Turf Replacement Design Service in early 2021 to provide customers, who wish to remove turf, with free customized landscape design plans for a sustainable, low water use garden.

LADWP Water Conservation Potential Study⁵. In Fall 2017, LADWP completed the Water Conservation Potential Study (WCPS), one of the most comprehensive assessments of the potential for future water conservation ever taken by a municipal water utility. The WCPS conducted detailed single-family and multifamily surveys, completed comprehensive onsite audits of City-owned facilities, and developed a sophisticated water conservation model to project future conservation potential. The WCPS determined that approximately 140,000 AFY in additional water conservation potential is achievable by FYE 2035, and meeting the City's aggressive 2025 and 2035 conservation goals will require tapping into most of the remaining conservation potential in the City.

Going forward, LADWP will use the WCPS findings and conservation model to develop a balanced conservation plan that achieves the City's long-term conservation goals. Meeting the goals will require a combination of increased funding for LADWP's conservation programs and continued commitment from LADWP customers to make

⁴ *Id.* at 3-33.

⁵ *Id.* at 3-34.

conservation a way of life for Los Angeles. The WCPS findings show that a large portion of the remaining conservation potential will come from passive water savings through customers' actions to comply with all City conservation codes and ordinances and finding additional opportunities to improve water efficiency for their residential or commercial properties.

2.0 Water Recycling

LADWP's 2015 UWMP set a target of delivering 75,400 AFY of recycled water by 2040 to off-set imported water.⁶ Some of the examples of the steps the City is taking in order to achieve this goal are listed below. There are other projects not listed below that will also contribute to recycled water use in the City's service area.

Recycled Water Master Planning (RWMP). In 2012, LADWP completed a three-year RWMP. RWMP documents guide near-term recycled water planning through 2035, as well as long-term recycled water planning for up to 50 years beyond the 2035 horizon. RWMP documents include an evaluation of recycling alternatives that integrate two strategies to increase recycling: Groundwater Replenishment (GWR), and non-potable reuse (NPR). The RWMP set goals for the GWR Project to replenish San Fernando Basin (SFB) with up to 30,000 AFY of recycled water, and for NPR projects to increase NPR recycled water use to 45,400 AFY by 2040.

GWR Project. The GWR is in the Planning phase. The Environmental Impact Report was certified in December 2016 by the Board of Water and Power Commissioners. The GWR Project is transitioning to a phased approach. The Initial Phase of the project will deliver up to 3,500 AFY of recycled water for indirect potable reuse in the San Fernando Valley starting in July 2021, then increase to 7,000 AFY in 2025.

The Machado Lake Pipeline Project (MLPP). MLPP is a part of a joint agency project between LASAN, Los Angeles Bureau of Engineering, and LADWP to serve the Los Angeles Harbor area customers up to an additional 6 million gallons per day of advanced treated recycled water from an expanded Terminal Island Treatment Plant (TITP). The MLPP will construct 8,800 linear feet of 24-inch ductile iron pipeline that connects two segments of existing pipeline infrastructure, thus creating a looped pipeline service system within the Los Angeles Harbor Area. The project is split into two construction phases. Construction of Phase I was completed in late 2020 and Phase II is estimated to be completed by mid-2021.

Second Gap Connection Pipeline Project. This pipeline project is to supply the LA County Dominguez Gap Seawater Intrusion Barrier (DGB) with a second supply line of advanced treated recycled water from the LASAN Terminal Island Water Reclamation Plant, and will increase service capacity to the DGB from 6 million gallons per day (mgd) to over 9.5 mgd. The pipeline is approximately 3000 linear feet of 24-inch diameter ductile iron pipe. LADWP and the Water Replenishment District of Southern

⁶ *Id.* at 4-27.

California (WRD) negotiated an agreement to construct this service pipeline as a joint agency project. Construction is anticipated to start in mid-2021 with an estimated completion in 2023.

Harbor Recycled Water System Potable Backup Project. The purpose of this project is to maximize the reuse of water from the Terminal Island Water Reclamation Plant by increasing the reliability of the Harbor Recycled Water System. This project will provide the Harbor Recycled Water System with a potable water backup supply capacity of 14.4 million gallon per day by constructing a 250 foot, 24-inch connection between a 36-inch steel pipe in LADWP's 320-foot potable Service Zone and a 24-inch ductile iron pipe in the Harbor Recycled Water System. LADWP and WRD negotiated an agreement scheduled for execution in fall 2020 to construct this project as a joint agency project. Design is anticipated to start in early 2021 and construction is scheduled to start in early 2022. The estimated in-service date is in late 2024.

For more information on our existing and planned recycled water pipelines and projects, please see our Recycled Water Annual Report available at the following link: www.ladwp.com/recycledwaterreport.

3.0 Enhancing Stormwater Capture

Stormwater runoff from urban areas is an underutilized resource. Within the City, the majority of stormwater runoff is directed to storm drains and ultimately channeled into the ocean. Unused stormwater reaching the ocean carries with it many pollutants that are harmful to marine life. In addition, local groundwater aquifers that should be replenished by stormwater are receiving less recharge than in the past due to increased urbanization. Urbanization has increased the City's hardscape, which has resulted in less infiltration of stormwater and a decline in groundwater elevations.

LADWP's Stormwater Capture Master Plan (SCMP), which was completed in August 2015, comprehensively evaluated stormwater capture potential within the City. The goals of the SCMP are to quantify stormwater capture potential and identify new projects, programs, and policies to significantly increase stormwater capture for water supply within the 20-year planning period. Achieving these goals, will help the City achieve its long-term strategy of enhancing local water supply through stormwater capture.

Through intensive implementation of both centralized projects and distributed programs, SCMP provides a strategy to achieve an annual average capture of 132,000 to 178,000 AFY by 2035, which includes the current baseline capture of 64,000 AFY. These projects include stormwater captured through infiltration type projects and programs that recharge aquifers as well as direct use programs that offset potable water demands, though the bulk of the capture is achieved through infiltration.

LADWP's 2015 UWMP projects that there will be a minimum of 15,000 AFY of increased groundwater pumping in SFB due to water supply augmentation through

centralized stormwater infiltration by year 2040. Anticipating that stored groundwater will rebound in response to enhanced groundwater replenishment, LADWP will work with the Upper Los Angeles River Area Watermaster to continue observing actual water levels and re-evaluate basin safe yield to allow additional increases in groundwater production over time as SFB elevations rebound.⁷

The San Fernando Valley spreading facilities are effective at capturing stormwater flowing down the tributaries; however, they are incapable of capturing significant portions of flow during wet and extremely wet years. Weather patterns in Los Angeles are highly variable, with many periods of dry years and wet years. Some climate studies predict that these patterns may become extreme in the future.

LADWP is currently partnering with other government and non-governmental agencies in various stormwater capture projects that include the following:

Completed Centralized Projects

Implemented centralized projects have increased the amount of stormwater captured by an average of 10,600 AFY during an average rainfall year. Below are recently implemented centralized projects:

- Big Tujunga Seismic Retrofit Project
- Hansen Spreading Grounds Upgrade
- Sheldon-Arleta Gas Management System

Completed Distributed Projects

LADWP's already implemented distributed projects that have increased the amount of stormwater captured by 490 AFY during an average rainfall year. The following are recently implemented distributed projects:

- Bradley Green Alley Project
- Elmer Avenue Neighborhood Green Street/Elmer Paseo Green Alley Stormwater Infiltration Projects
- Garvanza Park Stormwater Capture Use and Infiltration Project
- Glenoaks-Sunland Stormwater Infiltration Project
- Great Street – Van Nuys Boulevard Project
- Hollywood/Los Angeles Beautification Stormwater Capture Project
- Laurel Canyon Green Street
- LAUSD Conserving for Our Kids Program
- North Hollywood Alley Retrofit BMP Demonstration Project
- Sun Valley Economic Development Administration Public Improvement Project
- Sun Valley Park Stormwater Infiltration Project
- Woodman Avenue Median Stormwater Infiltration Project

⁷ *City of Los Angeles Department of Water and Power 2015 Urban Water Management Plan, at 7-29.*

Future Centralized Projects

By 2024, the following centralized projects are expected to be implemented that will provide an estimated 16,300 AFY of increased stormwater capture annually during an average rainfall year:

- Tujunga Spreading Grounds Upgrade
- Pacoima Spreading Grounds Upgrade
- Bull Creek Pipeline

Current/Future Distributed Projects

The following distributed projects are expected to be implemented in the next three years that will provide an estimated 540 AFY of increased stormwater capture annually during an average rainfall year:

- Agnes and Vanowen Stormwater Capture Project
- Burbank Boulevard BMP Capture Project
- Ben and Victory Stormwater Capture Project
- Glenoaks and Filmore Stormwater Capture Project
- Glenoaks-Nettleton Stormwater Infiltration Project
- Great Street – Lankershim Boulevard Project
- Victory and Goodland Stormwater Capture Project

LADWP's current effort also includes the Stormwater Capture Parks Program. By 2026, the following projects are expected to be implemented that will provide an estimated 3,090 AFY of increased stormwater capture annually during an average rainfall year:

- Alexandria Park Stormwater Capture Project
- David M. Gonzales Recreation Center Stormwater Capture Project
- Fernangeles Park Stormwater Capture Project
- North Hollywood Park Stormwater Capture Project
- Strathern Park North Stormwater Capture Project
- Valley Plaza Park North Stormwater Capture Project
- Valley Plaza Park South Stormwater Capture Project
- Valley Village Park Stormwater Capture Project
- Whitsett Fields Park North Stormwater Capture Project

Additional information regarding stormwater capture projects can be found in LADWP's Stormwater Capture Master Plan (2015) and Urban Water Management Plan (2015).

4.0 Accelerating Clean-Up of SFB

The SFB is an aquifer that can provide sufficient drinking water to over 800,000 residents within the City. However, LADWP groundwater production wells in SFB have been impacted by contamination caused by improper handling and disposal of hazardous chemicals from the aircraft manufacturing industry and other, commercial activities dating back to the 1940s. Resolving the contamination problems and restoring the beneficial use of the SFB will help protect public health and the environment, and to recover LADWP's historical groundwater supply and valuable local water resource.

Since the 1980 discovery of volatile organic compound (VOC) contamination of groundwater in SFB, LADWP has been working with government agencies to contain and remediate man-made contaminants in SFB. Chlorinated solvents such as trichloroethylene (TCE), perchloroethylene (PCE) and carbon tetrachloride account for the majority of this groundwater contamination.

From 2009 to 2015⁸, LADWP began an \$11.5 million, six-year study and development of a comprehensive remediation and cleanup strategy for all groundwater basin contamination in SFB.

Development of State-of-the-Art Groundwater Basin Remediation Facilities

- Based on the available groundwater quality information, a groundwater basin remediation program consisting of centralized as well as localized/well-head remediation facilities will be needed for public and environmental benefits as well as to prevent further losses to the beneficial use of groundwater.
- Design and construction of the groundwater basin remediation facilities is estimated to cost approximately \$600 million, and operation and maintenance is estimated to cost an additional \$50 million per year.

Groundwater and Treatment System Monitoring

- In order to fully characterize SFB groundwater quality as required by SWRCB Board's Division of Drinking Water guidelines and policies, LADWP has drilled 26 new monitoring wells in SFB to fill in data gaps and utilized a network of over 70 existing monitoring and production wells.
- Cost to install the monitoring wells is approximately \$22 million.

With completion of SFB groundwater characterization, LADWP is proceeding with the necessary environmental reviews, design, permitting, construction, and start-up of the groundwater basin remediation program to effectively clean and remove contaminants from SFB.

The current groundwater remediation facilities in operation are:

⁸ *Id.* at 6-9.

- **NHOU:** The NHOU began operations in the 1980s to treat 4.5 cfs of contaminated groundwater; however, changing groundwater conditions limited the ability of the remedy to contain the VOC plume. Implementation of a Second Interim Remedy is currently in progress to contain concentrated areas of the plume, but will not address contamination that has migrated to other well fields.
- **Liquid-Phase GAC Pilot Treatment Plant at Tujunga Wellfield:** The Liquid-Phase GAC Pilot Treatment Plant removes VOCs from two of the twelve production wells in the Tujunga Wellfield at 8,000 gpm, and treats the extracted groundwater for potable use. This pilot facility is a joint project with MWD to demonstrate the effectiveness of utilizing certain liquid phase GAC media for removal of VOCs from the groundwater.
- **Pollock Wells Treatment Plant:** The plant provides four liquid-phase GAC vessels to remove VOC contamination from two groundwater wellheads. However, LADWP has recently identified 1,4-dioxane and hexavalent chromium as emerging contaminants that may impair the operation of the Pollock Wells Treatment Plant.

These facilities will work with the new remediation facilities to clean up the majority of contaminants impacting LADWP's highest producing wellfields, including TCE, PCE, and 1,4-dioxane. The proposed centralized and localized facilities are:

- North Hollywood West Wellhead Treatment – Operation expected by 2022
- North Hollywood Central Treatment – Operation expected by 2023
- Tujunga Central Treatment – Operation expected by 2023

The overall purpose of the San Fernando Groundwater Basin Remediation Project is to restore and protect the full beneficial use of the San Fernando Groundwater Basin as a source of water consistent with LADWP's long-term water rights and historic groundwater use.

More information about LADWP's SFB Groundwater Remediation program can be found at www.ladwp.com/remediation.

To help achieve LADWP's commitment to developing sustainable local water supplies, critical funding from Proposition 1 (Prop 1) – the Water Quality, Supply, and Infrastructure Improvement Act of 2014 was passed on November 4, 2014 to support groundwater cleanup, stormwater capture, recycled water, water conservation, regional water management, and Los Angeles River revitalization projects. Prop 1 is a bond measure that provides \$7.545 billion to fund investments in water projects and programs as part of a statewide, comprehensive water plan for California. As of FYE 2020, LADWP has been awarded \$327.9 million in grants and \$3 million in zero-interest loans.

Water Supplies

The Los Angeles Aqueducts (LAA), local groundwater, purchased water from MWD, and recycled water are the primary sources of water supplies for the City. Table III shows LADWP water supplies from FYE 2016 to FYE 2020 from these sources.

TABLE III
LADWP Water Supply

Fiscal Year Ending	Los Angeles Aqueducts	Local Groundwater	MWD	Recycled Water	Transfer, Spread, Spills, and Storage	Total
2016	57,853	79,056	339,975	9,913	-3,509	490,306
2017	224,724	50,439	216,299	8,032	9,350	490,144
2018	307,671	21,760	182,706	9,778	-200	522,116
2019	312,456	32,233	137,775	7,512	1,710	488,266
2020	292,095	34,363	152,647	9,641	1,155	487,591

Note: Units are in AF.

1.0 Los Angeles Aqueducts

Snowmelt runoff from the Eastern Sierra Nevada Mountains is collected and conveyed to the City via Los Angeles Aqueducts (LAA). LAA supplies come primarily from snowmelt and secondarily from groundwater pumping and can fluctuate annually due to the varying hydrologic conditions. Since 1991, LAA supplies have been less than the historical average due to environmental obligations in Mono and Inyo Counties.

The City holds water rights in the Eastern Sierra Nevada where LAA supplies originate. These supplies originate from both streams and from groundwater. In 1905, the City approved a bond measure for purchase of land and water rights in the Owens River Valley. By 1913, the first LAA began its deliveries of water to the City primarily from surface water diversions from the Owens River and its tributaries. Historically, these supplies were augmented from time to time by groundwater extractions from beneath the lands that the City had purchased in the Owens Valley.

In 1940, the first LAA was extended north to deliver Mono Basin water to the City pursuant to water rights permits and licenses granted by the SWRCB. In 1970, the second LAA was completed increasing total delivery capacity of the LAA system to approximately 561,000 AFY. The second LAA was to be filled by completing the Mono Basin diversions originally authorized in 1940, by a more effective use of water for agricultural purposes on City-owned lands in the Owens Valley and Mono Basin and by increased groundwater pumping from the City's lands in the Owens Valley.

In 1972, Inyo County filed a CEQA lawsuit challenging the City's groundwater pumping program for the Owens Valley. In 1991, Inyo County and the City entered into the Inyo/LA Long-Term Water Agreement (Agreement) to manage groundwater in the Owens Valley. That same year, the Environmental Impact Report (EIR) for the Agreement and groundwater impacts was certified. In 1997, the EIR challenges and CEQA lawsuit had settled. The Agreement, entered as a judgment of the Superior Court in the County of Inyo (County of Inyo vs. City of Los Angeles, Superior Court No. 12908), outlines the management of the City's Owens Valley groundwater resources. As a result of the Agreement and subsequent MOU, LADWP has dedicated approximately 37,000 AF of water annually for enhancement and mitigation projects throughout Owens Valley which includes the re-watering of 62 miles of the Lower Owens River. LADWP also provides approximately 80,000 AF of water annually for other uses in the Owens Valley such as irrigation, town water supplies, stockwater, wildlife and recreational purposes.

Further, in December 1989, the Superior Court entered an injunction, ordering LADWP to allow sufficient flow to pass through the Mono Basin diversion facilities to maintain water level in Mono Lake at 6,377 feet from sea level and also to restore streams and protection of fishery in these streams. As a result, the City did not export any water from Mono Basin until 1994, when SWRCB issued Decision 1631. In September 1994, citing compliance with the public trust doctrine, the SWRCB issued Decision 1631, an amendment to the license for LADWP exports from Mono Basin which placed conditions on LADWP's water gathering activities from Mono Basin. Under Decision 1631, LADWP's allowable amount of export for a given runoff year (RY), April - March is dependent on the Mono Lake elevation. LADWP has implemented an extensive restoration and monitoring programs in Mono Basin to increase the level of Mono Lake and to improve stream conditions, fisheries, and waterfowl habitats in Walker, Parker, Rush and Lee Vining Creeks. With reduced diversions from the Mono Basin and favorable hydrologic conditions, Mono Lake's elevation has risen overtime. The Mono Lake annual average elevation reached 6,383 feet (between 6,380 and 6,391 feet) in RY 2019/20. This means that LADWP's allowable Mono Lake exports are 16,000 AF for RY 2020/21. Once the elevation of Mono Basin reaches 6,391 feet above mean sea level, a moderate increase in water exports from the Mono Basin may be permitted.

Diversion of water from Owens River, first by farmers in the Owens Valley and then by the City beginning in 1913, resulted in the exposed lakebed of Owens Lake becoming a major source of windblown dust. In July 1998, LADWP and the Great Basin Unified Air Pollution Control District (GBUAPCD) entered into a Memorandum of Agreement with requirements for LADWP to mitigate dust emissions from Owens Lake. Over the years, GBUAPCD continued to increase LADWP's obligations from the original 16.5 square mile dust control area to 48.6 square miles as of 2020. To meet these obligations, LADWP has invested \$2.4 billion on dust mitigation capital projects throughout Owens Lake, and historically, up to 75,000 AF of water from the LAA has been diverted each year to supply water-using dust control measures at Owens Lake.

With no end in sight for additional dust control orders, a historic agreement between LADWP and GBUAPCD was reached on November 14, 2014, which finally established an upper limit of 53.4 square miles that LADWP could potentially be ordered to mitigate dust emissions from Owens Lake Playa by the GBUAPCD. Hence, GBUAPCD's potential future dust mitigation orders to LADWP cannot exceed an additional 4.8 square miles. Furthermore, in recognition of the recent five-year drought that began in 2012, which strained LADWP's water resources, the agreement also set the stage for further development of water efficient and waterless dust mitigation measures at Owens Lake while mitigating impacts to the environment, such as habitat and cultural resources.

As a result, LADWP was able to implement multiple water conservation dust control measures in the past 5 years, such as Tillage, Dynamic Water Management, and Brine. These innovative efforts have helped reduce Owens Lake annual average water use to 60,000 AF. LADWP continues to explore new water-efficient dust control strategies and implement its Owens Lake Master Project (Master Project). Developed collaboratively with a variety of public stakeholders, the Master Project is an ambitious, lake-wide effort that balances multiple goals of mitigating dust, conserving water, and maintaining habitat & cultural resources. LADWP has already implemented the Master Project framework in previous dust control projects such as the Phase 7a and Phase 9/10 projects and is currently seeking to implement additional non-regulatory projects under this framework with the condition that all Master Project goals can be achieved in a cost-effective manner.

Additional plans are in development to use water efficiently for dust mitigation measures and enhance the environment. In 2007, the Owens Lake Groundwater Development Program began to look at the feasibility to use groundwater under the Owens Lake bed for dust mitigation measures. In the summer 2019, an independent group of scientists and engineers formed the Owens Lake Scientific Advisory Panel (Panel) to provide dust control strategies. The Panel published a report in February 2020 that proposes a "Landscape-Based Systems approach" to mitigate dust, conserve water, and enhance the environment in and around the Lake.

Average deliveries from LAA system have been approximately 238,960 AF annually from Fiscal Year (FY) 2015/16 to 2019/20. This average delivery includes two of the five dry years that began in FY 2012/2013 and finally ended in FY 2016/2017 with the highest levels of snowpack at 203 percent of normal. Since imported supplies vary from year to year depending on the hydrology, LADWP plans to increase resiliency to address climate change and natural disasters by developing sustainable local water supplies.

2.0 Groundwater

LADWP pumps from three adjudicated basins within the City. SFB and Sylmar Basin are subject to the judgment in the City of Los Angeles vs. City of San Fernando, et al. Groundwater pumping by LADWP and other parties is tracked and reported to the

court-appointed Upper Los Angeles River Area (ULARA) Watermaster. The Central Basin is also subject to court judgment. Pumping is reported to WRD, the administrative member of the Central Basin Water Rights Panel.

The SFB is the largest of four basins within ULARA. The basin consists of 112,000-acres of land and comprises 91.2 percent of ULARA valley fill area. The City has accumulated 591,460 AF of stored water credits in the San Fernando Basin as of October 1, 2018. A portion of this water is available for the City to withdraw during normal and dry years, or in an emergency, in addition to the City's approximate 87,000 AF annual entitlement. With SFB remediation facilities estimated to be operational by 2023, the groundwater storage credits may be used to optimize pumping beyond the City's annual entitlement.

While the majority of the City's groundwater is extracted from the SFB, the Sylmar Basin also provides local groundwater supply. Sylmar is located in the northern part of ULARA, consists of 5,600 acres, and comprises 4.6 percent of ULARA valley fill area. The City's current annual entitlement per latest Sylmar Safe Yield is 3,570 AF. As of October 1, 2019, the City has accumulated 9,014 AF of stored water credits in the Sylmar Basin. Sylmar Basin production is anticipated to increase to 4,170 AFY from FYE 2021 to FYE 2036 to utilize groundwater the City has accumulated into storage and then return to the entitlement of 3,570 AFY in FYE 2037.⁹

The ULARA Judgment was adopted through court adjudication on January 26, 1979, dictating the water rights within the basins of ULARA. Enclosed with the assessment are copies of those pages from the judgment showing the entitlements (see Appendix D). Further information about ULARA is detailed in the annual ULARA Watermaster Report. Both the Watermaster Reports and Judgment are available for review at the office of the ULARA Watermaster or on-line at www.ularawatermaster.com.

The City also has adjudicated groundwater extraction rights in the Central Basin. LADWP's annual entitlement is 17,236 AF. As of July 1, 2020, LADWP has accumulated 22,943 AF of stored water in the Central Basin, and pumping can be temporarily increased until stored water credits have been expended.¹⁰ See Appendix D for copies of relevant portions of Central Basin third amended judgment. Judgment is available for review on the WRD Web site at <http://wrwater.org/>.

The City plans to continue to develop production from its groundwater basins in the coming years to offset reductions in imported supplies. Groundwater produced by the City from the San Fernando, Sylmar, and Central Basins for the last available five years are shown on Table IV. See LADWP 2015 UWMP Exhibit 6I for the projected groundwater production through FYE 2040.

⁹ *Id.* at 11-4.

¹⁰ *Id.* at 6-24.

TABLE IV
Local Groundwater Basin Supply

Fiscal Year (July-June)	San Fernando	Sylmar	Central
2014-2015	80,097	1	6,948
2015-2016	75,958	683	8,395
2016-2017	55,116	0	3,005
2017-2018	22,259	0	0.77
2018-2019	36,871	1	5
2019-2020	35,948	2	10

Note: Units are in AF. Historical data are from the Upper Los Angeles River Area Watermaster Monthly Reports, July 2014 to June 2019.

Per the Agreement for Interim Water System Connection and Water Delivery between the cities of Los Angeles and Burbank, the City has been receiving water from Burbank Water and Power via the LA-Burbank Interim Interconnection starting August 2019. This water is groundwater from SFB treated at the Burbank Operable Unit (BOU), blended with MWD treated surface water. The agreement also allows the City to be able to utilize its SFB entitlements and increase its local water supplies. The agreement will remain in effect until June 30, 2025 or earlier if terminated earlier by either party.

During 2012-2016 drought, California was challenged with several statewide water shortage issues, including over pumping which results in land subsidence and dry well issues. The State Legislature enacted the Sustainable Groundwater Management Act (SGMA), effective January 1, 2015, in order to equip and empower local agencies with tools to manage local groundwater basins in a sustainable manner. Actions necessary to achieve sustainability will vary with each basin, but SGMA generally requires local agencies to form Groundwater Sustainability Agencies (GSAs) by January 30, 2017, develop and implement Groundwater Sustainability Plans (GSPs), and monitor and report status of groundwater conditions of high- and medium-priority basins. GSPs for critically over drafted high- and medium-priority basins were due to DWR by January 31, 2020. GSPs for the remaining high- and medium-priority basins are due to DWR by January 31, 2022. SGMA will mitigate and prevent the occurrence of adverse effects caused by unreasonable use of groundwater, such as groundwater storage depletion, land subsidence, seawater intrusion, water quality degradation, critical overdraft basin conditions, and surface water depletions.

The City overlies both adjudicated and unadjudicated basins. LADWP is working with its regional partners towards compliance with the SGMA for the unadjudicated basins, such as the Santa Monica Basin (SMB). The Hollywood Basin, also within the City boundary, was classified as low priority and not mandated to develop a GSA/GSP. Similarly, areas associated with adjudicated basins, like the northern area of Central Basin, were eventually characterized as lower priority and exempt by DWR.

In September 2017, DWR approved the formation of the SMBGSA as the exclusive GSA in the SMB. The five member agencies include LADWP, the City of Beverly Hills, the City of Santa Monica, the City of Culver City, and the County of Los Angeles. In November 2019, the SMBGSA initiated the development of a GSP for the SMB. The final GSP will be submitted to DWR by January 31, 2022.

3.0 Metropolitan Water District of Southern California

MWD is the largest water wholesaler for domestic and municipal uses in Southern California. As one of the 26 member agencies, LADWP purchases supplemental water from MWD in addition to the supplies from local groundwater, recycled water and LAA. MWD imports a portion of its water supplies from Northern California through the State Water Project's (SWP) California Aqueduct and from the Colorado River through MWD's own Colorado River Aqueduct (CRA). LADWP will continue to rely on MWD to meet its current and future water needs.

In ongoing efforts to evaluate MWD's own import reliability, an assessment was done to address changes in demand and supply conditions, and to provide additional resource reserves to mitigate against uncertainties in demand projections and risks in implementing supply programs. All these efforts went into MWD's 2015 UWMP. http://www.mwdh2o.com/PDF_About_Your_Water/2.4.2_Regional_Urban_Water_Management_Plan.pdf. Preparation of the 2020 UWMP by MWD is underway.

All 26 member agencies have preferential rights to purchase water from MWD. Pursuant to Section 135 of MWD Act, "Each member public agency shall have a preferential right to purchase from the district for distribution by such agency, or any public utility therein empowered by such agency for the purpose, for domestic and municipal uses within the agency a portion of the water served by the district which shall, from time to time, bear the same ratio to all of the water supply of the district as the total accumulation of amounts paid by such agency to the district on tax assessments and otherwise, excepting purchase of water, toward the capital cost and operating expense of the district's works shall bear to the total payments received by the district on account of tax assessments and otherwise, excepting purchase of water, toward such capital cost and operating expense." This is known as preferential rights. As of June 30, 2020, LADWP has a preferential right to purchase 18.12 percent of MWD's total water supply.

LADWP has worked with MWD in developing a plan for allocating water supplies during periods of shortage. On February 12, 2008, MWD Board adopted its Water Supply Allocation Plan (WSAP). LADWP supported the adoption of this plan to acquire its dry weather condition supplies from MWD.

The record dry and hot conditions of 2014 significantly impacted the water resources of both the State of California and MWD. DWR limited supplies from SWP to only five percent of the contractors' SWP Table A amounts in 2014. This allocation was the lowest ever in the history of SWP. MWD was able to meet demands in 2014 by relying

heavily on storage reserves to make up for the historically low allocation on SWP. MWD's dry-year storage reserves ended 2014 at approximately 1.2 million AF.

On April 14, 2015, to support Governor Brown's Executive Order B-29-15, and to reduce withdrawals from MWD's dry-year storage reserves, MWD implemented WSAP at a Level 3 Regional Shortage Level, effective July 1, 2015, through June 30, 2016. MWD's dry-year storage reserves ended 2015 at approximately 0.87 million AF.

On May 10, 2016, citing the improved water supply conditions and reduced water use due to conservation, MWD voted to end the current WSAP allocation and rescind WSAP Regional Shortage Level 3 and declared a Condition 2 Water Supply Alert for allocation year 2016/17. MWD, however, called for member agencies to continue with conservation efforts to safeguard against future dry years. On April 9, 2017, citing the improved water supply conditions, the actions taken by the Governor and the projected storage reserves, MWD voted to declare a Condition 1 Water Supply Watch.

LADWP plans to reduce purchase of MWD water supplies through increase conservation, increase recycle water production, and enhance groundwater pumping through stormwater capture and groundwater replenishment. This would allow LADWP to further reduce dependence on purchased imported water from MWD and maintain a resilient and sustainable water supply for the City.

State Water Project

SWP is owned by the State of California and operated by DWR, delivering water to two-thirds of the population of California and 750,000 acres of farmland. The SWP facilities include 30 dams, 20 reservoirs, 29 pumping and generating plants, and approximately 700 miles of aqueducts and pipelines. The water stored and delivered by the SWP originates from Northern California's watersheds, where most of the State's precipitation occurs. SWP facilities originate in Northern California at Lake Oroville on the Feather River and is pumped from the Bay-Delta region to contractors in areas north and south of the San Francisco Bay and south of the Bay-Delta.

MWD receives SWP water at three locations: Castaic Lake in Los Angeles County at the terminus of SWP West Branch, Devil Canyon Afterbay in San Bernardino County at the terminus of SWP East Branch Extension, and Box Springs Turnout at Lake Perris in Riverside County at the terminus of SWP East Branch.

MWD began receiving water from the SWP in 1972. MWD is the largest of the 29 SWP contractors, holding a contract for 1.912 MAF per year, or 46 percent of the total contracted amount of the 4.173 MAF ultimate delivery capacity of the project. Variable hydrology, environmental issues, and regulatory restrictions in the San Francisco Bay/Sacramento-San Joaquin River Delta (Bay-Delta) have periodically reduced the quantity of water that the SWP delivers to MWD.

Contract allocations for SWP contractors are provided by DWR in Table A, based on the original projected SWP maximum yield of 4.173 MAF. DWR annually approves the amount of contract allocations SWP contractors will receive. The contract allocation amount received by contractors varies based on contractor demands and projected available water supplies. Variables impacting projected water supplies include snowpack in the Sierra Nevada, capacity available in reservoirs, operational constraints, and demands of other water users.

Recent Issues Related to the State Water Project

Endangered Species Act Considerations

DWR has altered the SWP's operations to accommodate certain species that are threatened or endangered, which impact SWP deliveries to MWD. On December 15, 2008, the United States Fish and Wildlife Service (USFWS) released a biological opinion on the impacts of the State Water Project and the federal Central Valley Project on Delta smelt. Based on the biological opinion's findings, the USFWS provided recommended actions to protect the Delta smelt. On June 4, 2009, the National Marine Fisheries Service (NMFS) released a biological opinion for salmonid species. The water supply restrictions imposed by these biological opinions on Delta smelt and salmonid species have a range of impacts on Metropolitan's deliveries from the SWP that are depending on hydrologic conditions. The impact on total SWP deliveries to State Water Contractors attributable to the Delta smelt and salmonid species biological opinions combined is estimated to be one million AF in an average year, reducing total State Water Project deliveries to State Water Contractors from approximately 3.3 million acre-feet to approximately 2.3 million AF for the year under average hydrology.

On October 22, 2019, USFWS and NMFS released new biological opinions. The Bureau of Reclamation completed its environmental review of the proposed action covered by the new biological opinions on February 19, 2020. The new opinions replace the existing federal permits for the Central Valley Project.

On March 31, 2020 the California Department of Fish and Wildlife (CDFW) issued an Incidental Take Permit to DWR for long-term operations of the SWP. In April 2020, MWD, with the MWD Board approval, joined the State Water Contractors in their litigation against DWR and CDFW over the ITP. The impacts to MWD from the ongoing negotiation of Voluntary Agreements on the new biological opinions and incidental take permit, as well as litigation challenging them, remain unknown.

New Bay-Delta Conveyance Facility

In 2006, multiple State and federal resource agencies, water agencies, and other stakeholder groups entered into a planning agreement for the Bay-Delta Conservation Plan (BDCP). BDCP included alternatives for new water conveyance infrastructure and extensive habitat restoration in the Bay-Delta. In 2015, during the administration of the Governor Brown, the State and federal lead agencies proposed an alternative

implementation strategy and new alternatives to the BDCP to provide for the protection of water supplies conveyed through the Bay-Delta and the restoration of the ecosystem of the Bay-Delta, termed “California WaterFix” and “California EcoRestore,” respectively.

In July 2017, DWR certified a final EIR and approved the California WaterFix as an improvement to the State Water Project. As originally approved by DWR, California WaterFix, if completed, will provide new conveyance facilities for the transportation of State Water Project and Central Valley Project water from the north Delta, through two 30-mile long tunnels running under the Delta, to the existing aqueduct systems in the south Delta.

On April 29, 2019, Governor Newsom issued an executive order directing State agencies to develop a comprehensive statewide strategy to build a climate-resilient water system that included consideration of a single-tunnel Bay-Delta conveyance facility instead of the approved WaterFix project. Currently, DWR is pursuing a new environmental review and planning process for a single tunnel project to modernize the State Water Project’s Bay-Delta conveyance. The formal environmental review process commenced with the issuance by DWR of a Notice of Preparation under CEQA on January 15, 2020. In August 2020, the U.S. Army Corps of Engineers issued a Notice of Intent for the development of a new EIR. Planning, environmental review and conceptual design work by DWR for the proposed single tunnel Delta Conveyance Project is expected to take approximately 36 to 48 months.

Colorado River

MWD owns and operates the CRA, which since 1942 has delivered water from the Colorado River to Southern California. The Colorado River currently supplies approximately 17 percent of Southern California’s water needs, and on average makes up about 15 percent of LADWP’s purchases from MWD. This source of supply has been secured to MWD through long-standing legal entitlements. However, extended drought conditions and increased demands by other users have recently impacted its reliability.

The Colorado River supplies come from watersheds of the Upper Colorado River Basin in the states of Colorado, Utah, and Wyoming. Due to the way that Colorado River supplies are apportioned, snowpack and runoff levels do not impact MWD water supplies in the current year. Instead, snowpack and runoff would impact storage levels at Lake Powell and Lake Mead, which would then affect the likelihood of surplus or shortage conditions in the future.

By MWD having two principal sources of supply that draw from two different watersheds, MWD is able to utilize supplies from the Colorado River to offset reductions in SWP supplies and buffer impacts of the California drought. MWD plans to use CRA deliveries, storage reserves and supplemental water transfers and purchases to meet regional demands.

Under a permanent service contract with the U.S. Secretary of the Interior, MWD is entitled to receive water from the Colorado River and its tributaries. This water is also available to other users in California, as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming. Under a 1944 treaty, Mexico is allotted 1.5 million AF annually, except in extraordinary circumstances. There is long history of competition among users, but current conditions necessitate increased cooperation.

California is apportioned 4.4 million AF, annually, plus one-half of any surplus that may be available for use, collectively, in Arizona, California, and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to, but not used by, Arizona or Nevada. Since 2003, due to increased consumption, there has been no such unused, apportioned water available to California. Of the California apportionment, MWD holds the fourth priority right to 550,000 AFY under the 1931 priority system governing allotments to California. This is the last priority within California's basic apportionment of 4.4 million AF. Beyond the basic apportionment, MWD holds the fifth priority right to 662,000 AF of water. See Appendix F for more details.

Historically, MWD has been able to claim most of its legal entitlement of Colorado River water and could divert over 1.2 million AF in any year, but persistent drought conditions since 1999 have contributed to a decrease in these claims. The recent 16-year drought has been so severe that it has resulted in major reductions in water deliveries from the Colorado River. In response, the federal government, states and urban and agricultural water districts that depend on the Colorado River worked together toward a solution.

The Secretary of the Interior adopted the Interim Surplus Guidelines in 2001 to determine if there is surplus Colorado River water available for use in California, Arizona, and Nevada (Lower Basin States) through 2016. In 2007, the Secretary of the Interior issued the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead through a Record of Decision. The Record of Decision provide water release criteria from Lake Powell and water storage and water release criteria from Lake Mead during shortage and surplus conditions in the Lower Basin, provided a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead and extend the Interim Surplus Guidelines through 2026. The guidelines also created the Intentionally Created Surplus (ICS) program, which allows the Lower Basin States to store conserved water in Lake Mead. ICS water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) is eligible for storage in Lake Mead by MWD.

Since the 2007 Lower Basin shortage guidelines were issued for the coordinated operations of Lake Powell and Lake Mead, the Colorado River has continued to experience drought conditions. In order to reduce the risk of Lake Powell and Lake Mead declining below critical elevations, the federal government, states and urban and agricultural water districts that depend on the Colorado River worked together towards a solution. Their efforts resulted in the Drought Contingency Plan adopted and enacted in 2019. The Drought Contingency Plan is a collection of agreements within and among

the seven western states in the Colorado River Basin to boost storage levels in Lake Mead and Lake Powell and prevent the reservoirs from reaching critically low levels.

The Lower Basin Drought Contingency Plan Agreement requires California, Arizona and Nevada to store defined volumes of water in Lake Mead at specified lake levels. California would begin making contributions if Lake Mead's elevation is projected to be at or below 1,045 feet above sea level on January 1. As of September 2020, Lake Mead's elevation measured approximately 1,084 feet.

Reliability Efforts for Southern California

MWD has been developing plans and making efforts to provide additional water supply reliability for the entire Southern California region. LADWP coordinates closely with MWD to ensure implementation of these water resource development plans. MWD's long-term plans to meet its member agencies' growing reliability needs are through: improvements to SWP as outlined in the EcoRestore plans, conjunctive management efforts on the Colorado River, water transfer programs, outdoor conservation measures, and development of additional local resources, such as recycling, brackish water desalination, and seawater desalination. These plans are contained in MWD's 2015 IRP and 2015 UWMP, which can be found at the following links:

- MWD 2015 IRP:
[http://mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20\(web\).pdf](http://mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20(web).pdf)
- MWD 2015 UWMP:
http://www.mwdh2o.com/PDF_About_Your_Water/2.4.2_Regional_Urban_Water_Management_Plan.pdf

Additionally, MWD has more than 5.0 million AF of storage capacity available in reservoirs and banking/transfer programs. MWD was estimated to have 3.2 million AF of water in Water Surplus Drought Management storage and additional 750,000 AF in emergency storage as of January 1, 2021. Continued efficiency in the region kept demands low in 2020, resulting in available water supplies exceeding demands. With implementation of new and modified existing storage programs to manage the available surplus supplies, MWD was able to add to storage in 2020. MWD began CY 2021 with approximately 3.2 million AF of water in its dry-year storage portfolio.

MWD's 2015 IRP builds upon the strong foundation of diversification and adaptation developed in previous IRPs. 2015 IRP reinforces MWD commitment to meeting the region's water supply needs through an evolving long-term strategy that calls for maintaining and stabilizing existing resources along with developing more conservation and new local supplies.

MWD's 2015 UWMP reports on water reliability and identifies projected supplies to meet the long-term demand within MWD's service area. Table V summarizes MWD's reliability in five-year increments extending to 2040 and is based on information contained in MWD's 2015 UWMP. As reported, MWD has supply capabilities that would be sufficient to meet expected demands from 2020 through 2040 under average year, single dry-year and multiple dry-year hydrologic conditions. An in-depth discussion on MWD is attached in Appendix F.

Table V
MWD System Forecast Supplies and Demands
Average Year (1922 - 2012 Hydrology)

Forecast year	Supply (Thousands of AF per Year)				
	2020	2025	2030	2035	2040
<i>Current Programs</i>					
In-Region Supplies and Programs	693	774	852	956	992
State Water Project ¹	1,555	1,576	1,606	1,632	1,632
Colorado River Aqueduct					
Colorado River Aqueduct Supply ²	1,468	1,488	1,484	1,471	1,460
Aqueduct Capacity Limit ³	1,200	1,200	1,200	1,200	1,200
Colorado Aqueduct Capability	1,200	1,200	1,200	1,200	1,200
Capability of Current Programs	3,448	3,550	3,658	3,788	3,824
<i>Demands</i>					
Total Demands on MWD	1,586	1,636	1,677	1,726	1,765
Imperial Irrigation District - San Diego County Water Authority Transfers and Canal Linings ⁴	274	282	282	282	282
Total Demands on MWD	1,860	1,918	1,959	2,008	2,047
Surplus	1,588	1,632	1,699	1,780	1,777
<i>Programs Under Development</i>					
In-Region Supplies and Programs	43	80	118	160	200
State Water Project	20	20	268	268	268
Colorado River Aqueduct					
Colorado River Aqueduct Supply	5	25	25	25	25
Aqueduct Capacity Limit ²	0	0	0	0	0
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Programs Under Development	63	100	386	428	468
Maximum MWD Supply Capability	3,511	3,650	4,044	4,216	4,292
Potential Surplus	1,651	1,732	2,085	2,208	2,245

1. Includes water transfers and groundwater banking associated with SWP.

2. Includes 296 TAF of non-MWD supplies conveyed in CRA for Imperial Irrigation District - San Diego County Water Authority Transfers and Canal Linings.

3. CRA has a capacity constraint of 1.20 MAF per year.

4. Does not include 16 TAF subject to satisfaction of conditions specified in agreement among MWD, the US, and the San Luis Rey Settlement.

4.0 Secondary Sources and Other Considerations

Stormwater capture, water conservation, and recycling will play an increasing role in meeting future water demands. LADWP has implemented stormwater capture, conservation, and recycling programs with efforts under way to further promote and increase the level of these programs. LADWP is committed to supply a higher percentage of the City's water demand through local water supply development.

LADWP works closely with MWD, LASAN, other regional water providers, and various stakeholders to develop and implement programs that reduce overall water use. One example of such collaboration is an integrated resources planning process.

5.0 Summary of Water Demand and Supply Projections for 20 years

Table VI tabulates the service reliability assessment for average weather year. Existing water conservation has been subtracted already from projected demands, but new water conservation is included as a supply source.

Table VI
Service Area Reliability Assessment for Average Weather Year

Demand and Supply Projections (in acre-feet)	Average Weather Conditions (FY 1961/62 to 2010/11) Fiscal Year Ending on June 30				
	2020	2025	2030	2035	2040
Total Water Demand¹	611,800	644,700	652,900	661,800	675,700
pLAn Water Demand Target	485,600	533,000	540,100	551,100	565,600
Existing / Planned Supplies					
Conservation (Additional Active ² and Passive ³ after FY14/15)	125,800	110,900	111,600	109,100	108,100
Los Angeles Aqueduct ⁴	275,700	293,400	291,000	288,600	286,200
Groundwater ⁵ (Net)	112,670	110,670	106,670	114,670	114,070
Recycled Water					
- Irrigation and Industrial Use	19,800	29,000	39,000	42,200	45,400
- Groundwater Replenishment	0	30,000	30,000	30,000	30,000
Stormwater Capture					
- Stormwater Reuse (Harvesting)	400	800	1,200	1,600	2,000
- Stormwater Recharge (Increased Pumping)	<u>2,000</u>	<u>4,000</u>	<u>8,000</u>	<u>15,000</u>	<u>15,000</u>
Subtotal	536,370	578,770	587,470	601,170	600,770
MWD Water Purchases					
With Existing/Planned Supplies	75,430	65,930	65,430	60,630	74,930
Total Supplies	611,800	644,700	652,900	661,800	675,700
Potential Supplies					
Water Transfers ⁶	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>
Subtotal	40,000	40,000	40,000	40,000	40,000
MWD Water Purchases					
With Existing/Planned/Potential Supplies	35,430	25,930	25,430	20,630	34,930
Total Supplies	611,800	644,700	652,900	661,800	675,700

¹ Total Demand with existing passive conservation

² Cumulative hardware savings since late 1980s reached 118,034 AFY by 2014-15.

³ Additional non-hardware conservation required to meet water use reduction goals set in the Sustainable City pLAn.

⁴ LADWP anticipates conserving 20,000 AFY of water usage for dust mitigation on Owens Lake after the Master Project is implemented in FY 2023-24. Los Angeles Aqueduct supply is estimated to decrease 0.1652% per year due to climate change impact.

⁵ Net GW excludes Stormwater Recharge and Groundwater Replenishment supplies that contribute to increased pumping. The LADWP Groundwater Remediation project in the San Fernando Basin is expected in operation in 2021-22. Storage credit of 5,000 AFY will be used to maximize pumping in 2019-20 and thereafter. Sylmar Basin production will increase to 4,170 AFY from 2015-16 to 2038-39 to avoid the expiration of stored water credits, then go back to its entitlement of 3,570 AFY in 2039-40.

⁶ Potential water transfer occurs in dry years with stored water acquired in average and wet years.

Service area reliability assessments for single-dry year and multiple-dry year conditions are shown in LADWP 2015 UWMP Exhibits 11F through 11H. Demands are met by the available supplies under all scenarios.

Rates

Capital costs to finance facilities for the delivery of water supply to LADWP's service area are supported through customer-billed water rates. The Board sets rates subject to approval of City Council by ordinance. The Board is obligated by City Charter to establish water rates and collect charges in an amount sufficient to service the water system indebtedness and to meet its expenses for operation and maintenance.

On March 15, 2016, City Council approved the new water rates and rate structure. New water rates, which became effective April 15, 2016, through Ordinance 184130 provide for modest rate increases each year over a five-year period for infrastructure improvements, meeting regulatory water quality requirements, Owens Valley mitigation measures, and expanding the local water supply, which includes recycled water, stormwater capture, conservation, and groundwater remediation. New water rate structure increases the number of tiers from two to four for single-family residential customers. Goal is to incentivize conservation while recovering the higher costs of providing water to high volume users. In keeping with cost of service principles, the incremental pricing for the tiers is based on the cost of water supply.

Conclusion

The Project is estimated to increase the total water demand within the site by 49 AF annually. This additional water demand for the site has been accounted for in the City's overall total demand projections in the LADWP 2015 UWMP using a service area-wide approach that does not rely on individual development demand. The LADWP 2015 UWMP utilized SCAG's RTP data that provide reliable water demand forecasts, considering changes in population, housing units, and employment.

Based on the Planning Department's determination that the Project is consistent with the demographic forecasts for the City from the 2012 SCAG RTP, LADWP finds that the Project water demand is included in the City's LADWP 2015 UWMP. Furthermore, the LADWP 2015 UWMP forecasts adequate water supplies to meet all projected water demands in the City through the year 2040. LADWP therefore concludes that the projected 49 AFY increase in the total water demand for this Project is accounted for in the 2015 UWMP's 25-year water demand projections. LADWP finds it will be able to meet the proposed water demand of the Project as well as existing and planned future water demands of its service area.

Appendix A

City of Los Angeles Department of City Planning
Request for Water Supply Assessment,
and Scope Confirmation e-mail

DEPARTMENT OF
CITY PLANNING
COMMISSION OFFICE
(213) 978-1300

CITY PLANNING COMMISSION

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DEPUTY DIRECTOR

March 24, 2020

Mr. Richard F. Harasick
Senior Assistant General Manager for Water System
Los Angeles Department of Water & Power
111 North Hope Street, Room 1455
Los Angeles, CA 90012-5701

RE: AMENDMENT TO REQUEST FOR WATER SUPPLY ASSESSMENT FOR
PROJECT LOCATED AT 401 S. HEWITT STREET, LOS ANGELES, CA 90013 ENV-
2017-470-EIR, SCH # 2017091054

Dear Mr. Harasick:

The Department of City Planning is preparing an Environmental Impact Report ("EIR") in accordance with the California Environmental Quality Act ("CEQA") for a proposed project located at 900, 902, 904, 906-910, and 926 E. 4th Street; 406, 408, and 414 S. Colyton Street; and 405, 407, 411, 417, and 423 S. Hewitt Street, Los Angeles, California 90013 (the "Project Site"). The proposed address would be at 401 S. Hewitt Street, Los Angeles, CA 90013 (the "Project"). Pursuant to CEQA Guidelines Section 15206(b)(2)(B), this Project meets the criteria for being of "regional significance" because it includes the development of more than 500 dwelling units, a shopping center or business establishment encompassing more than 500,000 square feet ('sf') of floor space or employing more than 1,000 persons, and a commercial office building encompassing more than 250,000 sf of floor space or employing more than 1,000 persons.

For this reason, the Project must comply with the water supply assessment requirements of State Water Code (Section 10910-10915). As such, on January 2, 2018, the Project requested that the Los Angeles Department of Water & Power prepare a water supply assessment to determine its ability to meet the water demands of this project. However, due to Project changes, provided below is an updated description of the Project.

Project Title

"4th & Hewitt," located at 401 S. Hewitt Street

Project Applicant

LIG – 900, 910 and 926 E. 4th St., 405-411 S. Hewitt St., LLC
6315 Bandini Blvd.
Commerce, CA 90040
Contact: Dilip Bhavnani
Phone: (213) 820-9596
dilip@sunscopeusa.com

Contact Information for Project Representative

Mayer Brown
350 S. Grand Ave., 35th Floor
Los Angeles,, CA 90071
Contact: Edgar Khalatian
Phone (213) 229-9548
ekhalatian@mayerbrown.com

Contact Information for CEQA Lead Agency

City of Los Angeles
Department of City Planning
Major Projects
221 N. Figueroa St., Suite 1350
Los Angeles, CA 90012
Contact: William Lamborn
Phone: (213) 847-3637
william.lamborn@lacity.org

EIR Consultant

Envicom Corporation
4165 E. Thousand Oaks Blvd., Suite 290
Westlake Village, CA 91362
Contact: Johanna Falzarano
Phone: (818) 879-4700
jfalzarano@envicomcorporation.com

Project Location

The approximately 1.3-acre Project Site is located on the south side of 4th Street between Colyton and Hewitt Streets within the Arts District in the Central City North Community Plan Area of the City of Los Angeles. The Project Site is bounded by 4th Street to the north; Colyton Street to the west; Hewitt Street to the east; and industrial/warehouse and commercial uses to the south (see Attachment A). The Project Site is located approximately 0.35 miles east of the Los Angeles River, 0.10 miles west of S. Alameda Street, 0.75 miles south of Highway 101, and approximately one mile north of the Santa Monica Freeway (Interstate 10). The Project Site is comprised of the following parcels: Assessor Parcel Number ("APN") Nos. 5163-022-001 through 5163-022-003, 5163-022-005, 5163-022-022, and 5163-022-023. Table 1 below provides parcel information for the Project Site.

Table 1
Project Site – Parcel Information

APN	Street Address	Area (Net Square Feet) ¹
5163-022-001	926 E. 4 th St.	6,959 sf
5163-022-002	906-910 E. 4 th St.	5,002 sf
5163-022-003	900, 902, 904 E. 4th St. and 406 and 408 Colyton St.	10,012 sf
5163-022-005	414 S. Colyton St.	7,506 sf
5163-022-022	405, 407, 411, 417 and 423 S. Hewitt St	27,624 sf
5163-022-023		
TOTAL		57,103 net sf (1.31 acres)

¹ Psomas. 2016. ALTA/NSPS Land Title and Design Survey for: 4th Street Center. October 13.
 Note: Project Site square footage does not include easements and dedications. The addition of these elements results in a site square footage of 57,325 as shown on Vesting Tentative Tract Map No. 74745 (Psomas, January 6, 2017).

Existing Uses

The Project Site is currently developed with the 7,800-gross sf Architecture and Design (“A+D”) Museum and associated 1,000 gross sf detached storage space, a 6,030-gross sf office and related garage/storage space, and approximately 39,751 sf of surface parking lots. Current on-site operations include museum, storage space, and office activities. As summarized in Table 2 below, and as shown in Attachment B, Existing Site Plan, there are four structures within the Project Site with a gross floor area of 14,830 sf at the time the notice of preparation for the EIR was prepared on September 20, 2017.

Table 2
Existing Land Uses on the Project Site

Location	Land Use Type	Gross Floor Area (square feet)
906-910 E. 4 th St./ 904 E. 4 th St./ 414 S. Colyton St.	Museum	7,800 sf
412 Colyton St.	Museum Storage Space	1,000 sf
405 S. Hewitt St./ 407- 411, 423 S. Hewitt St.	Office	3,515 sf
	Office Garage Space	2,515 sf

Corner of Hewitt and 4 th Streets	Surface Parking Lot	-
TOTAL		14,830 sf
<i>Source: Gensler Architecture, 2019</i>		

Table 3 below provides as much known information available regarding service and customer information. Currently, there is only one meter for each of the water, electricity, and gas utility on the Project Site, which are located outside of the 405 S. Hewitt Street building and assigned to that location. The A+D Museum is located on the Project Site, at 904 E. 4th Street, and does not have a meter identified for any of its utilities. It is unclear whether both buildings (the law office and museum) are connected to the meters located at 405 Hewitt St. Therefore, it is also unclear if the current meter reads include all of the uses on the Project Site, or if it just reflects the law office use.

Table 3
Meter Numbers by Street Address for Project Site

Street Address/AP N	Customer	Use	Meter Numbers
926 E. 4 th St. 5163-022-001	City Center Parking	Surface parking Lot	Water: None Elec: None Gas: None
906-910 E. 4 th St. 5163-022-002	A+ D Museum	Standard use for a museum	Water: N/A Elec: N/A Gas: N/A
904 E. 4 th St. 5163-022-003			
414 S. Colyton St. 5163-022-005			
405 S. Hewitt St. 5163-022-022	Miller Law Associates APC	Standard use for an office	Water: 90388311 Elec: PMS00219-00019511 Gas: 13441995
(407-411 S. Hewitt St. 5163-022-023)			

As described above, because it is unknown whether the meter is providing an accurate read of current usage, supplemental information is provided below. Table 4 below

provides consumption estimates of water usage based on sewer usage standards for the two existing types of uses.

Table 4
Estimated Water Usage

Use/Street Address	Area (sf)	Sewer Generation Ratio	Estimated Water Usage
Museum 906-910 E. 4 th St./ 904 E. 4 th St./ 414 S. Colyton St.	7,800 sf	30 gallons/1,000 sf	234 GPD
Office 405 S. Hewitt St. / 407-411 S. Hewitt St.	3,515 sf	120 gallons/1,000 sf	422 GPD
Total	11,315 sf	Estimated Total Water Usage	656 GPD
<i>Source: City of Los Angeles Bureau of Sanitation "Sewage Generation Factor for Residential and Commercial Categories" table dated April 2, 2012</i>			

Project Comparison

Since submission of the January 2, 2018 water supply assessment request letter, the Project has been redesigned. Most prominently, the Project's total floor area has increased and redistributed throughout the Project site. Specifically, floor area for office uses has increased, while the retail/restaurant floor area has slightly decreased and currently only includes restaurant uses. The Project's overall height and number of floors have also increased, and also now includes a mezzanine on the ground floor and on Level 6. While the number of floors dedicated to parking has not changed, the total provided vehicular parking spaces has slightly increased proportionate to the increase in office floor area. Table 5, below, provides a summary comparison of the Project, as currently proposed, compared to the January 2018 iteration.

Table 5
Project Comparison

	January 2018	October 2019
Height		
<i>Top of Mechanical</i>	190'-0"	286'-0"
<i>Top of Roof</i>	170'-0"	272'-0"
<i>Height of Podium</i>	65'-0"	86'-0"
Number of Floors	11+ Mechanical	17+ Mechanical
Number of Parking Floors		
<i>Above ground</i>	4	4
<i>Below ground</i>	3	3
Floor Area		
<i>Existing Museum (A+D)</i>	7,800 SF	7,800 SF
<i>Retail/Restaurant</i>	14,995 SF	8,149 SF (restaurant only) ¹
<i>Office (incl. common area)</i>	266,408 SF	327,976 SF
<i>Total</i>	289,203 SF	343,925 SF
FAR	5.04	6.0
Number of Parking Spaces	538	660
Number of Bicycle Spaces	164	112
<i>Source: Gensler Architecture, 2018 and 2019, respectively</i>		

Project Characteristics

The Project would retain the approximately 7,800-sf existing A+D Museum and includes the demolition of approximately 1,000 sf of storage space associated with the A+D Museum, approximately 6,030 sf of office and related garage/storage space, and approximately 39,751 sf of surface parking lots. The Project would include construction of a 17-story (excluding mechanical, lower and upper roof levels) commercial office building consisting of approximately 8,149 sf of ground floor commercial space (restaurant), approximately 311,682 sf of commercial office space, and approximately 16,294 sf of exterior common area.

The ground floor of the Project Site would also include a landscaped outdoor plaza (940 sf of shrubs and ground cover, 210 sf for trees, for a total of 1,150 sf) that would lead to the passageway within the new commercial building to provide public pedestrian access between Colyton and Hewitt Streets, as well as access into the A+D Museum. The Project would provide 660 vehicle parking spaces located on three subterranean levels as well as on the 2nd through 5th floors of the proposed building (to be described in

¹ Ground floor retail uses have been removed from the redesigned Project and now only includes ground floor restaurant uses.

further detail below). Bicycle parking would be located on the ground floor and would be comprised of 72 long term spaces and 40 short term spaces.

Office space would comprise the 6th through 17th floors, with a portion of the 6th floor including a mezzanine. Outdoor amenity space (private balconies) would also be provided on the 6th through 17th floors. The Project would include 17 stories (excluding mechanical, lower, and upper roof levels) and mechanical equipment located on the rooftop. The main structure would rise to a maximum height of approximately 272 feet above grade; however, screening for the rooftop mechanical equipment would rise to a height of approximately 286 feet and portions of the rooftop equipment would exceed the screening height by 9 feet, for a total of approximately 295 feet. The Project's proposed floor area ratio ("FAR") would be approximately 6:1. Construction of the Project is expected to occur in a single phase and is anticipated to begin in 2021 and would be completed in 2023.

A summary of land uses and amount of square feet of development is presented in Table 6 below. Select relevant plan sheets, renderings, and landscape plans are provided in Attachment C.

Table 6
Proposed Development Program

Use	Floor Area (square feet)
A+D Museum (existing to remain)	7,800 sf
Restaurant	8,149 sf
Office	311,682 sf
Exterior Common Areas	16,294 sf
Total	343,925 sf 6:0 FAR
<i>Source: Gensler Architecture, 2019</i>	

Parking

The Project would include 660 parking spaces located on three subterranean levels as well as on the 2nd through 5th floors. The parking structure would be approximately 254,881 square feet. The vehicle parking calculations for the Project are provided in Table 7-A below, per LAMC requirements. The Project would also include a total of 112 short- and long-term bicycle parking spaces to meet the LAMC requirements for the proposed commercial land uses, as shown in Table 7-B, below. The 40 short-term bicycle parking spaces would be accessible from the passageway that connects to the lobby, all of the ground floor uses, and elevator to the upper floors. The 72 long-term bicycle parking spaces would be located on the ground floor, also accessible from the passageway. See Attachment C, for ground level and floors 2 through 5 floor plans.

**Table 7-A
 Proposed Vehicle Parking Program**

Use	LAMC 12.21.A.4	Spaces Required	Spaces Proposed
Institution/ Museum (7,800 sf)	2 per 1,000 sf per LAMC 12.21.A.4.(d) (Existing to remain)	16 (replaces 16 existing spaces)	16 (replaces 16 existing spaces)
Commercial - restaurant/office/common (336,125 sf)	2 per 1,000 sf per LAMC 12.21.A.4.(x) (State Enterprise Zone)	672	672
Total		688	688
Allowable Vehicle Space Reduction per Bicycle Replacement ¹			-28
Vehicle Parking Minimum Requirement			660
Total Provided			660
¹ Per the City of Los Angeles Bicycle Parking Ordinance, Off-Street Automobile Parking Requirements, new or existing automobile parking spaces required by Code, for all land uses, may be replaced by bicycle parking at a ratio of one automobile parking space for every four bicycle parking spaces provided. No more than 20 percent of the required automobile parking spaces for nonresidential uses shall be replaced at a site.			

**Table 7-B
 Proposed Bicycle Parking Program**

Use	Spaces Required LAMC Section 12.21.A.16			Spaces Proposed		
	Short-term	Long-term	Total	Short-term	Long-term	Total
Office (327,976 sf)	33 (1/10,000 sf)	66 (1/5,000 sf)	99	33	66	99
Restaurant (8,149 sf)	4 (1/2,000 sf or 2 per shop)	4 (1/2,000 sf or 2 per shop)	8	7	4	11
Institution/ Museum (7,800 sf)	0 (Existing use to remain. None required.)			0	0	0
Additional bicycle parking spaces				0	2	2
Total	37	70	107	40	72	112

Landscaping/Open Space

Although not required for commercial uses, the Project would include several areas of open space. The Project would include a landscaped ground floor outdoor plaza, comprised of 1,150 sf landscaping (940 sf of shrub and ground cover and 210 sf of trees), which would lead to the passageway within the building to provide a publicly accessible pedestrian access between Colyton and Hewitt Streets (See Attachment C, Ground Level Floor Plan and Site Plan). Proposed landscaping would comply with requirements of the LAMC and the City's Urban Forestry Division's requirements. The open space amenities would be made up of the outdoor public plaza on the ground floor, balconies, a terrace on the 6th floor and a roof terrace on the 17th and 18th floors. The 6th floor terrace would include approximately 2,816 sf of shrub and ground cover, as well as 2,962 sf of shrub and ground cover on the 17th and 18th floors.

The Project's landscaped areas would be comprised of a variety of trees and plants (See Table 8 below, Planting Matrix for Project). Additionally, there are three existing street trees within the adjacent street right-of-way on 4th Street. Current site plans for the Project assume removal of the three trees. During City and agency review of the Project, there is the potential for one or all three of these trees to remain or relocated as necessary. See Attachment C, Landscape Plan.

The Project's landscaping and water allowance is illustrated below in Table 8 below, including the Project's Plant Factors ("PF") and corresponding hydrozone area in square feet for the PF, and Table 9, which provides the Project's Maximum Applied Water Allowance ("MAWA").

**Table 8
 Planting Matrix for Project**

PLANT TYPES	PLANT WATER TYPE /	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	HYDROZONE AREA (HA)	PF X HA
	WUCOL					
LEVEL 1						
Trees	MEDIUM	0.5	Tree Bubbler	0.81	210 Sq.Ft.	105 PF/Sq.Ft.
Shrubs and Ground Cover	LOW	0.3	Drip	0.81	940 Sq.Ft.	282 PF/Sq.Ft.
SUBTOTAL					1,150 Sq.Ft.	-
LEVEL 6						
Shrubs and Ground Cover	LOW	0.3	Drip	0.81	2,816 Sq.Ft.	845 PF/Sq.Ft.
SUBTOTAL					2,816 Sq.Ft.	845 PF/Sq.Ft.
ROOF LEVEL (LEVELS 17 AND 18)						
Shrubs and Ground Cover	LOW	0.3	Drip	0.81	2,962 Sq.Ft.	889 PF/Sq.Ft.
SUBTOTAL					2,962 Sq.Ft.	-
TOTAL					6,928 Sq. Ft.	
<i>Source: Agence Ter LA</i>						

**Table 9
 Maximum Applied Water Allowance (MAWA)**

Reference Evapotranspiration (ET _o) ¹	Conversion Factor	ET Adjustment Factor (AF)	Landscape Area (LA)	Special Landscape Area (SLA)	Gallons Used	Acre-Feet per year (AFY)
LEVEL 1						
50.1	0.62	0.45	1,150 Sq.Ft.	-	16,075 Gal.	0.049

						Gal/Acre-Ft per Yr.
LEVEL 6						
50.1	0.62	0.45	2,816 Sq.Ft.	-	39,362 Gal	0.12 Gal/Acre-Ft. per Yr.
ROOF LEVEL (LEVELS 17 AND 18)						
50.1	0.62	0.45	2,962 Sq.Ft.	-	41,403 Gal	0.13 Gal/Acre-Ft. per Yr.
Total Landscape Area			6,928 Sq.Ft.			
Total Annual Consumption					96,840 Gal	0.299 Gal/Acre-Ft per Yr.
Total Landscape Area: 6,928 Sq.Ft.						
Total Annual Consumption: 96,840 Gal.						
¹ Reference Evapotranspiration (ETo) value from CIMIS ETo Zone Map. Accessed from http://www.cimis.water.ca.gov/App_Themes/impages/etozonemap.jpg <i>Source: Agence Ter LA</i>						

Environmental Design Features

The Project has been designed comparable to the Leadership in Energy and Environmental Design (“LEED”) Silver - Green Building Rating System standards, or equivalent, to reduce energy consumption. Specifically, the Project would incorporate, but not be limited to, the following features to support and promote environmental sustainability: a cool roof, electric vehicle chargers, Energy Star appliances, reduced water use, achieved by low-flow plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) that comply with the performance requirements specified in the City of Los Angeles Green Building Code, a weather-based irrigation system, and water efficient landscaping. The Project’s infill location would also promote the concentration of development in an urban location with extensive infrastructure, which would reduce the Project’s carbon footprint.

Table 10, below, includes the Project’s projected fixture counts.

**Table 10
 Fixture Counts**

	Restaurant/Bar	Office	Bicycle Facility
Water Closets	6	81	5

Urinals	2	27	1
Lavatory Faucets	4	80	4
Kitchen Faucets	4	14	-
Commercial Kitchen Pre-Rinse Spray Faucets	2	-	-
Showerheads	-	-	6
Clothes washer (Commercial)	2	-	-
Dishwasher (Residential)	-	14 (residential models)	-
Dishwasher (Commercial)	2	-	-

Proposed General Plan Amendment and Zone Change

The Project does not generally conform with the use and intensity of development currently permitted by the General Plan for this site. The Project Site is currently designated for Heavy Industrial land uses and zoned M3 (Heavy Industrial) under the General Plan. In order to develop the Project, the following entitlements are required: (1) General Plan Amendment to change the land use designation from Heavy Industrial to Regional Center Commercial; (2) Zone Change from the M3 Zone to the C2 Zone; (3) Height District Change from Height District No. 1 to Height District No. 2; (4) Master Conditional Use Permit approval to permit sale and dispensing of a full line of alcohol beverages for on-site consumption for up to six establishments for a total of 15,949 sf; (5) Conditional Use approval to permit a Major Development Project over 100,000 square feet or more of floor area in nonresidential uses in the C2 Zone; (6) Site Plan Review approval for a development project that results in an increase of 50,000 square feet of non-residential floor area; (7) a Vesting Tentative Tract Map to merge the existing lots and subdivide into 13 lots – one master lot and 12 airspace lots; and (8) a Waiver of Street Dedications and Street Improvements.

Table 11 below summarizes existing conditions under the General Plan and the Project for comparative analysis.

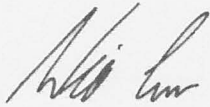
**Table 11
 Project Development Comparison**

	Existing under General Plan	Project
Land Use	Heavy Industrial	Regional Center Commercial
Zoning	M3 Zone	C2 Zone
Height District	Height District No. 1	Height District No. 2

	permits max 1.5:1 FAR	permits max 6:1 FAR
FAR	1.5:1	6:1
Floor Area	85,988 sf gross floor area	343,925 sf floor area
Density	0	0

Thank you for your assistance with this request. Your expert evaluation will help to ensure that our analysis of the Project's analysis water demand is accurate and complete. If you have any questions or comments, please contact William Lamborn at (213) 847-3637.

Sincerely,



William Lamborn
Major Projects
City of Los Angeles Department of City Planning

Attachments:

- A. Project Location Map
- B. Existing Site Plan
- C. Plan Set
 - Rendering (Cover Sheet)
 - Project Summary Sheet (Sheet G0.004)
 - Plot Plan (Sheet A1.200)
 - Ground Level Floor Plan (Sheets A1.201 and A1.201.M)
 - Level 2 Floor Plan (typical of floors 3-5) (Sheet A1.202)
 - Level 6 Floor Plan (Sheet A1.206)
 - Level 6 Mezzanine Floor Plan (Sheet A1.206.M)
 - Level 7 Floor Plan (typical of floors 8,10-11, 13-16) (Sheet A1.207)
 - Level 9 Floor Plan (Sheet A1.209)
 - Level 12 Floor Plan (Sheet A1.212)
 - Roof Floor Plan (Sheet A1.219)
 - Landscape Plan (Sheets L0.01 to L5.02)

Tcharssov, Andrei

From: Mindy Nguyen <Mindy.Nguyen@lacity.org>
Sent: Monday, December 21, 2020 2:37 PM
To: Tcharssov, Andrei
Cc: Erin Strellich; Kim, Theresa
Subject: [EXTERNAL] Re: 4th and Hewitt Project - WSA Scope Confirmation

EXTERNAL EMAIL! This email was generated from a non-LADWP address. If any links exist, do not click/open on them unless you are 100% certain of the associated site or source. ALWAYS hover over the link to preview the actual URL/site and confirm its legitimacy.

Hi Andrei,

The Project scope is correct and has not changed since the May commitment letter was provided.

Let me know if you need any additional information.

Regards,

On Thu, Dec 17, 2020 at 1:36 PM Tcharssov, Andrei <Andrei.Tcharssov@ladwp.com> wrote:

Erin, Mindy,

The Los Angeles Department of Water and Power (LADWP) is in the process of completing the Water Supply Assessment (WSA) for the 4th and Hewitt Project (Proposed Project). LADWP requests that the Department of City Planning (Planning Department) confirm the scope of Proposed Project.

Please confirm that the project's scope provided below is complete and accurate. The scope below is based on your Request for the WSA dated March 24, 2020 and all relevant e-mail communication to date. Please be advised that the scope is the basis for the WSA water demand calculations, and your scope confirming e-mail will be included, in part or in full, as an appendix to the WSA.

Proposed Project's scope:

1. Proposed Project is consistent with the demographic projection for the City from both the 2012 and 2016 Regional Transportation Plans by Southern California Association of Governments.

2. Proposed Project does not generally conform with the use and intensity of development permitted by the City's General Plan. The project site is currently designated for Heavy Industrial land uses and zoned M3 (heavy Industrial) under the General Plan. In order to develop the Project, the following entitlements are required: (1) General Plan Amendment to change the land use designation from Heavy Industrial to Regional Center Commercial; (2) Zone change from the M3 Zone to the C2 Zone; (3) Height District change from Height District No. 1 to Height District No. 2; (4) Master Conditional Use Permit approval to permit sale and dispensing of a full line of alcohol beverages for on-site consumption for up to six establishments for a total of 15,949 sf; (5) Conditional Use approval to permit a Major Development Project over 100,000 sf or more of floor area in nonresidential uses in the C2 Zone; (6) Site Plan Review approval for a development project that results in an increase of 50,000 sf of nonresidential floor area; (7) a Vesting Tentative Tract Map to merge the existing lots and subdivide into 13 lots – one master lot and 12 airspace lots; and (8) a Waiver of Street Dedications and Street Improvements.

3. New Development:

Proposed Use ¹	Quantity	Unit	Assumptions as applicable
Office	327,976	sf	311,682 sf + 16,294 sf exterior common areas.
Restaurant	272	seat	Assume full service SGF line No. 134/135, 8,149 sf or 1 seat per 30 sf.
Commercial Office/Restaurant Total	336,125	sf	
Landscaping	8,955	sf	
Covered Parking	254,881	sf	
cooling Tower			not used

Landscape:

Hydrozone	Plant Water Use Type	Plant Factor	Hydrozone Area (sf)	Irrigation Efficiency
L1 Shrub & Groundcover	Low	0.3	932	0.81
L1 Tree	Medium	0.5	69	0.81
L1 Street Tree	Medium	0.5	230	0.81
Roof Level 6 Shrub & Groundcover	Low	0.3	2,860	0.81
Roof Level 17 Shrub & Groundcover	Low	0.3	2,385	0.81

Roof Level 18 Shrub & Groundcover	Low	0.3	2,479	0.81
Total			8,955	

Plumbing Fixture Count:

Per final Conservation Commitment Letter dated May 6, 2020.

4. Existing Development:

A+D Museum of 7,800 sf to remain.

1,000 sf Museum storage space, 3,515 sf Office, 2,515 sf Office Garage/Storage and 39,751 sf Surface Parking will be removed.

If the above listed scope is accurate and consistent with the Proposed Project, please e-mail reply. If not, please edit the scope accordingly and send back to me by e-mail.

Thank you, and please let me know if you have any questions.

Andrei Tcharssov

LADWP Water Resources Development

111 N. Hope Street, Room 1450

Los Angeles, CA 90012

(213) 367-2155

-----Confidentiality Notice-----

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--

Mindy Nguyen
Preferred Pronouns: She, Hers, Her
City Planner
Los Angeles City Planning



221 N. Figueroa St., Suite 1350
Los Angeles, CA 90012
Planning4LA.org
T: (213) 847-3674



Appendix B

Water Conservation Commitment Letter

LIG – 900, 910 and 926 E. 4th St., 405-411 S. Hewitt St., LLC

May 6, 2020

Richard F. Harasick
Senior Assistant General Manager for Water Systems
Los Angeles Department of Water & Power
111 North Hope Street, Room 1455
Los Angeles, CA 90012-5701

Re: WATER CONSERVATION COMMITMENTS FOR THE 4th & HEWITT PROJECT

Dear Mr. Harasick:

LIG – 900, 910 and 926 E. 4th St., 405-411 S. Hewitt St., LLC (Applicant) proposes to develop the 4th & Hewitt project (Project) within the Central City North Community Plan area of the City of Los Angeles. The Project site, which encompasses approximately 1.3 acres, is generally bounded by 4th Street to the north, Hewitt Street to the east, commercial and industrial buildings to the south, and Colyton Street to the west (Project Site). The Project would retain the approximately 7,800-square-foot (sf) existing Architecture and Design Museum (A+D Museum). The Project would develop approximately 8,149 sf of new restaurant/bar uses, 327,976 sf of new office uses (of which 16,294 sf would be exterior common areas), and retain approximately 7,800 sf of the existing museum use. The Project would also include approximately 254,881 sf of covered vehicle parking and approximately 8,955 sf of landscaping. As part of the Project, approximately 7,030 sf of existing floor area would be removed.

The Applicant understands the City of Los Angeles' policy that future water needs shall be met by expanding water recycling and conservation. The Applicant has committed to implement the following water conservation measures that are in addition to those required by codes and ordinances for the entire Project:

- High Efficiency Toilets with a flush volume of 1.1 gallons per flush (gpf), or less
 - Showerheads with a flow rate of 1.5 gallons per minute (gpm), or less
 - Domestic Water Heating System located close proximity to point(s) of use
 - Drip/ Subsurface Irrigation (Micro-Irrigation)/ Bubblers for trees
 - Proper Hydro-zoning/Zoned Irrigation
- Drought Tolerant Plants

The Applicant has also committed to comply with the City of Los Angeles' Low Impact Development (LID) Ordinances (City Ordinance No. 181899 and No. 183833) and to implement Best Management Practices that have storm water recharge or reuse benefits

600 N. Lincoln Avenue, Pasadena Window Unit 91593, Pasadena Ca. 91109

LIG – 900, 910 and 926 E. 4th St., 405-411 S. Hewitt St., LLC

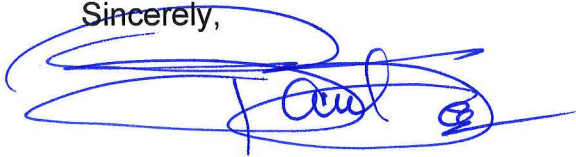
for the entire Project as applicable. More specifically, the Project will work to pursue infiltration of the 85th percentile rain event through the use of a drywell system pursuant to the City of Los Angeles' LID Ordinances, or other Best Management Practices per the City's LID Ordinances.

The following is the information on plumbing fixture/appliance counts/estimates for the Project:

	Restaurant/ Bar	Office	Bicycle Facility
Water Closets	6	81	5
Urinals	2	27	1
Lavatory Faucets	4	80	4
Kitchen Faucets	4	14	-
Commercial Kitchen Pre-Rinse Spray Faucets	2	-	-
Showerheads	-	-	6

Should you have any questions, please do not hesitate to call at (626) 683-7600.

Sincerely,



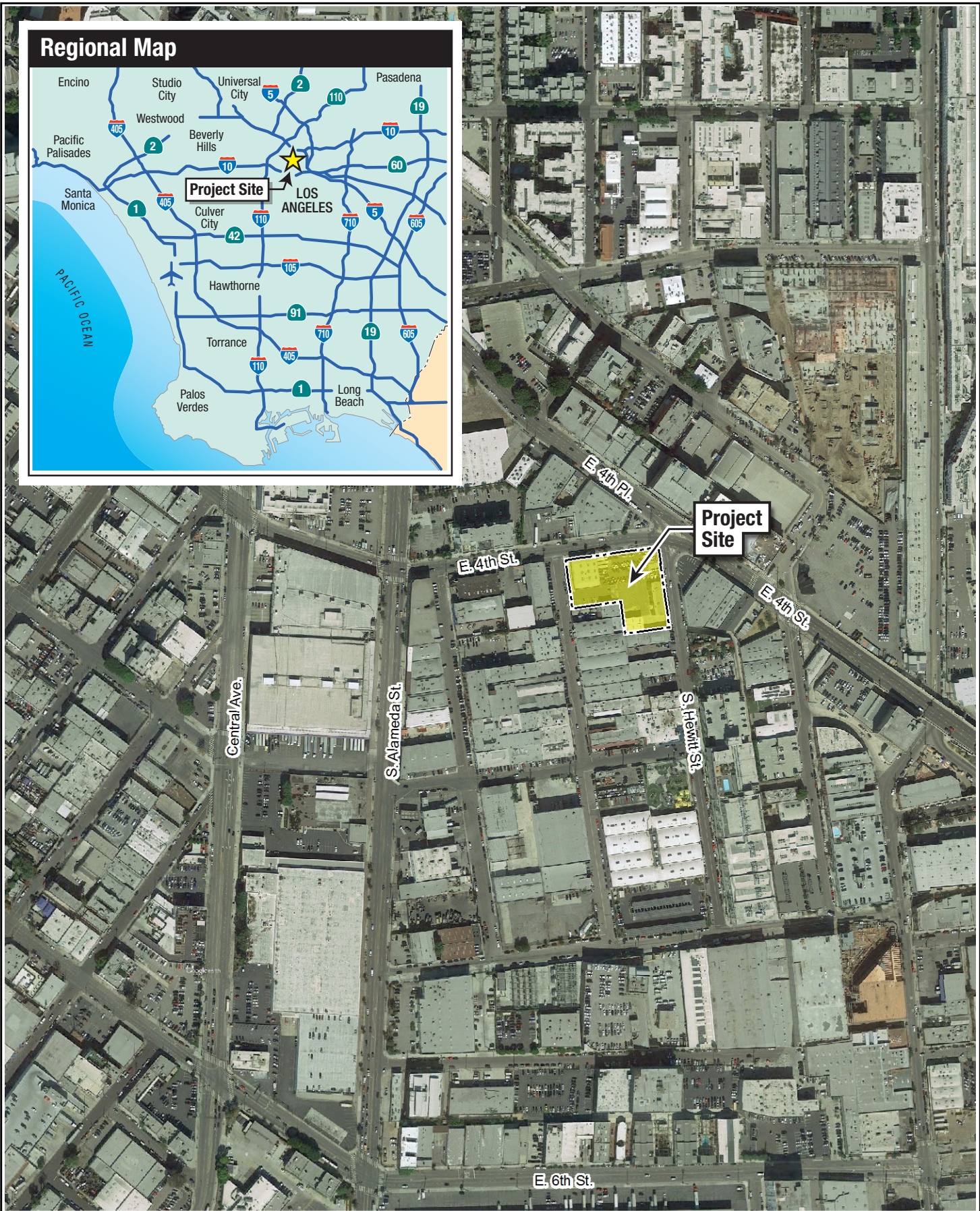
Surjit Soni

Manager

LIG – 900, 910 and 926 E. 4th St., 405-411 S. Hewitt St., LLC

Appendix C

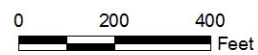
Project Location Maps



Aerial GoogleEarth Pro, Oct. 18, 2016.

4TH AND HEWITT PROJECT

Site and Regional Location Map





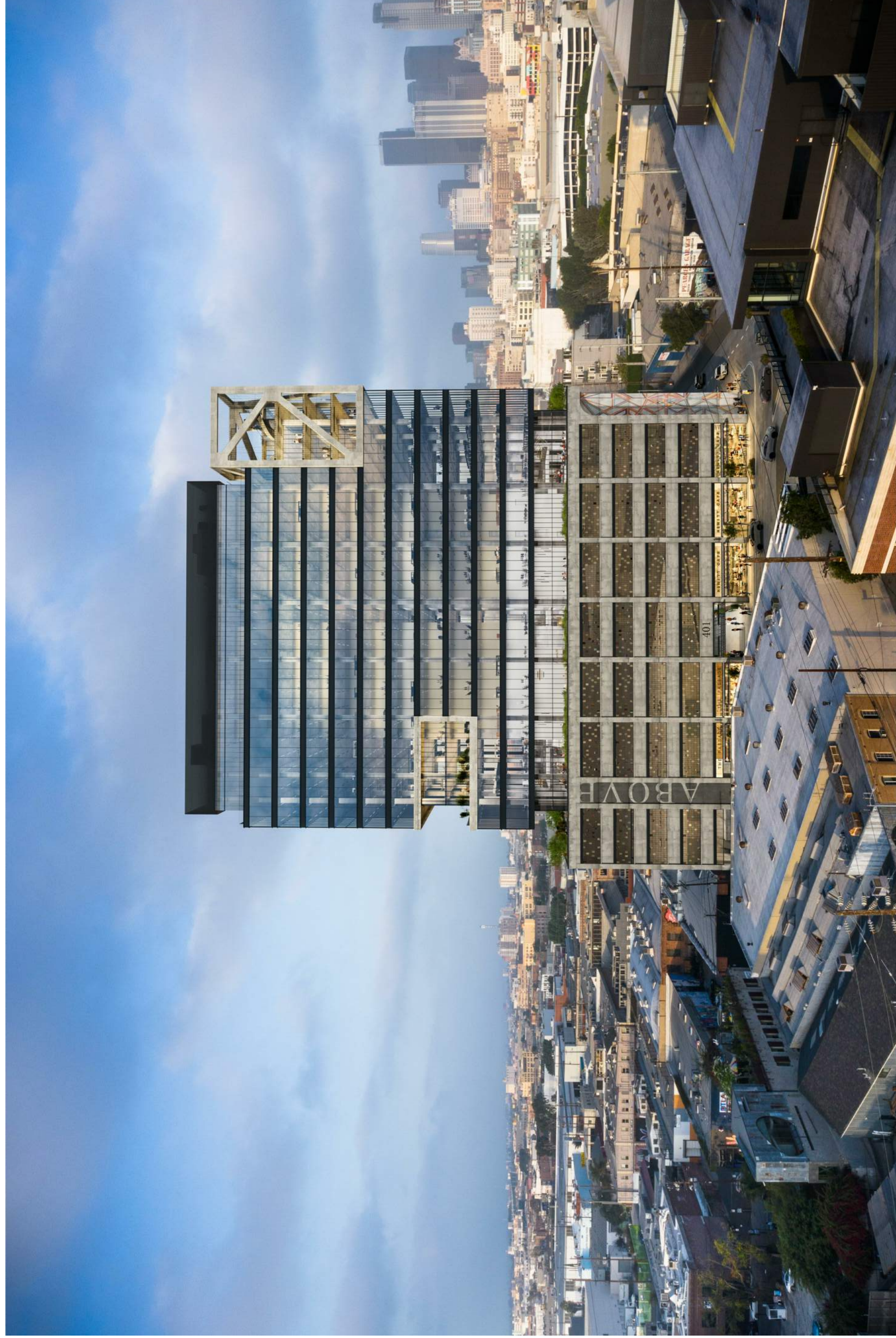
COLYTON STREET



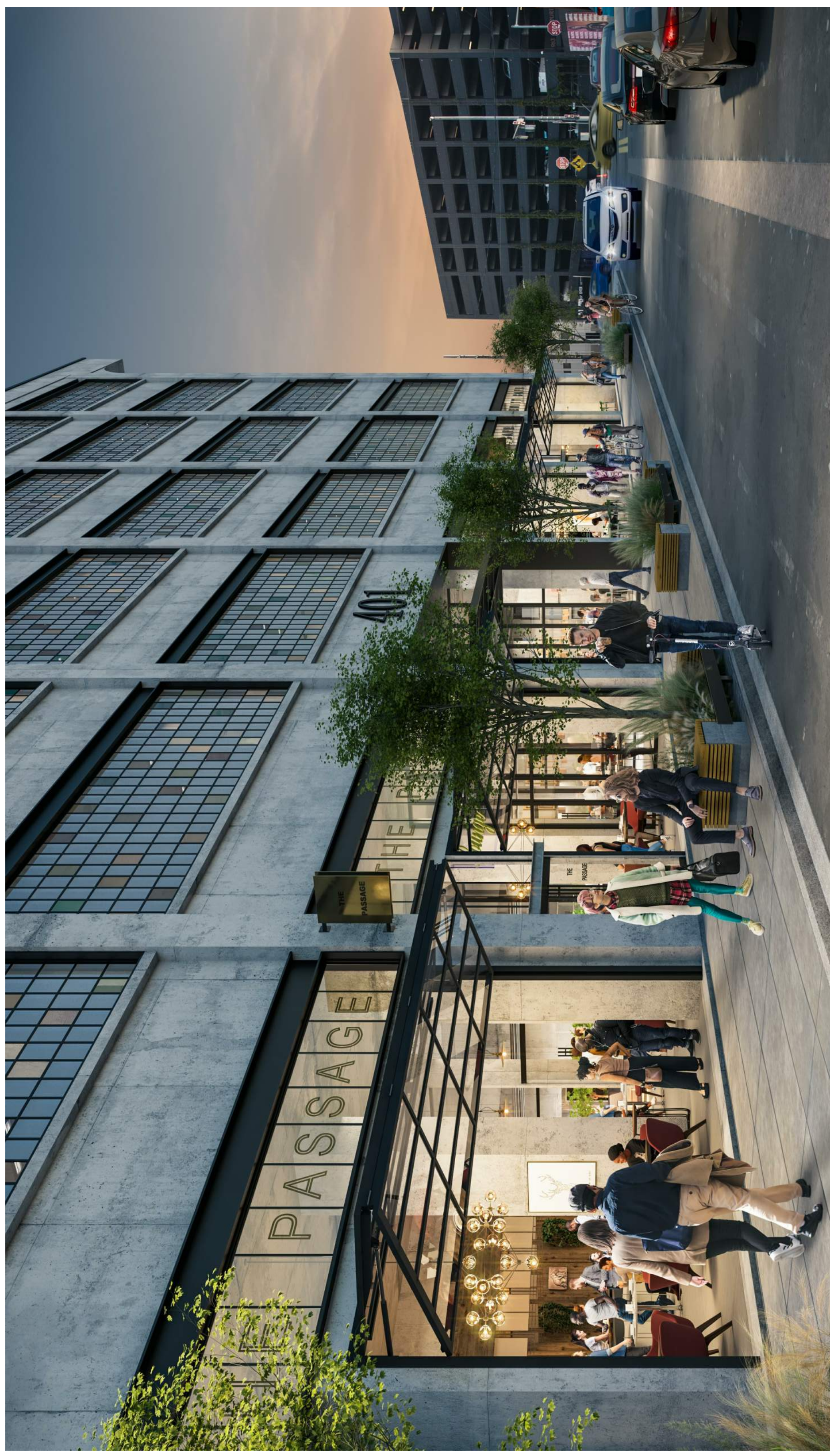
SOUTH HEWITT STREET CORNER



COURTYARD



AERIAL 1



S. HEWITT ST PEDESTRIAN EXPERIENCE

Appendix D

Adjudicated Groundwater Basin Judgments

- San Fernando Basin – Judgment No. 650079
- Sylmar Basin – Judgment No. 650079
- Central Basin – Judgment No, 786656

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SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES,)
)
 Plaintiff,)
)
 vs.)
)
 CITY OF SAN FERNANDO, ET AL.)
)
 Defendants.)

No. 650079
JUDGMENT

There follows by consecutive paging Recitals (page 1), Definitions and List of Attachments (pages 1 to 6), Designation of Parties (page 6), Declaration re Geology and Hydrology (pages 6 to 12), Declaration of Rights (pages 12 to 21), Injunctions (pages 21 to 22), Continuing Jurisdiction (page 23), Watermaster (pages 23 to 29), Physical Solution (pages 29 to 34), and Miscellaneous Provisions (pages 34 to 35), and Attachments (pages 36 to 46). Each and all of said several parts constitute a single integrated Judgment herein.

1 4.2.3 Separate Ground Water Basins. The physical and geologic characteristics of each
2 of the ground water basins, Eagle rock, Sylmar, Verdugo and San Fernando, cause impediments
3 to inter-basin ground water flow whereby there is created separate underground reservoirs. Each
4 of said basins contains a common source of water supply to parties extracting ground water from
5 each of said basins. The amount of underflow from Sylmar Basin, Verdugo Basin and Eagle
6 Rock Basin to San Fernando Basin is relatively small, and on the average has been
7 approximately 540 acre feet per year from the Sylmar Basin; 80 acre feet per year from Verdugo
8 Basin; and 50 acre feet per year from Eagle Rock Basin. Each has physiographic, geologic and
9 hydrologic differences, one from the other, and each meets the hydrologic definition of "basin".
10 The extractions of water in the respective basins affect the other water users within that basin but
11 do not significantly or materially affect the ground water levels in any of the other basins. The
12 underground reservoirs of Eagle Rock, Verdugo and Sylmar Basins are independent of one
13 another and of the San Fernando Basin.

14 4.2.4 Safe Yield and Native Safe Yield. The safe yield and native safe yield, stated in
15 acre feet, of the three largest basins for the year 1964-65 was as follows:

<u>Basin</u>	<u>Safe Yield</u>	<u>Native Safe Yield</u>
San Fernando	90,680	43,660
Sylmar	6,210	3,850
Verdugo	7,150	3,590

20 The safe yield of Eagle Rock Basin is derived from imported water delivered by Los Angeles.

21 There is no measurable native safe yield.

22 4.2.5 Separate Basins -- Separate Rights. The rights of the parties to extract ground
23 water within ULARA are separate and distinct as within each of the several ground water basins
24 within said watershed.

25 4.2.6 Hydrologic Condition of Basins. The several basins within ULARA are in varying
26 hydrologic conditions, which result in different legal consequences.

27 4.2.6.1 San Fernando Basin. The first full year of overdraft in San Fernando
28 Basin was 1954-55. It remained in overdraft continuously until 1968, when an injunction

1 LAGERLOF, SENICAL, DRESCHER & SWIFT
2 301 North Lake Avenue, 10th Floor
3 Pasadena, California 91101
4 (818) 793-9400 or (213) 385-4345
5
6
7

8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 FOR THE COUNTY OF LOS ANGELES

10
11 CENTRAL AND WEST BASIN WATER) No. 786,656
REPLENISHMENT DISTRICT, etc.,) SECOND AMENDED
12) JUDGMENT
Plaintiff,)
13 v.) (Declaring and establishing water rights in
Central Basin and enjoining extractions
14 CHARLES E. ADAMS, et al.,) therefrom in excess of specified quantities.)
15)
Defendants.)
16 CITY OF LAKEWOOD, a municipal)
corporation,)
17)
Cross-Complaint,)
18)
v.)
19)
20 CHARLES E. ADAMS, et al.,)
Cross-Defendants.)
21)
22

23 The above-entitled matter duly and regularly came on for trial in Department 73
24 of the above-entitled Court (having been transferred thereto from Department 75 by order of the
25 presiding Judge), before the Honorable Edmund M. Moor, specially assigned Judge, on May 17,
26 1965, at 10:00 a.m. Plaintiff was represented by its attorneys BEWLEY, KNOOP,
27

1 of the close of the water year ending September 30, 1978 in accordance with the Watermaster
2 Reports on file with this Court and the records of the Plaintiff. This tabulation does not take into
3 account additions or subtractions from any Allowed Pumping Allocation of a producer for the
4 1978-79 water year, nor other adjustments not representing change in fee title to water rights,
5 such as leases of water rights, nor does it include the names of lessees of landowners where the
6 lessees are exercising the water rights. The exercise of all water rights is subject, however, to the
7 provisions of this Judgment is hereinafter contained. All of said rights are of the same legal
8 force and effect and are without priority with reference to each other. Each party whose name is
9 hereinafter set forth in the tabulation set forth in Appendix "2" of this judgment, and after whose
10 name there appears under the column "Total Water Right" the figure "0" owns no rights to
11 extract any ground water from Central Basin, and has no right to extract any ground water from
12 Central Basin.

13 (b) Defendant The City of Los Angeles is the owner of the right to extract fifteen
14 thousand (15,000) acre feet per annum of ground water from Central Basin. Defendant
15 Department of Water and Power of the City of Los Angeles has no right to extract ground water
16 from Central Basin except insofar as it has the right, power, duty or obligation on behalf of
17 defendant The City of Los Angeles to exercise the water rights in Central Basin of defendant The
18 City of Los Angeles. The exercise of said rights are subject, however, to the provisions of this
19 judgment hereafter contained, including but not limited to, sharing with other parties in any
20 subsequent decreases or increases in the quantity of extractions permitted from Central Basin,
21 pursuant to continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000) acre
22 feet bears to the Allowed Pumping Allocations of the other parties.

23 (c) No party to this action is the owner of or has any right to extract ground water
24 from Central Basin except as herein affirmatively determined.

25 2. Parties Enjoined as Regards Quantities of Extractions.
26
27

Appendix E

Water Supply Assessment Provisions
California Water Code Section 10910-10915

State of California

WATER CODE

Section 10910

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system whose service area includes the project site and any water system adjacent to the project site that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied.

(B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city

or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.

(C) For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following:

(i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.

(ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

(D) For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water

system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available that was not known and could not have been known at the time when the assessment was prepared.

(i) For the purposes of this section, hauled water is not considered as a source of water.

(Amended by Stats. 2016, Ch. 594, Sec. 2. (SB 1262) Effective January 1, 2017.)

State of California

WATER CODE

Section 10911

10911. (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

(Amended by Stats. 2001, Ch. 643, Sec. 5. Effective January 1, 2002.)

State of California

WATER CODE

Section 10912

10912. For the purposes of this part, the following terms have the following meanings:

- (a) “Project” means any of the following:
- (1) A proposed residential development of more than 500 dwelling units.
 - (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
 - (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
 - (4) A proposed hotel or motel, or both, having more than 500 rooms.
 - (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
 - (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
 - (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.
- (b) If a public water system has fewer than 5,000 service connections, then “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.
- (c) “Public water system” means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. A public water system includes all of the following:
- (1) Any collection, treatment, storage, and distribution facility under control of the operator of the system that is used primarily in connection with the system.
 - (2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.
 - (3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.
- (d) This section shall become operative on January 1, 2018.

(Amended (as added by Stats. 2011, Ch. 588, Sec. 2) by Stats. 2016, Ch. 669, Sec. 2. (AB 2561) Effective September 26, 2016. Section operative January 1, 2018, by its own provisions.)

State of California

WATER CODE

Section 10914

10914. (a) Nothing in this part is intended to create a right or entitlement to water service or any specific level of water service.

(b) Nothing in this part is intended to either impose, expand, or limit any duty concerning the obligation of a public water system to provide certain service to its existing customers or to any future potential customers.

(c) Nothing in this part is intended to modify or otherwise change existing law with respect to projects which are not subject to this part.

(d) This part applies only to a project for which a notice of preparation is submitted on or after January 1, 1996.

(Added by Stats. 1995, Ch. 881, Sec. 4. Effective January 1, 1996.)

State of California

WATER CODE

Section 10915

10915. The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

(Amended by Stats. 2001, Ch. 643, Sec. 8. Effective January 1, 2002.)

Appendix F

Metropolitan Water District of Southern California

(APPENDIX A)

APPENDIX A

The Metropolitan Water District of Southern California



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INTRODUCTION

This Appendix A provides general information regarding The Metropolitan Water District of Southern California (“Metropolitan”), including information regarding Metropolitan’s operations and finances. Certain statements included or incorporated by reference in this Appendix A constitute “forward-looking statements.” Such statements are generally identifiable by the terminology used such as “plan,” “project,” “expect,” “estimate,” “budget” or other similar words. Such statements are based on facts and assumptions set forth in Metropolitan’s current planning documents including, without limitation, its most recent biennial budget. The achievement of results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Actual results may differ from Metropolitan’s forecasts. Metropolitan is not obligated to issue any updates or revisions to the forward-looking statements in any event.

Metropolitan maintains a website that may include information on programs or projects described in this Appendix A; however, none of the information on Metropolitan’s website is incorporated by reference or intended to assist investors in making an investment decision or to provide any additional information with respect to the information included in this Appendix A. The information presented on Metropolitan’s website is not part of the Official Statement and should not be relied upon in making investment decisions.

Formation and Purpose

Metropolitan is a metropolitan water district created in 1928 under authority of the Metropolitan Water District Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended (herein referred to as the “Act”). The Act authorizes Metropolitan to: levy property taxes within its service area; establish water rates; impose charges for water standby and service availability; incur general obligation bonded indebtedness and issue revenue bonds, notes and short-term revenue certificates; execute contracts; and exercise the power of eminent domain for the purpose of acquiring property. In addition, Metropolitan’s Board of Directors (the “Board”) is authorized to establish terms and conditions under which additional areas may be annexed to Metropolitan’s service area.

Metropolitan’s primary purpose is to provide a supplemental supply of water for domestic and municipal uses at wholesale rates to its member public agencies. If additional water is available, such water may be sold for other beneficial uses. Metropolitan serves its member agencies as a water wholesaler and has no retail customers.

The mission of Metropolitan, as promulgated by the Board, is to provide its service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan’s charges for water transactions and availability are fixed by its Board and are not subject to regulation or approval by the California Public Utilities Commission or any other state or federal agency. Metropolitan imports water from two principal sources: northern California via the Edmund G. Brown California Aqueduct (the “California Aqueduct”) of the State Water Project owned by the State of California (the “State” or “California”) and the Colorado River via the Colorado River Aqueduct (“CRA”) owned by Metropolitan.

Member Agencies

Metropolitan is comprised of 26-member public agencies, including 14 cities, 11 municipal water districts, and one county water authority, which collectively serve the residents and businesses of more than 300 cities and numerous unincorporated communities. Member agencies request water from Metropolitan at

various delivery points within Metropolitan’s system and pay for such water at uniform rates established by the Board for each class of water service. Metropolitan’s water is a supplemental supply for its member agencies, most of whom have other sources of water. See “METROPOLITAN REVENUES–Principal Customers” in this Appendix A for a listing of the ten-member agencies representing the highest level of water transactions and revenues of Metropolitan during the fiscal year ended June 30, 2019. Metropolitan’s member agencies may, from time to time, develop additional sources of water. See also “REGIONAL WATER RESOURCES.” No member is required to purchase water from Metropolitan, but all member agencies are required to pay readiness-to-serve charges whether or not they purchase water from Metropolitan. See “METROPOLITAN REVENUES–Rate Structure,” “–Member Agency Purchase Orders” and “–Other Charges” in this Appendix A.

The following table lists the 26-member agencies of Metropolitan.

Municipal Water Districts		Cities		County Water Authority
Calleguas	Las Virgenes	Anaheim	Los Angeles	San Diego ⁽¹⁾
Central Basin	Orange County	Beverly Hills	Pasadena	
Eastern	Three Valleys	Burbank	San Fernando	
Foothill	West Basin	Compton	San Marino	
Inland Empire Utilities Agency		Fullerton	Santa Ana	
Upper San Gabriel Valley		Glendale	Santa Monica	
Western of Riverside County		Long Beach	Torrance	

⁽¹⁾ The San Diego County Water Authority, currently Metropolitan’s largest customer based on water transactions, is a plaintiff in litigation challenging the allocation of costs to certain rates adopted by the Board and asserting other claims. See “METROPOLITAN REVENUES–Litigation Challenging Rate Structure” in this Appendix A.

Service Area

Metropolitan’s service area comprises approximately 5,200 square miles and includes all or portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. When Metropolitan began delivering water in 1941, its service area consisted of approximately 625 square miles. Its service area has increased by 4,575 square miles since that time. The expansion was primarily the result of annexation of the service areas of additional member agencies.

Metropolitan estimates that approximately 19 million people lived in Metropolitan’s service area in 2019, based on official estimates from the California Department of Finance and on population distribution estimates from the Southern California Association of Governments (“SCAG”) and the San Diego Association of Governments (“SANDAG”). Population projections prepared by SCAG in 2012 and SANDAG in 2013, as part of their planning process to update regional transportation and land use plans, and used as base data for Metropolitan’s 2015 Integrated Water Resources Plan update and subsequent water transactions forecasts, show expected population growth of about 18 percent in Metropolitan’s service area between 2010 and 2035, with the estimated population in the service area in 2020 then projected at approximately 19.35 million. The economy of Metropolitan’s service area is exceptionally diverse. In 2018, the economy of the six counties which contain Metropolitan’s service area had a gross domestic product larger than all but twelve nations of the world. Metropolitan has historically provided between 40 and 60 percent of the water used annually within its service area. For additional economic and demographic information concerning the six-county area containing Metropolitan’s service area, see Appendix E–“SELECTED DEMOGRAPHIC AND ECONOMIC INFORMATION FOR METROPOLITAN’S SERVICE AREA.”

The climate in Metropolitan’s service area ranges from moderate temperatures throughout the year in the coastal areas to hot and dry summers in the inland areas. Since 2000, annual rainfall has ranged from

approximately 4 to 27 inches along the coastal area, 6 to 38 inches in foothill areas, and 5 to 20 inches in inland areas.

COVID-19 Pandemic

The spread of the novel strain of coronavirus and the disease it causes (now known as “COVID-19”) is having significant negative impacts throughout the world, including in Southern California. The World Health Organization has declared the COVID-19 outbreak to be a pandemic, and states of emergency have been declared in the United States (the “U.S.”), the State of California, and numerous counties throughout the State, including in the six counties all or portions of which comprise the service area of Metropolitan. On March 17, 2020, Metropolitan’s General Manager declared a state of emergency at Metropolitan. The purposes behind these declarations are to initiate emergency response protocols, coordinate and formalize emergency actions across federal, state and local governmental agencies, and to proactively prepare for a wider spread of the virus.

As of June 9, 2020, the Centers for Disease Control and Prevention (CDC) report there have been more than 1.9 million confirmed cases of COVID-19 in the U.S., including tens of thousands of cases in Southern California, and health officials expect the number of confirmed cases to continue to grow. The outbreak has resulted in the implementation of “stay-at-home” (or “safer-at-home”) orders by State and local governments for citizens to remain at home except for certain essential purposes, the imposition of restrictions on mass gatherings and the widespread temporary closings of businesses, universities and schools (including within the jurisdiction of Metropolitan and its member agencies). As a result, economic activity has slowed considerably throughout the U.S. and the region. Employment data released since the imposition of the restrictions have shown a dramatic increase in unemployment rates. In addition, stock markets in the U.S. and globally have experienced significant recent declines that have been attributed to COVID-19 concerns.

Metropolitan has taken, and is taking, a number of steps to protect the health of its employees, maintain continuity of its critical and essential business functions and avoid widespread impacts to its workforce from the COVID-19 outbreak. Metropolitan’s Pandemic Action Plan is in effect. The following actions have been undertaken and are underway. A pandemic task force is meeting regularly to review and update plans, prepare and implement action plans and coordinate Metropolitan’s overall response activities. Metropolitan’s Emergency Operations Center has been activated in a virtual mode to monitor the spread of COVID-19 and coordinate emergency response activities throughout the organization and with other agencies. Staff is communicating with county health agencies and the State, monitoring media reports and preparing and implementing action plans, as needed. Metropolitan’s Water System is in a federally designated critical infrastructure sector with exemptions under Governor Newsom’s Statewide “stay-at-home” order as needed to maintain continuity of operations. Personnel necessary to the operation and delivery of water supplies remain on-site, with staffing strategies being utilized to promote “social distancing.” Enhanced facility cleaning and disinfection practices have also been put in place to promote a safe and healthful workplace for these employees. Telecommuting arrangements or paid administrative leave is being implemented for employees performing other functions, and non-essential business travel has been limited.

COVID-19 is not believed to present a threat to the safety of Metropolitan’s treated water supplies. Metropolitan has also taken steps to ensure it has the necessary backup equipment, supplies and treatment chemicals in the event of disruptions to the supply chain for these items. To date, Metropolitan’s ability to treat and deliver water has not been impaired.

Metropolitan is assessing the effects the ongoing COVID-19 outbreak will have on Metropolitan and its business and operations, as well as in the region, including the adverse financial impacts likely to be experienced by its member agencies. While Metropolitan continues work on a variety of infrastructure and system reliability projects, certain Metropolitan projects and initiatives have been delayed as a result of the

COVID-19 pandemic, and such delays are expected to continue. See also “CAPITAL INVESTMENT PLAN.” More broadly, press reports and analyses have suggested that water service providers serving residential, commercial and industrial end-use customers (referred to herein as “retail water service providers”), which includes some Metropolitan member agencies and agencies that purchase water from them, anticipate their customers are likely to be adversely impacted financially. As a measure to help mitigate such financial impacts and assure access to water service, on April 2, 2020, Governor Newsom issued an executive order which, among other things, orders the restoration of water service to residential customers in occupied residences whose service was discontinued for nonpayment during the state of emergency, and suspends the authority of retail water service providers to discontinue water service to residential and qualifying small business customers for non-payment. Voluntary measures may also be taken by retail water service providers in the State to assist their customers facing financial hardship as a result of the COVID-19 outbreak. The financial impacts to retail water customers and measures taken to assist them may result in more non-payment of utility bills than normal and forecasted, which is likely to further create financial stress on retail water service providers, including some Metropolitan member agencies.

In recognition of the changed circumstances and the uncertainties created by the ongoing COVID-19 outbreak, in the weeks following the declaration of a pandemic by the World Health Organization on March 11, 2020, Metropolitan reviewed its preliminary biennial budget initially presented to the Board in February 2020, and modified certain assumptions previously made in the proposed budget. The biennial budget for fiscal years 2020-21 and 2021-22, and water rates and charges for calendar years 2021 and 2022 adopted by the Board on April 14, 2020, reflect these adjustments, which include (i) a reduction in the overall rate increases for calendar years 2021 and 2022 from those previously proposed; (ii) a reduction in capital expenditures for fiscal year 2020-21 in recognition of likely delays in scheduling of construction work as a result of COVID-19; (iii) a reduction in the internal funding objective for the funding of capital program expenditures from current revenues for fiscal year 2020-21; and (iv) to review the adopted budget and rates no later than September 2020 to consider further impacts resulting from the COVID-19 crisis. See “METROPOLITAN’S REVENUES–Water Rates” and “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES.”

The COVID-19 outbreak is ongoing and developments will continue. The degree of impact to Metropolitan’s finances and operations is difficult to predict due to the evolving nature of the COVID-19 pandemic, including uncertainties relating to (i) the ultimate extent of the geographic spread of the virus; (ii) the duration and severity of the outbreak; (iii) the extent of the disruption to or decline in the local and global economies and financial markets; (iv) the degree to which business closures, increased unemployment, housing foreclosures and/or other economic consequences may reduce water demands in the region and Metropolitan’s water transactions, or negatively affect future property values in Metropolitan’s service area and/or Metropolitan’s property tax levy receipts, and reduce Metropolitan’s revenues; (v) the extent to which a protracted disruption in the manufacturing or construction industry may affect supply chains or further delay construction schedules for, or the implementation of, Metropolitan’s capital improvement programs and projects, or the costs of such programs or projects or Metropolitan’s water system operations; and (vi) what additional actions may be taken or required by governmental authorities to contain and respond to the outbreak and what the costs or impacts of such actions may be. Prospective investors should be aware that restrictions and limitations instituted related to COVID-19 will likely remain in place for some period, that the ongoing economic downturn may continue for many months and an economic recession has been projected as likely to occur, and that the recovery may be prolonged. As a result, Metropolitan’s finances and operations may be adversely impacted by COVID-19. To date, Metropolitan does not believe the impacts of the spread of COVID-19 will have a material adverse impact on its ability to pay debt service on its Bonds.

GOVERNANCE AND MANAGEMENT

Board of Directors

Metropolitan is governed by a 38-member Board of Directors, made up of representatives from all of Metropolitan's member agencies. Each member public agency is entitled to have at least one representative on the Board, plus an additional representative for each full five percent of the total assessed valuation of property in Metropolitan's service area that is within the member public agency. Changes in relative assessed valuation do not terminate any director's term. In 2019, California Assembly Bill 1220 (Garcia) amended the Act to provide that "A member public agency shall not have fewer than the number of representatives the member public agency had as of January 1, 2019." Accordingly, the Board may, from time to time, have more than 38 directors.

The Board includes business, professional and civic leaders. Directors are appointed by member agencies in accordance with those agencies' processes and the Act. They serve on the Board without compensation from Metropolitan. Voting is based on assessed valuation, with each member agency being entitled to cast one vote for each \$10 million or major fractional part of \$10 million of assessed valuation of property within the member agency, as shown by the assessment records of the county in which the member agency is located. The Board administers its policies through the Metropolitan Water District Administrative Code (the "Administrative Code"), which was adopted by the Board in 1977. The Administrative Code is periodically amended to reflect new policies or changes to existing policies that occur from time to time.

Management

Metropolitan's day-to-day management is under the direction of its General Manager, who serves at the pleasure of the Board, as do Metropolitan's General Counsel, General Auditor and Ethics Officer. Following is a biographical summary of Metropolitan's principal executive officers.

Jeffrey Kightlinger, General Manager – Mr. Kightlinger was appointed as General Manager in February 2006, leaving the position of General Counsel, which he had held since February 2002. Before becoming General Counsel, Mr. Kightlinger was a Deputy General Counsel and then Assistant General Counsel, representing Metropolitan primarily on Colorado River matters, environmental issues, water rights and a number of Metropolitan's water transfer and storage programs. Prior to joining Metropolitan in 1995, Mr. Kightlinger worked in private practice representing numerous public agencies including municipalities, redevelopment agencies and special districts. Mr. Kightlinger earned his bachelor's degree in history from the University of California, Berkeley, and his law degree from Santa Clara University. At the March 2020 Board meeting, Mr. Kightlinger announced his plans to step down as General Manager. Metropolitan's Board will conduct a recruitment process for a successor General Manager with the intention of making a selection (subject to such delays in schedule as may result from prolonged limitations due to COVID-19 response actions) prior to Mr. Kightlinger's departure, which is currently expected to occur in March 2021.

Marcia Scully, General Counsel – Ms. Scully assumed the position of General Counsel in March 2012. She previously served as Metropolitan's Interim General Counsel from March 2011 to March 2012. Ms. Scully joined Metropolitan in 1995, after a decade of private law practice, providing legal representation to Metropolitan on construction, employment, Colorado River and significant litigation matters. From 1981 to 1985 she was assistant city attorney for the City of Inglewood. Ms. Scully served as president of University of Michigan's Alumnae Club of Los Angeles and is a recipient of the 1996 State Bar of California, District 7 President's Pro Bono Service Award and the Southern California Association of Non-Profit Housing Advocate of the Year Award. She is also a member of the League of Women Voters for Whittier and was appointed for two terms on the City of Whittier's Planning Commission, three years of which were served as chair. Ms. Scully earned a bachelor's degree in liberal arts from the University of Michigan, a master's degree in urban planning from Wayne State University and her law degree from Loyola Law School.

Gerald C. Riss, General Auditor – Mr. Riss was appointed as Metropolitan’s General Auditor in July 2002. As General Auditor, he is responsible for the independent evaluation of the policies, procedures and systems of control throughout Metropolitan. Mr. Riss is a certified fraud examiner, certified financial services auditor and certified risk professional with more than 25 years of experience in accounting, audit and risk management. Prior to joining Metropolitan, Mr. Riss was Vice President and Assistant Division Head of Risk Management Administration at United California Bank/Bank of the West. He also served as Senior Vice President, Director of Risk Management and General Auditor of Tokai Bank of California from 1988 until its reorganization as United California Bank in 2001. He earned a bachelor’s degree in accounting and a master’s degree in business administration from Wayne State University.

Abel Salinas, Ethics Officer – Mr. Salinas was appointed as Metropolitan’s Ethics Officer in July 2019. He is responsible for making recommendations regarding rules and policies related to lobbying, conflicts of interest, contracts, campaign contributions and internal disclosures, while providing education and advice about these rules. Prior to joining Metropolitan, Mr. Salinas worked as the Special Agent in Charge in the U.S. Department of Labor’s Office of Inspector General. Before joining that agency, he served for three years in the U.S. Office of Personnel Management. Mr. Salinas holds a bachelor’s degree in criminal justice from University of Texas – Pan American and a master’s degree in policy management from Georgetown University.

Katano Kasaine, Assistant General Manager/Chief Financial Officer – Ms. Kasaine has been serving as the Assistant General Manager/Chief Financial Officer since August 2019. She is responsible for directing Metropolitan’s financial activities, including accounting and financial reporting, debt issuance and management, financial planning and strategy, managing Metropolitan’s investment portfolio, budget administration, financial analysis, financial systems, and developing rates and charges. In addition, she is responsible for risk management and business continuity activities. Prior to joining Metropolitan, Ms. Kasaine worked for the City of Oakland for nearly 25 years in various roles, including Finance Director/Treasurer. She holds a bachelor’s degree in business administration from Dominican University in San Rafael, California and a master’s degree in public health from Loma Linda University.

Deven Upadhyay, Assistant General Manager/Chief Operating Officer – Mr. Upadhyay was appointed to his current position in November 2017. In this capacity, he oversees the management of Metropolitan’s Water System Operations, Engineering Services and Water Resource Management. Mr. Upadhyay has over 20 years of experience in the water industry. He joined Metropolitan in 1996, beginning as a Resource Specialist and then left Metropolitan in 2005 to work at the Municipal Water District of Orange County. In 2008, he returned to Metropolitan as a Budget and Financial Planning Section Manager and became a Water Resource Management Group Manager in 2010. Mr. Upadhyay has a Bachelor of Arts degree in economics from the California State University, Fullerton and a master’s degree in public administration from the University of La Verne.

Roger Patterson, Assistant General Manager/Strategic Water Initiatives – Mr. Patterson was appointed to his current position in March 2006. He is responsible for overseeing water supply and planning issues, including the Colorado River and State Water Project. He previously served as a consultant to Metropolitan on Colorado River issues. Mr. Patterson was the director of the Nebraska Department of Natural Resources from 1999 to 2005, where he was responsible for water administration, water planning, flood-plain delineation, dam safety and the state databank. Prior to his work in Nebraska, Mr. Patterson spent 25 years with the U.S. Bureau of Reclamation (“Bureau of Reclamation”), retiring from the Bureau of Reclamation as the Regional Director for the Mid-Pacific Region. He is a registered professional engineer in Nebraska and Colorado. Mr. Patterson earned bachelor’s and master’s degrees in engineering from the University of Nebraska.

Shane Chapman, Assistant General Manager/Chief Administrative Officer – Mr. Chapman was appointed to his current position in January 2018 and is responsible for the strategic direction and

management of Metropolitan's administrative functions. His primary responsibilities include managing human resources, information technology, real property, environmental planning, and administrative services. Mr. Chapman joined Metropolitan as a Resource Specialist in 1991, progressing to the level of Program Manager in 2001. He became the Revenue, Rates and Budget Manager in 2003 and Assistant Group Manager in Water System Operations in 2006. Mr. Chapman served as General Manager of the Upper San Gabriel Valley Municipal Water District for seven years. Mr. Chapman has a Bachelor of Arts degree in economics from Claremont McKenna College and a master's degree in public administration from the University of Southern California.

Dee Zinke, Assistant General Manager/Chief External Affairs Officer – Ms. Zinke was appointed to her current position in January 2016. She is responsible for Metropolitan's communications, business outreach, education and legislative matters. She joined Metropolitan in 2009 as Manager of the Legislative Services Section. Before coming to Metropolitan, Ms. Zinke was the Manager of Governmental and Legislative Affairs at the Calleguas Municipal Water District for nearly 10 years, where she received recognition for her significant contributions to the Association of California Water Agencies, the Ventura County Special Districts Association and the Association of Water Agencies of Ventura County. During her tenure at Calleguas, she was named Chair of the Ventura County Watersheds Coalition and appointed by then-Secretary of Resources Mike Chrisman to the State Watershed Advisory Committee. Prior to her public service, she worked in the private sector as the Executive Officer and Senior Legislative Advocate for the Building Industry Association of Greater Los Angeles and Ventura Counties and as Director of Communications for E-Systems, a defense contractor specializing in communication, surveillance and navigation systems in Washington, D.C. Ms. Zinke holds a Bachelor of Arts degree in communication and psychology from Virginia Polytechnic Institute and State University.

Employee Relations

The total number of budgeted regular full-time Metropolitan employees on April 1, 2020 was 1,907 with 1,789 positions filled, and the remaining positions under recruitment or vacant. Of the filled positions, 1,239 were represented by AFSCME Local 1902, 93 by the Supervisors Association, 298 by the Management and Professional Employees Association and 129 by the Association of Confidential Employees. The remaining 30 employees are unrepresented. The four bargaining units represent 98 percent of Metropolitan's employees. The Memorandum of Understanding ("MOU") with each of AFSCME Local 1902, the Supervisors Association, the Management and Professional Employees Association and the Association of Confidential Employees were updated through negotiations and cover the period January 1, 2017 through December 31, 2021.

Risk Management

Metropolitan is exposed to various risks of loss related to, among other things, the design and construction of facilities, and the treatment and delivery of water. With the assistance of third party claims administrators, Metropolitan is self-insured for property losses, liability, and workers' compensation. Metropolitan self-insures the first \$25 million per liability occurrence, with commercial liability coverage of \$75 million in excess of the self-insured retention. The \$25 million self-insured retention is maintained as a separate restricted reserve. Metropolitan is also self-insured for loss or damage to its property, with the \$25 million self-insured retention also being accessible for emergency repairs and Metropolitan property losses. In addition, Metropolitan obtains other excess and specialty insurance coverages such as directors' and officers' liability, fiduciary liability and aircraft hull and liability coverage.

Metropolitan self-insures the first \$5 million for workers' compensation with statutory excess coverage. The self-insurance retentions and reserve levels currently maintained by Metropolitan may be modified by the Board at its sole discretion.

Cybersecurity

Metropolitan has adopted and maintains an active Cybersecurity Program (“CSP”) that includes policies reviewed by Metropolitan’s Office of Enterprise Cybersecurity, Audit department and independent third-party auditors and consultants. Metropolitan has appointed an Information Security Officer who is responsible for overseeing the annual review of the CSP and its alignment with Metropolitan’s Strategic Plan. Metropolitan’s policies and procedures on information governance, risk management, and compliance are consistent with the U.S. Commerce Department’s National Institute of Standards and Technology Cybersecurity Framework and are consistent with the requirements prescribed by the America’s Water Infrastructure Act (AWIA) for risk assessment and emergency response. Metropolitan’s Cybersecurity Team is responsible for identifying cybersecurity risks to Metropolitan, preventing, investigating, and responding to any cybersecurity incidents, and providing guidance and education on the implementation of new technologies at Metropolitan. All persons or entities authorized to use Metropolitan’s computer resources are required to participate in Metropolitan’s Cybersecurity Awareness Training.

METROPOLITAN’S WATER SUPPLY

General

Metropolitan’s principal sources of water supplies are the State Water Project and the Colorado River. Metropolitan receives water delivered from the State Water Project under State Water Contract provisions, including contracted supplies, use of carryover storage in San Luis Reservoir, and surplus supplies. Metropolitan holds rights to a basic apportionment of Colorado River water and has priority rights to an additional amount depending on availability of surplus supplies. Water management programs supplement these Colorado River supplies. To secure additional supplies, Metropolitan also has groundwater banking partnerships and water transfer and storage arrangements within and outside its service area. Metropolitan’s principal water supply sources, and other supply arrangements and water management are more fully described herein.

Metropolitan faces a number of challenges in providing adequate, reliable and high quality supplemental water supplies for Southern California. These include, among others: (1) population growth within the service area; (2) increased competition for low-cost water supplies; (3) variable weather conditions; (4) increased environmental regulations; and (5) climate change. Metropolitan’s resources and strategies for meeting these long-term challenges are set forth in its Integrated Water Resources Plan, as updated from time to time. See “–Integrated Water Resources Plan.” In addition, Metropolitan manages water supplies in response to the prevailing hydrologic conditions by implementing its Water Surplus and Drought Management (“WSDM”) Plan, and in times of prolonged or severe shortages, the Water Supply Allocation Plan (the “Water Supply Allocation Plan”). See “CONSERVATION AND WATER SHORTAGE MEASURES–Water Surplus and Drought Management Plan” and “–Water Supply Allocation Plan” in this Appendix A.

Hydrologic conditions can have a significant impact on Metropolitan’s imported water supply sources. For Metropolitan’s State Water Project supplies, precipitation in California’s northern Sierra Nevada during the fall and winter helps replenish storage levels in Lake Oroville, a key State Water Project facility. The subsequent runoff from the spring snowmelt helps satisfy regulatory requirements in the San Francisco Bay/Sacramento-San Joaquin River Delta (“Bay-Delta”) bolstering water supply reliability in the same year. See “–State Water Project – Bay-Delta Proceedings Affecting State Water Project.” The source of Metropolitan’s Colorado River supplies is primarily the watersheds of the Upper Colorado River Basin in the states of Colorado, Utah, and Wyoming. Although precipitation is primarily observed in the winter and spring, summer storms are common and can affect water supply conditions.

Uncertainties from potential future temperature and precipitation changes in a climate driven by increased concentrations of atmospheric carbon dioxide also present challenges. Areas of concern to

California water planners identified by researchers include: reduction in Sierra Nevada and Colorado Basin snowpack; increased intensity and frequency of extreme weather events; and rising sea levels resulting in increased risk of damage from storms, high-tide events, and the erosion of levees and potential cutbacks of deliveries of imported water. While potential impacts from climate change remain subject to study and debate, climate change is among the uncertainties that Metropolitan seeks to address through its planning processes.

Current Water Conditions

As of May 4, 2020, the northern Sierra precipitation was 57 percent of the 50-year average for the time of year, and northern Sierra snowpack measured at 20 percent of average for such time of year. On May 22, 2020, the California Department of Water Resources (“DWR”) notified State Water Contractors (defined below) that its calendar year 2020 allocation estimate of State Water Project water was increased, from the prior calendar year 2020 allocation of 15 percent, to 20 percent of contracted amounts, or 382,300 acre-feet for Metropolitan. (An acre-foot is the amount of water that will cover one acre to a depth of one foot and equals approximately 325,851 gallons, which represents the needs of three average families in and around the home for one year within Metropolitan’s service area.) Changes to the 2020 allocation may occur and are dependent on the developing hydrologic conditions. See “–State Water Project.”

As of May 4, 2020, the Upper Colorado River Basin snowpack accumulation measured 81 percent of the 30-year average as of this date and the total system storage in the Colorado River Basin was 51 percent of capacity, an increase of five percent or 3.2 million acre-feet from the same time the prior year. Because of the storage increase, no shortage will be declared in Colorado River water supply availability conditions for calendar year 2020, resulting in projected available supply of Colorado River water in calendar year 2020 of 1,005,200 acre-feet for Metropolitan. See “–Colorado River Aqueduct.”

See also “–Storage Capacity and Water in Storage.”

Integrated Water Resources Plan

Overview. The Integrated Water Resources Plan (hereafter, “IRP”) is Metropolitan’s principal water resources planning document. Metropolitan, its member agencies, subagencies and groundwater basin managers developed their first IRP as a long-term planning guideline for resources and capital investments. The purpose of the IRP was the development of a portfolio of preferred resources to meet the water supply reliability and water quality needs for the region in a cost-effective and environmentally sound manner. The first IRP was adopted by the Board in January 1996 and has been subsequently updated in 2004, 2010 and 2015.

The most recent IRP update in 2015 (the “2015 IRP Update”) was adopted by Metropolitan’s Board on January 12, 2016, as a strategy to set goals and a framework for water resources development. This strategy enables Metropolitan and its member agencies to manage future challenges and changes in California’s water conditions and to balance investments with water reliability benefits. The 2015 IRP Update provides an adaptive management approach to address future uncertainty, including uncertainty from climate change. It was formulated with input from member agencies, retail water agencies, and other stakeholders including water and wastewater managers, environmental and business interests and the community.

The 2015 IRP Update seeks to provide regional reliability through 2040 by stabilizing Metropolitan’s traditional imported water supplies and continuing to develop additional conservation programs and local resources, with an increased emphasis on regional collaboration. It also advances long-term planning for potential future contingency resources, such as storm water capture and seawater desalination. The 2015 IRP Update and associated materials are available on Metropolitan’s website at:

<http://www.mwdh2o.com/AboutYourWater/Planning/Planning-Documents/Pages/default.aspx>. The materials and other information set forth on Metropolitan’s website is not incorporated by reference.

Specific projects developed by Metropolitan in connection with the implementation of its IRP are subject to Board consideration and approval, as well as environmental and regulatory documentation and compliance.

An Adaptive Management Strategy. Adaptive water management, as opposed to a rigid set of planned actions over the coming decades, is the most nimble and cost-effective manner for Metropolitan and local water districts throughout Southern California to effectively prepare for the future. An adaptive management approach began to evolve with Metropolitan’s first IRP in 1996, after drought-related shortages in 1991 prompted a rethinking of Southern California’s long-term water strategy. Reliance on imported supplies to meet future water needs has decreased steadily over time, replaced by plans for local actions to meet new demands. The 2015 IRP Update continues to build a robust portfolio approach to water management.

The following paragraphs describe the goals, approaches and targets for each of the resource areas that are needed to ensure reliability under planned conditions.

State Water Project. The State Water Project is one of Metropolitan’s two major sources of water. The goal for State Water Project supplies is to adaptively manage flow and export regulations in the near term and to achieve a long-term Bay-Delta solution that addresses ecosystem and water supply reliability challenges. In furtherance of this goal, Metropolitan continues to participate and seek successful outcomes for a potential Bay-Delta conveyance project and the California EcoRestore efforts. See “–State Water Project” and “REGIONAL WATER RESOURCES–Local Water Supplies” in this Appendix A. The stated goal of the IRP is to manage State Water Project supplies in compliance with regulatory restrictions in the near-term for an average of 980,000 acre-feet of annual supplies, and to pursue an outcome for a potential Bay-Delta conveyance project and California EcoRestore efforts aimed towards achieving long-term average supplies of approximately 1.2 million acre-feet annually from this resource. See “–State Water Project –Bay-Delta Proceedings Affecting State Water Project.”

Colorado River Aqueduct. The CRA delivers water from the Colorado River, Metropolitan’s original source of supply. Metropolitan has helped to fund and implement agricultural conservation programs, improvements to river operation facilities, land management programs and water transfers and exchanges through agreements with agricultural water districts in Southern California, entities in Arizona and Nevada that use Colorado River water, and the Bureau of Reclamation. See “–Colorado River Aqueduct” and “–Water Transfer, Storage and Exchange Programs – Colorado River Aqueduct Agreements and Programs.” The stated goal of the IRP for the CRA supplies is to maintain current levels of water supplies from existing programs, while also developing flexibility through dry-year programs and storage to ensure that a minimum of 900,000 acre-feet of CRA deliveries are available when needed, with a target of 1.2 million acre-feet in dry years.

Water Transfers and Exchanges. Under voluntary water transfer or exchange agreements, agricultural communities using irrigation water may periodically sell or conserve some of their water allotments for use in urban areas. The water may be delivered through existing State Water Project or CRA facilities or may be exchanged for water that is delivered through such facilities. Metropolitan’s policy toward potential transfers states that the transfers will be designed to protect and, where feasible, enhance environmental resources and avoid the mining of local groundwater supplies. See “–Water Transfer, Storage and Exchange Programs.” The stated goal of the IRP is to pursue transfers and exchanges to hedge against shorter-term water demand and supply imbalances while long-term water supply solutions are developed and implemented.

Water Conservation. Conservation and other water use efficiencies are integral components of Metropolitan’s IRP. Metropolitan has invested in conservation programs since the 1980s. Historically, most of the investments have been in water efficient fixtures in the residential sector. With outdoor water use comprising at least 50 percent of residential water demand, Metropolitan has increased its conservation efforts to target outdoor water use reduction in its service area. See “CONSERVATION AND WATER SHORTAGE MEASURES” in this Appendix A. The stated goal of the IRP is to pursue further water conservation savings of 485,000 acre-feet annually by 2040 through continued increased emphasis on outdoor water-use efficiency using incentives, outreach/education and other programs. The conservation program is regularly reviewed and revised in order to meet the stated goal of the IRP.

Local Water Supplies. Local supplies are a significant and growing component of the region’s diverse water portfolio. While the extent to which each member agency’s water supply is provided by imported water purchased from Metropolitan varies, in the aggregate, local supplies can provide over half of the region’s water in a given year, and the maintenance of these supplies remain an integral part of the IRP. Similar to water conservation, local supplies serve the important function of reducing demands for imported water supplies and thereby making regional water system capacity and storage available and accessible to meet the needs of the region. Local water supply projects may include, among other things, recycled water, groundwater recovery, conjunctive use, stormwater, and seawater desalination. Metropolitan offers financial incentives to member agencies to help fund the development of a number of these types of local supply projects. The stated goal of the IRP is to seek to develop 227,000 acre-feet of additional local supplies produced by existing and future projects, with the region reaching a target of 2.4 million acre-feet of total dependable local supplies by 2040. Additionally, in 2018, an interim Local Resources Program target was adopted to spur development of additional local supplies in furtherance of the stated goal of the IRP. See “REGIONAL WATER RESOURCES–Local Water Supplies” in this Appendix A.

2020 IRP Update. Development of Metropolitan’s 2020 IRP is underway. The year 2020 marks the conclusion of the 25-year planning cycle envisioned by the inaugural 1996 IRP. The 2020 IRP is anticipated to build upon Metropolitan’s adaptive management strategy utilizing a scenario planning approach. This approach will evaluate a variety of potential scenarios and therefore prepare the region for a wider range of potential outcomes by identifying solutions and policies that are robust across a variety of futures. Metropolitan initiated the 2020 IRP process in February 2020.

State Water Project

Background

One of Metropolitan’s two major sources of water is the State Water Project, which is owned by the State, and managed and operated by DWR. The State Water Project is the largest state-built, multipurpose, user-financed water project in the country. It was designed and built primarily to deliver water, but also provides flood control, generates power for pumping, is used for recreation, and enhances habitat for fish and wildlife. The State Water Project provides irrigation water to 750,000 acres of farmland, mostly in the San Joaquin Valley, and provides municipal and industrial water to approximately 27 million of California’s estimated 39.9 million residents, including the population within the service area of Metropolitan.

The State Water Project’s watershed encompasses the mountains and waterways around the Feather River, the principal tributary of the Sacramento River, in the Sacramento Valley of Northern California. Through the State Water Project, Feather River water stored in and released from Oroville Dam (located about 70 miles north of Sacramento, east of the city of Oroville, California) and unregulated flows diverted directly from the Bay-Delta are transported south through the Central Valley of California, over the Tehachapi Mountains and into Southern California, via the California Aqueduct, to four delivery points near the northern and eastern boundaries of Metropolitan’s service area. The total length of the California Aqueduct is approximately 444 miles. See “METROPOLITAN’S WATER DELIVERY SYSTEM–Primary Facilities and Method of Delivery –State Water Project” in this Appendix A.

State Water Contract

Terms of the Contract. In 1960, Metropolitan signed a water supply contract (as amended, the “State Water Contract”) with DWR to receive water from the State Water Project. Metropolitan is one of 29 agencies and districts that have long-term contracts for water service from DWR (known collectively as the “State Water Contractors” and sometimes referred to herein as “Contractors”). Metropolitan is the largest of the State Water Contractors in terms of the number of people it serves (approximately 19 million), the share of State Water Project water that it has contracted to receive (approximately 46 percent), and the percentage of total annual payments made to DWR by agencies with State water supply contracts (approximately 49 percent for fiscal year 2018-19). Metropolitan received its first delivery of State Water Project water in 1972.

Pursuant to the terms of the State water supply contracts, all water-supply related expenditures for capital and operations, maintenance, power, and replacement costs associated with the State Water Project facilities are paid for by the State Water Contractors as components of their annual payment obligations to DWR. In exchange, Contractors have the right to participate in the system, with an entitlement to water service from the State Water Project and the right to use the portion of the State Water Project conveyance system necessary to deliver water to them. Each year DWR estimates the total State Water Project water available for delivery to the State Water Contractors and allocates the available project water among the State Water Contractors in accordance with the State water supply contracts. Late each year, DWR announces an initial allocation estimate for the upcoming year, but periodically provides subsequent estimates throughout the year if warranted by developing precipitation and water supply conditions. Based upon the updated rainfall and snowpack values, DWR’s total water supply availability projections are refined during each calendar year and allocations to the State Water Contractors are adjusted accordingly.

Metropolitan’s State Water Contract has been amended a number of times since its original execution and delivery. Several of the amendments, entered into by DWR and various subsets of State Water Contractors, relate to the financing and construction of a variety of State Water Project facilities and improvements and impose certain cost responsibility therefor on the affected Contractors, including Metropolitan. For a description of Metropolitan’s financial obligations under its State Water Contract, including with respect to such amendments, see “METROPOLITAN EXPENSES—State Water Contract Obligations” in this Appendix A.

Amendments, approved by Metropolitan’s Board in 1995, and since executed by DWR and 27 of the State Water Contractors (collectively known as the “Monterey Amendment”), among other things, made explicit that the Contractors’ rights to use the portion of the State Water Project conveyance system necessary to deliver water to them also includes the right to convey non-State Water Project water at no additional cost as long as capacity exists. These amendments also expanded the ability of the State Water Contractors to carry over State Water Project water in State Water Project storage facilities, allowed participating Contractors to borrow water from terminal reservoirs, and allowed Contractors to store water in groundwater storage facilities outside a Contractor’s service area for later use. These amendments provided the means for individual Contractors to increase supply reliability through water transfers and storage outside their service area. Metropolitan has subsequently developed and actively manages a portfolio of water supplies to convey through the California Aqueduct pursuant to these contractual rights. See “—Water Transfer, Storage and Exchange Programs.” The Monterey Amendment is the subject of ongoing litigation. See “— Related Litigation—Monterey Amendment” below.

Under its State Water Contract, Metropolitan has a contractual right to its proportionate share of the State Water Project water that DWR determines annually is available for allocation to the Contractors. This determination is made by DWR each year based on existing supplies in storage, forecasted hydrology, and other factors, including water quality and environmental flow obligations and other operational considerations. Available State Water Project water is then allocated to the Contractors in proportion to the amounts set forth in “Table A” of their respective State water supply contract (sometimes referred to herein

as “Table A State Water Project water”). Pursuant to Table A of its State Water Contract, Metropolitan is entitled to approximately 46 percent of the total annual allocation made available to State Water Contractors each year. Metropolitan’s State Water Contract, under a 100 percent allocation, provides Metropolitan 1,911,500 acre-feet of water. The 100 percent allocation is referred to as the contracted amount.

DWR operates the State Water Project in coordination with the federal Central Valley Project, which is operated by the Bureau of Reclamation. Since 1986, the coordinated operations have been undertaken pursuant to a Coordinated Operations Agreement for the Central Valley Project and State Water Project (the “COA”). The COA defines how the State and federal water projects share water quality and environmental flow obligations imposed by regulatory agencies. The agreement calls for periodic review to determine whether updates are needed in light of changed conditions. After completing a joint review process, DWR and the Bureau of Reclamation agreed to amend the COA to reflect water quality regulations, biological opinions and hydrology updated since the 1986 agreement was signed. On December 13, 2018, DWR and the Bureau of Reclamation executed an Addendum to the COA (the “COA Addendum”). Through the COA Addendum, DWR will adjust current State Water Project operations to modify pumping operations, as well as project storage withdrawals to meet in-basin uses, pursuant to revised calculations based on water year types. The COA Addendum will shift responsibilities for meeting obligations between the Central Valley Project and the State Water Project, resulting in a shift of approximately 120,000 acre-feet in long-term average annual exports from the State Water Project to the Central Valley Project. In executing the COA Addendum, DWR found the agreement to be exempt from environmental review under the California Environmental Quality Act (“CEQA”) as an ongoing project and that the adjustments in operations are within the original scope of the project. On January 16, 2019, commercial fishing groups and a tribe (“petitioners”) filed a lawsuit against DWR alleging that entering into the COA Addendum violated CEQA, the Delta Reform Act, and the public trust doctrine. On April 11, 2019, Westlands Water District (“Westlands”) filed a motion to intervene, which was not opposed by any parties. The court granted Westlands’ motion on June 7, 2019. On October 7, 2019, the North Delta Water Agency filed a motion to intervene. On November 19, 2019, the court granted North Delta Water Agency’s motion. The petitioners are still in the process of preparing the administrative record and no date for a hearing on the merits has been set. The effect of this lawsuit on the COA Addendum and State Water Project operations cannot be determined at this time.

From calendar years 2005 through 2019, the amount of water received by Metropolitan from the State Water Project, including water from water transfer, groundwater banking and exchange programs delivered through the California Aqueduct (described under “–Water Transfer, Storage and Exchange Programs” below), varied from a low of 593,000 acre-feet in calendar year 2015 to a high of 1,695,000 acre-feet in 2006. In calendar year 2018, DWR’s allocation to State Water Contractors was 35 percent of contracted amounts, or 669,025 acre-feet, for Metropolitan. In calendar year 2019, DWR’s allocation to State Water Contractors was 75 percent of contracted amounts, or 1,433,625 acre-feet, for Metropolitan.

On December 2, 2019, DWR announced an initial calendar year 2020 allocation of 10 percent. On January 24, 2020, DWR increased the allocation estimate to 15 percent. As a result of above-average precipitation in the month of May, DWR further increased the allocation estimate on May 22, 2020 to 20 percent, indicating that this would likely be the final allocation update of 2020.

The term of Metropolitan’s State Water Contract currently extends to December 31, 2035 or until all DWR bonds issued to finance construction of project facilities are repaid, whichever is longer. Upon expiration of the State Water Contract term, Metropolitan has the option to continue service under substantially the same terms and conditions. Metropolitan and other State Water Contractors have undertaken negotiations with DWR to extend their State water supply contracts. In June 2014, DWR and the State Water Contractors reached an Agreement in Principle (the “Agreement in Principle”) on an amendment to the State water supply contract to extend the contract and to make certain changes related to financial management of the State Water Project in the future. DWR and 25 of the State Water Contractors, including Metropolitan,

have signed the Agreement in Principle. Under the Agreement in Principle, the term of the State water supply contract for each Contractor that signs an amendment would be extended until December 31, 2085. The Agreement in Principle served as the “proposed project” for purposes of environmental review under CEQA. DWR issued a Notice of Availability of the Draft Environmental Impact Report (“EIR”) for the proposed project on August 17, 2016. The public review period ended October 17, 2016. State law requires DWR to make a presentation to the State Legislature at an informational hearing at least 60 days prior to final approval of a State water supply contract extension. That hearing occurred on September 11, 2018. DWR released the final EIR on November 16, 2018 and certified the final EIR and issued a Notice of Determination on December 11, 2018. Concurrently, Metropolitan considered the certified final EIR and approved the water supply contract extension amendment at its December 11, 2018 Board meeting. That same day, DWR filed a lawsuit seeking to validate the contract extension. In January 2019, North Coast Rivers Alliance and others separately filed petitions for writ of mandate and a complaint for declaratory and injunctive relief challenging DWR’s final EIR and approval of the State water supply contract extension amendment. Mandatory settlement conferences were held on February 22, 2019. On June 18, 2019, the cases were deemed related, and on August 20, 2019, they were assigned to a single judge. The parties are still in the process of preparing the administrative records for these cases, and no date for a hearing on the merits has been set and no briefing has occurred in either action. Any adverse impact of this litigation and rulings on Metropolitan’s State Water Project supplies cannot be determined at this time. DWR has yet to execute the contract extension amendment. To date, 21 of the 29 State Water Contractors have executed the amendment, achieving the DWR established threshold needed for it to be fully executed. DWR is awaiting a decision at the trial court on the validation litigation described above before moving forward with implementation of the amendments with individual State Water Contractors. Unless the contract extension amendment is implemented, the amortization period for any future State Water Project bonds will end in 2035.

In a process separate from the State Water Contract Extension amendment described above, Metropolitan and other State Water Contractors undertook negotiations with DWR to amend their State water supply contracts to clarify how costs would be allocated for the California WaterFix as well as to clarify the criteria applicable to certain water management tools including single and multi-year water transfers and exchanges and reached an agreement in principle in 2018 (the “2018 AIP”) and issued a draft EIR. On April 29, 2019, Governor Newsom issued an executive order directing State agencies to develop a comprehensive statewide strategy to build a climate-resilient water system that included consideration of a single-tunnel Bay-Delta conveyance facility instead of the approved WaterFix project. DWR removed the WaterFix cost provisions from the 2018 AIP and, on February 28, 2020, recirculated the Draft EIR for only the 2018 AIP’s water management provisions.

In light of this, Metropolitan and other State Water Contractors embarked on a third public process to further negotiate proposed amendments related to cost allocation for a potential new Bay-Delta conveyance, which process is expected to continue as DWR undertakes its environmental review and planning process for a single tunnel project. See “Bay-Delta Proceedings Affecting State Water Project-Bay-Delta Planning Activities; Delta Conveyance.”

Related Litigation–Monterey Amendment. On May 4, 2010, DWR completed an EIR and concluded a remedial CEQA review for the Monterey Amendment (described under “ – Terms of the Contract” above), which reflects the settlement of certain disputes regarding the allocation of State Water Project water. Central Delta Water Agency, South Delta Water Agency, California Water Impact Network, California Sportfishing Protection Alliance, and the Center For Biological Diversity filed a lawsuit against DWR in Sacramento County Superior Court challenging the validity of the EIR under CEQA and the validity of underlying agreements under a reverse validation action (the “Central Delta I” case). In January 2013, the Court ruled that the validation cause of action in Central Delta I was time barred by the statute of limitations. The court also held that DWR must complete a limited scope remedial CEQA review addressing the potential impacts of the Kern Water Bank, a portion of the Monterey Amendment that does not directly affect Metropolitan.

The court also ruled that the State Water Project may continue to be operated under the terms of the Monterey Amendment while the remedial CEQA review is prepared and leaves in place the underlying project approvals while DWR prepares the remedial CEQA review. Plaintiffs appealed. Briefing by the parties was completed, but no date for oral argument has been set.

In September 2016, DWR certified the Final Revised Draft EIR for the Monterey Amendment, recorded a Notice of Determination, and filed papers in the trial demonstrating compliance with the court's order for remedial CEQA review. On October 21, 2016, the petitioner group from Central Delta I and a new lead petitioner, Center for Food Safety, filed litigation against DWR challenging this EIR and named Metropolitan and the other State Water Project contractors as respondent parties. On October 2, 2017, the court denied Center for Food Safety's petition. Plaintiffs appealed. Briefing in this appeal has been completed. No date for oral argument has been set. Any adverse impact of any of the litigation and rulings relating to the Monterey Amendment on Metropolitan's State Water Project supplies cannot be determined at this time.

2017 Oroville Dam Spillway Incident

Oroville Dam, the earthfill embankment dam on the Feather River which impounds Lake Oroville, is operated by DWR as a facility of the State Water Project. On February 7, 2017, the main flood control spillway at Oroville Dam, a gated and concrete lined facility, experienced significant damage as DWR released water to manage higher inflows driven by continued precipitation in the Feather River basin. The damaged main spillway impaired DWR's ability to manage lake levels causing water to flow over the emergency spillway structure, an ungated, 1,730-foot-long concrete barrier located adjacent to and north of the main flood control spillway structure. Use of the emergency spillway structure resulted in erosion that threatened the stability of the emergency spillway structure. This concern prompted the Butte County Sheriff, on February 12, 2017, to issue an evacuation order for approximately 200,000 people living in Oroville and the surrounding communities.

On November 1, 2018, DWR completed reconstruction of the main spillway to its original design capacity of approximately 270,000 cubic feet per second ("cfs"), a capacity almost twice its highest historical outflow. Work on the emergency spillway was substantially completed in April 2019. Mitigation measures such as slope revegetation are expected to be completed in 2021. Although the full extent of the costs of the response and recovery efforts are unknown at this time, DWR has indicated that the total costs of the recovery and restoration project prior to any federal or other reimbursement are estimated to be approximately \$1.1 billion. Cost estimates are based on actual and projected work and may be adjusted further as work continues through completion of the project in 2021. Funding from the Federal Emergency Management Agency ("FEMA") is generally available under FEMA's Public Assistance Program to recover 75 percent of eligible costs to restore facilities damaged as a result of natural disasters to their pre-disaster condition. As of February 18, 2020, of the \$1.1 billion in costs incurred by DWR and submitted to FEMA, FEMA had approved reimbursement to DWR of approximately \$582 million in aggregate. Approximately \$40 million of powerline relocation costs are still under consideration by FEMA for reimbursement. Any unrecovered costs to be paid for by the State Water Contractors under the State water contracts are expected to be financed long-term with DWR bonds. Metropolitan's potential share of the cost for the unreimbursed work totals about \$243 million. About \$21 million of this amount has already been paid through the State Water Project annual statement of charges.

Bay-Delta Proceedings Affecting State Water Project

General. In addition to being a source of water for diversion into the State Water Project, the Bay-Delta is the source of water for local agricultural, municipal and industrial needs, and also supports significant resident and anadromous fish and wildlife resources and important recreational uses of water. Both the State Water Project's upstream reservoir operations and its Bay-Delta diversions can at times affect these other uses of Bay-Delta water directly, or indirectly, through impacts on Bay-Delta water quality. A

variety of proceedings and other activities are ongoing with the participation of various State and federal agencies, as well as California's environmental, urban and agricultural communities, in an effort to develop long-term, collectively-negotiated solutions to the environmental and water management issues concerning the Bay-Delta, and Metropolitan actively participates in these proceedings. Metropolitan cannot predict the ultimate outcome of any of the litigation or regulatory processes described below but believes that a materially adverse impact on the operation of State Water Project pumps, Metropolitan's State Water Project deliveries or Metropolitan's water reserves could result.

SWRCB Regulatory Activities and Decisions. The State Water Resources Control Board (the "SWRCB") is the agency responsible for setting water quality standards and administering water rights throughout California. The SWRCB exercises its regulatory authority over the Bay-Delta by means of public proceedings leading to regulations and decisions that can affect the availability of water to Metropolitan and other users of State Water Project water. These include the Water Quality Control Plan ("WQCP") for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, which establishes the water quality objectives and proposed flow regime of the estuary, and water rights decisions, which assign responsibility for implementing the objectives of the WQCP to users throughout the system by adjusting their respective water rights permits.

Since 2000, SWRCB's Water Rights Decision 1641 ("D-1641") has governed the State Water Project's ability to export water from the Bay-Delta for delivery to Metropolitan and other agencies receiving water from the State Water Project. D-1641 allocated responsibility for meeting flow requirements and salinity and other water quality objectives established earlier by the WQCP.

The WQCP gets reviewed periodically and new standards and allocations of responsibility can be imposed on the State Water Project as a result. The last review was completed in 2006, and the current review has been ongoing since approximately 2010.

The SWRCB's current review and update of the WQCP is being undertaken in phased proceedings. In December 2018, the SWRCB completed Phase 1 of the WQCP proceedings, adopting the plan amendments and environmental documents to support new flow standards for San Joaquin River tributaries and revised southern Delta salinity objectives. Various stakeholders filed suit against the SWRCB challenging these amendments. As part of Phase 2 proceedings, a framework document for the second plan amendment process, focused on the Sacramento River and its tributaries, Delta eastside tributaries, Delta outflows, and interior Delta flows, was released in July 2018. The framework describes changes that will likely be proposed by the SWRCB through formal proposed amendments and supporting environmental documents. The proposed changes include certain unimpaired flow requirements for the Sacramento River and its salmon-bearing tributaries. The SWRCB has also encouraged all stakeholders to work together to reach one or more voluntary agreements for consideration by the SWRCB that could implement the proposed amendments to the WQCP through a variety of tools, while seeking to protect water supply reliability. Metropolitan is participating in the Phase 2 proceedings and voluntary agreement negotiations.

Bay-Delta Planning Activities; Delta Conveyance. In 2000, several State and federal agencies released the CALFED Bay-Delta Programmatic Record of Decision and Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") that outlined and disclosed the environmental impacts of a 30-year plan to improve the Bay-Delta's ecosystem, water supply reliability, water quality, and levee stability. The CALFED Record of Decision remains in effect and many of the State, federal, and local projects begun under CALFED continue.

Building on CALFED and other Bay-Delta planning activities, in 2006 multiple State and federal resource agencies, water agencies, and other stakeholder groups entered into a planning agreement for the Bay-Delta Conservation Plan ("BDCP"). The BDCP was originally conceived as a comprehensive conservation strategy for the Bay-Delta designed to restore and protect ecosystem health, water supply, and

water quality within a stable regulatory framework to be implemented over a 50-year time frame with corresponding long-term permit authorizations from fish and wildlife regulatory agencies. The BDCP includes both alternatives for new water conveyance infrastructure and extensive habitat restoration in the Bay-Delta. The existing State Water Project Delta water conveyance system needs to be improved and modernized to address operational constraints on pumping in the south Delta as well as risks to water supplies and water quality from climate change, earthquakes, and flooding. Operational constraints are largely due to biological opinions and incidental take permits to which the State Water Project is subject that substantially limit the way DWR operates the State Water Project.

In 2015, the State and federal lead agencies proposed an alternative implementation strategy and new alternatives to the BDCP to provide for the protection of water supplies conveyed through the Bay-Delta and the restoration of the ecosystem of the Bay-Delta, termed “California WaterFix” and “California EcoRestore,” respectively. In this alternative approach, DWR and the Bureau of Reclamation would implement planned water conveyance improvements (California WaterFix) as a stand-alone project with the required habitat restoration limited to that directly related to construction mitigation. The associated costs of such mitigation would be underwritten by the public water agencies participating in the conveyance project. Ecosystem improvements and habitat restoration more generally (California EcoRestore) would be undertaken under a more phased approach than previously contemplated by the BDCP and would not be linked with the conveyance project or permits. As part of California EcoRestore, which was initiated in 2015, the State is pursuing more than 30,000 acres of Delta habitat restoration. Work on a number of EcoRestore projects is ongoing. Among other things, EcoRestore was undertaken to implement restoration projects required by the biological opinions to which the State Water Project has been and is subject. EcoRestore is estimated to cost approximately \$300 million in the first four years, and includes amounts being paid by the State Water Contractors, including Metropolitan, for the costs of habitat restoration required to mitigate State and federal water project impacts pursuant to the biological opinions. See also “–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations – State Water Project.”

In July 2017, DWR certified a final EIR and approved the California WaterFix as an improvement to the State Water Project. As originally approved by DWR, California WaterFix, if completed, would have provided new conveyance facilities for the transportation of State Water Project and Central Valley Project water from the north Delta, principally from three new intakes, with a total maximum capacity of 9,000 cfs, through two 30-mile long tunnels running under the Delta, to the existing aqueduct systems in the south Delta. Under the California WaterFix as approved, DWR would have extended the delivery system from new north Delta water intakes on the Sacramento River to a new forebay in the south Delta to provide additional flexibility in operating the State Water Project.

On July 10, 2018, Metropolitan’s Board approved Metropolitan’s funding in the aggregate of up to 64.6 percent of the estimated \$17 billion (in 2017 dollars) overall capital cost of the California WaterFix, including its share as a State Water Contractor and through various forms of additional financial support Metropolitan would contribute to the project.

On February 12, 2019, then recently elected Governor Gavin Newsom presented at the State of the State address a conceptual proposal supporting a single-tunnel configuration for new Bay-Delta conveyance instead of the two-tunnel California WaterFix. Subsequently, on April 29, 2019, Governor Newsom issued an executive order directing identified State agencies to develop a comprehensive statewide strategy to build a climate-resilient water system. Among other things, the Governor’s executive order directed the State agencies to inventory and assess the current planning for modernizing conveyance through the Bay-Delta with a new single tunnel project. Following the Governor’s executive order, in May 2019, DWR withdrew approval of the California WaterFix project and decertified the EIR. In August 2019, DWR terminated the last permit associated with the project.

DWR is pursuing a new environmental review and planning process for a single tunnel project to modernize the State Water Project's Bay-Delta conveyance. The formal environmental review process commenced with the issuance by DWR of a Notice of Preparation under CEQA on January 15, 2020. Planning, environmental review and conceptual design work by DWR for a proposed single tunnel project is expected to take approximately 18 to 36 months.

As authorized by Metropolitan's Board in July 2018, Metropolitan previously committed to provide up to \$86 million in advance funding for California WaterFix. As of May 1, 2019, Metropolitan had provided \$41.5 million in advance funding for pre-construction costs for California WaterFix pursuant to an advance funding agreement with DWR. On June 27, 2019, Metropolitan requested that DWR return all contributions that had not been spent as of May 2, 2019. In December 2019, Metropolitan received \$34.4 million from DWR in returned contributions (including interest earned).

Metropolitan held a Board workshop on March 26, 2019, during which it reviewed the various single tunnel alternatives that the State and Metropolitan analyzed during and after the environmental review process for the California WaterFix project, including a 3,000 cfs diversion capacity one tunnel option, and a 6,000 cfs diversion capacity option that could be implemented with a single main tunnel as a first stage of a potential two-stage implementation of California WaterFix. The expected benefits and estimated costs of each of these alternatives were presented. Based upon the single tunnel alternatives previously analyzed and preliminary estimates, the total capital costs of a 6,000 cfs capacity alternative is estimated to be \$11.1 billion in 2017 dollars (\$11.8 billion as adjusted to 2019 dollars) and the total capital costs of a 3,000 cfs capacity alternative is estimated to be \$9.2 billion in 2017 dollars (\$9.7 billion as adjusted to 2019 dollars). A single tunnel project to be proposed under the new planning effort and environmental review process being undertaken by DWR may be designed and configured differently than these previously analyzed single tunnel alternatives and therefore the capacity and cost estimates of the single tunnel project that is ultimately proposed by DWR may vary significantly from the estimates above.

Between mid-2017 and mid-2019, California WaterFix was subject to several lawsuits primarily related to DWR's powers to finance and construct the project and various environmental approvals and related matters. The lawsuits, administrative proceedings, and other matters were dismissed as a result of the cancellation of the California WaterFix project. However, new lawsuits could be filed in the future with respect to any new Bay-Delta conveyance project and may impact the anticipated timing and costs of a proposed new single tunnel project.

Metropolitan's Board has previously authorized Metropolitan's participation in two joint powers agencies relating to the Bay-Delta conveyance project: the Delta Conveyance Design and Construction Authority (the "Construction JPA"), formed by the participating water agencies to actively participate with DWR in the design and construction of the conveyance project in coordination with DWR and under the control and supervision of DWR; and the Delta Conveyance Finance Authority, formed by the participating water agencies to facilitate financing for the conveyance project. The Construction JPA is providing engineering and design activities to support the DWR's planning and environmental analysis for a potential new single tunnel Bay-Delta conveyance project.

Colorado River Aqueduct

Background

The Colorado River was Metropolitan's original source of water after Metropolitan's establishment in 1928. Metropolitan has a legal entitlement to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior. Water from the Colorado River and its tributaries is also available to other users in California, as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming (collectively, the "Colorado River Basin States"), resulting in both competition and the need for cooperation among these holders of Colorado River entitlements. In addition, under a 1944

treaty, Mexico has right to delivery of 1.5 million acre-feet of Colorado River water annually except as provided under shortage conditions described in Treaty Minute 323. The United States and Mexico agreed to conditions for reduced deliveries of Colorado River water to Mexico in Treaty Minute 323, adopted in 2017. That Minute established the rules under which Mexico agreed to take shortages and create reservoir storage in Lake Mead. Those conditions are in parity with the requirements placed on the Lower Basin States (defined below) in the Lower Basin Drought Contingency Plan (described under “– Colorado River Operations: Surplus and Storage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead” in this Appendix A). Mexico can also schedule delivery of an additional 200,000 acre-feet of Colorado River water per year if water is available in excess of the requirements in the United States and the 1.5 million acre-feet allotted to Mexico.

Construction of the CRA, which is owned and operated by Metropolitan, was undertaken by Metropolitan to provide for the transportation of its Colorado River water entitlement to its service area. The CRA originates at Lake Havasu on the Colorado River and extends approximately 242 miles through a series of pump stations and reservoirs to its terminus at Lake Mathews in Riverside County. Up to 1.25 million acre-feet of water per year may be conveyed through the CRA to Metropolitan’s member agencies, subject to availability of Colorado River water for delivery to Metropolitan as described below. Metropolitan first delivered CRA water to its member agencies in 1941.

Colorado River Water Apportionment and Seven-Party Agreement

Pursuant to the federal Boulder Canyon Project Act of 1928, California is apportioned the use of 4.4 million acre-feet of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada (the “Lower Basin States”). Under an agreement entered into in 1931 among the California entities that expected to receive a portion of California’s apportionment of Colorado River water (the “Seven-Party Agreement”) and which has formed the basis for the distribution of Colorado River water made available to California, Metropolitan holds the fourth priority right to 550,000 acre-feet per year. This is the last priority within California’s basic apportionment. In addition, Metropolitan holds the fifth priority right to 662,000 acre-feet of water, which is in excess of California’s basic apportionment. Until 2003, Metropolitan had been able to take full advantage of its fifth priority right as a result of the availability of surplus water and water apportioned to Arizona and Nevada that was not needed by those states. However, during the 1990s Arizona and Nevada increased their use of water from the Colorado River, and by 2002 no unused apportionment was available for California. As a result, California has limited its annual use to 4.4 million acre-feet since 2003, not including supplies made available under water supply programs such as intentionally-created surplus and certain conservation and storage agreements. In addition, a severe drought in the Colorado River Basin from 2000-2004 reduced storage in system reservoirs, ending the availability of surplus deliveries to Metropolitan. Prior to 2003, Metropolitan could divert over 1.25 million acre-feet in any year. Since 2003, Metropolitan’s net diversions of Colorado River water have ranged from a low of 537,607 acre-feet in 2019 to a high of approximately 1,179,000 acre-feet in 2015. Average annual net diversions for 2010 through 2019 were nearly 900,291 acre-feet, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. See “– Quantification Settlement Agreement” and “– Colorado River Operations: Surplus and Shortage Guidelines.” See also “–Water Transfer, Storage and Exchange Programs – Colorado River Aqueduct Agreements and Programs.” In 2019, total available Colorado River supply was just over one million acre-feet. A portion of the available supply that was not diverted was stored in Lake Mead for future usage. See also “–Storage Capacity and Water in Storage.”

The following table sets forth the existing priorities of the California users of Colorado River water established under the 1931 Seven-Party Agreement.

PRIORITIES UNDER THE 1931 CALIFORNIA SEVEN-PARTY AGREEMENT⁽¹⁾

Priority	Description	Acre-Feet Annually
1	Palo Verde Irrigation District gross area of 104,500 acres of land in the Palo Verde Valley	} 3,850,000
2	Yuma Project in California not exceeding a gross area of 25,000 acres in California	
3(a)	Imperial Irrigation District and other lands in Imperial and Coachella Valleys ⁽²⁾ to be served by All-American Canal	
3(b)	Palo Verde Irrigation District - 16,000 acres of land on the Lower Palo Verde Mesa	
4	Metropolitan Water District of Southern California for use on the coastal plain	550,000
	SUBTOTAL	4,400,000
5(a)	Metropolitan Water District of Southern California for use on the coastal plain	550,000
5(b)	Metropolitan Water District of Southern California for use on the coastal plain ⁽³⁾	112,000
6(a)	Imperial Irrigation District and other lands in Imperial and Coachella Valleys to be served by the All-American Canal	} 300,000
6(b)	Palo Verde Irrigation District - 16,000 acres of land on the Lower Palo Verde Mesa	
	TOTAL	5,362,000
7	Agricultural use in the Colorado River Basin in California	Remaining surplus

Source: Metropolitan.

- (1) Agreement dated August 18, 1931, among Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, Metropolitan, the City of Los Angeles, the City of San Diego and the County of San Diego. These priorities were memorialized in the agencies' respective water delivery contracts with the Secretary of the Interior.
- (2) The Coachella Valley Water District serves Coachella Valley.
- (3) In 1946, the City of San Diego, the San Diego County Water Authority, Metropolitan and the Secretary of the Interior entered into a contract that merged and added the City and County of San Diego's rights to storage and delivery of Colorado River water to the rights of Metropolitan.

Quantification Settlement Agreement

The Quantification Settlement Agreement ("QSA"), executed by the Coachella Valley Water District ("CVWD"), Imperial Irrigation District ("IID"), Metropolitan, and others in October 2003, establishes Colorado River water use limits for IID and CVWD, and provides for specific acquisitions of conserved water and water supply arrangements. The QSA and related agreements provide a framework for Metropolitan to enter into other cooperative Colorado River supply programs and set aside several disputes among California's Colorado River water agencies.

Specific programs under the QSA and related agreements include lining portions of the All-American and Coachella Canals, which were completed in 2009 and conserve over 98,000 acre-feet annually. Metropolitan receives this water and delivers over 77,000 acre-feet of exchange water annually to

San Diego County Water Authority (“SDCWA”), and provides 16,000 acre-feet of water annually by exchange to the United States for use by the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido and the Vista Irrigation District. Water became available for exchange with the United States following a May 17, 2017 notice from the Federal Energy Regulatory Commission (“FERC”) satisfying the last requirement of Section 104 of the San Luis Rey Indian Water Rights Settlement Act (Title I of Public Law 100-675, as amended). The QSA and related agreements also authorized the transfer of conserved water annually by IID to SDCWA (up to a maximum expected amount in 2021 of 205,000 acre-feet, then stabilizing to 200,000 acre-feet per year). Metropolitan also receives this water and delivers an equal amount of exchange water annually to SDCWA. See description under “– Metropolitan and San Diego County Water Authority Exchange Agreement” below; see also “METROPOLITAN REVENUES–Principal Customers” in this Appendix A. Also included under the QSA related agreements is a delivery and exchange agreement between Metropolitan and CVWD that provides for Metropolitan, when requested, to deliver annually up to 35,000 acre-feet of Metropolitan’s State Water Project contractual water to CVWD by exchange with Metropolitan’s available Colorado River supplies.

Metropolitan and San Diego County Water Authority Exchange Agreement

No facilities exist to deliver conserved water acquired by SDCWA from IID and water allocated to SDCWA that has been conserved as a result of the lining of the All-American and Coachella Canals. See “– Quantification Settlement Agreement.” Accordingly, in 2003, Metropolitan and SDCWA entered into an exchange agreement (the “Exchange Agreement”), pursuant to which SDCWA makes available to Metropolitan at its intake at Lake Havasu on the Colorado River the conserved Colorado River water SDCWA receives under the QSA related agreements. Metropolitan delivers an equal volume of water from its own sources of supply through its delivery system to SDCWA. The Exchange Agreement limits the amount of water that Metropolitan delivers to 277,700 acre-feet per year, except that an additional 5,000 acre-feet and an additional 2,500 acre-feet will be exchanged in years 2021 and 2022, respectively. In consideration for the conserved water made available to Metropolitan by SDCWA, SDCWA pays the agreement price for the exchange water delivered by Metropolitan. The price payable by SDCWA is calculated using the charges set by Metropolitan’s Board from time to time to be paid by its member agencies for the conveyance of water through Metropolitan’s facilities. See “METROPOLITAN REVENUES–Litigation Challenging Rate Structure” in this Appendix A for a description of Metropolitan’s charges for the conveyance of water through Metropolitan’s facilities and litigation in which SDCWA is challenging such charges. The term of the Exchange Agreement, as it relates to conserved water transferred by IID to SDCWA, extends through 2047, and as it relates to water allocated to SDCWA that has been conserved as a result of the lining of the All-American and Coachella Canals, extends through 2112; subject, in each case, to the right of SDCWA, upon a minimum of five years’ advance written notice to Metropolitan, to permanently reduce the aggregate quantity of conserved water made available to Metropolitan under the Exchange Agreement to the extent SDCWA decides continually and regularly to transport such conserved water to SDCWA through alternative facilities (which do not presently exist). In 2019, approximately 237,711 acre-feet were delivered to Metropolitan by SDCWA for exchange, consisting of 160,000 acre-feet of IID conservation plus 77,711 acre-feet of conserved water from the Coachella Canal and All-American Canal lining projects.

Colorado River Operations: Surplus and Shortage Guidelines

General. The Secretary of the Interior is vested with the responsibility of managing the mainstream waters of the lower Colorado River pursuant to federal law. Each year, the Secretary of the Interior is required to declare the Colorado River water supply availability conditions for the Lower Basin States in terms of “normal,” “surplus” or “shortage” and has adopted operations criteria in the form of guidelines to determine the availability of surplus or potential shortage allocations among the Lower Basin States and reservoir operations for such conditions.

Interim Surplus Guidelines. In January 2001, the Secretary of the Interior adopted guidelines (the “Interim Surplus Guidelines”), initially for use through 2016, in determining the availability and quantity of surplus Colorado River water available for use in California, Arizona and Nevada. The Interim Surplus Guidelines were amended in 2007 and now extend through 2026. The purpose of the Interim Surplus Guidelines was to provide mainstream users of Colorado River water, particularly those in California and Nevada who had been utilizing surplus flows, a greater degree of predictability with respect to the availability and quantity of surplus water. Under the Interim Surplus Guidelines, Metropolitan initially expected to divert up to 1.25 million acre-feet of Colorado River water annually under foreseeable runoff and reservoir storage scenarios from 2004 through 2016. However, an extended drought in the Colorado River Basin reduced these initial expectations, and Metropolitan has not received any surplus water since 2002.

Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead. In May 2005, the Secretary of the Interior directed the Bureau of Reclamation to develop additional strategies for improving coordinated management of the reservoirs of the Colorado River system. In November 2007, the Bureau of Reclamation issued a Final EIS regarding new federal guidelines concerning the operation of the Colorado River system reservoirs, particularly during drought and low reservoir conditions. These guidelines provide water release criteria from Lake Powell and water storage and water release criteria from Lake Mead during shortage and surplus conditions in the Lower Basin, provide a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead and extend the Interim Surplus Guidelines through 2026. The Secretary of the Interior issued the final guidelines through a Record of Decision signed in December 2007. The Record of Decision and accompanying agreement among the Colorado River Basin States protect reservoir levels by reducing deliveries during low inflow periods, encourage agencies to develop conservation programs and allow the Colorado River Basin States to develop and store new water supplies. The Colorado River Basin Project Act of 1968 insulates California from shortages in all but the most extreme hydrologic conditions. Consistent with these legal protections, under the guidelines, Arizona and Nevada are first subject to the initial annual shortages identified by the Secretary up to 500,000 acre-feet.

The guidelines also created the Intentionally Created Surplus (“ICS”) program, which allows water contractors in the Lower Basin States to store conserved water in Lake Mead. Under this program, ICS water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) is eligible for storage in Lake Mead by Metropolitan. ICS can be created through 2026 and delivered through 2036. See the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “–Storage Capacity and Water in Storage.” Under the guidelines and the Colorado River Drought Contingency Plan Authorization Act, California is able to create and deliver up to 400,000 acre-feet of extraordinary conservation ICS (“EC ICS”) annually and accumulate up to 1.7 million acre-feet of EC ICS in Lake Mead. In December 2007, California contractors for Colorado River water executed the California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus (the “California ICS Agreement”), which established terms and conditions for the creation, accumulation, and delivery of EC ICS by California contractors receiving Colorado River water. The California ICS Agreement apportioned the State’s EC ICS creation, accumulation, and delivery limits provided to California under the 2007 Interim Surplus Guidelines between IID and Metropolitan. No other California contractors were permitted to create or accumulate ICS. Under the terms of the agreement, IID is allowed to store up to 25,000 acre-feet per year of EC ICS in Lake Mead with a cumulative limit of 50,000 acre-feet. Metropolitan is permitted to use the remaining available EC ICS creation, delivery, and accumulation limits provided to California.

The Secretary of the Interior delivers the stored ICS water to Metropolitan in accordance with the terms of December 13, 2007, January 6, 2010, and November 20, 2012 Delivery Agreements between the United States and Metropolitan. As of January 1, 2020, Metropolitan had an estimated 980,000 acre-feet in its ICS accounts. These ICS accounts include water conserved by fallowing in the Palo Verde Valley, projects implemented with IID in its service area, groundwater desalination, the Warren H. Brock Reservoir Project, and international agreements that converted water conserved by Mexico to the United States.

Since the 2007 Lower Basin shortage guidelines were issued for the coordinated operations of Lake Powell and Lake Mead, the Colorado River has continued to experience drought conditions. The seven Colorado River Basin States, the U.S. Department of Interior through the Bureau of Reclamation, and water users in the Colorado River basin, including Metropolitan, began developing Drought Contingency Plans (“DCPs”) to reduce the risk of Lake Powell and Lake Mead declining below critical elevations through 2026.

In April 2019, the President signed legislation directing the Secretary of the Interior to sign and implement four DCP agreements related to the Upper and Lower Basin DCPs without delay. The agreements were executed and the Upper and Lower Basin DCPs became effective on May 20, 2019. The Lower Basin Drought Contingency Plan Agreement requires California, Arizona and Nevada to store defined volumes of water in Lake Mead at specified lake levels. California would begin making contributions if Lake Mead’s elevation is projected to be 1,045 feet above sea level or below on January 1. Lake Mead elevation in January 2020 was 1,090 feet. Depending on the lake’s elevation, California’s contributions would range from 200,000 to 350,000 acre-feet a year (“DCP Contributions”). Pursuant to intrastate implementation agreements, Metropolitan will be responsible for 93 percent of California’s DCP Contributions under the Lower Basin DCP. CVWD will be responsible for 7 percent of California’s required DCP Contributions.

Implementation of the Lower Basin DCP enhances Metropolitan’s ability to store water in Lake Mead and ensures that water in storage can be delivered at a later date. The Lower Basin DCP increases the total volume of water that California may store in Lake Mead by 200,000 acre-feet, which Metropolitan will have the right to use. Water stored as ICS will be available for delivery as long as Lake Mead’s elevation remains above 1,025 feet. Previously, that water would likely have become inaccessible below a Lake Mead elevation of 1,075 feet. DCP Contributions may be made through conversion of existing ICS. These types of DCP Contributions become DCP ICS. DCP Contributions may also be made by leaving water in Lake Mead that there was a legal right to have delivered. This type of DCP Contribution becomes system water and may not be recovered. Rules are set for delivery of DCP ICS through 2026 and between 2027-2057.

The Lower Basin DCP will be effective through 2026. Before the DCP and 2007 Lower Basin shortage guidelines terminate in 2026, the U.S. Department of Interior through the Bureau of Reclamation, the seven Colorado River Basin States, and water users in the Colorado River basin, including Metropolitan, will begin work on the development of new shortage guidelines for the management and operation of the Colorado River.

On April 22, 2019, Metropolitan was served notice of a CEQA lawsuit filed by IID against Metropolitan. In this lawsuit, IID is seeking to vacate Metropolitan’s Board actions taken on December 11, 2018 and March 12, 2019 authorizing Metropolitan’s entering into the agreements implementing the Lower Basin DCP under CEQA and to block Metropolitan from implementing the Lower Basin DCP and any related agreements. The trial is scheduled for November 30, 2020. IID is not seeking immediate injunctive relief; however, Metropolitan is unable to assess at this time the likelihood of success of this litigation or any future claims, or their potential effect on future implementation of the Lower Basin DCP.

Related Litigation–Navajo Nation Suit. The Navajo Nation filed litigation against the Department of the Interior, specifically the Bureau of Reclamation and the Bureau of Indian Affairs, in 2003, alleging that the Bureau of Reclamation has failed to determine the extent and quantity of the water rights of the Navajo Nation in the Colorado River and that the Bureau of Indian Affairs has failed to otherwise protect the interests of the Navajo Nation. The complaint challenges the adequacy of the environmental review for the Interim Surplus Guidelines (described under “–Colorado River Operations: Surplus and Shortage Guidelines – Interim Surplus Guidelines”) and seeks to prohibit the Department of the Interior from allocating any “surplus” water until such time as a determination of the rights of the Navajo Nation is completed. Metropolitan and other California water agencies filed motions to intervene in this action. In October 2004 the court granted the motions to intervene and stayed the litigation to allow negotiations among the Navajo Nation, federal defendants, Central Arizona Water Conservation District (“CAWCD”), State of Arizona and

Arizona Department of Water Resources. After years of negotiations, a tentative settlement was proposed in 2012 that would provide the Navajo Nation with specified rights to water from the Little Colorado River and groundwater basins under the reservation, along with federal funding for development of water supply systems on the tribe's reservation. The proposed agreement was rejected by tribal councils for both the Navajo and the Hopi, who were seeking to intervene. On May 16, 2013, the stay of proceedings was lifted. On June 3, 2013, the Navajo Nation moved for leave to file a first amended complaint, which the court granted on June 27, 2013. The amended complaint added a legal challenge to the Lower Basin Shortage Guidelines adopted by the Secretary of the Interior in 2007 that allow Metropolitan and other Colorado River water users to store water in Lake Mead (described under “– Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead”). Metropolitan has used these new guidelines to store over 1,000,000 acre-feet of water in Lake Mead, a portion of which has been delivered, and the remainder of which may be delivered at Metropolitan's request in future years. On July 22, 2014, the district court dismissed the lawsuit in its entirety, ruling that the Navajo Nation lacked standing and that the claim was barred against the federal defendants. The district court denied a motion by the Navajo Nation for leave to amend the complaint further after the dismissal. On September 19, 2014, the Navajo Nation appealed the dismissal of its claims related to the Interim Surplus Guidelines, the Lower Basin Shortage Guidelines, and breach of the federal trust obligation to the tribe. On December 4, 2017, the Ninth Circuit Court of Appeals held that the Navajo Nation lacked standing for its National Environmental Policy Act claims, but that the breach of trust claim was not barred against the federal defendants.

The matter was remanded to the district court in January 2018 to consider the Navajo Nation's breach of trust claim on its merits. The Navajo Nation sought leave to file an amended complaint on its breach of trust claim twice. On August 23, 2019, the district court issued its order denying the motion to amend, entered judgment against the Navajo Nation, and dismissed the action. In reaching this decision, the court reasoned that the Navajo Nation could not identify a specific statute or regulation that created any trust duty because, in part, it could not identify any specific duty breached by the United States. The court specifically rejected the Navajo Nation's argument that a trust duty arose out of the implied water rights that attach to federal reservations. The court reasoned that reserved water rights can only apply to water appurtenant to the reservation and to the extent the Navajo Nation based its claim on allegedly appurtenant rights in the mainstream of the Colorado River, the court has no jurisdiction to hear these claims since the U.S. Supreme Court retained continuing, exclusive jurisdiction in *Arizona v. California*. On October 18, 2019, the Navajo Nation filed its notice of appeal in the Ninth Circuit. The Navajo Nation filed its opening brief on February 26, 2020. Defendants and Intervenor answering briefs were due April 27, 2020. Metropolitan filed a joint answering brief with several other Defendant-Intervenor, including, among others, the State of Arizona, the State of Nevada, Coachella Valley Water District, and Imperial Irrigation District. Metropolitan is unable to assess at this time the likelihood of success of this litigation or any future claims, or their potential effect on Colorado River water supplies.

Endangered Species Act and Other Environmental Considerations

Endangered Species Act Considerations - State Water Project

General. DWR has altered the operations of the State Water Project to accommodate species of fish listed as threatened or endangered under the federal Endangered Species Act (“ESA”) and/or California ESA. Currently, three species (the winter-run and spring-run Chinook salmon and the Delta smelt) are listed under both ESAs. The Central Valley steelhead, the North American green sturgeon and the killer whale are listed under the federal ESA, and the Longfin smelt is listed as a threatened species under the California ESA.

The federal ESA requires that before any federal agency authorizes, funds, or carries out an action that may affect a listed species or designated critical habitat, it must consult with the appropriate federal fishery agency (either the National Marine Fisheries Service (“NMFS”) or the U.S. Fish and Wildlife Service (“USFWS”) depending on the species) to determine whether the action would jeopardize the continued

existence of any threatened or endangered species, or adversely modify habitat critical to the species' needs. The result of the consultation is known as a "biological opinion." In a biological opinion, a federal fishery agency determines whether the action would cause jeopardy to a threatened or endangered species or adverse modification to critical habitat; and if jeopardy or adverse modification is found, recommends reasonable and prudent alternatives that would allow the action to proceed without causing jeopardy or adverse modification. If no jeopardy or adverse modification is found, the fish agency issues a "no jeopardy opinion." The biological opinion also includes an "incidental take statement." The incidental take statement allows the action to go forward even though it will result in some level of "take," including harming or killing some members of the species, incidental to the agency action, provided that the agency action does not jeopardize the continued existence of any threatened or endangered species and complies with reasonable mitigation and minimization measures recommended by the federal fishery agency or as incorporated into the project description.

The California ESA generally requires an incidental take permit or consistency determination for any action that may cause take of a State-listed species of fish or wildlife. To issue an incidental take permit or consistency determination, the California Department of Fish and Wildlife ("CDFW") must determine that the impacts of the authorized take will be minimized and fully mitigated and will not cause jeopardy.

On August 2, 2016, DWR and the Bureau of Reclamation requested that USFWS and NMFS reinstate federal ESA consultation on the coordinated operations of the State Water Project and the federal Central Valley Project to update them with the latest best available science and lessons learned operating under the prior 2008 and 2009 biological opinions. In January 2019, the Bureau of Reclamation submitted the initial biological assessment to USFWS and NMFS. The biological assessment contains a description of the Bureau of Reclamation's and DWR's proposed long-term coordinated operations plan (the "2019 Long-Term Operations Plan"). On October 22, 2019, USFWS and NMFS issued new federal biological opinions (the "2019 biological opinions") that provide incidental take coverage for the 2019 Long-Term Operations Plan. On February 18, 2020, the Bureau of Reclamation signed a Record of Decision, pursuant to the National Environmental Policy Act, completing its environmental review and adopting the 2019 Long-Term Operations Plan.

The 2019 Long-Term Operations Plan incorporates and updates many of the requirements contained in the previous 2008 and 2009 biological opinions. It also includes over \$1 billion over a ten-year period in conservation, monitoring and new science, some of which is in the form of commitments carried forward from the previous biological opinions. Those costs are shared by the State Water Project and the federal Central Valley Project. The prior 2008 and 2009 biological opinions resulted in an estimated reduction in State Water Project deliveries of 0.3 million acre-feet during critically dry years to 1.3 million acre-feet in above normal water years as compared to the previous baseline. The 2019 Long-Term Operations Plan and 2019 biological opinions are expected to increase State Water Project deliveries by an annual average of 200,000 acre-feet as compared to the previous biological opinions.

On December 2, 2019, a group of non-governmental organizations, including commercial fishing groups and the Natural Resources Defense Council (the "NGOs"), sued USFWS and NMFS, alleging the 2019 biological opinions were arbitrary and capricious, later amending the lawsuit to include claims under the federal ESA and the National Environmental Policy Act related to decisions made by the Bureau of Reclamation. On February 20, 2020, the California Natural Resources Agency ("Natural Resources"), the California Environmental Protection Agency, and the Attorney General (collectively, the "State Petitioners") sued the federal agencies, making similar allegations. The State Water Contractors intervened in both cases to defend the 2019 biological opinions. The NGOs filed for a temporary restraining order on April 2, 2020, which the Court overruled. The NGOs and the State Petitioners filed a preliminary injunction seeking a court order imposing interim operations consistent with the prior 2008 and 2009 biological opinions pending rulings on the merits of plaintiffs' challenges to the two 2019 biological opinions. On May 11, 2020, the court granted, in part, the motions for preliminary injunction, thereby requiring the Central Valley Project to

operate to one of the reasonable and prudent alternatives (being the so-called “inflow-to-export ratio”) in the 2009 biological opinion through May 31, 2020. DWR is not a party in this litigation, and other legal requirements will be controlling the operation of the State Water Project during the relevant time period in May, and therefore the State Water Project will not be impacted by this order. Metropolitan is unable to predict the outcome of any litigation relating to the federal 2019 biological opinions or any potential effect on Metropolitan’s State Water Project water supplies.

As described above, operations of the State Water Project require both federal ESA and California ESA authorizations. DWR described and analyzed its proposed State Water Project long-term operations plan for purposes of obtaining a new California ESA permit in its November 2019 Draft EIR under CEQA. Its 2019 Draft EIR proposed essentially the same operations plan as for the federal 2019 biological opinions, with the addition of operations for the State-only listed species, Longfin smelt. The proposed State project included an estimated \$540 million in conservation, monitoring and science, much of which overlapping with DWR’s share of the estimated more than \$1 billion under the federal 2019 biological opinions. In December 2019, DWR submitted its application for an incidental take permit under the California ESA to CDFW, with a modified State operations plan that added new outflow and environmental commitments. On March 27, 2020, DWR released its final EIR and Notice of Determination, describing and adopting a State operations plan with additional operational restrictions and additional conservation commitments. On March 31, 2020, CDFW issued an incidental take permit for the State Water Project that included further operational restrictions and outflow. As issued, the incidental take permit reduces State Water Project deliveries by more than 200,000 acre-feet, and adds another \$218 million over a ten-year period in environmental commitments for the State Water Project.

On April 28, 2020, Metropolitan and Mojave Water Agency (“Mojave”) jointly sued CDFW and DWR, and Natural Resources, alleging that the new California ESA permit and Final EIR violate CEQA and the California ESA. Metropolitan and Mojave also allege that DWR breached the State Water Contract and the implied covenant of good faith and fair dealing by, among other things, accepting an incidental take permit containing mitigation requirements in excess of that required by law. The State Water Contractors and the Kern County Water Agency also filed CEQA and CESA actions, in which the San Gabriel Valley Municipal Water District has joined, and a CEQA challenge was filed by several federal contractors. Three other lawsuits have been filed by certain commercial fishing groups and a tribe, several environmental groups, and two in-Delta water agencies challenging the Final EIR as inadequate under CEQA and alleging violations of the Delta Reform Act, public trust doctrine and, in one of the cases, certain water right statutes. Metropolitan expects that additional lawsuits with respect to the California ESA permit and Final EIR may be filed. Metropolitan is unable to assess at this time the likelihood of success of any litigation relating to the California ESA permit, including any future litigation or any future claims that may be filed, or any potential effect on Metropolitan’s State Water Project water supplies.

Endangered Species Act Considerations - Colorado River

Federal and state environmental laws protecting fish species and other wildlife species have the potential to affect Colorado River operations. A number of species that are on either “endangered” or “threatened” lists under the ESAs are present in the area of the Lower Colorado River, including among others, the bonytail chub, razorback sucker, southwestern willow flycatcher and Yuma clapper rail. To address this issue, a broad-based state/federal/tribal/private regional partnership that includes water, hydroelectric power and wildlife management agencies in Arizona, California and Nevada have developed a multi-species conservation program for the main stem of the Lower Colorado River (the Lower Colorado River Multi-Species Conservation Program or “MSCP”). The MSCP allows Metropolitan to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations of its Colorado River facilities and to minimize any uncertainty from additional listings of endangered species. The MSCP also covers operations of federal dams and power plants on the river that deliver water and hydroelectric power for use by Metropolitan and other agencies. The MSCP covers 27 species and habitat in the Lower Colorado River from Lake Mead to the Mexican border for a term of 50

years (commencing in 2005). Over the 50-year term of the program, the total cost to Metropolitan will be about \$88.5 million (in 2003 dollars), and annual costs will range between \$0.8 million and \$4.7 million (in 2003 dollars).

Invasive Species - Mussel Control Programs

Zebra and quagga mussels are established in many regions of the United States. Mussels can reproduce quickly and, if left unmanaged, can reduce flows by clogging intakes and raw water conveyance systems, alter or destroy fish habitats, and affect lakes and beaches. Mussel management activities may require changes in water delivery protocols to reduce risks of spreading mussel populations and increase operation and maintenance costs.

In January 2007, quagga mussels were discovered in Lake Mead. All pipelines and facilities that transport raw Colorado River water are considered to be infested with quagga mussels. Metropolitan has a quagga mussel control plan, approved by the CDFW to address the presence of mussels in the CRA system and limit further spread of mussels. Year-round routine monitoring for mussel larvae has been conducted at Lake Havasu, selected locations in the CRA system, and non-infested areas of Metropolitan's system and some southern locations in the State Water Project. Recent shutdown inspections have demonstrated that control activities effectively limit mussel infestation in the CRA and prevent the further spread of mussels to other bodies of water and water systems. Metropolitan's costs for controlling quagga mussels in the CRA system over the past 12 years has been approximately \$5 million per year.

Established mussel populations are located within ten miles of the State Water Project. A limited number of mussels have also been detected in State Water Project supplies but there is currently no evidence of established mussel populations, nor have they impacted Metropolitan's State Water Project deliveries. To prevent the introduction and further spread of mussels into the State Water Project, the Bay-Delta, and other uninfested bodies of water and water systems, DWR has also developed quagga mussel control plans and has partnered with other State and federal agencies on a number of related activities. Metropolitan coordinates mussel monitoring and control activities with these agencies.

Water Transfer, Storage and Exchange Programs

General

To supplement its State Water Project and Colorado River water supplies, Metropolitan has developed and actively manages a portfolio of water supply programs, including water transfer, storage and exchange agreements, the supplies created by which are conveyed through the California Aqueduct of the State Water Project, utilizing Metropolitan's rights under its State Water Contract to use the portion of the State Water Project conveyance system necessary to deliver water to it, or through available CRA capacity. Consistent with its IRP, Metropolitan will continue to pursue voluntary water transfer and exchange programs with State, federal, public and private water districts and individuals to help mitigate supply/demand imbalances and provide additional dry-year supply sources. A summary description of certain of Metropolitan's supply programs are set forth below. In addition to the arrangements described below, Metropolitan is entitled to storage and access to stored water in connection with various other storage programs and facilities. See "--Colorado River Aqueduct" above, as well as the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "--Storage Capacity and Water in Storage" below.

State Water Project Agreements and Programs

In addition to the basic State Water Project contract provisions, Metropolitan has other contract rights that accrue to the overall value of the State Water Project. Because each Contractor is paying for physical facilities, they also have the right to use the facilities to move water supplies associated with agreements, water transfers and water exchanges. Metropolitan has entered into agreements and exchanges that provide additional water supplies.

Existing and potential water transfers and exchanges are an important element for improving the water supply reliability within Metropolitan's service area and accomplishing the reliability goal set by Metropolitan's Board. California's agricultural activities consume approximately 34 million acre-feet of water annually, which is approximately 80 percent of the total water used in the State for agricultural and urban uses and 40 percent of the water used for all consumptive uses, including environmental demands. Voluntary water transfers and exchanges with agricultural users can make a portion of this agricultural water supply available to support the State's urban areas. The portfolio of supplemental supplies that Metropolitan has developed to be conveyed through the California Aqueduct extend from north of the Bay-Delta to Southern California. Certain of these arrangements are also described below.

Castaic Lake and Lake Perris. Metropolitan has contractual rights to withdraw up to 65,000 acre-feet of water in Lake Perris (East Branch terminal reservoir) and 153,940 acre-feet of water in Castaic Lake (West Branch terminal reservoir). This storage provides Metropolitan with additional options for managing State Water Project deliveries to maximize yield from the project. Any water used must be returned to the State Water Project within five years or it is deducted from allocated amounts in the sixth year.

Metropolitan Article 56 Carryover. Metropolitan has the right to store its allocated contract amount for delivery in subsequent years. Metropolitan can store between 100,000 and 200,000 acre-feet, depending on the final water supply allocation percentage.

Yuba River Accord. Metropolitan entered into an agreement with DWR in December 2007 to purchase a portion of the water released by the Yuba County Water Agency ("YCWA"). YCWA was involved in a SWRCB proceeding in which it was required to increase Yuba River fishery flows. Within the framework of agreements known as the Yuba River Accord, DWR entered into an agreement for the long-term purchase of water from YCWA. The agreement permits YCWA to transfer additional supplies at its discretion. Metropolitan, other State Water Contractors, and the San Luis & Delta-Mendota Water Authority entered into separate agreements with DWR for the purchase of portions of the water made available. Metropolitan's agreement allows Metropolitan to purchase, in dry years through 2025, available water supplies which have ranged from approximately 6,555 acre-feet to 67,068 acre-feet per year.

In addition to water made available under the Yuba River Accord, Metropolitan has developed groundwater storage agreements that allow Metropolitan to store available supplies in the Central Valley for return later. See "METROPOLITAN'S WATER DELIVERY SYSTEM—Water Quality and Treatment" in this Appendix A for information regarding recent water quality regulations and developments that impact or may impact certain of Metropolitan's groundwater storage programs.

Metropolitan has also developed other groundwater storage and exchange programs, certain of which are described below.

Arvin-Edison/Metropolitan Water Management Program. In December 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District ("Arvin-Edison"), an irrigation agency located southeast of Bakersfield, California. Under the program, Arvin-Edison stores water on behalf of Metropolitan. In January 2008, Metropolitan and Arvin-Edison amended the agreement to enhance the program's capabilities and to increase the delivery of water to the California Aqueduct. Up to 350,000 acre-feet of Metropolitan's water may be stored and Arvin-Edison is obligated to return up to 75,000 acre-feet of stored water in any year to Metropolitan, upon request. The agreement will terminate in 2035 unless extended. To facilitate the program, new wells, spreading basins and a return conveyance facility connecting Arvin-Edison's existing facilities to the California Aqueduct have been constructed. The agreement also provides Metropolitan priority use of Arvin-Edison's facilities to convey high quality water available on the east side of the San Joaquin Valley to the California Aqueduct. Metropolitan's storage account balance under the Arvin-Edison/Metropolitan Water Management Program as of January 1, 2020 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "—Storage Capacity and Water

in Storage” below. As a result of detecting 1,2,3-trichloropropane (“TCP”) in Arvin-Edison wells, Metropolitan has temporarily suspended operation of the program until the water quality concerns can be further evaluated and managed.

Semitropic/Metropolitan Groundwater Storage and Exchange Program. In 1994, Metropolitan entered into an agreement with the Semitropic Water Storage District (“Semitropic”), located adjacent to the California Aqueduct north of Bakersfield, to store water in the groundwater basin underlying land within Semitropic. The minimum annual yield available to Metropolitan from the program is 39,700 acre-feet of water and the maximum annual yield is 231,200 acre-feet of water depending on the available unused capacity and the State Water Project allocation. Metropolitan’s storage account balance under the Semitropic program as of January 1, 2020 is shown in the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “–Storage Capacity and Water in Storage” below.

Kern Delta Storage Program. Metropolitan entered into an agreement with Kern Delta Water District (“Kern Delta”) in May 2003, for a groundwater banking and exchange transfer program to allow Metropolitan to store up to 250,000 acre-feet of State Water Contract water in wet years and to permit Metropolitan, at Metropolitan’s option, a return of up to 50,000 acre-feet of water annually during hydrologic and regulatory droughts. Metropolitan’s storage account balance under this program as of January 1, 2020 is shown in the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “–Storage Capacity and Water in Storage” below.

Mojave Storage Program. Metropolitan entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency (“Mojave”) in October 2003. This agreement was amended in 2011 to allow for the cumulative storage of up to 390,000 acre-feet. The agreement allows for Metropolitan to store water in an exchange account for later return. The agreement allows Metropolitan to annually withdraw Mojave State Water Project contractual amounts, after accounting for local needs. Under a 100 percent allocation, the State Water Contract provides Mojave 82,800 acre-feet of water. Metropolitan’s storage account balance under this program as of January 1, 2020 is shown in the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “–Storage Capacity and Water in Storage” below.

Antelope Valley-East Kern Storage and Exchange Program. In 2016, Metropolitan entered into an agreement with the Antelope Valley-East Kern Water Agency (“AVEK”), the third largest State Water Contractor, to both exchange supplies and store water in the Antelope Valley groundwater basin. Under this agreement, AVEK would provide Metropolitan up to 30,000 acre-feet of storage and the ability to exchange supplies. AVEK would provide at least 30,000 acre-feet over ten years of its unused Table A State Water Project water to Metropolitan. For every two acre-feet provided to Metropolitan as part of the exchange, AVEK would receive back one acre-foot in the future. For the one acre-foot that is retained by Metropolitan, Metropolitan would pay AVEK under a set price schedule based on the State Water Project allocation at the time. The payment would range from \$587/acre-foot under a five percent State Water Project allocation to \$38/acre-foot under an 86 percent State Water Project allocation. DWR has approved the storage program element but has yet to approve the exchange element of the program. Metropolitan’s storage account balance under this program as of January 1, 2020 is shown in the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “–Storage Capacity and Water in Storage” below.

Antelope Valley-East Kern High Desert Water Bank Program. In April 2019, Metropolitan’s Board authorized the General Manager to enter into an agreement with AVEK for a groundwater banking program referred to as the High Desert Water Bank Program. Under this agreement, Metropolitan would pay AVEK for the capital costs of construction of groundwater recharge and recovery facilities to be located in AVEK’s service area near the split of the West and East Branches of the California Aqueduct. In fiscal year 2019-20, AVEK plans to re-activate a turnout from the East Branch of the California Aqueduct that will allow recharge to occur earlier, if needed. Geotechnical and hydrogeologic work for the facilities has started and test boring and drilling is occurring on-site. The estimated costs of construction of the facilities is \$131

million. Following completion of construction, which is expected to take approximately five years, Metropolitan would have the right to store up to 70,000 acre-feet per year of its unused Table A State Water Project water or other supplies in the Antelope Valley groundwater basin for later return. The maximum storage capacity for Metropolitan supplies would be 280,000 acre-feet. At Metropolitan's direction, up to 70,000 acre-feet of stored water annually would be available for return by direct pump back into the East Branch of the California Aqueduct. Metropolitan would pay for the actual operation, maintenance and power costs for the water bank facilities when used for Metropolitan's benefit. In addition, Metropolitan would pay a set recovery usage fee on all recovered water. In total, the estimated cost to Metropolitan would be \$320/per acre-foot. Upon completion, this program would provide additional flexibility to store and recover water for emergency or water supply needs through 2057.

San Gabriel Valley Municipal Water District and Other Exchange Programs. In 2013, Metropolitan entered into an agreement with the San Gabriel Valley Municipal Water District ("SGVMWD"). Under this agreement, Metropolitan delivers treated water to a SGVMWD subagency in exchange for twice as much untreated water in the groundwater basin. Metropolitan's member agencies can then use the groundwater supplies to meet their needs. Metropolitan can exchange and purchase at least 5,000 acre-feet per year. This program has the potential to increase Metropolitan's reliability by providing 115,000 acre-feet through 2035.

Metropolitan has been negotiating, and will continue to pursue, water purchase, storage and exchange programs with other agencies in the Sacramento and San Joaquin Valleys. These programs involve the storage of both State Water Project supplies and water purchased from other sources to enhance Metropolitan's dry-year supplies and the exchange of normal year supplies to enhance Metropolitan's water reliability and water quality, in view of dry conditions and potential impacts from the ESA considerations discussed above under the heading "--Endangered Species Act and Other Environmental Considerations -- Endangered Species Act Considerations - State Water Project."

Colorado River Aqueduct Agreements and Programs

Metropolitan has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water, including through cooperative programs with other water agencies to conserve and develop supplies and through programs to exchange water with other agencies. These supplies are conveyed through the CRA. Metropolitan determines the delivery schedule of these supplies throughout the year based on changes in the availability of State Water Project and Colorado River water. Under certain of these programs, water may be delivered to Metropolitan's service area in the year made available or in a subsequent year as ICS water from Lake Mead storage. See "--Colorado River Aqueduct --Colorado River Operations: Surplus and Shortage Guidelines -- Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead."

IID/Metropolitan Conservation Agreement. Under a 1988 water conservation agreement, as amended in 2003 and 2007 (the "1988 Conservation Agreement") between Metropolitan and IID, Metropolitan provided funding for IID to construct and operate a number of conservation projects that have conserved up to 109,460 acre-feet of water per year that has been provided to Metropolitan. As amended, the agreement's initial term has been extended to at least 2041 or 270 days after the termination of the QSA. In 2019, 105,000 acre-feet of conserved water was made available by IID to Metropolitan. Under the QSA and related agreements, Metropolitan, at the request of CVWD, forgoes up to 20,000 acre-feet of this water each year for diversion by CVWD from the Coachella Canal. In each of 2018 and 2019, CVWD's requests were for 0 acre-feet, leaving 105,000 acre-feet in 2018 and 2019 for Metropolitan. In December 2019, Metropolitan signed a revised agreement with CVWD in which CVWD will limit its annual request of water from this program to 15,000 acre-feet through 2026. See "--Colorado River Aqueduct --Quantification Settlement Agreement."

Palo Verde Land Management, Crop Rotation and Water Supply Program. In August 2004, Metropolitan and PVID signed the program agreement for a Land Management, Crop Rotation and Water Supply Program. Under this program, participating landowners in the PVID service area are compensated for reducing water use by not irrigating a portion of their land. This program provides up to 133,000 acre-feet of water to be available to Metropolitan in certain years. The term of the program is 35 years. Fallowing began on January 1, 2005. The following table shows annual volumes of water saved and made available to Metropolitan during the last 10 calendar years under the Land Management, Crop Rotation and Water Supply Program with PVID:

**WATER AVAILABLE FROM PVID LAND MANAGEMENT,
CROP ROTATION AND WATER SUPPLY PROGRAM**

<u>Calendar Year</u>	<u>Volume (acre-feet)</u>
2010 ⁽¹⁾	148,600
2011	122,200
2012	73,700
2013	32,800
2014	43,000
2015	94,500
2016	125,400
2017	111,800
2018	95,800
2019	44,500

Source: Metropolitan.

⁽¹⁾ Includes water from a supplemental fallowing program entered into with PVID in March 2009 that provided for fallowing of additional acreage in 2009 and 2010 and resulted in an additional 24,100 acre-feet and 32,300 acre-feet of water in 2009 and 2010, respectively, made available under the program.

Bard Water District Seasonal Fallowing Program. In January 2020, Metropolitan and Bard Water District signed a seven-year agreement for a seasonal fallowing program. Under this program, each year farmers in Bard Water District have the opportunity to be compensated for reducing water use by not irrigating a portion of their land between April 1 and August 1 each year. During this period, farmers typically plant low-value, high water use crops, and this program incentivizes them to fallow the land instead. This program provides up to 6,000 acre-feet of water per year to be available to Metropolitan. The term of the program is through 2026, and during that time the water can either be delivered to Metropolitan or stored in Lake Mead as described below. In 2020, Metropolitan will pay \$452 per acre in fallowing payments for a maximum of 3,000 acres fallowed per year. The payments increase annually with inflation.

Lake Mead Storage Program. As described under “–Colorado River Aqueduct –Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead,” in December 2007, Metropolitan entered into agreements to set forth the guidelines under which ICS water is developed and stored in and delivered from Lake Mead. The amount of water stored in Lake Mead must be created through extraordinary conservation, system efficiency, tributary, imported, or binational conservation methods. Metropolitan has participated in projects to create ICS as described below:

Drop 2 (Warren H. Brock) Reservoir. In May 2008, Metropolitan provided \$28.7 million to join the CAWCD and the Southern Nevada Water Authority (“SNWA”) in funding the Bureau of Reclamation’s construction of an 8,000 acre-foot off-stream regulating reservoir near Drop 2 of the All-American Canal in Imperial County (officially named the Warren H. Brock Reservoir). Construction was completed in October 2010 and the Bureau of Reclamation refunded approximately \$3.71 million in unused contingency funds to Metropolitan. The Warren H. Brock Reservoir conserves about 70,000 acre-feet of water per year by

capturing and storing water that would otherwise be lost from the system. In return for its funding, Metropolitan received 100,000 acre-feet of water that was stored in Lake Mead for its future use and has the ability to receive up to 25,000 acre-feet of water in any single year. Besides the additional water supply, the addition of the Warren H. Brock reservoir adds to the flexibility of Colorado River operations by storing underutilized Colorado River water orders caused by unexpected canal outages, changes in weather conditions, and high tributary runoff into the Colorado River. As of January 1, 2020, Metropolitan had taken delivery of 35,000 acre-feet of this water and had 65,000 acre-feet remaining in storage.

International Water Treaty Minutes 319 and 323. In November 2012, as part of the implementation of Minute 319, Metropolitan executed agreements in support of a program to augment Metropolitan's Colorado River supply between 2013 through 2017 through an international pilot project in Mexico. Metropolitan's total share of costs was \$5 million for 47,500 acre-feet of project supplies. In December 2013, Metropolitan and IID executed an agreement under which IID has paid half of Metropolitan's program costs, or \$2.5 million, in return for half of the project supplies, or 23,750 acre-feet. As such, 23,750 acre-feet of Intentionally Created Mexican Allocation was converted to Binational ICS and credited to Metropolitan's binational ICS water account in 2017. See "–Colorado River Aqueduct –Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead." In September 2017, as part of the implementation of Minute 323, Metropolitan agreed to fund additional water conservation projects in Mexico that will yield approximately 24,000 acre-feet of additional supply for Metropolitan by 2026 at a cost of approximately \$3.3 million.

Storage and Interstate Release Agreement with Nevada. In May 2002, SNWA and Metropolitan entered into an Agreement Relating to Implementation of Interim Colorado River Surplus Guidelines, in which SNWA and Metropolitan agreed to the allocation of unused apportionment as provided in the Interim Surplus Guidelines and on the priority of SNWA for interstate banking of water in Arizona. SNWA and Metropolitan entered into a storage and interstate release agreement on October 21, 2004. Under this agreement, SNWA can request that Metropolitan store unused Nevada apportionment in California. The amount of water stored through 2014 under this agreement was approximately 205,000 acre-feet. In October 2015, SNWA and Metropolitan executed an additional amendment to the agreement under which Metropolitan paid SNWA approximately \$44.4 million and SNWA stored an additional 150,000 acre-feet with Metropolitan during 2015. Of that amount, 125,000 acre-feet has been added to SNWA's storage account with Metropolitan, increasing the total amount of water stored to approximately 330,000 acre-feet. In subsequent years, SNWA may request recovery of the stored water. When SNWA requests the return of any of the stored 125,000 acre-feet, SNWA will reimburse Metropolitan for an equivalent proportion of the \$44.4 million plus inflation based on the amount of water returned. However, it is expected that SNWA will not request return of any of the water stored with Metropolitan before 2022.

California ICS Agreement Intrastate Storage Provisions. In addition to establishing terms and conditions for the creation, accumulation, and delivery of ICS by California contractors, the California ICS Agreement allows IID to store up to 25,000 acre-feet per year of conserved water within Metropolitan's system with a cumulative limit of 50,000 acre-feet. Under a 2015 amendment, IID was permitted to store up to 100,000 acre-feet per year of conserved water within Metropolitan's system with a cumulative limit of 200,000 acre-feet, for a three-year term (2015-2018). When requested by IID, Metropolitan has agreed to return to IID the lesser of either 50,000 acre-feet per year, or in a year in which Metropolitan's member agencies are under a shortage allocation, 50 percent of the cumulative amount of water IID has stored with Metropolitan under the 2015 amendment. IID currently has 162,000 acre-feet of water stored with Metropolitan pursuant to the terms of the California ICS Agreement.

State Water Project and Colorado River Aqueduct Arrangements

Metropolitan/CVWD/Desert Water Agency Exchange and Advance Delivery Agreement. Metropolitan has agreements with CVWD and the Desert Water Agency ("DWA") in which Metropolitan exchanges its Colorado River water for those agencies' State Water Project contractual water and other State

Water Project water acquisitions on an annual basis. Because CVWD and DWA do not have a physical connection to the State Water Project, Metropolitan takes delivery of CVWD's and DWA's State Water Project supplies and delivers a like amount of Colorado River water to the agencies. In accordance with an advance delivery agreement executed by Metropolitan, CVWD and DWA, Metropolitan may deliver Colorado River water in advance of receiving State Water Project supplies to these agencies for storage in the Upper Coachella Valley groundwater basin. In years when it is necessary to augment available supplies to meet local demands, Metropolitan may meet the exchange delivery obligation through drawdowns of the advance delivery account, rather than deliver Colorado River water in that year. Metropolitan's storage account under the CVWD/DWA program as of January 1, 2020 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. In addition to the storage benefits of the program, Metropolitan receives water quality benefits with increased deliveries of lower salinity water from the State Water Project in lieu of delivering higher saline Colorado River water. In December 2019, the exchange agreements were amended to provide more flexibility and operational certainty for the parties involved. Additionally, under the amended agreements, CVWD and DWA pay a portion of Metropolitan's water storage management costs in wet years, up to a combined total of \$4 million per year.

Storage Capacity and Water in Storage

Metropolitan's storage capacity, which includes reservoirs, conjunctive use and other groundwater storage programs within Metropolitan's service area and groundwater and surface storage accounts delivered through the State Water Project or CRA, is approximately 6.0 million acre-feet. In 2019, approximately 626,000 acre-feet of total stored water in Metropolitan's reservoirs and other storage resources was emergency storage that was reserved for use in the event of supply interruptions from earthquakes or similar emergencies (see "METROPOLITAN'S WATER DELIVERY SYSTEM–Seismic Considerations and Emergency Response Measures" in this Appendix A), as well as extended drought. Metropolitan's emergency storage requirement is established periodically to provide a six-month water supply at 75 percent of member agencies' retail demand under normal hydrologic conditions. Metropolitan's ability to replenish water storage, both in the local groundwater basins and in surface storage and banking programs, has been limited by Bay-Delta pumping restrictions under the biological opinions issued for listed species. See "–Endangered Species Act and Other Environmental Considerations –Endangered Species Act Considerations – State Water Project – Delta Smelt and Salmon Federal ESAs Biological Opinions and California ESA Consistency Determinations and Incidental Take Permit." Metropolitan replenishes its storage accounts when available imported supplies exceed demands. Effective storage management is dependent on having sufficient years of excess supplies to store water so that it can be used during times of shortage. Metropolitan forecasts that, with anticipated supply reductions from the State Water Project due to pumping restrictions, it will need to draw down on storage in about seven of ten years and will be able to replenish storage in about three years out of ten. This reduction in available supplies extends the time required for storage to recover from drawdowns and could require Metropolitan to implement its Water Supply Allocation Plan during extended dry periods. See "CONSERVATION AND WATER SHORTAGE MEASURES–Water Supply Allocation Plan" in this Appendix A. As a result of increased State Water Project supplies and improved conditions on the Colorado River in 2019, Metropolitan's storage as of January 1, 2020 is estimated to be 3.90 million acre-feet. Metropolitan completed an evaluation of its Emergency Storage Objective in 2019. Through a collaborative process with its member agencies, it was recommended to increase the emergency storage from 626,000 acre-feet to 750,000 acre-feet by January 1, 2020. As a result, the portion of the emergency storage in Metropolitan's reservoirs will be increased from 298,000 acre-feet to 369,000 acre-feet. The following table shows three years of Metropolitan's water in storage as of January 1, including emergency storage.

METROPOLITAN'S WATER STORAGE CAPACITY AND WATER IN STORAGE⁽¹⁾
(in Acre-Feet)

<u>Water Storage Resource</u>	<u>Storage Capacity</u>	<u>Water in Storage January 1, 2020</u>	<u>Water in Storage January 1, 2019</u>	<u>Water in Storage January 1, 2018</u>
<u>Colorado River Aqueduct</u>				
DWA / CVWD Advance Delivery Account	800,000	296,000	235,000	228,000
Lake Mead ICS	<u>1,739,000</u>	<u>980,000</u>	<u>625,000</u>	<u>479,000</u>
Subtotal	2,539,000	1,276,000	860,000	707,000
<u>State Water Project</u>				
Arvin-Edison Storage Program ⁽²⁾	350,000	143,000	154,000	149,000
Semitropic Storage Program	350,000	265,000	187,000	187,000
Kern Delta Storage Program	250,000	189,000	138,000	138,000
Mojave Storage Program	330,000 ⁽⁵⁾	19,000 ⁽⁵⁾	19,000 ⁽⁵⁾	27,000
AVEK Storage Program	30,000	27,000	9,000	9,000
Castaic Lake and Lake Perris ⁽³⁾	219,000	219,000	219,000	219,000
State Water Project Carryover ⁽⁴⁾	350,000 ⁽⁶⁾	331,000	93,000	325,000
Emergency Storage	<u>381,000</u>	<u>381,000</u>	<u>328,000</u>	<u>328,000</u>
Subtotal	2,260,000	1,574,000	1,147,000	1,382,000
<u>Within Metropolitan's Service Area</u>				
Diamond Valley Lake	810,000	796,000	702,000	747,000
Lake Mathews	182,000	152,000	141,000	139,000
Lake Skinner	<u>44,000</u>	<u>38,000</u>	<u>37,000</u>	<u>38,000</u>
Subtotal⁽⁷⁾	1,036,000	986,000	880,000	924,000
<u>Member Agency Storage Programs</u>				
Conjunctive Use ⁽⁸⁾	<u>210,000</u>	<u>59,000</u>	<u>47,000</u>	<u>41,000</u>
Total	<u>6,045,000</u>	<u>3,895,000</u>	<u>2,934,000</u>	<u>3,054,000</u>

Source: Metropolitan

- (1) Water storage capacity and water in storage are measured based on engineering estimates and are subject to change.
- (2) Metropolitan has temporarily suspended operation of the Arvin-Edison storage program. See "METROPOLITAN'S WATER SUPPLY—Water Transfer, Storage and Exchange Programs – Arvin-Edison/Metropolitan Water Management Program" and "METROPOLITAN'S WATER DELIVERY SYSTEM—Water Quality and Treatment" in this Appendix A.
- (3) Flexible storage allocated to Metropolitan under its State Water Contract. Withdrawals must be returned within 5 years.
- (4) Includes Article 56 Carryover of Metropolitan, Coachella Valley Water District, and Desert Water Agency, prior-year carryover, non-project carryover, and carryover of curtailed deliveries pursuant to Article 14(b) and Article 12(e) of Metropolitan's State Water Contract.
- (5) The Mojave Storage agreement was amended in 2011 to allow for cumulative storage of up to 390,000 acre-feet. Since January 1, 2011, Metropolitan has stored 60,000 acre-feet, resulting in a remaining balance of storage capacity of 330,000 acre-feet. 41,000 acre-feet of the 60,000 acre-feet stored has been returned, leaving a remaining balance in storage of 19,000 acre-feet.
- (6) A capacity of 350,000 acre-feet is estimated to be the practical operational limit for carryover storage considering Metropolitan's capacity to take delivery of carryover supplies before San Luis Reservoir fills.
- (7) Includes 298,000 acre-feet of emergency storage in Metropolitan's reservoirs in 2018 and 2019, and 369,000 acre-feet of emergency storage in Metropolitan's reservoirs in 2020.
- (8) Cyclic Storage water removed from this line item and is now categorized a pre-delivery.

CONSERVATION AND WATER SHORTAGE MEASURES

General

The central objective of Metropolitan’s water conservation program is to help ensure adequate, reliable and affordable water supplies for Southern California by actively promoting efficient water use. The importance of conservation to the region has increased in recent years because of drought conditions in the State Water Project watershed and court-ordered restrictions on Bay-Delta pumping, as described under “METROPOLITAN’S WATER SUPPLY–State Water Project –Bay-Delta Proceedings Affecting State Water Project” and “–Endangered Species Act and Other Environmental Considerations –Endangered Species Act Considerations-State Water Project – Delta Smelt and Salmon Federal ESAs Biological Opinions and California ESA Consistency Determinations and Incidental Take Permit” in this Appendix A. Conservation reduces the need to import water to deliver to member agencies through Metropolitan’s system. Water conservation is an integral component of Metropolitan’s IRP, WSDM Plan and Water Supply Allocation Plan.

Metropolitan’s conservation program has largely been developed to assist its member agencies in meeting the conservation goals of the 2015 IRP Update. See “METROPOLITAN’S WATER SUPPLY–Integrated Water Resources Plan” in this Appendix A. All users of Metropolitan’s system benefit from the reduced infrastructure costs and system capacity made available by investments in demand management programs like the Conservation Credits Program. Under the terms of Metropolitan’s Conservation Credits Program, Metropolitan administers regional conservation programs and also co-funds member agency conservation programs designed to achieve greater water use efficiency in residential, commercial, industrial, institutional and landscape uses. Direct spending by Metropolitan on active conservation incentives, including rebates for water-saving plumbing fixtures, appliances and equipment totaled about \$16.4 million in fiscal year 2018-19. The 2015 IRP Update estimates that Metropolitan’s conservation efforts will result in 1,197,000 acre-feet of water being conserved annually in Southern California by 2025. See also “METROPOLITAN’S WATER SUPPLY–Integrated Water Resources Plan” in this Appendix A and “–Increased Drought Resiliency” below.

Historically, revenues collected by Metropolitan’s Water Stewardship Rate and available grant funds have funded conservation incentives, local resource development incentives, and other water demand management programs. The Water Stewardship Rate is charged on every acre-foot of water conveyed by Metropolitan, except on water delivered to SDCWA pursuant to the Exchange Agreement (see “METROPOLITAN REVENUES–Water Rates” and “–Litigation Challenging Rate Structure” in this Appendix A) in calendar years 2018, 2019, and 2020. The Water Stewardship Rate will be collected for water deliveries through December 31, 2020, except for water delivered pursuant to the Exchange Agreement. See “METROPOLITAN REVENUES–Rate Structure –Water Stewardship Rate” in this Appendix A.

In addition to ongoing conservation, Metropolitan has developed a WSDM Plan, which splits resource actions into two major categories: Surplus Actions and Shortage Actions. See “–Water Surplus and Drought Management Plan.” Conservation and water efficiency programs are part of Metropolitan’s resource management strategy which makes up these Surplus and Shortage actions.

Metropolitan’s Water Supply Allocation Plan allocates Metropolitan’s water supplies among its member agencies, based on the principles contained in the WSDM Plan, to reduce water use and drawdowns from water storage reserves. See “–Water Supply Allocation Plan.” Metropolitan’s member agencies and retail water suppliers in Metropolitan’s service area also have the ability to implement water conservation and allocation programs, and some of the retail suppliers in Metropolitan’s service area have initiated conservation measures. The success of conservation measures in conjunction with the implementation of the

Water Supply Allocation Plan in fiscal years 2009-10, 2010-11, 2011-12 and 2015-16 is evidenced as a contributing factor in the lower than budgeted water transactions during such drought periods.

Legislation approved in November 2009 sets a statewide conservation target for urban per capita potable water use of 20 percent reductions (from a baseline per capita use determined utilizing one of four State-approved methodologies) by 2020 (with credits for existing conservation) at the retail level, providing an additional catalyst for conservation by member agencies and retail suppliers. Metropolitan's water transactions projections incorporate an estimate of conservation savings that will reduce retail demands. Current projections include an estimate of additional water use efficiency savings that would result from Metropolitan's IRP goals that include the reduction of overall regional per capita water use by 20 percent by 2020 from a baseline of average per capita water use from 1996-2005 in Metropolitan's service area. As of calendar year 2018, per capita water use in Metropolitan's service area was below the 20 percent by 2020 target.

Water Surplus and Drought Management Plan

In addition to the long-term planning guidelines and strategy provided by its IRP, Metropolitan has developed its WSDM Plan for the on-going management of its resources and water supplies in response to hydrologic conditions. The WSDM Plan, which was adopted by Metropolitan's Board in April 1999, evolved from Metropolitan's experiences during the droughts of 1976-77 and 1987-92. The WSDM Plan is a planning document that Metropolitan uses to guide inter-year and intra-year storage operations, and splits resource actions into two major categories: surplus actions and shortage actions. The surplus actions emphasize storage of surplus water inside the region, followed by storage of surplus water outside the region. The shortage actions emphasize critical storage programs and facilities and conservation programs that make up part of Metropolitan's response to shortages. Implementation of the plan is directed by a WSDM team, made up of Metropolitan staff, that meets regularly throughout the year and more frequently between November and April as hydrologic conditions develop. The WSDM team develops and recommends storage actions to senior management on a regular basis and provides updates to the Board on hydrological conditions, storage levels and planned storage actions through detailed reports.

Water Supply Allocation Plan

In times of prolonged or severe water shortages, Metropolitan manages its water supplies through the implementation of its Water Supply Allocation Plan. The Water Supply Allocation Plan was originally approved by Metropolitan's Board in February 2008, and has been implemented three times since its adoption, including most recently in April 2015. The drought of 2012-2016 was one of the driest periods in the hydrological record since 1931-1934. The Board declared a Water Supply Condition 3 on April 14, 2015, and the implementation of the Water Supply Allocation Plan at a Level 3 Regional Shortage Level, effective July 1, 2015 through June 30, 2016. On May 10, 2016, the Board rescinded the implementation of the Water Supply Allocation Plan due to improved hydrological conditions. The Water Supply Allocation Plan provides a formula for equitable distribution of available water supplies in case of extreme water shortages within Metropolitan's service area and if needed is typically approved in the month of April with implementation beginning in the month of July. In December 2014, the Board approved certain adjustments to the formula for calculating member agency supply allocations during subsequent periods of implementation of the Water Supply Allocation Plan. Although the Act gives each of Metropolitan's member agencies a preferential entitlement to purchase a portion of the water served by Metropolitan (see "METROPOLITAN REVENUES-Preferential Rights" in this Appendix A), historically, these rights have not been used in allocating Metropolitan's water. Metropolitan's member agencies and retail water suppliers in Metropolitan's service area also may implement water conservation and allocation programs within their respective service territories in times of shortage. See also "Increased Drought Resiliency." Based upon current hydrologic conditions and current DWR State Water Project allocation estimates, implementation of the Water Supply Allocation Plan for fiscal year 2019-20 is not expected.

Increased Drought Resiliency

Metropolitan has worked proactively with its member agencies to conserve water supplies in its service area, and significantly expanded its water conservation and outreach programs and increased funding for conservation incentive programs. In May 2017, the Alliance for Water Efficiency presented a peer review report of Metropolitan’s conservation programs. Program modifications were adopted in April 2018 to reflect the peer review recommendations as well as feedback from member agencies. See “CONSERVATION AND WATER SHORTAGE MEASURES–General.” Metropolitan has also taken other actions to improve drought resiliency that include increasing water recycling by providing incentives for on-site recycled water hook-ups, improving return capability of storage programs, and modifying Metropolitan’s distribution system to enhance Colorado River water delivery to mitigate limitations in State Water Project supply.

REGIONAL WATER RESOURCES

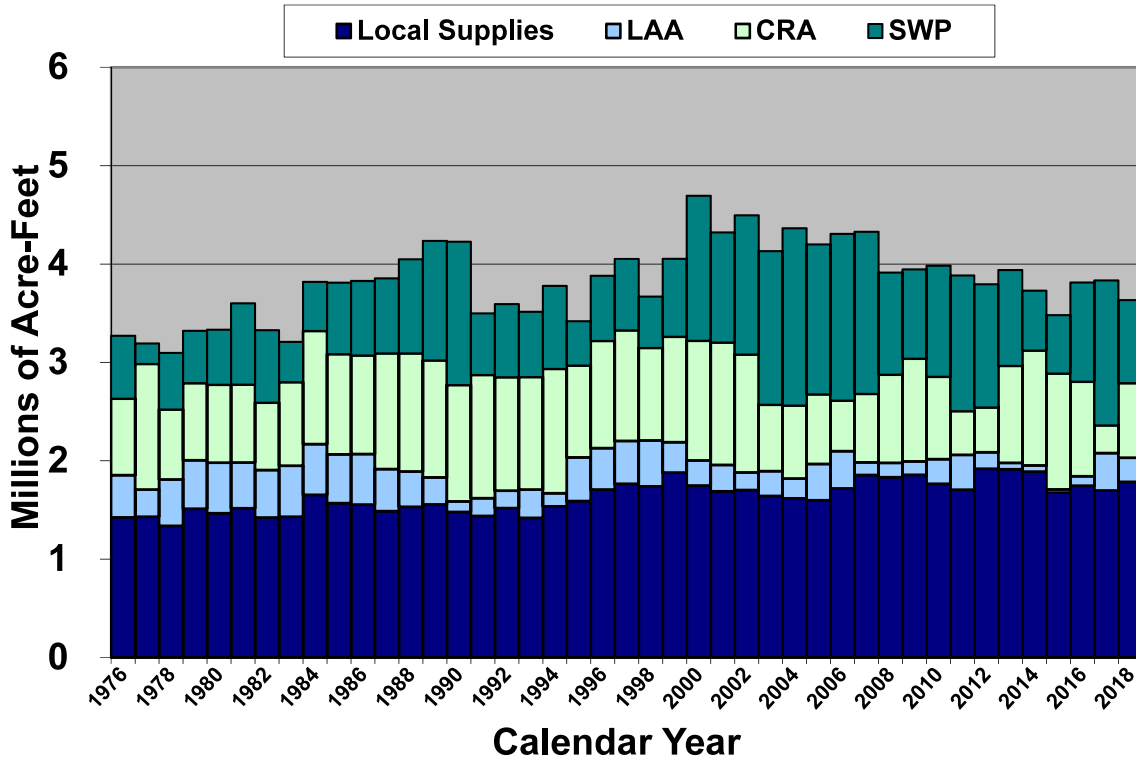
The water supply for Metropolitan’s service area is provided in part by Metropolitan and in part by non-Metropolitan sources available to members. Approximately 60 percent of the water supply for Metropolitan’s service area is imported water received by Metropolitan from the CRA and the State Water Project and by the City of Los Angeles (the “City”) from the Los Angeles Aqueduct. While the City is one of the largest water customers of Metropolitan, it receives a substantial portion of its water from the Los Angeles Aqueduct and local groundwater supply. The balance of water within the region is produced locally, primarily from groundwater supplies and runoff.

Metropolitan’s member agencies are not required to purchase or use any of the water available from Metropolitan. Some agencies depend on Metropolitan to supply nearly all of their water needs, regardless of the weather. Other agencies, with local surface reservoirs or aqueducts that capture rain or snowfall, rely on Metropolitan more in dry years than in years with heavy rainfall, while others, with ample groundwater supplies, purchase Metropolitan water only to supplement local supplies and to recharge groundwater basins. The demand for supplemental supplies provided by Metropolitan is dependent on water use at the retail consumer level and the amount of locally supplied and conserved water. See “CONSERVATION AND WATER SHORTAGE MEASURES” in this Appendix A and “–Local Water Supplies” below. Consumer demand and locally supplied water vary from year to year, resulting in variability in the volume of Metropolitan’s water transactions. Future reliance on Metropolitan supplies will depend on, among other things, local projects and the amount of water, if any, that may be derived from sources other than Metropolitan. In recent years, supplies and demands have been affected by drought, water use restrictions, economic conditions, weather conditions and environmental laws, regulations and judicial decisions, as described in this Appendix A under “METROPOLITAN’S WATER SUPPLY.” For information on Metropolitan’s water revenues, see “METROPOLITAN REVENUES” and “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.

The following graph shows a summary of the regional sources of water supply for the years 1976 to 2018.

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Sources of Water Supply in the Metropolitan Service Area (1976-2018)



Source: Metropolitan.

The major sources of water available to some or all of Metropolitan’s member agencies in addition to supplies provided by Metropolitan are described below.

Los Angeles Aqueduct

The City of Los Angeles, through its Department of Water and Power (“LADWP”), operates its Los Angeles Aqueduct system to import water from the Owens Valley and the Mono Basin on the eastern slopes of the Sierra Nevada in eastern California. Prior to the 1990-1991 drought, the City had imported an average of 440,000 acre-feet of water annually from the combined Owens Valley/Mono Basin system, of which about 90,000 acre-feet came from the Mono Basin. Under the Mono Lake Basin Water Right Decision (Decision 1631) issued in September 1994, which revised LADWP’s water rights licenses in the Mono Basin, the City is prohibited from exporting water when Mono Lake elevation is below 6,377 feet above mean sea level, and is limited to export 4,500 acre-feet annually when Mono Lake elevation is between 6,377 to 6,380 feet above mean sea level, and 16,000 acre-feet annually when the elevation is between 6,380 to 6,391 feet above mean sea level, on April 1 of the runoff year. If Mono Lake is above elevation 6,391 feet, the City may export all available water from the Basin that is not dedicated to instream fishery protection flows. Due to the near record snowpack in the Eastern Sierra during the winter of 2016-17, the April 1, 2018 Mono Lake water level reached 6,382 feet, surpassing the 6,380 feet threshold which permits the increase of exports to all available water from the Basin not dedicated to instream fishery protection flows pursuant to Decision 1631. As of April 1, 2020, Mono Lake water levels reached 6,382.6 feet.

Pursuant to the City's turnout agreement with DWR, AVEK and Metropolitan, LADWP commenced construction in 2010 of the turnout facilities along the California Aqueduct within AVEK's service area. In September 2017, DWR accepted the facility, which enables delivery of water along the California Aqueduct to the Los Angeles Aqueduct. Conditions precedent to such delivery of water include obtaining approval(s) for the transfer of non-State Water Project water, available capacity in the California Aqueduct and compliance with State Water Project water quality requirements. On October 24, 2019, LADWP completed a test delivery of non-State Water Project supplies purchased from San Geronio Pass Water Agency.

Prior to 1991, the Los Angeles Aqueduct and local groundwater supplies had been nearly sufficient to meet the City's water demands during normal water supply years. As a result, only about 13 percent of the City's water needs (approximately 82,000 acre-feet) was supplied by Metropolitan. From fiscal year 2000-01 to fiscal year 2018-19, approximately 28 to 75 percent of the City's total water requirements were met by Metropolitan. For the five fiscal years ended June 30, 2019, the City's water deliveries from Metropolitan averaged approximately 247,900 acre-feet per year, which constituted approximately 49 percent of the City's total water supply. Deliveries from Metropolitan to the City during this period varied between approximately 137,800 acre-feet per year and approximately 362,700 acre-feet per year. See "METROPOLITAN REVENUES—Principal Customers" in this Appendix A. According to LADWP's 2015 Urban Water Management Plan, the City is planning to increase locally-developed supplies including recycled water, new conservation, stormwater capture and local groundwater from the average for the five-year period ending June 30, 2015 of 14 percent to 47 percent of its normal year supplies by fiscal year 2039-40. Accordingly, the City expects to decrease reliance on Metropolitan from the five-year average ending June 30, 2015 of 57 percent to 11 percent of its normal year supplies by fiscal year 2039-40. However, the City may still purchase up to 311,000 acre-feet per year or 44 percent of its dry year supplies from Metropolitan until 2040. This corresponds to an increase from normal to dry years of approximately 236,000 acre-feet in potential demand for supplies from Metropolitan.

LADWP analyzed the additional impacts to the Los Angeles Aqueduct's water supply deliveries for various environmental projects aimed at improving air quality and fish and riparian habitat in the Owens Valley. In November 2014, LADWP reached an agreement over implementation of dust control measures on Owens Lake which saved approximately 8,700 acre-feet of water from the water use baseline established in 2013 and is expected to expand water savings in the future. LADWP reports that in calendar year 2019, 91,500 acre-feet of water was devoted to dust and environmental mitigation projects in the Owens Valley and Eastern Sierra, resulting in the need to purchase an equivalent amount of Metropolitan supply.

Local Water Supplies

Local water supplies are made up of groundwater, groundwater recovery, surface runoff, recycled water, and seawater desalination. Metropolitan supports local resources development through its Local Resources Program, which provides financial incentives up to \$340 per acre-foot of water production from local water recycling, groundwater recovery and seawater desalination projects. Metropolitan utilizes conjunctive use of groundwater to encourage storage in groundwater basins. Member agencies and other local agencies have also independently funded and developed additional local supplies, including groundwater clean-up, recycled water and desalination of brackish or high salt content water. See also "METROPOLITAN'S WATER DELIVERY SYSTEM—Water Quality and Treatment" in this Appendix A for information regarding recent water quality regulations and developments that impact or may impact certain local groundwater supplies.

Metropolitan's water transaction projections are based in part on projections of locally-supplied water. Projections of future local supplies are based on estimated yields from sources and projects that are currently producing water or are under construction at the time a water transaction projection is made. Additional reductions in Metropolitan's water transaction projections are made to account for future local supply augmentation projects, based on the IRP Update goals. See "MANAGEMENT'S DISCUSSION OF

HISTORICAL AND PROJECTED REVENUES AND EXPENSES–Water Transactions Projections” and “METROPOLITAN’S WATER SUPPLY–Integrated Water Resources Plan” in this Appendix A.

Groundwater. Demands for about 1.1 million acre-feet per year, about one-third of the annual water demands for approximately 19 million residents of Metropolitan’s service area, are met from groundwater production. Local groundwater supplies are supported by recycled water, which is blended with imported water and recharged into groundwater basins, and also used for creating seawater barriers that protect coastal aquifers from seawater intrusion.

Member Agency Storage Programs. Metropolitan has developed a number of local programs to work with its member agencies to increase storage in groundwater basins. Metropolitan has encouraged storage through its cyclic and conjunctive use storage programs. These programs allow Metropolitan to deliver water into a groundwater basin in advance of agency demands. Metropolitan has drawn on dry-year supply from nine contractual conjunctive use storage programs to address shortages from the State Water Project and the CRA.

Cyclic storage agreements allow pre-delivery of imported water for recharge into groundwater basins in excess of an agency’s planned and budgeted deliveries making best use of available capacity in conveyance pipelines, use of storm channels for delivery to spreading basins, and use of spreading basins. This water is then purchased at a later time when the agency has a need for groundwater replenishment deliveries.

Conjunctive use agreements provide for storage of imported water that can be called for use by Metropolitan during dry, drought, or emergency conditions. During a dry period, Metropolitan has the option to call water stored in the groundwater basins pursuant to its contractual conjunctive use agreements. At the time of the call, the member agency pays Metropolitan the prevailing rate for that water. Nine conjunctive use projects provide about 210,000 acre-feet of groundwater storage and have a combined extraction capacity of about 70,000 acre-feet per year. See the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “METROPOLITAN’S WATER SUPPLY–Storage Capacity and Water in Storage” in this Appendix A.

Recovered Groundwater. Contamination of groundwater supplies is a growing threat to local groundwater production. Metropolitan has been supporting increased groundwater production and improved regional supply reliability by offering financial incentives to agencies for production and treatment of degraded groundwater since 1991. Metropolitan has executed agreements with local agencies to provide financial incentives to 26 projects that recover contaminated groundwater with total contract yields of about 120,000 acre-feet per year. During fiscal year 2018-19, Metropolitan provided incentives for approximately 50,000 acre-feet of recovered water under these agreements. Total groundwater recovery use under executed agreements is expected to grow to 67,000 acre-feet in 2020.

Surface Runoff. Local surface water resources consist of runoff captured in storage reservoirs and diversions from streams. Since 1980, agencies have used an average of 110,000 acre-feet per calendar year of local surface water. Local surface water supplies are heavily influenced by year to year local weather conditions, varying from a high of 188,000 acre-feet in calendar year 1998 to a low of 37,000 acre-feet in calendar year 2016.

Recycled Water-Local Agency Projects. Metropolitan has supported recycled water use to offset water demands and improve regional supply reliability by offering financial incentives to agencies for production and sales of recycled water since 1982. Metropolitan has executed agreements with local agencies to provide financial incentives to 83 recycled water projects with total expected contract yields of about 312,000 acre-feet per year. During fiscal year 2018-19, Metropolitan provided incentives for approximately 138,000 acre-feet of recycled water under these agreements. Total recycled water use under executed

agreements currently in place is expected to be approximately 185,000 acre-feet annually by 2020. On December 10, 2019, Metropolitan's Board authorized the General Manager to enter into a Local Resources Program agreement with SDCWA and the City of San Diego to provide financial incentives in connection with the first phase of a proposed recycling project (the San Diego Pure Water North City Project Phase 1) being developed by the City of San Diego. Phase 1 of the project, if completed, would provide up to 33,600 acre-feet annually of recycled water for surface water augmentation, and Local Resource Program financial incentives of up to \$285.6 million could be provided by Metropolitan for the project over a 25-year period. As noted above, Local Resources Program agreements provide incentives of up to \$340 per acre-foot of water production (based on actual project unit costs that exceed Metropolitan's water rates) from local water supply projects developed by local and member agencies. Agreement terms are for 25 years and terminate automatically if construction does not commence within two years of agreement execution or if recycled water deliveries are not realized within four years of agreement execution.

Recycled Water-Metropolitan Regional Recycled Water Program. Since 2010, Metropolitan has been evaluating the potential and feasibility of implementing a regional recycled water program (the "RRWP"). Chronic drought conditions have resulted in significant reductions in local surface supplies and groundwater production and have increased the need for recharge supplies to groundwater and surface water reservoirs to improve their sustainable yields and operating integrity. In 2015, Metropolitan executed an agreement with the Sanitation Districts of Los Angeles County ("LACSD") to implement a demonstration project and to establish a framework of terms and conditions of the RRWP. The objectives of the RRWP are to enable the potential reuse of up to 150 million gallons per day ("mgd") of treated effluent from LACSD's Joint Water Pollution Control Plant ("JWPCP"). Purified water from a new advanced treatment facility could be delivered through pipelines to the region's groundwater basins, industrial facilities, and two of Metropolitan's treatment plants. Construction of a 0.5-mgd advanced water treatment demonstration plant was approved in 2017 and was completed in September 2019. Testing and operation of the plant began in October 2019 to confirm treatment costs and provide the basis for regulatory approval of the proposed treatment process. The initial phase of testing is scheduled for completion in 2021 with future testing phases planned that will form the basis for the design, operation, and optimization of, and will inform Metropolitan's Board decision whether to move forward with, a full-scale advanced water treatment facility. Finally, the RRWP will have the flexibility to be expanded in the future to implement Direct Potable Reuse ("DPR") through raw water augmentation at two of Metropolitan's treatment plants. The SWRCB Division of Drinking Water ("DDW") is in the process of developing regulations for DPR in California, with the current anticipated date for promulgation by the end of 2023. The fiscal year 2020-21 and 2021-22 biennial budget includes \$30 million for the preparation of a programmatic environment impact report for the RRWP. Metropolitan's financial projections for the fiscal years ending June 30, 2020 through 2024 do not include any future capital costs associated with a potential full-scale RRWP.

Seawater Desalination. Metropolitan's IRP includes seawater desalination as a part of the region's local supply that could help increase supply reliability in Metropolitan's service area. The IRP also supports foundational actions to lay the groundwork for accelerating seawater desalination development as needed in the future. To encourage local development, Metropolitan has signed Seawater Desalination Program ("SDP") incentive agreements with three of its member agencies: City of Long Beach, Municipal Water District of Orange County ("MWDOC") and West Basin Municipal Water District ("West Basin MWD"). The SDP agreements provide incentives to the member agencies of up to \$250 per acre-foot when the desalinated supplies are produced. Agreement terms are for the earlier of 25 years or through 2040 and are designed to phase out if Metropolitan's water rates surpass the unit cost of producing desalinated seawater. SDP agreements are subject to final approval by Metropolitan's Board after review of the complete project description and environmental documentation. While the City of Long Beach is no longer pursuing a seawater desalination project, MWDOC's project (the Doheny desalination project) is now in the permitting phase and West Basin MWD's project is in the environmental review phase. If completed, the two would produce up to 25,000 acre-feet initially and potentially up to 75,000 acre-feet if expanded in the future. The SDP agreements are currently active but will automatically terminate in July 2020 if the projects are not

operational by that time. Metropolitan may consider extending the terms for one or more of the SDP agreements if requested by a member agency. In October 2014, seawater desalination projects became eligible for funding under Metropolitan’s Local Resources Program.

In late 2015, Poseidon Resources LLC (“Poseidon”) began operating the 56,000-acre-foot capacity Carlsbad Desalination Project (“Carlsbad Project”) and associated pipeline. The SDCWA has a purchase agreement with Poseidon for a minimum of 48,000 acre-feet per year from the Carlsbad Project with an option to purchase an additional 8,000 acre-feet per year. Other seawater desalination projects that could provide supplies to Metropolitan’s service area are under development or consideration. In partnership with the Orange County Water District, Poseidon is also pursuing a 56,000 acre-feet per year plant in Huntington Beach. The project is currently in the permitting phase.

Another project with the potential to augment regional supplies is a seawater desalination project in Rosarito Beach, Mexico. A consortium of private companies led by Consolidated Water Co., Ltd. and its Mexican subsidiary, N.S.C. Agua S.A. de C.V., is developing the project. The 56,000 to 112,000 acre-feet per year project is in the pre-construction phase and could supply Metropolitan’s service area through exchange agreements. Additional approvals from a number of U.S. and Mexican federal agencies, along with State and local approvals, would be needed for the project to proceed and any potential cross-border exchanges agreements to be realized.

METROPOLITAN’S WATER DELIVERY SYSTEM

Primary Facilities and Method of Delivery

Metropolitan’s water delivery system is made up of three basic components: the CRA, the California Aqueduct of the State Water Project and Metropolitan’s water distribution system. Metropolitan’s delivery system is integrated and designed to meet the differing needs of its member agencies. Metropolitan seeks redundancy in its delivery system to assure reliability in the event of an outage. Improvements are designed to increase the flexibility of the system. Since local sources of water are generally used to their maximum each year, growth in the demand for water is partially met by Metropolitan. The operation of Metropolitan’s water system is being made more reliable through the rehabilitation of key facilities as needed, improved preventive maintenance programs and the upgrading of Metropolitan’s operational control systems. See “CAPITAL INVESTMENT PLAN” in this Appendix A.

Colorado River Aqueduct. Work on the CRA commenced in 1933 and water deliveries started in 1941. Additional facilities were completed by 1961 to meet additional requirements of Metropolitan’s member agencies. The CRA is 242 miles long, starting at the Lake Havasu intake and ending at the Lake Mathews terminal reservoir. Metropolitan owns all of the components of the CRA, which include five pumping plants, 64 miles of canal, 92 miles of tunnels, 55 miles of concrete conduits, four reservoirs, and 144 underground siphons totaling 29 miles in length. The pumping plants lift the water approximately 1,617 feet over several mountain ranges to Metropolitan’s service area. See “METROPOLITAN’S WATER SUPPLY–Colorado River Aqueduct” in this Appendix A.

State Water Project. The initial portions of the State Water Project serving Metropolitan were completed in 1973. The State Water Project, managed and operated by DWR, is one of the largest water supply projects undertaken in the history of water development. The State Water Project facilities dedicated to water delivery consist of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water. Water from rainfall and snowmelt runoff is captured and stored in State Water Project conservation facilities and then delivered through State Water Project transportation facilities to water agencies and districts located throughout the Upper Feather River, Bay Area, Central Valley, Central Coast, and Southern California. Metropolitan receives water from the State Water Project through the main stem of the aqueduct system, the California Aqueduct, which is 444 miles long and includes 381 miles of canals and siphons, 49 miles of pipelines or tunnels and 13 miles of channels and reservoirs.

As described herein, Metropolitan is the largest (in terms of number of people it serves, share of State Water Project water it has contracted to receive, and percentage of total annual payments made to DWR therefor) of twenty-nine agencies and districts that have entered into contracts with DWR to receive water from the State Water Project. Contractors pay all costs of the facilities in exchange for participation rights in the system. Thus, Contractors also have the right to use the portion of the State Water Project conveyance system necessary to deliver water to them at no additional cost as long as capacity exists. See “METROPOLITAN’S WATER SUPPLY–State Water Project” in this Appendix A.

Distribution System. Metropolitan’s distribution system is a complex network of facilities which routes water from the CRA and State Water Project to Metropolitan’s member agencies. The water distribution system includes components that were built beginning in the 1930s and through the present. Metropolitan owns all of these components, including 16 reservoirs, five regional treatment plants, over 800 miles of transmission pipelines, feeders and canals, and 16 hydroelectric plants with an aggregate capacity of 131 megawatts.

Diamond Valley Lake. Diamond Valley Lake, a man-made reservoir, built, owned and operated by Metropolitan, is located southwest of the city of Hemet, California. It covers approximately 4,410 acres and has capacity to hold approximately 810,000 acre-feet or 265 billion gallons of water. Diamond Valley Lake was constructed to serve approximately 90 percent of Metropolitan’s service area by gravity flow. Imported water is delivered to Diamond Valley Lake during surplus periods. The reservoir provides more reliable delivery of imported water from the State Water Project during summer months, droughts and emergencies. In addition, Diamond Valley Lake is capable of providing more than one-third of Southern California’s water needs from storage for approximately six months after a major emergency (assuming that there has been no impairment of Metropolitan’s internal distribution network). See the table entitled “Metropolitan’s Water Storage Capacity and Water in Storage” under “METROPOLITAN’S WATER SUPPLY–Storage Capacity and Water in Storage” in this Appendix A for the amount of water in storage at Diamond Valley Lake. Excavation at the project site began in May 1995. Diamond Valley Lake was completed in March 2000, at a total cost of \$2 billion, and was in full operation in December 2001.

Inland Feeder. Metropolitan’s Inland Feeder is a 44-mile-long conveyance system that connects the State Water Project to Diamond Valley Lake and the CRA. The Inland Feeder provides greater flexibility in managing Metropolitan’s major water supplies and allows greater amounts of State Water Project water to be accepted during wet seasons for storage in Diamond Valley Lake. In addition, the Inland Feeder increases the conveyance capacity from the East Branch of the State Water Project by 1,000 cfs, allowing the East Branch to operate up to its full capacity. Construction of the Inland Feeder was completed in September 2009 at a total cost of \$1.14 billion.

Operations Control Center. Metropolitan’s water conveyance and distribution system operations are coordinated from the Operations Control Center (“OCC”) centrally located in Los Angeles County. The OCC plans, balances and schedules daily water and power operations to meet member agencies’ demands, taking into consideration the operational limits of the entire system.

Water Quality and Treatment

Metropolitan filters and disinfects water at five water treatment plants: the F.E. Weymouth Treatment Plant, the Joseph Jensen Treatment Plant, the Henry J. Mills Treatment Plant, the Robert B. Diemer Treatment Plant, and the Robert A. Skinner Treatment Plant. In recent years, the plants typically treat between 0.8 billion and 1.0 billion gallons of water per day and have a maximum capacity of approximately 2.4 billion gallons per day. Approximately 50 percent of Metropolitan’s water deliveries are treated water.

Federal and state regulatory agencies continually identify potential contaminants and establish new water quality standards. New water quality standards could affect availability of water and impose significant compliance costs on Metropolitan. The federal Safe Drinking Water Act (“SDWA”) establishes drinking

water quality standards, monitoring, and public notification and enforcement requirements for public water systems. To achieve these objectives, the U.S. Environmental Protection Agency (the “USEPA”), as the lead regulatory authority, promulgates national drinking water regulations and develops the mechanism for individual states to assume primary enforcement responsibilities. The SWRCB DDW, formerly the Drinking Water Program under the California Department of Public Health, has primary responsibility for the regulation of public water systems in the State. Drinking water delivered to customers must comply with statutory and regulatory water quality standards designed to protect public health and safety. Metropolitan operates its five water treatment plants under a domestic water supply permit issued by DDW, which is amended, as necessary, such as when significant facility modifications occur. Metropolitan operates and maintains water storage, treatment and conveyance facilities, implements watershed management and protection activities, performs inspections, monitors drinking water quality, and submits monthly and annual compliance reports. In addition, public water system discharges to state and federal waters are regulated under general National Pollutant Discharge Elimination System (“NPDES”) permits. These NPDES permits, which the SWRCB issued to Metropolitan, contain numerical effluent limitations, monitoring, reporting, and notification requirements for water discharges from the facilities and pipelines of Metropolitan’s water supply and distribution system.

As described herein, Metropolitan has established five groundwater storage programs with other water agencies that allow Metropolitan to store available supplies in the Central Valley for return later. These programs help manage supplies by putting into storage surplus water in years when it is available and converting that to dry year supplies to be returned when needed. These programs can also provide emergency supplies. See “METROPOLITAN’S WATER SUPPLY–Water Transfer, Storage and Exchange Programs – State Water Project Agreements and Programs” and “–Storage Capacity and Water in Storage” in this Appendix A. Generally, water returned to Metropolitan under these groundwater storage programs (“return water”) may be made available in one of two ways: by direct pump back from a groundwater well to the California Aqueduct or, when available, by an exchange with a supply already in the aqueduct. Water quality issues can arise in water returned by direct pumping as a result of the presence of a water quality contaminant in the groundwater storage basin and due to the imposition of stricter water quality standards by federal or State regulation.

In 2017, the SWRCB adopted a regulation setting a Maximum Contaminant Level (“MCL”) for TCP of five parts per trillion or 5 ppt based upon a running annual average. TCP is a manufactured chemical used as a cleaning and degreasing solvent and has been found at industrial and hazardous waste sites. It is also associated with pesticide products used in agricultural practices. In January 2018, the new regulation went into effect. Under the new regulation, drinking water agencies are required to perform quarterly monitoring of TCP. There have been no detections of this chemical in Metropolitan’s system. However, TCP has been detected above the new MCL in groundwater wells of three of Metropolitan’s groundwater storage program partners through monitoring performed by these agencies. Levels detected in groundwater wells of the Arvin-Edison Water Storage District are the highest and will impact the ability of Metropolitan to take return water under that program. As noted under “METROPOLITAN’S WATER SUPPLY–Water Transfer, Storage and Exchange Programs” in this Appendix A, Metropolitan has temporarily suspended operation of this program until the water quality concerns can be further evaluated and managed. The levels of TCP detected at Metropolitan’s other groundwater storage programs are much lower and impact fewer groundwater wells. Metropolitan is evaluating the effects of TCP on the return capability of those programs.

Possible remediation measures include, for example, return water with other surface water supplies, removal of wells from service, return water by exchange, or treatment. Additional capital and/or operation and maintenance costs could be incurred by Metropolitan in connection with remediation options, but the magnitude of such costs is not known at this time. To the extent return water under one or more groundwater storage programs could not be utilized due to groundwater quality, the available supply of stored water during extended drought or emergency periods would be reduced.

Metropolitan continually monitors new water quality laws and regulations and frequently comments on new legislative proposals and regulatory rules. For example, on June 26, 2019, the USEPA proposed setting the MCL for perchlorate at 56 micrograms per liter ($\mu\text{g/L}$). Perchlorate is both a naturally occurring and man-made chemical used in the production of rocket fuel, missiles, fireworks, flares and explosives. It is also sometimes present in bleach and in some fertilizers. Groundwater in the Henderson, Nevada area has been contaminated with perchlorate as a result of two former chemical manufacturing facilities, and there are ongoing remediation programs to mitigate its release into the Las Vegas Wash and the downstream Colorado River. In addition to its proposed setting of a perchlorate MCL of 56 $\mu\text{g/L}$, the USEPA sought comment on three alternative regulatory options: (1) setting an MCL for perchlorate at 18 $\mu\text{g/L}$; (2) setting an MCL for perchlorate at 90 $\mu\text{g/L}$; or (3) withdrawing EPA's 2011 determination to regulate perchlorate in drinking water. On August 23, 2019, Metropolitan submitted a comment letter on the USEPA's proposed regulation, recommending that the USEPA consider the health effects data used by several states for setting MCLs and Advisory Levels for perchlorate, as well as the monitoring and compliance guidance provided by California and Massachusetts in developing their perchlorate MCLs. Also, Metropolitan expressed its concern that the USEPA does not have an up-to-date accounting of perchlorate contamination and that the USEPA excluded perchlorate data from California and Massachusetts. As it has in the past, Metropolitan continued to urge the USEPA to establish a drinking water regulation for perchlorate that is protective of human health and prevents any adverse impact to the Colorado River and the millions of users that rely upon it as a source of drinking water supply. Lastly, Metropolitan asked the USEPA not to withdraw its 2011 determination to regulate perchlorate in drinking water; otherwise, drinking water utilities in Nevada and Arizona which rely on Colorado River water could then have higher levels of perchlorate in their source water, and California drinking water utilities, including some of Metropolitan's member agencies, would be challenged to comply with California's MCL for perchlorate of 6 $\mu\text{g/L}$ if remediation efforts in the Henderson area were slowed down in the absence of a federal regulation. USEPA is currently developing a final action on its regulatory proposal based on comments received and intends to issue this action in June 2020. California is also reviewing its MCL for perchlorate in light of a revised Public Health Goal ("PHG") of 1 $\mu\text{g/L}$ adopted in February 2015. The SWRCB is required to set an MCL for a chemical as close to the PHG as is technologically and economically feasible. As part of this process, the SWRCB held a public hearing on April 28, 2020, to consider lowering the detection limit for purposes of reporting ("DLR") for perchlorate from 4 $\mu\text{g/L}$ to 2 $\mu\text{g/L}$. Data collected from monitoring using the lower DLR will allow the SWRCB to evaluate the technological and economic feasibility of water treatment to reduce perchlorate levels to concentrations less than the current DLR. On April 30, 2020, Metropolitan submitted a comment letter to the SWRCB supporting the lower perchlorate DLR which is consistent with laboratory capabilities and will allow for a more accurate and complete assessment of perchlorate occurrence across the State. Metropolitan will continue to participate in federal and state rulemaking proceedings.

Metropolitan is monitoring and commenting on the development of legislation, laws, and regulations regarding per- and poly-fluoroalkyl substances ("PFAS"). PFAS are substances widely used in consumer and industrial products such as fabrics, carpets, firefighting foams, food packaging and nonstick cookware and are known for their nonstick, waterproof, and heat and stain resistant properties. Perfluorooctane sulfonate ("PFOS") and perfluorooctanoic acid ("PFOA") are the two most common synthetic organic chemicals in the group of compounds referred to as PFAS. In August 2019, DDW lowered the notification levels for PFOS from 13 ppt to 6.5 ppt and for PFOA from 14 ppt to 5.1 ppt. Notification levels are non-regulatory, precautionary health-based measures for concentrations of chemicals in drinking water that warrant notification and further monitoring and assessment. If a chemical concentration is greater than its notification level in drinking water that is provided to consumers, DDW recommends that the utility inform its customers and consumers about the presence of the chemical, and about health concerns associated with exposure to it. In February 2020, DDW lowered response levels for PFOA and PFOS from 70 ppt for individual or combined concentrations to 10 ppt for PFOA and 40 ppt for PFOS. A response level is set higher than a notification level and represents a chemical concentration level at which DDW recommends a water system consider taking a water source out of service or providing treatment if that option is available to them. Legislation which took effect on January 1, 2020 (California Assembly Bill 756), requires that water systems

that receive a monitoring order from the SWRCB and detect levels of PFAS that exceed their respective response level must either take a drinking water source out of use or provide specified public notification if they continue to supply water above the response level. PFOA and PFOS have not been detected in Metropolitan's imported or treated water supplies. In 2019, Metropolitan detected in its supplies low levels of perfluorohexanoic acid (PFHxA), which is not acutely toxic or carcinogenic and is not currently regulated in California or at the federal level. No other PFAS have been detected in Metropolitan imported or treated supplies. However, PFOA and PFOS have been detected in groundwater wells in the region, including those of certain member agencies. Metropolitan may experience increased demands for its imported water to help offset the potential loss of any affected local supplies. On March 10, 2020, the USEPA announced its preliminary determination to regulate PFOA and PFOS in drinking water. Written comments are due by June 10, 2020. In addition, the SWRCB has initiated a process to establish regulatory standards for PFOA and PFOS by requesting the California Office of Environmental Health Hazard Assessment ("OEHHA") to establish PHGs for these two chemicals. PHGs are established by the OEHHA and used as the basis for the development of a State regulation setting an MCL. Metropolitan will continue to monitor and participate in federal and state rulemaking proceedings.

Metropolitan is currently operating in compliance with all state and federal drinking water regulations and permit requirements.

Seismic Considerations and Emergency Response Measures

General. Although the magnitude of damages resulting from a significant seismic event are impossible to predict, Metropolitan's water conveyance and distribution facilities are designed either to withstand a maximum probable seismic event or to minimize the potential repair time in the event of damage. The five pumping plants on the CRA have been buttressed to better withstand seismic events. Other components of the CRA are monitored for any necessary rehabilitation and repair. Metropolitan personnel and independent consultants periodically reevaluate the internal water distribution system's vulnerability to earthquakes. As facilities are evaluated and identified for seismic retrofitting, they are prioritized, with those facilities necessary for delivering or treating water scheduled for upgrade before non-critical facilities. However, major portions of the California Aqueduct and the CRA are located near major earthquake faults, including the San Andreas Fault. A significant earthquake could damage structures and interrupt the supply of water, adversely affecting Metropolitan's revenues and its ability to pay its obligations. Therefore, emergency supplies are stored for use throughout Metropolitan's service area, and a six-month reserve supply of water normally held in local storage (including emergency storage in Diamond Valley Lake) provides reasonable assurance of continuing water supplies during and after such events (assuming there has been no impairment of Metropolitan's internal distribution network).

Metropolitan has an ongoing surveillance program that monitors the safety and structural performance of its 20 dams and reservoirs permitted by DWR's Division of Safety of Dams. Operating personnel perform regular inspections that include monitoring and analyzing seepage flows and pressures. Engineers responsible for dam safety review the inspection data and monitor the horizontal and vertical movements for each dam. Major on-site inspections are performed at least twice each year. Instruments that transmit seismic acceleration time histories for analysis any time a dam is subjected to strong motion during an earthquake are located at a number of selected sites.

Metropolitan has developed an emergency plan that calls for specific levels of response appropriate to an earthquake's magnitude and location. Included in this plan are various communication tools, as well as a structured plan of management that varies with the severity of the event. Pre-designated personnel follow detailed steps for field facility inspection and distribution system patrol. Approximately 40 employees are designated to respond immediately under certain identifiable seismic events. An emergency operations center is maintained at the OCC. The OCC, which is specifically designed to be earthquake resistant, contains communication equipment, including a radio transmitter, microwave capability and a response line linking Metropolitan with its member agencies, DWR, other utilities and the State's Office of Emergency Services.

Metropolitan, in conjunction with DWR and LADWP, has formed the Seismic Resilience Water Supply Task Force for the purpose of collaborating on studies and mitigation measures aimed at improving the reliability of imported water supplies to Southern California. Specific task force goals included revisiting historical assumptions regarding potential aqueduct outages after a seismic event; establishing a common understanding about individual agency aqueduct vulnerability assessments, projected damage scenarios, and planning assumptions; and discussing ideas for improving the resiliency of Southern California's imported water supplies through multi-agency cooperation. The task force has established multi-year goals and will continue to meet on these issues and develop firm plans for mitigating seismic vulnerabilities.

Metropolitan's resiliency efforts include manufacturing, pipe fabrication and coating capabilities in La Verne, California. Over \$47 million has been invested to enhance and expand Metropolitan's capacity to provide fabrication, manufacturing, and coating services for rehabilitation work, maintenance activities, and capital projects. Upon request, Metropolitan is also able to provide manufacturing, coating and fabrication services through reimbursable agreements to member agencies, and DWR. These agreements have enhanced timely and cost-effective emergency response capabilities. Materials to fabricate pipe and other appurtenant fittings are kept on site. In the event of earthquake damage, Metropolitan has taken measures to provide the design and fabrication capacity to fabricate pipe and manufacture fittings. Metropolitan is also staffed to perform emergency repairs and has pre-qualified contractors for emergency repair needs at various locations throughout Metropolitan's service area.

State Water Project Facilities-California Aqueduct. The California Aqueduct crosses all major faults either by canal at ground level or by pipeline at very shallow depths to ease repair in case of damage from movement along a fault. State Water Project facilities are designed to withstand major earthquakes along a local fault or the San Andreas Fault without major damage. Dams, for example, are designed to accommodate movement along their foundations and to resist earthquake forces on their embankments. Earthquake loads have been taken into consideration in the design of project structures such as pumping and power plants. The location of check structures on the canal allows for hydraulic isolation of the fault-crossing repair. While the dams, canals, pump stations and other constructed State Water Project facilities have been designed to withstand earthquake forces, the critical supply of water from Northern California must traverse the Bay-Delta through hundreds of miles of varying levels of engineered levees that are susceptible to major failures due to flood and seismic risk. In the event of a failure of the Bay-Delta levees, the quality of the Bay-Delta's water could be severely compromised as salt water comes in from the San Francisco Bay. Metropolitan's supply of State Water Project water would be adversely impacted if pumps that move Bay-Delta water southward to the Central Valley and Southern California are shut down to contain the salt water intrusion. Metropolitan estimates that stored water supplies, CRA supplies and local water resources that would be available in case of a levee breach or other interruption in State Water Project supplies would meet demands in Metropolitan's service area for approximately twelve months. See "METROPOLITAN'S WATER SUPPLY-Storage Capacity and Water in Storage" in this Appendix A.

Metropolitan, in cooperation with the other State Water Contractors, developed recommendations to DWR for emergency preparedness measures to maintain continuity in export water supplies and water quality during seismic and other emergency events. These measures include improvements to emergency construction materials stockpiles in the Bay-Delta, improved emergency contracting capabilities, strategic levee improvements and other structural measures of importance to Bay-Delta water export interests, including development of an emergency freshwater pathway to export facilities in a severe earthquake. DWR utilized \$12 million in fiscal year 2007-08 for initial stockpiling of rock for emergency levee repairs and development of Bay-Delta land and marine loading facilities and has identified future funding for expanded stockpiles.

State Water Project-Perris Dam. DWR's Perris Dam forms Lake Perris, the southernmost terminal reservoir for the State Water Project in Riverside County, with maximum capacity of approximately 130,000 acre-feet of water. Metropolitan uses water from Lake Perris for delivery to customers in Riverside and San

Diego counties. Deliveries from the lake are used as a redundant source for the Mills Water Treatment Plant, drought supply from a flexible storage account, and for consumptive use by Metropolitan’s customers. After seismic studies concluded in 2005 that DWR’s Perris Dam facility could experience damage from moderate earthquakes along the San Jacinto or San Andreas faults due to potential weaknesses in the dam’s foundation, DWR lowered the water level in the reservoir by about 25 feet and reduced the amount of water stored in the reservoir to about 75,000 acre-feet as DWR evaluated alternatives for repair of the dam. Following completion of environmental review and design work in 2011, DWR undertook a major retrofit to Perris Dam to improve its seismic stability and designed to restore the reservoir to its historical level. Repair work was completed in April 2018. Upgrades included strengthening the foundation and adding 1.4 million cubic yards of embankment at the 130-foot tall, earthen dam. DWR’s current estimate for repair costs, inclusive of environmental and right-of-way work is \$139.5 million. Following completion of the work, DWR began to refill Lake Perris in March 2018 to allow the dam to be tested and certified to again store 130,000 acre-feet of water. Under the original allocation of joint costs for this facility, the State would have paid approximately six percent of the repair costs. However, because of the recreational benefit this facility provides to the public, the Legislature has approved a recommendation from DWR that the State assume 32.2 percent of these repair costs. The remaining 67.8 percent of repairs costs are being paid for by the three agencies that use the water stored in Lake Perris: Metropolitan (42.9 percent), DWA (3.0 percent) and CVWD (21.9 percent). DWR recovers the cost of repairs through its annual statement of charges sent to each agency. See “METROPOLITAN EXPENSES–State Water Contract Obligations” in this Appendix A.

The dam remediation is one of three major projects to improve seismic stability and enhance public safety in the Perris Dam Remediation Program. The other two projects include the Outlet Tower Improvements project and the Emergency Release Facility (“ERF”) project. Construction on the Outlet Tower Improvements project began October 2, 2019. Work on the outlet tower bridge, with modifications to bridge support, bridge seat, end diaphragm, and installation of stiffener plates, is planned for completion in early 2022. The ERF is in design and the project EIR was published in February 2018. The ERF project includes improvements downstream of the reservoir that would direct the flow of water in an emergency requiring the dewatering of the reservoir. Flows would be directed through a series of berms and lined and unlined channels that would ultimately terminate at the Riverside County Flood Control and Water Conservation District’s Perris Valley Channel. The Outlet Tower Improvements and ERF projects enhance the safety of the dam for other risks in addition to that posed by earthquakes. It is anticipated that costs will be shared in the same manner as for the Lake Perris dam remediation project. DWR’s current estimate for repair costs (including the share of costs to be assumed by the State) is \$27.1 million for the Outlet Tower Improvements project and \$62.3 million for the ERF project (of which Metropolitan’s anticipated share would be 42.9 percent).

Security Measures

Metropolitan conducts ground and air patrols of the CRA and monitoring and testing at all treatment plants and along the CRA. Similarly, DWR has in place security measures reasonably designed to protect critical facilities of the State Water Project, including both ground and air patrols of the State Water Project.

Although Metropolitan has constructed redundant systems and other safeguards to ensure its ability to continually deliver water to its customers, and DWR has made similar efforts, a terrorist attack or other security breach against water facilities could materially impair Metropolitan’s ability to deliver water to its customers, its operations, and revenues and its ability to pay its obligations.

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CAPITAL INVESTMENT PLAN

General Description

Metropolitan’s current Capital Investment Plan (the “Capital Investment Plan” or “CIP”) involves infrastructure and system reliability projects, either as upgrades to existing capital assets or replacements and refurbishments of existing facilities, to ensure reliability as well as enhance operational efficiency and flexibility, and comply with water quality regulations. Metropolitan’s CIP is regularly reviewed and updated. Metropolitan’s biennial budget process includes a review of the projected long-term capital needs and the development of a capital expenditure forecast for the ten-year financial forecast, as well as the identification of the capital priorities of Metropolitan over the biennial budget term. While the award of major contracts and professional services agreements are subject to approval by Metropolitan’s Board, in October 2018 the Board amended the Administrative Code to update the process for appropriating funds and authorizing work to proceed for capital projects. Under the revised process, following the adoption of the biennial budget, a Board action is presented to (1) appropriate the total amount of approved biennial CIP expenditures and (2) authorize the General Manager to initiate and proceed with all work on projects that have been included in the CIP for such biennial period. The new appropriation process has resulted in faster implementation of capital projects. The amount and timing of borrowings to fund capital expenditures will depend upon, among other factors, status of construction activity and water demands within Metropolitan’s service area. From time to time, projects that have been undertaken are delayed, redesigned or deferred by Metropolitan for various reasons, and no assurance can be given that a project in the CIP will be completed in accordance with its original schedule or that any project will be completed as currently planned. In addition, from time to time, when circumstances warrant, Metropolitan’s Board may approve capital expenditures other than or in addition to those contemplated by the CIP at the time of the then current biennial budget.

Projection of Capital Investment Plan Expenditures

The table below sets forth the projected CIP expenditures by project type for the fiscal years ending June 30, 2020 through 2024, as projected for fiscal year 2020 and as reflected in the biennial budget for fiscal years 2020-21 and 2021-22 for fiscal years 2021 through 2024. This estimate is updated every two years as a result of the periodic review and adoption of the capital budget by Metropolitan’s Board. See “HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.

CAPITAL INVESTMENT PLAN PROJECTION OF EXPENDITURES⁽¹⁾ (Fiscal Years Ended June 30 - Dollars in Thousands)

	2020	2021	2022	2023	2024	Total ⁽²⁾
Infrastructure R&R	\$150,358	\$ 89,006	\$108,318	\$124,455	\$147,682	\$ 619,819
Infrastructure Upgrade	106,352	90,894	88,166	127,310	127,269	539,991
Regulatory Compliance	4,736	773	537	1,019	472	7,537
Stewardship	10,378	3,194	4,191	7,575	10,052	35,390
Supply Reliability	3,123	168	0	254	47	3,592
System Flexibility	15,890	10,723	21,264	34,647	0	82,524
Water Quality	9,963	5,242	2,524	4,740	14,478	36,947
Total⁽³⁾	\$300,800⁽²⁾	\$200,000	\$225,000	\$300,000	\$300,000	\$1,325,800

Source: Metropolitan.

- (1) Fiscal year 2019-20 is based on current projections. Fiscal years 2020-21 through 2023-24 are based on the ten-year financial forecast provided in the biennial budget for fiscal years 2020-21 and 2021-22.
- (2) Fiscal year 2019-20 capital expenditures were budgeted at \$200 million. Capital expenditures are currently estimated to be approximately \$301 million and reflect Metropolitan’s update to its CIP appropriation process and the resulting faster implementation of capital projects.
- (3) Totals may not foot due to rounding.

In developing the CIP, projects are reviewed, scored and prioritized towards the objectives of ensuring the sustainable delivery of reliable, high quality water, while meeting all regulatory requirements and maintaining affordability. Additional capital costs may arise in the future as a result of, among other things, federal and State water quality regulations, project changes and mitigation measures necessary to satisfy environmental and regulatory requirements, and additional facilities' needs. See "METROPOLITAN'S WATER DELIVERY SYSTEM—Water Quality and Treatment" in this Appendix A.

Construction projects included in the CIP are subject to ordinary construction risks and delays, including but not limited to: inclement weather or natural hazards affecting work and timeliness of completion; contractor claims or nonperformance; work stoppages or slowdowns; unanticipated project site conditions encountered during construction; errors or omissions in contract documents requiring change orders; and/or higher than anticipated construction bids or costs, any of which could affect the costs and availability of, or delivery schedule for, equipment, components, materials, labor or subcontractors, and result in increased CIP costs. The construction schedules for certain ongoing Metropolitan projects have been delayed as a result of the COVID-19 outbreak and additional delays are possible. See "INTRODUCTION—COVID-19 Pandemic."

Capital Investment Plan Financing

The CIP requires funding from debt financing (see "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A) as well as from pay-as-you-go funding. In connection with the biennial budget process and the development of the ten-year financial forecast provided therein, an internal funding objective is established for the funding of capital program expenditures from current revenues. An internal funding objective to fund 55 to 60 percent of capital program expenditures from current revenues was established in connection with the adoption of the biennial budget for fiscal years 2020-21 and 2021-22. This objective is updated every two years as a result of the periodic review and adoption of the capital budget by Metropolitan's Board. The remainder of capital program expenditures are expected to be funded through the issuance from time to time of water revenue bonds, which are payable from Net Operating Revenues. However, as in prior years, pay-as-you-go funding may be reduced or increased by the Board during the fiscal year.

In fiscal year 2019-20, \$270 million of additional water revenue bonds have been issued to fund or reimburse prior capital expenditures. Current projections for fiscal years 2020-21 through 2024-25 assume the issuance of approximately \$510 million in additional water revenue bonds over such period to finance the CIP. These revenue bonds may be issued either as Senior Revenue Bonds under the Senior Debt Resolutions or as Subordinate Revenue Bonds under the Subordinate Debt Resolutions (each as defined under "METROPOLITAN EXPENSES—Limitations on Additional Revenue Bonds" in this Appendix A). The cost of these projected bond issues is reflected in the financial projections under "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

Major Projects of Metropolitan's Capital Investment Plan

Colorado River Aqueduct Facilities. As previously noted, deliveries through the CRA began in 1941. Through annual inspections and maintenance activities, the performance and reliability of the various components of the CRA are regularly evaluated. Projects under the CRA facilities program are designed to replace or refurbish facilities and components on the CRA system in order to reliably convey water from the Colorado River to Southern California. A variety of projects have been completed over the past 10 years, including, among other things, replacement of high voltage circuit breakers and transformers at the five pumping plant switchyards, refurbishment of operators and power centers on the head gates downstream of the pumping plants, replacement of several miles of deteriorated concrete canal liner, new wastewater systems at the Hinds and Eagle Mountain Pumping Plants, replacement of the sand trap facilities upstream of the Hinds, Eagle Mountain, and Iron Mountain pumping plants, and replacement of the outlet gates and appurtenant electrical, mechanical, and control systems at the Copper Basin Reservoir. Projects currently

underway to refurbish or replace electrical and mechanical system components at each of the five pumping plants includes power cables, uninterruptible power supply systems, and sump systems. Additionally, many of the mechanical and electrical components, including the nine main pumps and motors at each of the five pumping plants will be evaluated and replaced or refurbished over the next several years. The current projected cost estimate for all prior and planned refurbishment or replacement projects under the CRA facilities program is \$854.4 million. Costs through February 2020 were \$306.6 million. Budgeted aggregate capital expenditures for improvements on the CRA for fiscal years 2020-21 and 2021-22 are \$107.4 million.

Distribution System – Prestressed Concrete Cylinder Pipe. Metropolitan’s distribution system is comprised of approximately 830 miles of pipelines ranging in diameter from 30 inches to over 200 inches. (See “METROPOLITAN’S WATER DELIVERY SYSTEM” in this Appendix A.) 163 miles of the distribution system is made up of prestressed concrete cylinder pipe (“PCCP”). In response to PCCP failures experienced by several water agencies, Metropolitan initiated the PCCP Assessment Program in December 1996 to evaluate the condition of Metropolitan’s PCCP lines and investigate inspection and refurbishment methods. As a result, Metropolitan has identified and made improvements to several sections of PCCP. The costs for these improvements through February 2020 were \$99.2 million. Rather than continue to make spot repairs to pipe segments, Metropolitan has initiated a long-term capital program to rehabilitate approximately 100 miles of PCCP in five pipelines by relining with a welded steel liner. The first major contract to reline approximately 4.5 miles of PCCP on the Second Lower Feeder was completed in August 2018. The second major contract to reline approximately 1.9 miles of PCCP on the Second Lower Feeder was completed in October 2019. The third major contract to reline approximately 4.5 miles of PCCP on the Second Lower Feeder was awarded in May 2019 and is underway. Subsequent contracts are planned to be awarded annually depending on shutdown scheduling. In order to meet the critical timing of the relining projects, the steel pipe lining sections for the next contract are being purchased in advance. Costs through February 2020 for all PCCP work (including the \$99.2 million of repairs costs noted above) were \$248.3 million. The estimated cost to reline all 100 miles of PCCP is approximately \$2.2 billion and is expected to be undertaken over a period of approximately 20 years. Budgeted aggregate capital expenditures for PCCP rehabilitation for fiscal years 2020-21 and 2021-22 are \$53.9 million.

Distribution System – Refurbishments and Improvements. In addition to the long-term program to rehabilitate Metropolitan’s PCCP lines, several other components of the distribution system are being refurbished and/or improved. Major projects completed to date include the \$70 million replacement of the outlet facilities at Lake Mathews, the first two phases of the Orange County Feeder and Etiwanda Pipeline relining projects for a total of \$34 million, and various other facility refurbishment and replacement projects ranging in cost from approximately \$500,000 to over \$10 million. Ongoing projects to ensure the reliability of the distribution system, primarily due to age, include multiple replacements or refurbishments of isolation and control valves and gates, lining replacement of remaining portions of the Etiwanda Pipeline and Orange County Feeder, refurbishment to pressure control and hydroelectric power facilities, system improvements to provide drought relief, and various other upgrades totaling approximately \$417.9 million through February 2020. The current projected cost estimate for the prior and planned refurbishment or replacement projects, other than the PCCP relining, is \$1.1 billion. For fiscal years 2020-21 and 2021-22, budgeted aggregate capital expenditures for refurbishing and improvements on the distribution system, other than PCCP rehabilitation, are \$123.7 million.

System Reliability. System Reliability projects are implemented at facilities throughout Metropolitan’s system to utilize new processes or technologies, to improve safety, or to increase overall reliability. Significant projects in this category include seismic strengthening of Metropolitan’s headquarters building, construction of operations support facilities such as the La Verne machine and fabrication shops, security system enhancements, and information technology infrastructure projects. The total estimated cost for all prior and projected system reliability improvements under this program is approximately \$482.4 million, with \$212.3 million spent through February 2020. Budgeted aggregate capital expenditures for improvements on system reliability projects for fiscal years 2020-21 and 2021-22 are \$97.4 million.

F.E. Weymouth Treatment Plant Improvements. The Weymouth Treatment Plant, built in 1938, is Metropolitan’s oldest water treatment facility. It has been subsequently expanded several times since its original construction. Metropolitan has completed several upgrades and refurbishment/replacement projects to maintain the plant’s reliability and improve its efficiency. These include power systems upgrades, residual solids dewatering facility, refurbishment/replacement of the mechanical equipment in two of the eight flocculation and settling basins, a new plant maintenance facility, new chemical feed systems and storage tanks, replacement of the plant domestic/fire water system, seismic upgrades to the plant inlet structure and filter buildings, upgrades to the plants filters, and a new chlorine handling and containment facility. Significant projects over the next several years include refurbishment of four of the plant’s settling basins, seismic retrofits to the administration building, and replacement of the valves used to control filter operation. The cost estimate for all prior and projected improvements at the Weymouth plant, not including the ozone facilities, is approximately \$452.4 million, with \$291.3 million spent through February 2020. Budgeted aggregate capital expenditures for improvements at the Weymouth plant for fiscal years 2020-21 and 2021-22 are \$18.7 million.

Robert B. Diemer Treatment Plant Improvements. The Diemer Treatment Plant, built in 1963 and subsequently expanded in 1968, is Metropolitan’s second oldest water treatment facility. Several upgrades and refurbishment/replacement projects have been completed at the Diemer plant, including power system upgrades, a new residual solids dewatering facility, new vehicle and plant maintenance facilities, new chemical feed systems and storage tanks, a new chlorine handling and containment facility, construction of a roller-compacted concrete slope stabilization system, a new secondary access road, and upgrades to half of the plant’s settling basins and filter valves. Significant projects over the next several years include the completion of refurbishment of the plant’s settling basins and replacement of the valves used to control filter operation, and seismic retrofits to the filter buildings. The current cost estimate for all prior and projected improvements at the Diemer plant, not including the ozone facilities, is approximately \$399.2 million, with \$300.4 million spent through February 2020. Budgeted aggregate capital expenditures for improvements at the Diemer plant for fiscal years 2020-21 and 2021-22 are \$22.9 million.

METROPOLITAN REVENUES

General

Until water deliveries began in 1941, Metropolitan’s activities were, by necessity, supported entirely through the collection of *ad valorem* property taxes. Since the mid-1980s, water revenues, which includes revenues from water sales, wheeling and exchanges, have provided approximately 80 percent of total revenues annually. In that time period, *ad valorem* property taxes have accounted for about 10 percent of total revenues, and in fiscal year 2018-19, *ad valorem* property taxes accounted for approximately 13 percent of total revenues. See “–Revenue Allocation Policy and Tax Revenues.” The remaining revenues have been derived principally from the sale of hydroelectric power, interest on investments and additional revenue sources (water standby charges and availability of service charges) beginning in 1992. *Ad valorem* taxes do not constitute a part of Operating Revenues and are not available to make payments with respect to the water revenue bonds issued by Metropolitan.

The basic rate for untreated water service for domestic and municipal uses is \$755 per acre-foot at the Tier 1 level, which became effective January 1, 2020. See “–Rate Structure” and “–Water Rates.” The *ad valorem* tax rate for Metropolitan purposes has gradually been reduced from a peak equivalent rate of 0.1250 percent of full assessed valuation in fiscal year 1945-46 to 0.0035 percent of full assessed valuation for fiscal year 2019-20. The rates charged by Metropolitan represent the cost of Metropolitan’s wholesale water service to its member agencies, and not the cost of water to the ultimate consumer. Metropolitan does not exercise control over the rates charged by its member agencies or their subagencies to their customers.

Summary of Revenues by Source

The following table sets forth Metropolitan’s sources of revenues for the five fiscal years ended June 30, 2019, on a modified accrual basis. All information is unaudited. Audited financial statements for the fiscal years ended June 30, 2019 and June 30, 2018 are included in APPENDIX B–“THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS’ REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2019 AND JUNE 30, 2018 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2020 AND 2019 (UNAUDITED).”

SUMMARY OF REVENUES BY SOURCE⁽¹⁾ Fiscal Years Ended June 30 (Dollars in Millions)

	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Water Revenues ⁽²⁾	\$1,383	\$1,166	\$1,151	\$1,285	\$1,149
Net Tax Collections ⁽³⁾	104	108	116	131	145
Additional Revenue Sources ⁽⁴⁾	199	200	184	172	170
Interest on Investments	16	17	4	8	34
Hydroelectric Power Sales	8	7	21	24	18
Other Revenues ⁽⁵⁾	<u>163</u>	<u>246</u>	<u>51</u>	<u>28</u>	<u>22</u>
Total Revenues	<u>\$1,873</u>	<u>\$1,744</u>	<u>\$1,527</u>	<u>\$1,648</u>	<u>\$1,538</u>

Source: Metropolitan.

(1) Does not include any proceeds from the sale of bonded indebtedness.

(2) Water revenues include revenues from water sales, exchanges, and wheeling.

(3) *Ad valorem* taxes levied by Metropolitan are applied solely to the payment of outstanding general obligation bonds of Metropolitan and to State Water Contract obligations.

(4) Includes revenues derived from water standby charges, readiness-to-serve, and capacity charges.

(5) Includes miscellaneous revenues and Build America Bonds (BABs) subsidy payment of \$12.3 million, \$12.3 million, \$9.8 million, \$15.0 million, and \$12.5 million, in fiscal years 2014-15 through 2018-19, respectively. Fiscal years 2014-15, 2015-16, 2016-17, and 2017-18, include \$142 million, \$222 million, \$33 million, and \$1 million, respectively, of water conservation and water purchase expenditures, funded from a like amount of funds transferred from the Water Management Fund.

Revenue Allocation Policy and Tax Revenues

The Board determines the water revenue requirement for each fiscal year after first projecting the *ad valorem* tax levy for that year. The tax levy for any year is subject to limits imposed by the State Constitution, the Act and Board policy and to the requirement under the State Water Contract that in the event that Metropolitan fails or is unable to raise sufficient funds by other means, Metropolitan must levy upon all property within its boundaries not exempt from taxation a tax or assessment sufficient to provide for all payments under the State Water Contract. See “HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A. Beginning with fiscal year 1990-91, the Act limits Metropolitan’s tax levy to the amount needed to pay debt service on Metropolitan’s general obligation bonds and to satisfy a portion of Metropolitan’s State Water Contract obligation. However, Metropolitan has authority to impose a greater tax levy if, following a public hearing, the Board finds that such revenue is essential to Metropolitan’s fiscal integrity. For each fiscal year since 2013-14, the Board has exercised that authority and voted to suspend the tax limit clause in the Act, maintaining the fiscal year 2012-13 *ad valorem* tax rate to pay for a greater portion of Metropolitan’s State Water Contract obligations. Any deficiency between tax levy receipts and Metropolitan’s State Water Contract obligations is expected to be paid from Operating Revenues, as defined in the Senior Debt Resolutions (defined in this Appendix A under “METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds”).

The COVID-19 pandemic has negatively affected economic activity throughout the U.S., including within the Southern California region. These negative impacts may reduce or otherwise negatively affect future property tax values within Metropolitan’s service area and/or Metropolitan’s tax levy receipts. The assumptions underlying Metropolitan’s financial projections for fiscal years 2020-21 through 2024-25 include modest annual increases in assessed valuation over the five-year projection period that are significantly below the average annual assessed valuation increases actually observed, and property tax delinquency rates that are significantly in excess of the property tax delinquency rate actually experienced, over the five fiscal years 2014-15 through 2018-19, which is expected to help abate the financial effects of such COVID-19 impacts if they occur. See “INTRODUCTION–COVID-19 Pandemic.”

Water Revenues

General; Authority. Water rates are established by the Board and are not subject to regulation or approval by the California Public Utilities Commission or by any other local, State or federal agency. In accordance with the Act, water rates must be uniform for like classes of service. Metropolitan, a wholesaler, provides two types of services: full service water service (treated or untreated) and wheeling service. See “–Classes of Water Service.”

No member agency of Metropolitan is obligated to purchase water from Metropolitan. However, 21 of Metropolitan’s 26-member agencies have entered into 10-year voluntary water supply purchase orders (“Purchase Orders”) effective through December 31, 2024. See “–Member Agency Purchase Orders.” Consumer demand and locally supplied water vary from year to year, resulting in variability in water revenues. Metropolitan uses its financial reserves and budgetary tools to manage the financial impact of the variability in revenues due to fluctuations in annual water transactions. See “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.

Payment Procedure. Water is delivered to the member agencies on demand and is metered at the point of delivery. Member agencies are billed monthly and a late charge of one percent of the delinquent payment is assessed for a payment that is delinquent for no more than five business days. A late charge of two percent of the amount of the delinquent payment is charged for a payment that is delinquent for more than five business days for each month or portion of a month that the payment remains delinquent. Metropolitan has the authority to suspend service to any member agency delinquent for more than 30 days. Delinquencies have been rare; in such instances late charges have been collected. No service has been suspended because of delinquencies.

Water Revenues. The following table sets forth water transactions (which includes water sales, exchanges, and wheeling) in acre-feet and water revenues (which includes revenues from water sales, exchanges, and wheeling) for the five fiscal years ended June 30, 2019, on a modified accrual basis. As reflected in the table below, water revenues for the fiscal year ended June 30, 2019 aggregated \$1,148.7 million, of which \$1,046.5 million was generated from water sales and \$102.2 million was generated from exchanges and wheeling. Water revenues of Metropolitan for the fiscal years ended June 30, 2019 and June 30, 2018, on an accrual basis, are shown in Metropolitan’s audited financial statements included in Appendix B.

SUMMARY OF WATER TRANSACTIONS AND REVENUES
Fiscal Years Ended June 30

Year	Water Transactions in Acre-Feet ⁽¹⁾	Water Revenues ⁽²⁾ (in millions)	Dollars Per Acre-Foot	Average Dollars Per 1,000 Gallons
2015	1,905,502	\$ 1,383.1	\$ 726	\$ 2.23
2016	1,623,052	1,166.0	718	2.20
2017	1,540,915	1,150.5	747	2.29
2018	1,610,969	1,285.2	798	2.45
2019	1,418,324	1,148.7	810	2.49

Source: Metropolitan.

(1) Water Transactions include water sales, exchanges, and wheeling.

(2) Water Revenues include revenues from water sales, exchanges, and wheeling. Water Revenues from wheeling and exchange transactions were \$78.8 million, \$84.3 million, \$87.4 million, \$96.1 million, and \$102.2 million in the fiscal years ended June 30, 2015 through 2019, respectively.

Principal Customers

Total water transactions accrued for the fiscal year ended June 30, 2019, were 1.42 million acre-feet, generating \$1.15 billion in water revenues for such period. Metropolitan’s ten largest water customers for the year ended June 30, 2019 are shown in the following table, on an accrual basis. The SDCWA has filed litigation challenging Metropolitan’s rates. See “–Litigation Challenging Rate Structure.”

TEN LARGEST WATER CUSTOMERS
Year Ended June 30, 2019
Accrual Basis

Agency	Water Revenues ⁽¹⁾ (in Millions)	Percent of Total	Water Transactions in Acre-Feet ⁽²⁾	Percent of Total
San Diego CWA	\$ 206.7	18.0%	346,400	24.4%
MWD of Orange County	159.0	13.8	183,264	12.9
City of Los Angeles	122.2	10.6	141,866	10.0
West Basin MWD	120.7	10.5	117,039	8.2
Calleguas MWD	89.3	7.8	86,741	6.1
Eastern MWD	77.1	6.7	86,636	6.1
Western MWD	59.9	5.2	66,134	4.7
Three Valleys MWD	53.6	4.7	64,349	4.5
Inland Empire Utilities Agency	45.6	4.0	60,693	4.3
Upper San Gabriel Valley MWD	34.1	3.0	46,195	3.3
Total	\$ 968.2	84.3%	1,199,317	84.5%
Total Water Revenues⁽¹⁾	\$1,148.7	Total Acre-Foot	1,418,324	

Source: Metropolitan.

(1) Water Revenues include revenues from water sales, exchanges, and wheeling.

(2) Water Transactions include water sales, exchanges, and wheeling.

Rate Structure

The following rates and charges are elements of Metropolitan’s unbundled rate structure:

Tier 1 and Tier 2 Water Supply Rates. The rate structure recovers supply costs through a two-tiered price structure. The Tier 1 Supply Rate supports a regional approach through the uniform, postage stamp

rate. The Tier 1 Supply Rate is calculated as the amount of the total supply revenue requirement that is not covered by the Tier 2 Supply Rate divided by the estimated amount of Tier 1 water sales. The Tier 2 Supply Rate is a volumetric rate that reflects Metropolitan's cost of purchasing water transfers north of the Delta. The Tier 2 Supply Rate encourages the member agencies and their customers to maintain existing local supplies and develop cost-effective local supply resources and conservation. Member agencies are charged the Tier 1 or Tier 2 Water Supply Rate for water purchases, as described under "–Member Agency Purchase Orders" below.

System Access Rate. The System Access Rate recovers the cost of the Conveyance and Distribution System that is used on an average annual basis through a uniform, volumetric rate. The System Access Rate is charged for each acre-foot of water transported by Metropolitan, regardless of the ownership of the water being transported. All users (including member agencies and third-party wheelers) using the Metropolitan system to transport water pay the same System Access Rate for the use of the system conveyance and distribution capacity to meet average annual demands.

Water Stewardship Rate. The Water Stewardship Rate is designed to provide a dedicated source of funding for conservation and local resources development through a uniform, volumetric rate. For water deliveries through December 31, 2020, the Water Stewardship Rate is charged on each acre-foot of water delivered by Metropolitan, except SDCWA Exchange Agreement deliveries as explained below, and is allocated to Metropolitan's transportation rates. All users (including member agencies and third-party wheelers) benefit from avoided system infrastructure costs through conservation and local resources development, and from the system capacity made available by investments in demand management programs like Metropolitan's Conservation Credits Program and Local Resources Program. Therefore, all users pay the Water Stewardship Rate, except on water delivered to SDCWA pursuant to the Exchange Agreement (see "METROPOLITAN REVENUES–Water Rates" and "–Litigation Challenging Rate Structure" in this Appendix A) in calendar years 2018, 2019, and 2020. See also "CONSERVATION AND WATER SHORTAGE MEASURES–General."

In *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.* (see "–Litigation Challenging Rate Structure" below), the Court of Appeal held that the administrative record before it for the rates in calendar years 2011 through 2014 did not support Metropolitan's Water Stewardship Rate allocation to transportation rates, but the court did not address the allocation in subsequent years based on a different record. On April 10, 2018, the Board suspended the billing and collection of the Water Stewardship Rate on Exchange Agreement deliveries to SDCWA in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs recovered through the Water Stewardship Rate. For calendar year 2018, the suspension was retroactive to January 1, 2018. The total effect of the suspension, taking into consideration the lower revenues over the three calendar years, is estimated to be up to approximately \$46 million.

Having completed a demand management cost allocation process, on December 10, 2019, Metropolitan's Board directed staff to incorporate the use of the 2019-20 fiscal year-end balance of the Water Stewardship Fund to fund demand management costs in the proposed biennial budget for fiscal years 2020-21 and 2021-22 and to not incorporate the Water Stewardship Rate (or any other rates or charges to recover demand management costs), with the proposed rates and charges for calendar years 2021 and 2022, to allow the Board to consider demand management funding in relation to the 2020 Integrated Resources Plan update and to undergo a rate structure refinement process. The balance of the Water Stewardship Fund as of June 30, 2020 is currently projected to be approximately \$131 million, which based on the biennial budget for fiscal years 2020-21 and 2021-22, is expected to be sufficient to fund the demand management costs during the biennial budget period. The Water Stewardship Rate will be collected for water deliveries through December 31, 2020, except for water delivered pursuant to the Exchange Agreement. These collections through the end of 2020 will be used to fund demand management costs during such period.

System Power Rate. The System Power Rate recovers the cost of energy required to pump water to Southern California through the State Water Project and CRA. The cost of power is recovered through a uniform, volumetric rate. The System Power Rate is applied to all deliveries of Metropolitan water to member agencies. Wheeling parties pay for actual cost (not system average) of power needed to move the water. Member agencies engaging in wheeling transactions of up to one year pay the wheeling rate (consisting of the actual cost of power, the System Access Rate, the Water Stewardship Rate, and an administrative fee). Other wheeling transactions are pursuant to individual contracts. For example, a party wheeling water through the California Aqueduct would pay the variable power cost associated with using the State Water Project transportation facilities.

Treatment Surcharge. The Treatment Surcharge recovers all of the costs of providing treatment capacity and operations through a uniform, volumetric rate per acre-foot of treated water transactions. The Treatment Surcharge is charged to all treated water transactions.

The amount of each of these rates since January 1, 2016, is shown in the table entitled “SUMMARY OF WATER RATES” under “–Water Rates” below.

Member Agency Purchase Orders

The current rate structure allows member agencies to choose to purchase water from Metropolitan by means of a Purchase Order. Purchase Orders are voluntary agreements that determine the amount of water that a member agency can purchase at the Tier 1 Supply Rate. Under the Purchase Orders, member agencies have the option to purchase a greater amount of water (based on past purchase levels) over the term of the Purchase Order. Such agreements allow member agencies to manage costs and provide Metropolitan with a measure of secure revenue.

In November 2014, the Metropolitan Board approved new Purchase Orders effective January 1, 2015 through December 31, 2024 (the “Purchase Order Term”). Twenty-one of Metropolitan’s 26-member agencies have Purchase Orders, which commit the member agencies to purchase a minimum amount of supply from Metropolitan (the “Purchase Order Commitment”).

The key terms of the Purchase Orders include:

A ten-year term, effective January 1, 2015 through December 31, 2024;

A higher Tier 1 limit based on the Base Period Demand, determined by the member agency’s choice between (1) the Revised Base Firm Demand, which is the highest fiscal year purchases during the 13-year period of fiscal year 1989-90 through fiscal year 2001-02, or (2) the highest year purchases in the most recent 12-year period of fiscal year 2002-03 through 2013-14. The demand base is unique for each member agency, reflecting the use of Metropolitan’s system water over time;

An overall purchase commitment by the member agency based on the Demand Base period chosen, times ten to reflect the ten-year Purchase Order term. Those agencies choosing the more recent 12-year period may have a higher Tier 1 Maximum and commitment. The commitment is also unique for each member agency;

The opportunity to reset the Base Period Demand using a five-year rolling average;

Any obligation to pay the Tier 2 Supply Rate will be calculated over the ten-year period, consistent with the calculation of any Purchase Order commitment obligation; and

An appeals process for agencies with unmet purchase commitments that will allow each acre-foot of unmet commitment to be reduced by the amount of production from a local resource project that commences operation on or after January 1, 2014.

Member agencies that do not have Purchase Orders in effect are subject to Tier 2 Supply Rates for amounts exceeding 60 percent of their base amount (equal to the member agency's highest fiscal year demand between 1989-90 and 2001-02) annually.

Other Charges

The following paragraphs describe the additional charges for the use of Metropolitan's distribution system:

Readiness-to-Serve Charge. The Readiness-to-Serve Charge ("RTS") recovers the cost of the portion of the system that is available to provide emergency service and available capacity during outages and hydrologic variability. The RTS is a fixed charge that is allocated among the member agencies based on a ten-fiscal year rolling average of firm demands. Water transfers and exchanges, except SDCWA Exchange Agreement transactions, are included for purposes of calculating the ten-fiscal year rolling average. The Standby Charge, described below, will continue to be collected at the request of a member agency and applied as a direct offset to the member agency's RTS obligation. The RTS (including RTS charge amounts collected through the Standby Charge described below) generated \$144 million in fiscal year 2016-17, \$137.5 million in fiscal year 2017-18, and \$136.5 million in fiscal year 2018-19. Based on the adopted rates and charges, the RTS (including RTS charge amounts expected to be collected through the Standby Charge described below) is projected to generate \$134.5 million in fiscal year 2019-20 and \$133.0 million in fiscal year 2020-21.

Water Standby Charges. The Standby Charge is authorized by the State Legislature and has been levied by Metropolitan since fiscal year 1992-93. Metropolitan will continue to levy the Standby Charge only within the service areas of the member agencies that request that the Standby Charge be utilized to help fund a member agency's RTS obligation. See "-- Readiness-to-Serve Charge" above. The Standby Charge for each acre or parcel of less than an acre will vary from member agency to member agency, reflecting current rates, which have not exceeded the rates set in fiscal year 1993-94, and range from \$6.94 to \$15 for each acre or parcel less than an acre within Metropolitan's service area, subject to specified exempt categories. Standby charges are assessments under the terms of Proposition 218, a State constitutional ballot initiative approved by the voters on November 5, 1996, but Metropolitan's current standby charges are exempt from Proposition 218's procedural requirements. See "--California Ballot Initiatives."

Twenty-two of Metropolitan's member agencies collect their RTS charges through Standby Charges. RTS charges collected by means of such Standby Charges were \$41.7 million in fiscal year 2016-17, \$41.6 million in fiscal year 2017-18, and \$41.7 million in fiscal year 2018-19.

Capacity Charge. The Capacity Charge recovers costs incurred to provide peak capacity within Metropolitan's distribution system. The Capacity Charge provides a price signal to encourage agencies to reduce peak demands on the distribution system and to shift demands that occur during the May 1 through September 30 period into the October 1 through April 30 period. This results in more efficient utilization of Metropolitan's existing infrastructure and deferring capacity expansion costs. Each member agency will pay the Capacity Charge per cfs based on a three-year trailing peak (maximum) day demand, measured in cfs. Each member agency's peak day is likely to occur on different days; therefore, this measure approximates peak week demands on Metropolitan. The Capacity Charge was \$8,600 per cfs effective as of January 1, 2019 and was \$8,800 per cfs effective as of January 1, 2020. The Capacity Charge will be \$10,700 per cfs effective as of January 1, 2021. The Capacity Charge generated \$39.7 million in fiscal year 2016-17, \$34.6 million in fiscal year 2017-18 and \$33.0 million in fiscal year 2018-19. Based on the adopted rates and

charges, the Capacity Charge is projected to generate \$30.5 million in fiscal year 2019-20 and \$34.7 million in fiscal year 2020-21.

Classes of Water Service

Metropolitan, a wholesaler, provides two types of services: full service water service (treated or untreated) and wheeling service. Metropolitan has one class of customers: its member agencies. The level of rate unbundling in Metropolitan’s rate structure provides transparency to show that rates and charges recover only those functions involved in the applicable service, and that no cross-subsidy of costs exists. Metropolitan’s cost of service process and resulting unbundled rate structure ensures that its wholesale customers pay for only those services they elect to receive.

The applicable rate components and fixed charges for each class of water service are shown in the chart below.

Current Services and Rate Components

Service	Rates & Charges That Apply						
	System Access	Water Stewardship ⁽¹⁾	System Power	Tier 1/ Tier 2	Readiness to Serve	Capacity Charge	Treatment Surcharge
Full Service Untreated	Yes	Yes	Yes	Yes	Yes	Yes	No
Full Service Treated	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wheeling Service ⁽²⁾	Yes	Yes	No ⁽³⁾	No	Yes	Yes	Yes ⁽⁴⁾

- ⁽¹⁾ As described under “–Rate Structure –Water Stewardship Rate,” the Water Stewardship Rate has not been incorporated into Metropolitan’s rates and charges for calendar years 2021 and 2022 and therefore will not be collected on water transactions after December 31, 2020.
- ⁽²⁾ Metropolitan’s rate for wheeling service applies to wheeling to member agencies in transactions of up to one year.
- ⁽³⁾ Under Metropolitan’s rate for wheeling service, wheeling parties must pay for their own cost for power (if such power can be scheduled by Metropolitan) or pay Metropolitan for the actual cost (not system average) of power service utilized for delivery of the wheeled water. In addition, wheeling parties shall be assessed an administration fee of not less than \$5,000 per transaction.
- ⁽⁴⁾ If applicable.

Metropolitan offers three programs that encourage the member agencies to increase groundwater and emergency storage and for which certain Metropolitan charges are inapplicable.

(1) Conjunctive Use Program. The Conjunctive Use Program is operated through individual agreements with member and retail agencies for groundwater storage within Metropolitan’s service area. Wet-year imported supplies are stored to enhance reliability during dry, drought, and emergency conditions. Metropolitan has the option to call water stored in the groundwater basins for the participating member agency pursuant to its contractual conjunctive use agreement. At the time of the call, the member agency pays the prevailing rate for that water, but the deliveries are excluded from the calculation of the Capacity Charge because Conjunctive Use Program deliveries are made at Metropolitan’s discretion. Conjunctive use programs may also contain cost-sharing terms related to operational costs. See “REGIONAL WATER RESOURCES–Local Water Supplies” in this Appendix A.

(2) Cyclic Storage Program. The Cyclic Storage Program refers collectively to the existing Cyclic Storage Program agreements and the Pre-Deliveries Program approved in 2019. The Program is operated through individual agreements with member agencies for groundwater or surface water storage or pre-deliveries within Metropolitan’s service area. Wet-year imported supplies are stored to enhance reliability during dry, drought, and emergency conditions. Deliveries to the cyclic storage accounts are at Metropolitan’s discretion while member agencies have discretion on whether they want to accept the water. At the time the water is delivered from the cyclic storage account, the prevailing full-service rate applies, but deliveries are excluded from the calculation of the Capacity Charge because Cyclic Storage Program

deliveries are made at Metropolitan’s discretion. See “REGIONAL WATER RESOURCES–Local Water Supplies” in this Appendix A.

(3) *Emergency Storage Program.* The Emergency Storage Program is used for delivering water for emergency storage in surface water reservoirs and storage tanks. Emergency Storage Program purposes include initially filling a newly constructed reservoir or storage tank and replacing water used during an emergency. Because Metropolitan could interrupt delivery of this water, Emergency Storage Program Deliveries are excluded from the calculation of the RTS Charge, the Capacity Charge, and the Tier 1 maximum.

The applicable rate components and fixed charges applicable for each such program are shown in the following chart.

Current Programs and Rate Components

Rates & Charges That Apply

<u>Program</u>	<u>Supply</u>	<u>System Access</u>	<u>Water Stewardship⁽¹⁾</u>	<u>System Power</u>	<u>Readiness to Serve</u>	<u>Capacity Charge</u>	<u>Tier 1 Maximum</u>
Full Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conjunctive Use	Yes	Yes	Yes	Yes	Yes	No	Yes
Cyclic	Yes	Yes	Yes	Yes	Yes	No	Yes
Emergency Storage	Yes	Yes	Yes	Yes	No	No	No*

⁽¹⁾ As described under “–Rate Structure –Water Stewardship Rate,” the Water Stewardship Rate has not been incorporated into Metropolitan’s rates and charges for calendar years 2021 and 2022 and therefore will not be collected on water transactions after December 31, 2020.

* Emergency Storage Program pays the Tier 1 Supply Rate; purchases under Emergency Storage program do not count towards a member agency’s Tier 1 Maximum.

Water Rates

The following table sets forth Metropolitan’s water rates by category beginning January 1, 2016. See also “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES–Water Revenues” in this Appendix A. In addition to the base rates for untreated water sold in the different classes of service, the columns labeled “Treated” include the surcharge that Metropolitan charges for water treated at its water treatment plants. See “–Rate Structure” and “–Classes of Water Service” for descriptions of current rates. See also “–Litigation Challenging Rate Structure” for a description of litigation challenging Metropolitan’s water rates.

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**SUMMARY OF WATER RATES
(Dollars Per Acre-Foot)**

	<u>SUPPLY RATE</u>		<u>SYSTEM ACCESS RATE</u>	<u>WATER STEWARDSHIP RATE⁽¹⁾</u>	<u>SYSTEM POWER RATE</u>	<u>TREATMENT SURCHARGE</u>
	<u>Tier 1</u>	<u>Tier 2</u>				
January 1, 2016	\$156	\$290	\$259	\$41	\$138	\$348
January 1, 2017	\$201	\$295	\$289	\$52	\$124	\$313
January 1, 2018	\$209	\$295	\$299	\$55	\$132	\$320
January 1, 2019	\$209	\$295	\$326	\$69	\$127	\$319
January 1, 2020	\$208	\$295	\$346	\$65	\$136	\$323
January 1, 2021*	\$243	\$285	\$373	\$--	\$161	\$327
January 1, 2022*	\$243	\$285	\$389	\$--	\$167	\$344

	<u>FULL SERVICE TREATED⁽²⁾</u>		<u>FULL SERVICE UNTREATED⁽³⁾</u>	
	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 1</u>	<u>Tier 2</u>
January 1, 2016	\$942	\$1,076	\$594	\$728
January 1, 2017	\$979	\$1,073	\$666	\$760
January 1, 2018	\$1,015	\$1,101	\$695	\$781
January 1, 2019	\$1,050	\$1,136	\$731	\$817
January 1, 2020	\$1,078	\$1,165	\$755	\$842
January 1, 2021*	\$1,104	\$1,146	\$777	\$819
January 1, 2022*	\$1,143	\$1,185	\$799	\$841

Source: Metropolitan.

* Rates effective January 1, 2021 and January 1, 2022 were adopted by Metropolitan's Board on April 14, 2020.

(1) As described under "Rate Structure –Water Stewardship Rate," the Water Stewardship Rate has not been incorporated into Metropolitan's rates and charges for calendar years 2021 and 2022 and therefore will not be collected on water transactions after December 31, 2020.

(2) Full service treated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate, System Power Rate and Treatment Surcharge.

(3) Full service untreated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate and System Power Rate.

Financial Reserve Policy

Metropolitan's reserve policy provides for a minimum reserve requirement and target amount of unrestricted reserves at June 30 of each year. The minimum reserve requirement at June 30 of each year is equal to the portion of fixed costs estimated to be recovered by water revenues for the 18 months beginning with the immediately succeeding July. Funds representing the minimum reserve requirement are held in the Revenue Remainder Fund. Any funds in excess of the minimum reserve requirement are held in the Water Rate Stabilization Fund. The target amount of unrestricted reserves is equal to the portion of the fixed costs estimated to be recovered by water revenues during the two years immediately following the 18-month period used to calculate the minimum reserve requirement. Funds in excess of the target amount are to be utilized for capital expenditures in lieu of the issuance of additional debt, or for the redemption, defeasance or purchase of outstanding bonds or commercial paper as determined by the Board. Provided that the fixed charge coverage ratio is at or above 1.2, amounts in the Water Rate Stabilization Fund may be expended for any lawful purpose of Metropolitan, as determined by the Board. See "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

At June 30, 2019, unrestricted reserves, which consist of the Water Rate Stabilization Fund and the Revenue Remainder Fund, totaled \$460 million on a modified accrual basis. As of June 30, 2019, the minimum reserve requirement was \$256.9 million, and the target reserve level was \$626.4 million.

Due to SDCWA’s litigation challenging Metropolitan’s rates and pursuant to the Exchange Agreement between Metropolitan and SDCWA, Metropolitan is required to set aside funds based on the quantities of exchange water that Metropolitan provides to SDCWA and the amount of charges disputed by SDCWA. In April 2016, Metropolitan transferred these funds from unrestricted financial reserves to a new designated fund, the Exchange Agreement Set-Aside Fund. As of April 30, 2020, Metropolitan held \$57.39 million in the Exchange Agreement Set-Aside Fund. This amount contains the disputed Water Stewardship Rate payments and interest earned thereon based on the rate earned by Metropolitan’s investment portfolio. The amounts held do not include the statutory prejudgment interest, post-judgment interest, attorneys’ fees, or costs awards, none of which the Exchange Agreement requires to be held. Amounts held pursuant to the Exchange Agreement will continue to accumulate based on the quantities of exchange water that Metropolitan provides to SDCWA and the payments disputed by SDCWA, until the litigation, including all appeals, is concluded. See “METROPOLITAN’S WATER SUPPLY–Colorado River Aqueduct – Metropolitan and San Diego County Water Authority Exchange Agreement” in this Appendix A. See also “– Litigation Challenging Rate Structure” below.

Metropolitan projects that its unrestricted reserves as of June 30, 2020 will be approximately \$487 million. This amount does not include funds held in the Exchange Agreement Set-Aside Fund. This projection is based on the assumptions set forth in the table entitled “HISTORICAL AND PROJECTED REVENUES AND EXPENSES” under “HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A. In addition, this projection is based on the assumption that Metropolitan’s Board will not authorize the use of any additional amounts in the unrestricted reserves.

California Ballot Initiatives

Proposition 218, a State ballot initiative known as the “Right to Vote on Taxes Act,” was approved by the voters on November 5, 1996 adding Articles XIII C and XIII D to the California Constitution. Article XIII D provides substantive and procedural requirements on the imposition, extension or increase of any “fee” or “charge” levied by a local government upon a parcel of real property or upon a person as an incident of property ownership. As a wholesaler, Metropolitan serves water to its member agencies, not to persons or properties as an incident of property ownership. Thus, water rates charged by Metropolitan to its member agencies are not property related fees and charges and therefore are exempt from the requirements of Article XIII D. Fees for retail water service by Metropolitan’s member agencies or their agencies are subject to the requirements of Article XIII D.

Article XIII D also imposes certain procedures with respect to assessments. Under Article XIII D, “standby charges” are considered “assessments” and must follow the procedures required for “assessments,” unless they were in existence on the effective date of Article XIII D. Metropolitan has imposed its water standby charges since 1992 and therefore its current standby charges are exempt from the Article XIII D procedures. Changes to Metropolitan’s current standby charges could require notice to property owners and approval by a majority of such owners returning mail-in ballots approving or rejecting any imposition or increase of such standby charge. Twenty-two of Metropolitan’s member agencies have elected to collect all or a portion of their readiness-to-serve charges through standby charges. See “– Other Charges – Readiness-to-Serve Charge” and “– Water Standby Charges” above. Even if Article XIII D is construed to limit the ability of Metropolitan and its member agencies to impose or collect standby charges, the member agencies will continue to be obligated to pay the readiness-to-serve charges.

Article XIII C makes all taxes either general or special taxes and imposes voting requirements for each kind of tax. It also extends the people’s initiative power to reduce or repeal previously authorized local taxes, assessments, fees and charges. This extension of the initiative power is not limited by the terms of

Article XIII C to fees imposed after November 6, 1996 or to property-related fees and charges and absent other authority could result in retroactive reduction in existing taxes, assessments or fees and charges.

Proposition 26, a State ballot initiative aimed at restricting regulatory fees and charges, was approved by the California voters on November 2, 2010. Proposition 26 broadens the definition of “tax” in Article XIII C of the California Constitution to include: levies, charges and exactions imposed by local governments, except for charges imposed for benefits or privileges or for services or products granted to the payor (and not provided to those not charged) that do not exceed their reasonable cost; regulatory fees that do not exceed the cost of regulation and are allocated in a fair or reasonable manner; fees for the use of local governmental property; fines and penalties imposed for violations of law; real property development fees; and assessments and property-related fees imposed under Article XIII D of the California Constitution. Special taxes imposed by local governments including special districts are subject to approval by two-thirds of the electorate. Proposition 26 applies to charges imposed or increased by local governments after the date of its approval. Metropolitan believes its water rates and charges are not taxes under Proposition 26. SDCWA’s lawsuit challenging the rates adopted by Metropolitan in April 2012 (part of which became effective January 1, 2013 and part of which became effective January 1, 2014) alleged that such rates violate Proposition 26. On June 21, 2017, the California Court of Appeal ruled that whether or not Proposition 26 applies to Metropolitan’s rates, the System Access Rate and System Power Rate challenged by SDCWA in such lawsuit comply with Proposition 26. See “–Litigation Challenging Rate Structure.”

Propositions 218 and 26 were adopted as measures that qualified for the ballot pursuant to the State’s initiative process. Other initiative measures have been proposed from time to time, including presently, or could be proposed in the future, which if qualified for the ballot, could be adopted, or legislative measures could be approved by the Legislature, which may place limitations on the ability of Metropolitan or its member agencies to increase revenues or to increase appropriations. Such measures may further affect Metropolitan’s ability to collect taxes, assessments or fees and charges, which could have an effect on Metropolitan’s revenues.

Preferential Rights

Section 135 of the Act gives each of Metropolitan’s member agencies a preferential right to purchase for domestic and municipal uses within the agency a portion of the water served by Metropolitan, based upon a ratio of all payments on tax assessments and otherwise, except purchases of water, made to Metropolitan by the member agency compared to total payments made by all member agencies on tax assessments and otherwise since Metropolitan was formed, except purchases of water. Historically, these rights have not been used in allocating Metropolitan’s water. In 2004, the California Court of Appeal upheld Metropolitan’s methodology for calculation of the respective member agencies’ preferential rights under Section 135 of the Act. SDCWA’s litigation challenging Metropolitan’s rate structure also challenged Metropolitan’s exclusion of payments for Exchange Agreement deliveries from the calculation of SDCWA’s preferential right. On June 21, 2017, the California Court of Appeal held that SDCWA’s payments under the Exchange Agreement must be included in the preferential rights calculation. See “–Litigation Challenging Rate Structure.”

Litigation Challenging Rate Structure

SDCWA filed *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.* on June 11, 2010. The complaint alleges that the rates adopted by the Board on April 13, 2010, which became effective January 1, 2011 and January 1, 2012, misallocate certain State Water Contract costs to the System Access Rate and the System Power Rate, and thus affect charges for transportation of water, resulting in an overcharge to SDCWA by at least \$24.5 million per year. The complaint alleges that all State Water Project costs should be allocated instead to Metropolitan’s Supply Rate, even though under the State Water Contract Metropolitan is billed separately for transportation, power and supply costs. It states additionally that Metropolitan will overcharge SDCWA by another \$5.4 million per year by including the Water Stewardship Rate in transportation charges.

The complaint requested a court order invalidating the rates adopted April 13, 2010, and that Metropolitan be mandated to allocate costs associated with the State Water Contract and the Water Stewardship Rate to water supply rates and not to transportation rates. Rates in effect in prior years are not challenged in this lawsuit.

SDCWA filed its First Amended Petition for Writ of Mandate and Complaint on October 27, 2011, adding five new claims to this litigation, two of which were eliminated from the case on January 4, 2012. The three remaining new claims were for breach of the water Exchange Agreement between Metropolitan and SDCWA (described herein under “METROPOLITAN’S WATER SUPPLY–Colorado River Aqueduct – Metropolitan and San Diego County Water Authority Exchange Agreement”) due to a price based on allegedly illegal rates; improper exclusion of SDCWA’s payments under such Exchange Agreement from calculation of SDCWA’s preferential rights to purchase Metropolitan supplies (see “–Preferential Rights” above); and illegality of the rate structure integrity provision in conservation and local resources incentive agreements between Metropolitan and SDCWA. The rate structure integrity provision permitted the Board to terminate incentives payable under conservation and local resources incentive agreements between Metropolitan and a member agency due to certain actions by the member agency to challenge the rates that are the source of incentive payments. In June 2011, Metropolitan’s Board authorized termination of two incentive agreements with SDCWA under the rate structure integrity provision in such agreements after SDCWA filed its initial complaint challenging Metropolitan’s rates. SDCWA filed a Second Amended Petition for Writ of Mandate and Complaint on April 17, 2012, which contained additional allegations but no new causes of action.

On June 8, 2012, SDCWA filed a new lawsuit challenging the rates adopted by Metropolitan on April 10, 2012 and effective on January 1, 2013 and January 1, 2014. The complaint contained allegations similar to those in the Second Amended Petition for Writ of Mandate and Complaint and new allegations asserting that Metropolitan’s rates, adopted in April 2012, violate Proposition 26. See “–California Ballot Initiatives” for a description of Proposition 26.

SDCWA filed a Third Amended Petition for Writ of Mandate and Complaint on January 23, 2013, to add new allegations that Metropolitan’s rates adopted in April 2010 did not meet the requirements of Proposition 26. The court granted Metropolitan’s motion to strike allegations relating to Proposition 26 on March 29, 2013, expressly ruling that SDCWA may not allege a violation of Proposition 26 in its challenge to the rates adopted in April 2010. This ruling did not affect SDCWA’s separate challenge to Metropolitan’s rates adopted in April 2012, which also includes Proposition 26 allegations.

Following trial of both lawsuits in two phases, concluding on January 23, 2014 and April 30, 2015, respectively, the Superior Court of the State of California, County of San Francisco (the “Superior Court”), issued its Final Judgment and a Peremptory Writ of Mandate in the 2010 and 2012 SDCWA v. Metropolitan cases. Metropolitan appealed the trial court’s decision in each case, and SDCWA filed a cross-appeal of the court’s ruling on the rate structure integrity claim and an attorneys’ fees order.

On June 21, 2017, the California Court of Appeal released its decision in the appeals and cross-appeal filed by Metropolitan and SDCWA, respectively. The Court of Appeal ruled that Metropolitan may lawfully include its State Water Project transportation costs in the System Access Rate and System Power Rate that are part of the Exchange Agreement’s price term, and that Metropolitan may also lawfully include the System Access Rate in its wheeling rate, reversing the trial court decision on this issue. The Court held Metropolitan’s allocation of the State Water Project transportation costs as its own transportation costs is proper and does not violate the wheeling statutes (Water Code, § 1810, *et seq.*), Proposition 26 (Cal. Const., Article XIII C, §1, subd.(e)), whether or not that Proposition applies to Metropolitan’s rates, California Government Code section 54999.7, the common law, or the terms of the parties’ Exchange Agreement.

The Court of Appeal also ruled that the administrative record before it for the rates in calendar years 2011 through 2014 did not support Metropolitan’s inclusion of its Water Stewardship Rate as a transportation

cost in the Exchange Agreement price or the wheeling rate, under the common law and wheeling statutes. Having made that determination, the Court of Appeal stated it need not evaluate the issue under any other law. The court did not address the allocation of the Water Stewardship Rate in subsequent years based on a different record. The court noted, and in a subsequent modification confirmed, that its holding does not preclude Metropolitan from including the Water Stewardship Rate in Metropolitan's full-service rate.

The Court of Appeal held that because the Water Stewardship Rate was included in the Exchange Agreement price, there was a breach by Metropolitan of the Exchange Agreement in 2011 through 2014. The court remanded the case to the trial court for a redetermination of damages in light of its ruling concerning the Water Stewardship Rate. The Court of Appeal agreed with the trial court that statutory prejudgment interest applies with respect to any damages award, not a lesser contractual interest. The Court of Appeal reversed the trial court by finding that the Exchange Agreement may entitle SDCWA to attorneys' fees for the second phase of the case concerning breach of contract; but directed the trial court on remand to make a new determination of the prevailing party, if any. The cases were therefore remanded to the trial court for a review of both damages and attorneys' fees.

With respect to other issues considered on appeal, the Court of Appeal upheld the trial court's ruling that Metropolitan improperly excludes SDCWA's payments under the Exchange Agreement in Metropolitan's calculation of SDCWA's preferential rights. The court also ruled that SDCWA had the constitutional right to challenge the rate structure integrity provision in Metropolitan's conservation and local resources incentive agreements and found that the rate structure integrity provision was invalid and unenforceable as an unconstitutional condition on the provision of a public benefit.

On September 27, 2017, the California Supreme Court denied SDCWA's petition for review, declining to consider the Court of Appeal's decision. The Court of Appeal's decision is therefore final.

On July 25, 2018, the Superior Court issued an order regarding the scope of the matters to be reconsidered by the Superior Court on remand pursuant to the Court of Appeal decision. With respect to the Superior Court's re-determination of damages in light of the Court of Appeal's ruling that the administrative record for calendar years 2011 through 2014 did not support Metropolitan's inclusion of its demand management costs in the Exchange Agreement price, the Superior Court ruled that it will award SDCWA \$28,678,190.90 in contract damages for breach of the Exchange Agreement, plus prejudgment interest at 10 percent per annum. The Superior Court determined that Metropolitan is not entitled in the remand proceedings to show what it could have lawfully charged SDCWA for demand management costs and to deduct that from SDCWA's damages.

The Superior Court further ruled that SDCWA is not entitled in the remand proceedings to litigate the issue of "offsetting benefits" under the wheeling statutes for the parties' Exchange Agreement. The Superior Court found that such claim is both outside the scope of remand and waived.

The Superior Court also ruled that SDCWA is entitled to judgment on its declaratory relief cause of action declaring the rate structure integrity provision in Metropolitan's conservation and local resources incentive agreements invalid and unenforceable, SDCWA is entitled to further proceedings to litigate the issue of an entitlement to monetary restitution for 2011 through 2014, and the parties shall also litigate in further proceedings the issue of what prospective relief SDCWA may be entitled to in connection with this cause of action.

Finally, the Superior Court confirmed, as the parties agreed, that it will conduct further proceedings for a redetermination of the prevailing party and attorneys' fees in this matter.

The court had scheduled an evidentiary hearing for June 16 to June 18, 2020 on SDCWA's requested relief based on its rate structure integrity clause claim. Following action of the SDCWA Board of Directors on February 27, 2020 (discussed further below), SDCWA informed Metropolitan and the court that it was no

longer seeking this relief. Accordingly, the evidentiary hearing was canceled. The court will enter judgment and, potentially at SDCWA's request, a writ in the 2010 and 2012 cases, based on proposals to be submitted by the parties. The court will thereafter schedule proceedings concerning the redetermination of the prevailing party and attorney's fees.

On September 14, 2018, Metropolitan filed a Petition for Writ of Mandate with the California Court of Appeal, requesting the court to require the Superior Court to recalculate contract damages for breach of the Exchange Agreement from years 2011 through 2014, to include a set-off for the additional sums SDCWA would have paid had Metropolitan collected the Water Stewardship Rate through its full service sales as SDCWA argued was correct. On November 1, 2018, the Court of Appeal determined that it would not review the issue at this stage of the cases. Metropolitan may raise this issue again on any later appeal from the cases' final judgment.

Due to SDCWA's litigation challenging Metropolitan's rates, and pursuant to the Exchange Agreement between Metropolitan and SDCWA, as of April 30, 2020, Metropolitan held \$57.39 million in a designated fund, the Exchange Agreement Set-Aside Fund. See "–Financial Reserve Policy." This amount includes the disputed Water Stewardship Rate payments for calendar years 2011 through the present, and interest earned by Metropolitan thereon. The amount held does not include statutory prejudgment interest or any post-judgment interest, attorneys' fees, or costs the Court may award. The Set-Aside Fund also does not include any amounts applicable to the rate structure integrity provision declaratory relief cause of action, because that claim does not involve disputed payments under the Exchange Agreement.

On February 14, 2019, Metropolitan tendered to SDCWA payment of \$44.4 million for the San Francisco Superior Court's contract damages award for Water Stewardship Rate payments from 2011 through 2014, plus statutory interest through February 15, 2019, with a reservation of appeal rights, in the 2010 and 2012 SDCWA v. Metropolitan actions. This tender was made under compulsion to cease accrual of statutory interest in excess of market rates, but did not affect Metropolitan's rights to appeal, including its right to challenge the amount of the damages award. The tendered payment included \$31.6 million of amounts withdrawn from the Exchange Agreement Set-Aside Fund, and \$12.8 million withdrawn from reserves (representing statutory interest). On March 7, 2019, SDCWA rejected the tendered payment and returned the uncashed check for the tendered payment. The returned funds were credited back to the Exchange Agreement Set-Aside Fund and Metropolitan reserves in the amounts drawn. The balance in the Exchange Agreement Set-Aside Fund set forth above includes the returned funds.

On August 29, 2019, as a result of changes in reorganization of assignments at the San Francisco Superior Court, the 2010, 2012, 2016, and 2017 SDCWA v. Metropolitan cases were reassigned to a different department of the Court. SDCWA filed a motion for peremptory disqualification of the new judge and on September 6, 2019, the motion was sustained. On September 27, 2019, the 2010, 2012, 2016, and 2017 cases were assigned to Department 304, a different complex department in which the 2014 case is already pending.

In May 2014, SDCWA filed a new lawsuit asserting essentially the same rate claims and breach of contract claim in connection with the Board's April 2014 rate adoption. Metropolitan filed its answer on June 30, 2014. On February 9, 2015, pursuant to stipulation by the parties, the San Francisco Superior Court ordered that the case be stayed. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On April 13, 2016, SDCWA filed a new lawsuit that alleges all rates and charges for 2017 and 2018 adopted by Metropolitan's Board on April 12, 2016 violate the California Constitution, statutes, and common law. The Petition for Writ of Mandate and Complaint asserts misallocation of costs as alleged in the previous cases listed above and additional claims of over-collection and misallocation of costs and procedural violations. Following a stipulated order issued by the court on November 10, 2016, SDCWA filed a First Amended Petition for Writ of Mandate and Complaint and the court ordered the case stayed pending final

resolution of the 2010 and 2012 SDCWA v. Metropolitan cases' appeals. The amended petition/complaint adds allegations of the same Exchange Agreement breach as in the previous cases listed above and breach of a provision that requires Metropolitan to set aside disputed amounts, relating to the manner in which Metropolitan has set aside the amounts; requests a judicial declaration that, if a judgment is owed to SDCWA under the Exchange Agreement, SDCWA will not be required to pay any portion of that judgment; and requests a refund to SDCWA of any amount Metropolitan has collected in excess of the reasonable costs of the services provided or, alternatively, a reduction in SDCWA's future fees. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On June 9, 2017, SDCWA filed a new Petition for Writ of Mandate and Complaint challenging the Readiness-to-Serve Charge and Capacity Charge for 2018 adopted by Metropolitan's Board on April 11, 2017. These two charges are set annually, and SDCWA's 2016 lawsuit included a challenge to these two charges for 2017. The new lawsuit similarly alleges the 2018 Readiness-to-Serve Charge and Capacity Charge violate the California Constitution, statutes, and common law. The petition/complaint asserts misallocation of costs. Metropolitan was served with the petition/complaint on June 20, 2017. On July 18, 2017, SDCWA filed a first amended petition/complaint to add Metropolitan's Board action of July 11, 2017 to make minor corrections to the Readiness-to-Serve Charge. On July 31, 2018, pursuant to stipulation by the parties, the San Francisco Superior Court ordered that the case be stayed. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On June 8, 2018, SDCWA filed a new lawsuit that alleges all rates and charges for 2019 and 2020 adopted by Metropolitan's Board on April 10, 2018 violate the California Constitution, statutes, and common law. The Petition for Writ of Mandate and Complaint asserts the Water Stewardship Rate is unlawful per se and its collection in transportation charges is also unlawful; failure to provide wheelers a reasonable credit for "offsetting benefits" pursuant to Water Code Section 1810, *et seq.*, which SDCWA contends (and Metropolitan disputes) applies to the parties' Exchange Agreement; over-collection and misallocation of costs, including misallocation of Metropolitan's California WaterFix costs as its transportation costs; and specified procedural violations. SDCWA states in the Petition and Complaint that it intends to amend its complaint to allege additional claims against Metropolitan, including but not limited to a claim for breach of contract. Following a stipulated order issued by the San Francisco Superior Court on January 10, 2019, SDCWA filed a First Amended Petition for Writ of Mandate and Complaint and the court ordered the case stayed pending final resolution of the 2010 and 2012 SDCWA v. Metropolitan cases. The amended petition/complaint adds a cause of action for breach of the Exchange Agreement alleging Metropolitan charged an unlawful price that includes the Water Stewardship Rate (despite suspension of this charge), failing to provide credit for offsetting benefits, charging transportation rates that are not based on costs of service, including California WaterFix costs, and not following procedural requirements; and requests a refund to SDCWA of any amount Metropolitan has collected in excess of the reasonable costs of the services provided or, alternatively, a reduction in SDCWA's future fees. This 2018 lawsuit has not yet been assigned to a department in the San Francisco Superior Court. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On November 15, 2019, Metropolitan provided a statutory Offer to Compromise to SDCWA to resolve all pending litigation filed by SDCWA. The offer, which was not confidential, was made under California Code of Civil Procedure Section 998, and was deemed withdrawn if not accepted by December 30, 2019. By letter dated December 19, 2019, SDCWA notified Metropolitan that it had determined not to act upon Metropolitan's Section 998 Offer to Compromise. Metropolitan's statutory Offer to Compromise is now deemed withdrawn. SDCWA made its own settlement offer, which is public but non-statutory. SDCWA's settlement offer was made subject to acceptance by Metropolitan no later than the close of business on January 31, 2020. The Metropolitan Board reviewed SDCWA's proposal at its January 14, 2020 Board meeting and took no action.

On February 27, 2020, the SDCWA Board of Directors authorized its attorneys to dismiss, without prejudice, claims related to payments of the Water Stewardship Rate on supply purchases only and the

unquantified claims in the stayed cases relating to cost-of-service grounds and the rate model. SDCWA has not yet dismissed claims and Metropolitan has not yet assessed the impact of the authorized dismissals.

Other Revenue Sources

Hydroelectric Power Recovery Revenues. Metropolitan has constructed 16 small hydroelectric plants on its distribution system. The combined generating capacity of these plants is approximately 131 megawatts. The plants are located in Los Angeles, Orange, Riverside, and San Diego Counties at existing pressure control structures and other locations. The total capital cost of the 16 facilities is approximately \$176.1 million. Since 2000, annual energy generation sales revenues have ranged between \$7.3 million and nearly \$29.6 million. Including the sale of excess energy generation from Hoover and Parker dams, the total energy sales revenues were \$23.7 million in fiscal year 2017-18 and \$18.3 million in fiscal year 2018-19.

Metropolitan has a power sales contract with Pacific Gas and Electric Company (“PG&E”) for the sale to PG&E of the output of Metropolitan’s 24 megawatt Etiwanda hydroelectric plant through 2034. On January 29, 2019, PG&E and its parent company, PG&E Corporation, filed for bankruptcy protection under Chapter 11 of the Bankruptcy Code. As a result of the PG&E bankruptcy filing, a \$10,136 payment due in January 2019 under the power sales contract was not received. PG&E has taken no action to reject the power sales contract in the bankruptcy proceedings and has made all subsequent payments. Metropolitan continues to perform under the contract. Metropolitan will hold a claim against the bankruptcy estate for any unpaid amounts from PG&E during the pendency of the bankruptcy proceedings.

Investment Income. In fiscal years 2016-17 2017-18, and 2018-19 Metropolitan’s earnings on investments, including adjustments for gains and losses and premiums and discounts, including construction account and trust fund earnings, excluding gains and losses on swap terminations, on an accrual basis (audited) were \$6.2 million, \$10.6 million, and \$36.0 million, respectively.

Investment of Moneys in Funds and Accounts

The Board has delegated to the Treasurer the authority to invest funds. All moneys in any of the funds and accounts established pursuant to Metropolitan’s water revenue or general obligation bond resolutions are managed by the Treasurer in accordance with Metropolitan’s Statement of Investment Policy. All Metropolitan funds available for investment are currently invested in United States Treasury and agency securities, commercial paper, negotiable certificates of deposit, banker’s acceptances, corporate notes, municipal bonds, government-sponsored enterprise, supranationals, money market funds, California Asset Management Program (“CAMP”), and the California Local Agency Investment Fund (“LAIF”). CAMP is a program created through a joint powers agency as a pooled short-term portfolio and cash management vehicle for California public agencies. CAMP is a permitted investment for all local agencies under California Government Code Section 53601(p). LAIF is a voluntary program created by statute as an investment alternative for California’s local governments and special districts. LAIF permits such local agencies to participate in an investment portfolio, which invests billions of dollars, managed by the State Treasurer’s Office.

The Statement of Investment Policy provides that in managing Metropolitan’s investments, the primary objective shall be to safeguard the principal of the invested funds. The secondary objective shall be to meet all liquidity requirements and the third objective shall be to achieve a return on the invested funds. Although the Statement of Investment Policy permits investments in some government-sponsored enterprise, the portfolio does not include any of the special investment vehicles related to sub-prime mortgages. The Statement of Investment Policy allows Metropolitan to exceed the portfolio and single issuer limits for purchases of California local agency securities when purchasing Metropolitan tendered bonds in conjunction with its self-liquidity program. Metropolitan’s current investments comply with the Statement of Investment Policy.

As of April 30, 2020, the total market value (cash-basis) of all Metropolitan invested funds was \$1.2 billion, including bond reserves of \$1.6 million. The market value of Metropolitan's investment portfolio is subject to market fluctuation and volatility and general economic conditions. Over the three years ended April 30, 2020 the market value of the month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) averaged approximately \$1.0 billion. The minimum month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) during such period was approximately \$831.9 million on July 31, 2019. See Footnote 3 to Metropolitan's audited financial statements in Appendix B for additional information on the investment portfolio.

Metropolitan's administrative code requires that (1) the Treasurer provide an annual Statement of Investment Policy for approval by Metropolitan's Board, (2) the Treasurer provide a monthly investment report to the Board and the General Manager showing by fund the description, maturity date, yield, par, cost and current market value of each security, and (3) the General Counsel review as to eligibility the securities invested in by the Treasurer for that month and report his or her determinations to the Board. The Board approved the Statement of Investment Policy for fiscal year 2019-20 on June 11, 2019.

Subject to the provisions of Metropolitan's water revenue or general obligation bond resolutions, obligations purchased by the investment of bond proceeds in the various funds and accounts established pursuant to a bond resolution are deemed at all times to be a part of such funds and accounts and any income realized from investment of amounts on deposit in any fund or account therein will be credited to such fund or account. The Treasurer is required to sell or present for redemption any investments whenever it may be necessary to do so in order to provide moneys to meet required payments or transfers from such funds and accounts. For the purpose of determining at any given time the balance in any such funds, any such investments constituting a part of such funds and accounts will be valued at the then estimated or appraised market value of such investments.

All investments, including those authorized by law from time to time for investments by public agencies, contain certain risks. Such risks include, but are not limited to, a lower rate of return than expected and loss or delayed receipt of principal. The occurrence of these events with respect to amounts held under Metropolitan's water revenue or general obligation revenue bond resolutions, or other amounts held by Metropolitan, could have a material adverse effect on Metropolitan's finances. These risks may be mitigated, but are not eliminated, by limitations imposed on the portfolio management process by Metropolitan's Statement of Investment Policy.

The Statement of Investment Policy requires that investments have a minimum credit rating of "A-1/P-1/F1" for short-term securities and "A" for longer-term securities, without regard to modifiers, at the time of purchase. If a security is downgraded below the minimum rating criteria specified in the Statement of Investment Policy, the Treasurer shall determine a course of action to be taken on a case-by-case basis considering such factors as the reason for the downgrade, prognosis for recovery or further rating downgrades, and the market price of the security. The Treasurer is required to note in the Treasurer's monthly report any securities which have been downgraded below Policy requirements and the recommended course of action.

The Statement of Investment Policy also limits the amount of securities that can be purchased by category, as well as by issuer, and prohibits investments that can result in zero interest income. Metropolitan's securities are settled on a delivery versus payment basis and are held by an independent third-party custodian. See Metropolitan's financial statements included in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2019 AND JUNE 30, 2018 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2020 AND 2019 (UNAUDITED)" for a description of Metropolitan's investments at June 30, 2019 and March 31, 2020.

Since July 2019, Metropolitan has retained one outside investment firm to manage the portion of Metropolitan’s portfolio not needed to provide liquidity for expenditures over the next six months. As of April 30, 2020, this manager was managing approximately \$193.3 million in investments on behalf of Metropolitan. Since December 2018, Metropolitan has retained an outside investment firm to manage a portion of the liquidity portfolio and certain trust funds. As of April 30, 2020, this firm managed approximately \$692.2 million. The outside managers are required to adhere to Metropolitan’s Statement of Investment Policy.

Metropolitan’s Statement of Investment Policy may be changed at any time by the Board (subject to State law provisions relating to authorized investments). There can be no assurance that the State law and/or the Statement of Investment Policy will not be amended in the future to allow for investments that are currently not permitted under State law or the Statement of Investment Policy, or that the objectives of Metropolitan with respect to investments or its investment holdings at any point in time will not change.

METROPOLITAN EXPENSES

General

The following table sets forth a summary of Metropolitan’s expenses, by major function, for the five years ended June 30, 2019, on a modified accrual basis. All information is unaudited. Expenses of Metropolitan for the fiscal years ended June 30, 2019 and June 30, 2018, on an accrual basis, are shown in Metropolitan’s audited financial statements included in Appendix B.

SUMMARY OF EXPENSES Fiscal Years Ended June 30 (Dollars in Millions)

	2015	2016	2017	2018	2019
Operation and Maintenance Costs ⁽¹⁾	\$ 697	\$ 799	\$ 559	\$ 568	\$ 569
Total State Water Project ⁽²⁾	436	512	506	527	482
Total Debt Service	303	332	330	360	347
Construction Expenses from Revenues ⁽³⁾	210	273	132	98	128
Other ⁽⁴⁾	<u>7</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>6</u>
Total Expenses (net of reimbursements)	<u>\$1,653</u>	<u>\$1,922</u>	<u>\$1,531</u>	<u>\$1,558</u>	<u>\$1,532</u>

Source: Metropolitan.

⁽¹⁾ Includes operation and maintenance, debt administration, conservation and local resource programs, CRA power, and water supply expenses. Fiscal years 2014-15, 2015-16, 2016-17, and 2017-18 include \$142 million, \$222 million, \$33 million, and \$1 million, respectively, of conservation projects funded from transfers from the Water Management Fund.

⁽²⁾ Includes both operating and capital expense portions.

⁽³⁾ At the discretion of the Board, in any given year, Metropolitan may increase or decrease funding available for construction disbursements to be paid from revenues. Includes \$160 million for acquiring properties in Riverside and Imperial Counties, funded by \$160 million from the Replacement and Refurbishment Fund Reserves. Does not include expenditures of bond proceeds.

⁽⁴⁾ Includes operating equipment.

Revenue Bond Indebtedness and Other Obligations

As of May 1, 2020, Metropolitan had total outstanding indebtedness secured by a lien on Net Operating Revenues of \$4.02 billion. This indebtedness was comprised of \$2.55 billion of Senior Revenue Bonds issued under the Senior Debt Resolutions (each as defined below), which includes \$2.22 billion of fixed rate Senior Revenue Bonds, and \$331.9 million of variable rate Senior Revenue Bonds; \$1.42 billion of Subordinate Revenue Bonds issued under the Subordinate Debt Resolutions (each as defined below), which includes \$969.24 million of fixed rate Subordinate Revenue Bonds, and \$446.3 million of variable rate Subordinate Revenue Bonds; and \$46.8 million of subordinate lien short-term certificates, which bear a

variable rate, and are on parity with the Subordinate Revenue Bonds. In addition, Metropolitan has \$493.6 million of fixed-payor interest rate swaps which provides a fixed interest rate hedge to an equivalent amount of variable rate debt. Metropolitan’s revenue bonds and other revenue obligations are more fully described below.

REVENUE BOND INDEBTEDNESS AND OTHER OBLIGATIONS

	Variable Rate	Fixed Rate	Total
Senior Lien Revenue Bonds	\$ 331,875,000	\$2,221,475,000	\$2,553,350,000
Subordinate Lien Revenue Bonds	446,255,000	969,240,000	1,415,495,000
Subordinate Lien Short-Term Certificates	46,800,000	--	46,800,000
Total	\$ 824,930,000	\$3,190,715,000	\$4,015,645,000
Fixed-Payor Interest Rate Swaps	(493,630,000)	493,630,000	--
Net Amount (after giving effect to Swaps)	\$ 331,300,000	\$3,684,345,000	\$4,015,645,000

Source: Metropolitan.

Limitations on Additional Revenue Bonds

Resolution 8329, adopted by Metropolitan’s Board on July 9, 1991, as amended and supplemented (the “Master Senior Resolution,” and collectively with all such supplemental resolutions, the “Senior Debt Resolutions”), provides for the issuance of Metropolitan’s senior lien water revenue bonds. The Senior Debt Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Senior Debt Resolutions, no additional bonds, notes or other evidences of indebtedness payable out of Operating Revenues may be issued having any priority in payment of principal, redemption premium, if any, or interest over any water revenue bonds authorized by the Senior Debt Resolutions (“Senior Revenue Bonds”) or other obligations of Metropolitan having a lien and charge upon, or being payable from, the Net Operating Revenues on parity with such Senior Revenue Bonds (“Senior Parity Obligations”). No additional Senior Revenue Bonds or Senior Parity Obligations may be issued or incurred unless the conditions of the Senior Debt Resolutions have been satisfied.

Resolution 9199, adopted by Metropolitan’s Board on March 8, 2016, as amended and supplemented (the “Master Subordinate Resolution,” and collectively with all such supplemental resolutions, the “Subordinate Debt Resolutions,” and together with the Senior Debt Resolutions, the “Revenue Bond Resolutions”), provides for the issuance of Metropolitan’s subordinate lien water revenue bonds and other obligations secured by a pledge of Net Operating Revenues that is subordinate to the pledge securing Senior Revenue Bonds and Senior Parity Obligations. The Subordinate Debt Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Subordinate Debt Resolutions, with the exception of Senior Revenue Bonds and Senior Parity Obligations, no additional bonds, notes or other evidences of indebtedness payable out of Operating Revenues may be issued having any priority in payment of principal, redemption premium, if any, or interest over any subordinate water revenue bonds authorized by the Subordinate Debt Resolutions (“Subordinate Revenue Bonds” and, together with Senior Revenue Bonds, “Revenue Bonds”) or other obligations of Metropolitan having a lien and charge upon, or being payable from, the Net Operating Revenues on parity with the Subordinate Revenue Bonds (“Subordinate Parity Obligations”). No additional Subordinate Revenue Bonds or Subordinate Parity Obligations may be issued or incurred unless the conditions of the Subordinate Debt Resolutions have been satisfied.

The laws governing Metropolitan’s ability to issue water revenue bonds currently provide two additional limitations on indebtedness that may be incurred by Metropolitan. The Act provides for a limit on general obligation bonds, water revenue bonds and other evidences of indebtedness of 15 percent of the assessed value of all taxable property within Metropolitan’s service area. As of May 1, 2020, outstanding general obligation bonds, water revenue bonds and other evidences of indebtedness in the amount of \$4.05

billion represented approximately 0.13 percent of the fiscal year 2019-20 taxable assessed valuation of \$3,092.4 billion. The second limitation under the Act specifies that no revenue bonds may be issued, except for the purpose of refunding, unless the amount of net assets of Metropolitan as shown on its balance sheet as of the end of the last fiscal year prior to the issuance of such bonds, equals at least 100 percent of the aggregate amount of revenue bonds outstanding following the issuance of such bonds. The net assets of Metropolitan at June 30, 2019 were \$6.84 billion. The aggregate amount of revenue bonds outstanding as of May 1, 2020 was \$3.97 billion. The limitation does not apply to other forms of financing available to Metropolitan. Audited financial statements including the net assets of Metropolitan as of June 30, 2019 and June 30, 2018 are shown in Metropolitan’s audited financial statements included in APPENDIX B–“THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS’ REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2019 AND JUNE 30, 2018 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2020 AND 2019 (UNAUDITED).”

Metropolitan provides no assurance that the Act’s limitations on indebtedness will not be revised or removed by future legislation. Limitations under the Revenue Bond Resolutions respecting the issuance of additional obligations payable from Net Operating Revenues on parity with the Senior Revenue Bonds and Subordinate Revenue Bonds of Metropolitan will remain in effect so long as any Senior Revenue Bonds and Subordinate Revenue Bonds authorized pursuant to the applicable Revenue Bond Resolutions are outstanding, provided however, that the Revenue Bond Resolutions are subject to amendment and supplement in accordance with their terms.

Variable Rate Exposure Policy

As of May 1, 2020, Metropolitan had outstanding \$331.9 million of variable rate obligations issued as Senior Revenue Bonds under the Senior Debt Resolutions (described under “–Outstanding Senior Revenue Bonds and Senior Parity Obligations –Variable Rate and Swap Obligations” below). In addition, as of May 1, 2020, \$493.1 million of Metropolitan’s \$1.46 billion of outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations issued under the Subordinate Debt Resolutions were variable rate obligations (described under “–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations” below).

As of May 1, 2020, of Metropolitan’s \$824.9 million of variable rate obligations, \$493.6 million of such variable rate demand obligations are treated by Metropolitan as fixed rate debt, by virtue of interest rate swap agreements (described under “–Outstanding Senior Revenue Bonds and Senior Parity Obligations – Variable Rate and Swap Obligations – Interest Rate Swap Transactions” below), for the purpose of calculating debt service requirements. The remaining \$331.3 million of variable rate obligations represent approximately 8.3 percent of total outstanding water revenue secured indebtedness (including Senior Revenue Bonds and Senior Parity Obligations and Subordinate Revenue Bonds and Subordinate Parity Obligations), as of May 1, 2020.

Metropolitan’s variable rate exposure policy requires that variable rate debt be managed to limit net interest cost increases within a fiscal year as a result of interest rate changes to no more than \$5 million. In addition, the maximum amount of variable interest rate exposure (excluding variable rate bonds associated with interest rate swap agreements) is limited to 40 percent of total outstanding water revenue bond debt. Variable rate debt capacity will be reevaluated as interest rates change and managed within these parameters.

The periodic payments due to Metropolitan from counterparties under its outstanding interest rate swap agreements and the interest payments to be payable by Metropolitan under certain of its outstanding variable rate obligations (including some of Metropolitan’s Subordinate Revenue Bonds and certain notes issued pursuant to its short-term revolving credit agreement and subordinate note purchase agreements as hereinafter described) are calculated by reference to the London interbank offering rate (“LIBOR”). On July 27, 2017, the Financial Conduct Authority (the “FCA”), the U.K. regulatory body currently responsible

for the regulation and supervision of LIBOR, announced that it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR rates after 2021 (the “FCA Announcement”). Metropolitan staff is monitoring alternate benchmark rates. It is not possible to predict the effects of the FCA Announcement or how any prospective phasing out of LIBOR as a reference rate and transition to an alternate benchmark rate will be implemented, but increased volatility in the reported LIBOR rates may occur and the level of such LIBOR-based swap and interest payments may be affected.

Outstanding Senior Revenue Bonds and Senior Parity Obligations

Senior Revenue Bonds

The water revenue bonds issued under the Senior Debt Resolutions outstanding as of May 1, 2020, are set forth below:

Name of Issue	Principal Outstanding
Water Revenue Refunding Bonds, 1993 Series A	\$ 12,225,000
Water Revenue Bonds, 2000 Authorization, Series B-3 ⁽¹⁾	78,900,000
Water Revenue Bonds, 2010 Authorization, Series A ⁽²⁾⁽³⁾	250,000,000
Water Revenue Refunding Bonds, 2010 Series B ⁽³⁾	56,005,000
Water Revenue Refunding Bonds, 2011 Series B	1,345,000
Water Revenue Refunding Bonds, 2011 Series C	118,800,000
Water Revenue Refunding Bonds, 2012 Series A	181,180,000
Water Revenue Refunding Bonds, 2012 Series C	19,835,000
Water Revenue Refunding Bonds, 2012 Series F	48,885,000
Water Revenue Refunding Bonds, 2012 Series G	111,890,000
Water Revenue Refunding Bonds, 2014 Series A	37,870,000
Water Revenue Refunding Bonds, 2014 Series C-2 ⁽³⁾	14,020,000
Water Revenue Refunding Bonds, 2014 Series C-3	2,810,000
Water Revenue Refunding Bonds, 2014 Series E	86,060,000
Water Revenue Refunding Bonds, 2014 Series G-5 ⁽³⁾	6,205,000
Water Revenue Bonds, 2015 Authorization, Series A	204,120,000
Water Revenue Refunding Bonds, 2016 Series A	239,455,000
Special Variable Rate Water Revenue Refunding Bonds, 2016 Series B-1 and B-2 ⁽¹⁾	82,905,000
Water Revenue Bonds, 2017, Authorization, Series A ⁽¹⁾	80,000,000
Special Variable Water Revenue Refunding Bonds, 2018 Series A-1 and A-2 ⁽¹⁾	90,070,000
Water Revenue Refunding Bonds, 2018 Series B	133,510,000
Water Revenue Refunding Bonds, 2019 Series A	218,090,000
Water Revenue Bonds, 2020 Series A	207,355,000
Special Variable Rate Water Revenue Refunding Bonds, 2020 Series B ⁽⁴⁾	271,815,000
Total	\$2,553,350,000

Source: Metropolitan.

- (1) Outstanding variable rate obligation.
- (2) Designated as “Build America Bonds” pursuant to the American Recovery and Reinvestment Act of 2009.
- (3) All or a portion of the outstanding Senior Revenue Bonds of this Series are to be refunded by Metropolitan’s Water Revenue Refunding Bonds, 2020 Series C.
- (4) Initially delivered in a long mode at a fixed interest rate to April 2, 2021.

Variable Rate and Swap Obligations

As of May 1, 2020, Metropolitan had outstanding \$331.9 million of senior lien variable rate obligations. The outstanding variable rate obligations consist of Senior Revenue Bonds issued under the Senior Debt Resolutions (described under this caption “–Variable Rate and Swap Obligations”) as variable rate demand obligations in a daily mode supported by standby bond purchase agreements between Metropolitan and various liquidity providers (the “Liquidity Supported Bonds”). Metropolitan also has an outstanding Short-Term Revolving Credit Facility under which it may incur variable rate Senior Parity Obligations (described under “–Senior Parity Obligations – Short-Term Revolving Credit Facility” below).

Liquidity Supported Bonds. The interest rates for Metropolitan’s variable rate demand obligations issued under the Senior Debt Resolutions, totaling \$331.9 million as of May 1, 2020, are currently reset on a daily basis. While bearing interest at a daily rate, such variable rate demand obligations are subject to optional tender on any business day with same day notice by the owners thereof and mandatory tender upon specified events. Such variable rate demand obligations are supported by standby bond purchase agreements between Metropolitan and liquidity providers that provide for purchase of variable rate bonds by the applicable liquidity provider upon tender of such variable rate bonds and a failed remarketing. Metropolitan has secured its obligation to repay principal and interest advanced under the standby bond purchase agreements as Senior Parity Obligations. A decline in the creditworthiness of a liquidity provider will likely result in an increase in the interest rate of the applicable variable rate bonds, as well as an increase in the risk of a failed remarketing of such tendered variable rate bonds. Variable rate bonds purchased by a liquidity provider (“bank bonds”) would initially bear interest at a per annum interest rate equal to, depending on the liquidity facility, either: (a) the highest of (i) the Prime Rate, (ii) the Federal Funds Rate plus one-half of a percent, or (iii) seven and one-half percent (with the spread or rate increasing in the case of each of (i), (ii) and (iii) of this clause (a) by one percent after 60 days); or (b) the highest of (i) the Prime Rate plus one percent, (ii) Federal Funds Rate plus two percent, and (iii) seven percent (with the spread or rate increasing in the case of each of (i), (ii) and (iii) of this clause (b) by one percent after 90 days). To the extent such bank bonds have not been remarketed or otherwise retired as of the earlier of the 60th day following the date such bonds were purchased by the liquidity provider or the stated expiration date of the related liquidity facility, Metropolitan’s obligation to reimburse the liquidity provider may convert the term of the variable rate bonds purchased by the liquidity provider into a term loan payable under the terms of the current liquidity facilities in semi-annual installments over a period ending on either the third anniversary or fifth anniversary, depending on the applicable liquidity facility, of the date on which the variable rate bonds were purchased by the liquidity provider. In addition, upon an event of default under any such liquidity facility, including a failure by Metropolitan to perform or observe its covenants under the applicable standby bond purchase agreement, a default in other specified indebtedness of Metropolitan, or other specified events of default (including a reduction in the credit rating assigned to Senior Revenue Bonds issued under the Senior Debt Resolutions by any of Fitch, S&P or Moody’s below “A-” or “A3”), the liquidity provider could require all bank bonds to be subject to immediate mandatory redemption by Metropolitan.

The following table lists the liquidity providers, the expiration date of each facility and the principal amount of outstanding variable rate demand obligations covered under each facility as of May 1, 2020.

Liquidity Facilities and Expiration Dates

Liquidity Provider	Bond Issue	Principal Outstanding	Facility Expiration
The Toronto-Dominion Bank, New York Branch	2018 Series A-1 and Series A-2	\$ 90,070,000	June 2021
Bank of America, N.A.	2016 Series B-1 and Series B-2	\$ 82,905,000	July 2021
PNC Bank, N.A.	2017 Authorization Series A	\$ 80,000,000	March 2023
PNC Bank, N.A.	2000 Authorization Series B-3	<u>\$ 78,900,000</u>	March 2023
Total		\$331,875,000	

Source: Metropolitan.

Interest Rate Swap Transactions. By resolution adopted on September 11, 2001, Metropolitan’s Board authorized the execution of interest rate swap transactions and related agreements in accordance with a master swap policy, which was subsequently amended by resolutions adopted on July 14, 2009 and May 11, 2010. Metropolitan may execute interest rate swaps if the transaction can be expected to reduce exposure to changes in interest rates on a particular financial transaction or in the management of interest rate risk derived from Metropolitan’s overall asset/liability balance, result in a lower net cost of borrowing or achieve a higher net rate of return on investments made in connection with or incidental to the issuance, incurring or carrying of Metropolitan’s obligations or investments, or manage variable interest rate exposure consistent with prudent debt practices and Board-approved guidelines. The Chief Financial Officer reports to the Finance and Insurance Committee of Metropolitan’s Board each quarter on outstanding swap transactions, including notional amounts outstanding, counterparty exposures and termination values based on then-existing market conditions.

Metropolitan currently has one type of interest rate swap, referred to in the table below as “Fixed Payor Swaps.” Under this type of swap, Metropolitan receives payments that are calculated by reference to a floating interest rate and makes payments that are calculated by reference to a fixed interest rate.

Metropolitan’s obligations to make regularly scheduled net payments under the terms of the interest rate swap agreements are payable on a parity with the Senior Parity Obligations. Termination payments under the 2002A and 2002B interest rate swap agreements would be payable on a parity with the Senior Parity Obligations. Termination payments under all other interest rate swap agreements would be on parity with the Subordinate Parity Obligations.

The following swap transactions were outstanding as of May 1, 2020:

FIXED PAYOR SWAPS:

Designation	Notional Amount Outstanding	Swap Counterparty	Fixed Payor Rate	MWD Receives	Maturity Date
2002 A	\$ 75,838,400	Morgan Stanley Capital Services, Inc.	3.300%	57.74% of one-month LIBOR	7/1/2025
2002 B	28,371,600	JPMorgan Chase Bank	3.300	57.74% of one-month LIBOR	7/1/2025
2003	158,597,500	Wells Fargo Bank	3.257	61.20% of one-month LIBOR	7/1/2030
2003	158,597,500	JPMorgan Chase Bank	3.257	61.20% of one-month LIBOR	7/1/2030
2004 C	7,760,500	Morgan Stanley Capital Services, Inc.	2.980	61.55% of one-month LIBOR	10/1/2029
2004 C	6,349,500	Citigroup Financial Products, Inc.	2.980	61.55% of one-month LIBOR	10/1/2029
2005	29,057,500	JPMorgan Chase Bank	3.360	70% of 3-month LIBOR	7/1/2030
2005	<u>29,057,500</u>	Citigroup Financial Products, Inc.	3.360	70% of 3-month LIBOR	7/1/2030
Total	\$493,630,000				

Source: Metropolitan.

These interest rate swap agreements entail risk to Metropolitan. The counterparty may fail or be unable to perform, interest rates may vary from assumptions, Metropolitan may be required to post collateral

in favor of its counterparties and Metropolitan may be required to make significant payments in the event of an early termination of an interest rate swap. Metropolitan believes that if such an event were to occur, it would not have a material adverse impact on its financial position. Metropolitan seeks to manage counterparty risk by diversifying its swap counterparties, limiting exposure to any one counterparty, requiring collateralization or other credit enhancement to secure swap payment obligations, and by requiring minimum credit rating levels. Initially, swap counterparties must be rated at least “Aa3” or “AA-”, or equivalent by any two of the nationally recognized credit rating agencies; or use a “AAA” subsidiary as rated by at least one nationally recognized credit rating agency. Should the credit rating of an existing swap counterparty drop below the required levels, Metropolitan may enter into additional swaps if those swaps are “offsetting” and risk-reducing swaps. Each counterparty is initially required to have minimum capitalization of at least \$150 million. See Note 5(e) in Metropolitan’s audited financial statements in Appendix B.

Early termination of an interest rate swap agreement could occur due to a default by either party or the occurrence of a termination event (including defaults under other specified swaps and indebtedness, certain acts of insolvency, if a party may not legally perform its swap obligations, or, with respect to Metropolitan, if its credit rating is reduced below “BBB-” by Moody’s or “Baa3” by S&P (under most of the interest rate swap agreements) or below “BBB” by Moody’s or “Baa2” by S&P (under one of the interest rate swap agreements)). As of March 31, 2020, Metropolitan would have been required to pay to some of its counterparties termination payments if its swaps were terminated on that date. Metropolitan’s net exposure to its counterparties for all such termination payments on that date was approximately \$73.0 million. Metropolitan does not presently anticipate early termination of any of its interest rate swap agreements due to default by either party or the occurrence of a termination event. However, Metropolitan has previously exercised, and may in the future exercise, from time to time, optional early termination provisions to terminate all or a portion of certain interest rate swap agreements.

Metropolitan is required to post collateral in favor of a counterparty to the extent that Metropolitan’s total exposure for termination payments to that counterparty exceeds the threshold specified in the applicable swap agreement. Conversely, the counterparties are required to release collateral to Metropolitan or post collateral for the benefit of Metropolitan as market conditions become favorable to Metropolitan. As of March 31, 2020, Metropolitan had no collateral posted with any counterparty. The highest, month-end, amount of collateral posted was \$36.8 million, on June 30, 2012, which was based on an outstanding swap notional amount of \$1.4 billion at that time. The amount of required collateral varies from time to time due primarily to interest rate movements and can change significantly over a short period of time. See “METROPOLITAN REVENUES—Financial Reserve Policy” in this Appendix A. In the future, Metropolitan may be required to post additional collateral, or may be entitled to a reduction or return of the required collateral amount. Collateral deposited by Metropolitan is held by the counterparties; a bankruptcy of any counterparty holding collateral posted by Metropolitan could adversely affect the return of the collateral to Metropolitan. Moreover, posting collateral limits Metropolitan’s liquidity. If collateral requirements increase significantly, Metropolitan’s liquidity may be materially adversely affected. See “METROPOLITAN REVENUES—Financial Reserve Policy” in this Appendix A.

Direct Purchase Long Mode Bonds

In April 2020, Metropolitan entered into a Bond Purchase Agreement, dated as of April 1, 2020 (the “2020 Direct Purchase Agreement”) with Wells Fargo Municipal Capital Strategies, LLC (“WFMCS”), for the purchase by WFMCS and sale by Metropolitan of Metropolitan’s \$271.8 million Special Variable Rate Water Revenue Refunding Bonds 2020 Series B (the “2020B Senior Revenue Bonds”). The 2020B Senior Revenue Bonds were issued for the purpose of refunding all of Metropolitan’s then outstanding variable rate Senior Revenue Bonds that were designated as self-liquidity bonds as part of Metropolitan’s self-liquidity program (“Self-Liquidity Bonds”).

The 2020B Senior Revenue Bonds were issued under the Senior Debt Resolutions and are further described in a related paying agent agreement, dated as of April 1, 2020 (the “2020B Paying Agent Agreement”), by and between Metropolitan and Wells Fargo Bank, N.A., as paying agent. Pursuant to the 2020B Paying Agent Agreement, the 2020B Senior Revenue Bonds may bear interest from time to time in any one of several interest rate modes at the election of Metropolitan. The 2020B Senior Revenue Bonds were initially issued in a Long Mode under the 2020B Paying Agent Agreement and initially bear interest at a Long Rate equal to 1.04 percent per annum for the initial Long Period ending on April 2, 2021. The 2020B Senior Revenue Bonds are subject to mandatory tender for purchase on April 2, 2021 (the “Mandatory Tender Date”), the last day of the Long Period. The 2020B Senior Revenue Bonds were initially designated as Self-Liquidity Bonds pursuant to the 2020B Paying Agent Agreement and no standby bond purchase agreement or other liquidity facility is in effect for the purchase of such bonds.

On or before the date 120 days prior to the end of the Long Period, Metropolitan may request WFMCS to purchase the 2020B Senior Revenue Bonds for another Long Period, or Metropolitan may seek to remarket the 2020B Senior Revenue Bonds to another bank or in the public debt markets in a new interest rate mode or at a fixed interest rate. In the event the 2020B Bonds are not purchased by WFMCS for a subsequent Long Period, Metropolitan is obligated under the 2020 Direct Purchase Agreement to cause 2020B Senior Revenue Bonds that have not been converted to another interest rate mode or remarketed to a purchaser or purchasers other than WFMCS (“Unremarketed 2020B Bonds”) to be redeemed on the Mandatory Tender Date; provided, that if no default or event of default under the 2020 Direct Purchase Agreement shall have occurred and be continuing and the representations and warranties of Metropolitan shall be true and correct on the Mandatory Tender Date, then the principal amount of the Unremarketed 2020B Senior Revenue Bonds shall be due and payable on the date that is 30 days following the Mandatory Tender Date and shall accrue interest at the Purchaser Rate, a fluctuating interest per annum equal to, the greatest of the (i) the Prime Rate, (ii) Federal Funds Rate plus one-half of one percent, and (iii) five percent, as specified in the 2020 Direct Purchase Agreement. If no default or event of default under the 2020 Direct Purchase Agreement shall have occurred and be continuing and the representations and warranties of Metropolitan shall be true and correct at the end of such 30-day period, the Unremarketed 2020B Senior Revenue Bonds will continue to bear interest at the Purchaser Rate plus, after 180 days from the Mandatory Tender Date, a spread of one percent, and the principal amount of such Unremarketed 2020B Senior Revenue Bonds may, at Metropolitan’s request, instead be subject to mandatory redemption in substantially equal installments payable every six months over an amortization period commencing six months after the Mandatory Tender Date and ending on the third anniversary of the Mandatory Tender Date.

Under the 2020 Direct Purchase Agreement, upon a failure by Metropolitan to pay principal or interest of any 2020B Senior Revenue Bonds, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of bankruptcy or insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below “BBB-,” or if any of Fitch, S&P or Moody’s shall have assigned a credit rating below “A-” or “A3,” to Senior Revenue Bonds issued under the Senior Debt Resolutions), WFMCS has the right to accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days’ notice) Metropolitan’s obligation to repay the 2020B Senior Revenue Bonds.

In connection with the execution of the 2020 Direct Purchase Agreement, Metropolitan designated the principal payable on the 2020B Senior Revenue Bonds on the Mandatory Tender Date as Excluded Principal Payments under the Senior Debt Resolutions and thus, for purposes of calculating Maximum Annual Debt Service, included the amount of principal and interest due and payable in connection therewith on a schedule of Assumed Debt Service. This schedule of Assumed Debt Service assumes that Metropolitan will pay the principal of the 2020B Senior Revenue Bonds over a period of 30 years at a fixed interest rate of approximately 5.00 percent.

Metropolitan has previously, and may in the future, enter into one or more self-liquidity revolving credit agreements which may be drawn upon for the purpose of paying the purchase price of any Self-Liquidity Bonds issued by Metropolitan, the repayment obligations of Metropolitan under which may be secured as either Senior Parity Obligations or Subordinate Parity Obligations.

Term Mode Bonds

As of May 1, 2020, Metropolitan had outstanding \$23.0 million of Senior Revenue Bonds bearing interest in a term mode, comprised of \$16.8 million of 2014 Series C Bonds in two outstanding series, and \$6.2 million of 2014 Series G Bonds in one outstanding series (collectively, the “Term Mode Bonds”). The Term Mode Bonds initially bear interest at a fixed rate for a specified period from their date of issuance, after which there shall be determined a new interest mode for each series (which may be another term mode, a daily mode, a weekly mode, a short-term mode or an index mode) or the Term Mode Bonds may be converted to bear fixed interest rates through the maturity date thereof. The owners of the Term Mode Bonds of a series must tender for purchase, and Metropolitan must purchase, all of the Term Mode Bonds of such series on the specified scheduled mandatory tender date of each term period for such series. The Term Mode Bonds outstanding as of May 1, 2020, are summarized in the following table:

Term Mode Bonds		
Series	Original Principal Amount Issued	Next Scheduled Mandatory Tender Date
2014 C-2 ⁽¹⁾	\$14,020,000	October 1, 2020
2014 C-3	2,810,000	October 1, 2021
2014 G-5 ⁽¹⁾	6,205,000	October 1, 2020
Total	\$23,035,000	

Source: Metropolitan.

⁽¹⁾ To be refunded by Metropolitan’s Water Revenue Refunding Bonds, 2020 Series C.

Metropolitan will pay the principal of, and interest on, the Term Mode Bonds on parity with its other Senior Revenue Bonds. Metropolitan anticipates that it will pay the purchase price of tendered Term Mode Bonds from the proceeds of remarketing such Term Mode Bonds or from other available funds. Metropolitan’s obligation to pay the purchase price of any tendered Term Mode Bonds is an unsecured, special limited obligation of Metropolitan payable from Net Operating Revenues. Purchase price payments of Term Mode Bonds are subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate Parity Obligations. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of Term Mode Bonds in connection with any scheduled mandatory tender. If the purchase price of the Term Mode Bonds of any series is not paid from the proceeds of remarketing or other funds following a scheduled mandatory tender, such Term Mode Bonds will then bear interest at a default rate of up to 12 percent per annum until purchased by Metropolitan or redeemed. Failure to pay the purchase price of a series of Term Mode Bonds on a scheduled mandatory tender date is a default under the related paying agent agreement, upon the occurrence and continuance of which a majority in aggregate principal amount of the owners of such series of Term Mode Bonds may elect a bondholders’ committee to exercise rights and powers of such owners under such paying agent agreement. Failure to pay the purchase price of a series of Term Mode Bonds on a scheduled mandatory tender date is not a default under the Senior Debt Resolutions. If the purchase price of the Term Mode Bonds of any series is not paid on a scheduled mandatory tender date, such Term Mode Bonds will also be subject to special mandatory redemption, in part, 18, 36 and 54 months following the purchase default. Any such special mandatory redemption payment will constitute an obligation payable on parity with the Senior Revenue Bonds and Senior Parity Obligations.

Build America Bonds

Metropolitan previously issued three Series of Bonds which it designated as “Build America Bonds” under the provisions of the American Recovery and Reinvestment Act of 2009 (the “Build America Bonds”), one Series of which, its Water Revenue Bonds, 2010 Authorization, Series A (the “2010 Build America Bonds”), remains outstanding in the aggregate principal amount of \$250.0 million. In connection with the semi-annual interest payments on its Build America Bonds at any time outstanding, Metropolitan was eligible to receive cash subsidies from the United States Treasury (the “Interest Subsidy Payments”) equal to 35 percent of the interest payable on all such outstanding Build America Bonds less any federal budget sequestration offsets (automatic, generally across-the-board, spending reductions) imposed pursuant to the federal Budget Control Act of 2011 (the “Budget Control Act”) at that time. For the federal fiscal year ended September 30, 2020, such Interest Subsidy Payments are reduced by the federal fiscal year 2020 sequestration rate of 5.9 percent. Interest Subsidy Payments received by Metropolitan in connection with Build America Bonds do not constitute Operating Revenues under the Senior Debt Resolutions or the Subordinate Debt Resolutions. Such Interest Subsidy Payments constitute Additional Revenues, which Metropolitan may take into consideration when establishing its rates and charges. The 2010 Build America Bonds are expected to be refunded in full and redeemed by Metropolitan with proceeds of its Water Revenue Refunding Bonds, 2020 Series C, which are expected to be delivered on or about July 1, 2020. Upon such refunding, Metropolitan will have no Build America Bonds remaining outstanding.

Senior Parity Obligations

Short-Term Revolving Credit Facility. In April 2016, Metropolitan entered into a noteholder’s agreement (such agreement as subsequently amended, the “RBC Short-Term Revolving Credit Facility”) with RBC Municipal Products, LLC (“RBC”) and a related note purchase agreement with RBC Capital Products, LLC, as the underwriter, for the issuance and sale by Metropolitan and the purchase by RBC of Metropolitan’s short-term Index Notes. Pursuant to the RBC Short-Term Revolving Credit Facility, Metropolitan may borrow, pay down and re-borrow amounts, through the issuance and sale from time to time of up to \$200 million of notes (including, subject to certain terms and conditions, notes to refund maturing notes) to be purchased by RBC during the term of RBC’s commitment thereunder (which commitment currently extends to April 5, 2022). As of May 1, 2020, Metropolitan had outstanding \$0 of short-term notes under the RBC Short-Term Revolving Credit Facility. Metropolitan expects to make a draw on the RBC Short-Term Revolving Credit Facility on or before July 1, 2020 and issue notes thereunder to provide temporary financing for the refunding of a portion of certain series of its outstanding Subordinate Revenue Bonds. Metropolitan expects to apply a portion of the proceeds of its Water Revenue Refunding Bonds, 2020 Series C, which are anticipated to be issued on or about July 1, 2020, to pay down all of the then outstanding notes under the RBC Short-Term Revolving Credit Facility. Any unpaid principal remaining outstanding at the April 5, 2022 commitment end date of the RBC Short-Term Revolving Credit Facility is required to be paid by Metropolitan in quarterly installments over a period of approximately one year.

Notes under the RBC Short-Term Revolving Credit Facility bear interest at a variable rate of interest: for taxable borrowings, at a spread of 0.54 percent (so long as the current credit rating on Metropolitan’s Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to the one-month LIBOR; and for tax-exempt borrowings, at a spread of 0.38 percent (so long as the current credit rating on Metropolitan’s Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to the SIFMA Municipal Swap Index. Under the RBC Short-Term Revolving Credit Facility, upon a failure by Metropolitan to pay principal or interest of any note thereunder, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including a reduction in the credit rating assigned to Senior Revenue Bonds issued under the Senior Debt Resolutions by Fitch, S&P or Moody’s below “A-” or “A3”), the bank has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days’ notice) Metropolitan’s obligation to repay its

borrowings. Metropolitan has secured its obligation to pay principal and interest on notes evidencing borrowings under the RBC Short-Term Credit Facility as Senior Parity Obligations.

In connection with the execution of the RBC Short-Term Revolving Credit Facility, Metropolitan designated the principal and interest payable on the notes thereunder as Excluded Principal Payments under the Senior Debt Resolutions and thus, for purposes of calculating Maximum Annual Debt Service, included the amount of principal and interest due and payable under the RBC Short-Term Revolving Credit Facility on a schedule of Assumed Debt Service. This schedule of Assumed Debt Service assumes that Metropolitan will pay the principal under the RBC Short-Term Revolving Credit Facility over a period of 30 years at a fixed interest rate of approximately 3.3 percent.

Metropolitan has previously, and may in the future, enter into one or more other or alternative short-term revolving credit facilities, the repayment obligations of Metropolitan under which may be secured as either Senior Parity Obligations or Subordinate Parity Obligations.

Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations

Subordinate Revenue Bonds

The water revenue bonds issued under the Subordinate Debt Resolutions outstanding as of May 1, 2020, are set forth below:

<u>Name of Issue</u>	<u>Principal Outstanding</u>
Subordinate Water Revenue Bonds, 2016 Authorization Series A ⁽¹⁾	\$ 175,000,000
Subordinate Water Revenue Refunding Bonds, 2017 Series A	238,015,000
Subordinate Water Revenue Refunding Bonds, 2017 Series B ⁽²⁾	178,220,000
Subordinate Water Revenue Bonds, 2017 Series C ⁽¹⁾	80,000,000
Subordinate Water Revenue Refunding Bonds, 2017 Series D ⁽¹⁾	95,630,000
Subordinate Water Revenue Refunding Bonds, 2017 Series E ⁽¹⁾	95,625,000
Subordinate Water Revenue Refunding Bonds, 2018 Series A	94,675,000
Subordinate Water Revenue Bonds, 2018 Series B	64,345,000
Subordinate Water Revenue Refunding Bonds, 2019 Series A	241,530,000
Subordinate Water Revenue Refunding Bonds, 2020 Series A	152,455,000
Total	\$1,415,495,000

Source: Metropolitan.

⁽¹⁾ Outstanding variable rate obligation.

⁽²⁾ A portion of the outstanding Subordinate Revenue Bonds of this Series will be refunded by notes to be issued on or before July 1, 2020 pursuant to a draw on Metropolitan's RBC Short-Term Revolving Credit Facility. See "–Outstanding Senior Revenue Bonds and Senior Parity Obligations –Senior Parity Obligations – Short-Term Revolving Credit Facility" above.

Variable Rate Bonds

As of May 1, 2020, of the \$1.42 billion outstanding Subordinate Revenue Bonds, \$446.3 million were variable rate obligations. The outstanding variable rate Subordinate Revenue Bonds (described under this caption "–Variable Rate Bonds") are all bonds bearing interest in a LIBOR Index Mode or a SIFMA Index Mode (referred to herein as "Index Tender Bonds"). Metropolitan also has outstanding \$46.8 million short-term notes issued as variable rate Subordinate Parity Obligations (described under "–Subordinate Parity Obligations – Subordinate Short-Term Certificates" below).

Direct Purchase LIBOR Index Mode Bonds. In December 2016, Metropolitan entered into a Continuing Covenant Agreement with Bank of America, N.A. ("BANA," and the "2016 BANA Agreement"), for the purchase by BANA and sale by Metropolitan of \$175 million Subordinate Water

Revenue Bonds, 2016 Authorization Series A (the “Subordinate 2016 Series A Bonds”), which was the first series of bonds issued under the Subordinate Debt Resolutions. Proceeds were used to reimburse Metropolitan for the purchase of the Delta Islands in the San Francisco Bay\Sacramento-San Joaquin River Delta that was funded from Metropolitan’s reserves in July 2016.

The Subordinate 2016 Series A Bonds bear interest at a variable rate of interest, at a spread of 0.32 percent (so long as the current credit rating on Metropolitan’s Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to one-month LIBOR. Under the 2016 BANA Agreement, upon a failure by Metropolitan to pay principal or interest of any Subordinate 2016 Series A Bonds, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below “BBB–,” or if any of Fitch, S&P or Moody’s shall have assigned a credit rating below “BBB” or “Baa2,” to Senior Revenue Bonds issued under the Senior Debt Resolutions), BANA has the right to accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days’ notice) Metropolitan’s obligation to repay the Subordinate 2016 Series A Bonds. Metropolitan has secured its obligation to pay principal and interest under the 2016 BANA Agreement as a Subordinate Parity Obligation. The Subordinate 2016 Series A Bonds are Index Tender Bonds and are subject to mandatory tender for purchase on the scheduled mandatory tender date of December 21, 2020, or, if directed by BANA upon the occurrence and continuance of an event of default under the 2016 BANA Agreement, five business days after receipt of such direction. On or before the scheduled mandatory tender date, Metropolitan may request an extension of the 2016 BANA Agreement for another tender period or may request BANA to purchase the Subordinate 2016 Series A Bonds in another interest rate mode, or Metropolitan may seek to remarket the Subordinate 2016 Series A Bonds to another bank or in the public debt markets. In the event the 2016 BANA Agreement is not extended, Metropolitan is obligated under the 2016 BANA Agreement to cause unremarketed Subordinate 2016 Series A Bonds to be redeemed five business days after the scheduled mandatory tender date in the event the purchase price of the Subordinate 2016 Series A Bonds is not paid from the proceeds of a remarketing or other funds on the scheduled mandatory tender date. A failure to pay the purchase price of the Subordinate 2016 Series A Bonds upon a mandatory tender would constitute a default under the Subordinate Debt Resolutions if not remedied within five business days.

SIFMA Index Mode Bonds. Metropolitan’s Subordinate Water Revenue Bonds, 2017 Series C, Subordinate Water Revenue Refunding Bonds, 2017 Series D and Subordinate Water Revenue Refunding Bonds, 2017 Series E (collectively, the “Subordinate 2017 Series C, D and E Bonds”) bear interest at a rate that fluctuates weekly based on the SIFMA Municipal Swap Index plus a spread. The Subordinate 2017 Series C, D and E Bonds are Index Tender Bonds and are subject to mandatory tender under certain circumstances, including on certain scheduled mandatory tender dates (unless earlier remarketed or otherwise retired). Metropolitan anticipates that it will pay the purchase price of tendered Subordinate 2017 Series C, D and E Bonds from the proceeds of remarketing such Index Tender Bonds or from other available funds. Metropolitan’s obligation to pay the purchase price of any such tendered Subordinate 2017 Series C, D and E Bonds is a special limited obligation of Metropolitan payable solely from Net Operating Revenues subordinate to the Senior Revenue Bonds and Senior Parity Obligations and on parity with the other outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of Subordinate 2017 Series C, D and E Bonds in connection with a scheduled mandatory tender. Failure to pay the purchase price of any Subordinate 2017 Series C, D and E Bonds on a scheduled mandatory tender date for such Index Tender Bonds for a period of five business days following written notice by any Owner of such Subordinate 2017 Series C, D and E Bonds will constitute an event of default under the Subordinate Debt Resolutions, upon the occurrence and continuance of which the owners of 25 percent in aggregate principal amount of the Subordinate Revenue Bonds then outstanding may elect a bondholders’ committee to exercise rights and powers of such owners under the Subordinate Debt Resolutions, including the right to declare the entire unpaid principal of the Subordinate Revenue Bonds then outstanding to be immediately due and payable.

The mandatory tender dates and related tender periods for the Index Tender Bonds outstanding as of May 1, 2020, are summarized in the following table:

Index Tender Bonds				
Series	Date of Issuance	Original Principal Amount Issued	Next Scheduled Mandatory Tender Date	Maturity Date
Subordinate 2016 Authorization Series A	December 21, 2016	\$175,000,000	December 21, 2020	July 1, 2045
Subordinate 2017 Series C	July 3, 2017	80,000,000	June 21, 2021	July 1, 2047
Subordinate 2017 Refunding Series D	July 3, 2017	95,630,000	June 21, 2021	July 1, 2037
Subordinate 2017 Refunding Series E	July 3, 2017	95,625,000	June 21, 2021	July 1, 2037
Total		\$446,255,000		

Source: Metropolitan.

Subordinate Parity Obligations

Subordinate Short-Term Certificates. In August 2019, Metropolitan entered into an amended and restated note purchase and continuing covenant agreement with BANA (the “Subordinate Refunding Note Purchase Agreement”) for the purchase by BANA and sale by Metropolitan of Metropolitan’s \$46.8 million principal amount of Short-Term Revenue Refunding Certificates, Series 2019 A (the “2019A Subordinate Short-Term Refunding Notes”). The \$46.8 principal amount of 2019A Subordinate Short-Term Refunding Notes issued by Metropolitan and purchased by BANA on August 1, 2019 refunded all of the outstanding notes previously issued by Metropolitan under a prior note purchase and continuing covenant agreement entered into in 2018 between Metropolitan and BANA. Such refunded notes were issued for the purpose of providing advance funding to support the California WaterFix as authorized by the Board on July 10, 2018. On May 2, 2019, DWR withdrew its approval of California WaterFix and announced plans to pursue a new planning and environmental review process for a single tunnel Bay-Delta conveyance project. See “METROPOLITAN’S WATER SUPPLY–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities; Delta Conveyance” in this Appendix A.

The 2019A Subordinate Short-Term Refunding Notes bear interest at a fluctuating per annum interest rate, equal to one-month LIBOR plus a spread of 0.32 percent (which spread is subject to increase on a scale based upon the then applicable credit ratings on Metropolitan’s Senior Revenue Bonds), not to exceed 18 percent per annum. The scheduled maturity date of the 2019A Subordinate Short-Term Refunding Notes is August 1, 2021.

Concurrently with the execution of the Subordinate Refunding Note Purchase Agreement, in August 2019, Metropolitan entered into an additional note purchase and continuing covenant agreement (the “2019 Subordinate Note Purchase Agreement”) with BANA for the purchase by BANA and sale by Metropolitan, from time to time, of Metropolitan’s Short-Term Revenue Certificates, Series 2019. Pursuant to the terms of the 2019 Subordinate Note Purchase Agreement, Metropolitan may borrow, through the issuance and sale from time to time of short-term notes (with maturity dates not exceeding one year from their delivery date), an aggregate principal amount not to exceed \$39.2 million (including, subject to certain terms and conditions, notes to refund maturing notes) to be purchased by BANA during the term of BANA’s commitment thereunder (the stated expiration date of which is July 30, 2021). As of May 1, 2020, Metropolitan had outstanding \$0 of Short-Term Revenue Certificates under the 2019 Subordinate Note Purchase Agreement.

Notes under the 2019 Subordinate Note Purchase Agreement bear interest at a fluctuating per annum interest rate: (i) for taxable borrowings, equal to one-month LIBOR plus a spread of 0.32 percent; and (ii) for tax-exempt borrowings, equal to 80 percent of one month LIBOR plus a spread of 0.20 percent; in each case,

which spread is subject to increase on a scale based upon the then applicable credit ratings on Metropolitan’s Senior Revenue Bonds. The per annum interest rate on notes under 2019 Subordinate Note Purchase Agreement shall not exceed 12 percent on notes issued for new money purposes and shall not exceed 18 percent on notes issued to refund maturing notes.

Metropolitan has secured its obligations to pay principal and interest under the Subordinate Refunding Note Purchase Agreement and the 2019 Subordinate Note Purchase Agreement as Subordinate Parity Obligations, payable from Net Operating Revenues on a basis junior and subordinate to Metropolitan’s Senior Revenue Bonds and Senior Parity Obligations and on parity with Metropolitan’s Subordinate Revenue Bonds.

Under each of Subordinate Refunding Note Purchase Agreement and the 2019 Subordinate Note Purchase Agreement, upon a failure by Metropolitan to pay principal or interest of any note thereunder, upon a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of bankruptcy or insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below “BBB–,” or if any of Fitch, S&P or Moody’s shall have assigned a credit rating below “BBB” or “Baa2,” to Metropolitan’s Senior Revenue Bonds), BANA has the right to terminate its commitments thereunder and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days’ notice) Metropolitan’s obligation to repay its borrowings. Upon the occurrence and during the continuation of an event of default under the Subordinate Refunding Note Purchase Agreement or the 2019 Subordinate Note Purchase Agreement, outstanding notes thereunder would bear interest at a default rate of 12 percent per annum.

Other Junior Obligations

Metropolitan currently is authorized to issue up to \$400,000,000 of Commercial Paper Notes payable from Net Operating Revenues on a basis subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate Parity Obligations. Although no Commercial Paper Notes are currently outstanding, the authorization remains in full force and effect and Metropolitan may issue Commercial Paper Notes from time to time.

General Obligation Bonds

As of May 1, 2020, \$48,050,000 aggregate principal amount of general obligation bonds payable from *ad valorem* property taxes were outstanding. See “METROPOLITAN REVENUES–General” and “–Revenue Allocation Policy and Tax Revenues” in this Appendix A. Metropolitan’s revenue bonds are not payable from the levy of *ad valorem* property taxes.

General Obligation Bonds	Amount Issued⁽¹⁾	Principal Outstanding
Waterworks General Obligation Refunding Bonds, 2010 Series A	\$ 39,485,000	\$18,735,000
Waterworks General Obligation Refunding Bonds, 2014 Series A	49,645,000	4,540,000
Waterworks General Obligation Refunding Bonds, 2019 Series A	<u>16,755,000</u>	<u>14,025,000</u>
Total	<u>\$105,885,000</u>	<u>\$37,300,000</u>

Source: Metropolitan.

⁽¹⁾ Voters authorized Metropolitan to issue \$850,000,000 of Waterworks General Obligation Bonds, Election 1966, in multiple series, in a special election held on June 7, 1966. This authorization has been fully utilized. This table lists bonds that refunded such Waterworks General Obligation Bonds, Election 1966.

State Water Contract Obligations

General. As described herein, in 1960, Metropolitan entered into its State Water Contract with DWR to receive water from the State Water Project. All expenditures for capital and operations, maintenance, power and replacement costs associated with the State Water Project facilities used for water delivery are

paid for by the 29 Contractors that have executed State water supply contracts with DWR, including Metropolitan. Contractors are obligated to pay allocable portions of the cost of construction of the system and ongoing operating and maintenance costs through at least 2035, regardless of quantities of water available from the project. Other payments are based on deliveries requested and actual deliveries received, costs of power required for actual deliveries of water, and offsets for credits received. In exchange, Contractors have the right to participate in the system, with an entitlement to water service from the State Water Project and the right to use the portion of the State Water Project conveyance system necessary to deliver water to them at no additional cost as long as capacity exists. Metropolitan's State Water Contract accounts for nearly one-half of the total entitlement for State Water Project water contracted for by all Contractors.

DWR and other State Water Contractors, including Metropolitan, have reached an Agreement in Principle to extend their State water supply contracts to 2085 and to make certain changes related to the financial management of the State Water Project in the future. See "METROPOLITAN'S WATER SUPPLY—State Water Project" in this Appendix A.

Metropolitan's payment obligation for the State Water Project for the fiscal year ended June 30, 2019 was \$482.2 million, which amount reflects prior year's credits of \$32.2 million. For the fiscal year ended June 30, 2019, Metropolitan's payment obligations under the State Water Contract were approximately 32 percent of Metropolitan's total annual expenses. A portion of Metropolitan's annual property tax levy is for payment of State Water Contract obligations, as described above under "METROPOLITAN REVENUES—Revenue Allocation Policy and Tax Revenues" in this Appendix A. Any deficiency between tax levy receipts and Metropolitan's State Water Contract obligations is expected to be paid from Operating Revenues, as defined in the Senior Debt Resolutions. See Note 9(a) to Metropolitan's audited financial statements in Appendix B for an estimate of Metropolitan's payment obligations under the State Water Contract. See also "—Power Sources and Costs; Related Long-Term Commitments" for a description of current and future costs for electric power required to operate State Water Project pumping systems and a description of litigation involving the federal relicensing of the Hyatt-Thermalito hydroelectric generating facilities at Lake Oroville.

Metropolitan capitalizes its share of the State Water Project capital costs as participation rights in State Water Project facilities as such costs are billed by DWR. Unamortized participation rights essentially represent a prepayment for future water deliveries through the State Water Project system. Metropolitan's share of system operating and maintenance costs are annually expensed.

DWR and various subsets of the State Water Contractors have entered into amendments to the State water supply contracts related to the financing of certain State Water Project facilities. The amendments establish procedures to provide for the payment of construction costs financed by DWR bonds by establishing separate subcategories of charges to produce the revenues required to pay all of the annual financing costs (including coverage on the allocable bonds) relating to the financed project. If any affected Contractor defaults on payment under certain of such amendments, the shortfall may be collected from the non-defaulting affected Contractors, subject to certain limitations.

These amendments represent additional long-term obligations of Metropolitan, as described below.

Devil Canyon-Castaic Contract. On June 23, 1972, Metropolitan and five other Southern California public agencies entered into a contract (the "Devil Canyon-Castaic Contract") with DWR for the financing and construction of the Devil Canyon and Castaic power recovery facilities, located on the aqueduct system of the State Water Project. Under this contract, DWR agreed to build the Devil Canyon and Castaic facilities, using the proceeds of revenue bonds issued by DWR under the State Central Valley Project Act. DWR also agreed to use and apply the power made available by the construction and operation of such facilities to deliver water to Metropolitan and the other contracting agencies. Metropolitan, in turn, agreed to pay to

DWR 88 percent of the debt service on the revenue bonds issued by DWR. For calendar year 2019, this represented a payment of \$7.8 million. In addition, Metropolitan agreed to pay 78.5 percent of the operation and maintenance expenses of the Devil Canyon facilities and 96 percent of the operation and maintenance expenses of the Castaic facilities. Metropolitan's obligations under the Devil Canyon-Castaic Contract continue until the bonds are fully retired in 2022 even if DWR is unable to operate the facilities or deliver power from these facilities.

Off-Aqueduct Power Facilities. In addition to system "on-aqueduct" power facilities costs, DWR has, either on its own or by joint venture, financed certain off-aqueduct power facilities. The power generated is utilized by the system for water transportation and other State Water Project purposes. Power generated in excess of system needs is marketed to various utilities and the California Independent System Operator ("CAISO"). Metropolitan is entitled to a proportionate share of the revenues resulting from sales of excess power. By virtue of a 1982 amendment to the State Water Contract and the other water supply contracts, Metropolitan and the other water Contractors are responsible for paying the capital and operating costs of the off-aqueduct power facilities regardless of the amount of power generated.

East Branch Enlargement Amendment. In 1986, Metropolitan's State Water Contract and the water supply contracts of certain other State Water Contractors were amended for the purpose, among others, of financing the enlargement of the East Branch of the California Aqueduct. Under the amendment, enlargement of the East Branch can be initiated either at Metropolitan's request or by DWR finding that enlargement is needed to meet demands. Metropolitan, the other State Water Contractors on the East Branch, and DWR are currently in discussions on the timetable and plan for future East Branch enlargement actions.

The amendment establishes a separate subcategory of the Transportation Charge under the State Water Contract for the East Branch Enlargement and provides for the payment of costs associated with financing and operating the East Branch Enlargement. Under the amendment, the annual financing costs for such facilities financed by bonds issued by DWR are allocated among the participating Contractors based upon the delivery capacity increase allocable to each participating Contractor. Such costs include, but are not limited to, debt service, including coverage requirements, deposits to reserves, and certain operation and maintenance expenses, less any credits, interest earnings or other moneys received by DWR in connection with this facility.

If any participating Contractor defaults on payment of its allocable charges under the amendment, among other things, the non-defaulting participating Contractors may assume responsibility for such charges and receive delivery capability that would otherwise be available to the defaulting participating Contractor in proportion to the non-defaulting Contractor's participation in the East Branch Enlargement. If participating Contractors fail to cure the default, Metropolitan will, in exchange for the delivery capability that would otherwise be available to the defaulting participating Contractor, assume responsibility for the capital charges of the defaulting participating Contractor.

Water System Revenue Bond Amendment. In 1987, the State Water Contract and other water supply contracts were amended for the purpose of financing State Water Project facilities through revenue bonds. This amendment establishes a separate subcategory of the Delta Water Charge and the Transportation Charge under the State water supply contracts for projects financed with DWR water system revenue bonds. This subcategory of charge provides the revenues required to pay the annual financing costs of the bonds and consists of two elements. The first element is an annual charge for repayment of capital costs of certain revenue bond financed water system facilities under the existing water supply contract procedures. The second element is a water system revenue bond surcharge to pay the difference between the total annual charges under the first element and the annual financing costs, including coverage and reserves, of DWR's water system revenue bonds.

If any Contractor defaults on payment of its allocable charges under this amendment, DWR is required to allocate a portion of the default to each of the nondefaulting Contractors, subject to certain limitations, including a provision that no nondefaulting Contractor may be charged more than 125 percent of the amount of its annual payment in the absence of any such default. Under certain circumstances, the nondefaulting Contractors would be entitled to receive an allocation of the water supply of the defaulting Contractor.

The following table sets forth Metropolitan’s projected costs of State Water Project water based upon DWR’s Appendix B to Bulletin 132-19 (an annual report produced by DWR setting forth data and computations used by the State in determining State Water Contractors’ Statements of Charges), Metropolitan’s share of the forecasted costs associated with the planning of a single tunnel Bay-Delta conveyance project (see “METROPOLITAN’S WATER SUPPLY–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities; Delta Conveyance”), and power costs forecasted by Metropolitan. The projections reflect Metropolitan’s biennial budget for fiscal years 2020-21 and 2021-22, which includes a ten-year financial forecast. See also “HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A. The projections reflect certain assumptions concerning future events and circumstances which may not occur or materialize. Actual costs may vary from these projections if such events and circumstances do not occur as expected or materialize, and such variances may be material.

**PROJECTED COSTS OF METROPOLITAN
FOR STATE WATER CONTRACT AND DELTA CONVEYANCE
(Dollars in Millions)**

Year Ending June 30	Capital Costs⁽¹⁾	Minimum OMP&R⁽¹⁾	Power Costs⁽²⁾	Refunds & Credits⁽¹⁾	Delta Conveyance⁽³⁾	Total⁽⁴⁾
2020	\$180.4	\$233.7	\$221.1	\$(32.1)	\$13.0	\$616.1
2021	198.2	272.2	207.2	(61.8)	25.0	640.8
2022	211.9	275.2	212.4	(70.1)	25.0	654.4
2023	189.4	283.9	212.2	(63.5)	50.0	672.0
2024	209.9	294.9	212.5	(64.0)	--	653.3

Source: Metropolitan.

- (1) Capital Costs, Minimum Operations, Maintenance, Power and Replacement (“OMP&R”) and Refunds and Credits projections are based on DWR’s Appendix B to Bulletin 132-19. Capital costs reflect DWR’s October 2019 capital expenditures projections based upon its condition assessment review of State Water Project repair and replacement needs.
- (2) Power costs are forecasted by Metropolitan based on a 50 percent State Water Project allocation. Availability of State Water Project supplies vary and deliveries may include transfers and storage. All deliveries are based upon availability, as determined by hydrology, water quality and wildlife conditions. See “METROPOLITAN’S WATER SUPPLY–State Water Project” and “–Endangered Species Act and Other Environmental Considerations” in this Appendix A.
- (3) Based on Metropolitan’s share of the forecasted planning costs for a single tunnel project. Does not include any capital costs associated with any future proposed Bay-Delta conveyance project.
- (4) Totals may not add due to rounding.

Power Sources and Costs; Related Long-Term Commitments

Current and future costs for electric power required for operating the pumping systems of the CRA and the State Water Project are a substantial part of Metropolitan’s overall expenses. Metropolitan’s power costs include various ongoing fixed annual obligations under its contracts with the U.S. Department of Energy Western Area Power Administration and the Bureau of Reclamation for power from the Hoover and Parker Power Plants respectively. Expenses for electric power for the CRA for the fiscal years 2017-18 and 2018-19 were approximately \$29.1 million and \$39.2 million, respectively. Expenses for electric power and transmission service for the State Water Project for fiscal years 2017-18 and 2018-19 were approximately

\$156.5 million and \$131.1 million, respectively. Electricity markets are subject to volatility and Metropolitan is unable to give any assurance with respect to the magnitude of future power costs.

Colorado River Aqueduct. Approximately 50 percent of the annual power requirements for pumping at full capacity (1.25 million acre-feet of Colorado River water) in Metropolitan's CRA are secured through long-term contracts for energy generated from federal facilities located on the Colorado River (Hoover Power Plant and Parker Power Plant). Payments made under the Hoover Power Plant and Parker Power Plant contracts are operation and maintenance expenses. These contracts provide Metropolitan with reliable and economical power resources to pump Colorado River water to Metropolitan's service area.

As provided for under the Hoover Power Allocation Act of 2011 (H.R. 470), Metropolitan has executed a 50-year agreement with the Western Area Power Administration for the continued purchase of electric energy generated at the Hoover Power Plant through September 2067, succeeding Metropolitan's prior Hoover contract that expired on September 30, 2017.

Depending on pumping conditions, Metropolitan can require additional energy in excess of the base resources available to Metropolitan from the Hoover and Parker Power Plants. The remaining up to approximately 50 percent of annual pumping power requirements for full capacity pumping on the CRA is obtained through energy purchases from municipal and investor-owned utilities, third party suppliers, or the CAISO markets. Metropolitan is a member of the Western Systems Power Pool ("WSPP") and utilizes its industry standard form contract to make wholesale power purchases at market cost.

Gross diversions of water from Lake Havasu for fiscal years 2017-18 and 2018-19 were approximately 786,000 acre-feet and 798,000 acre-feet, respectively, including Metropolitan's basic apportionment of Colorado River water and supplies from water transfer and storage programs. In fiscal years 2017-18 and 2018-19, Metropolitan purchased approximately 94,000 and 395,000 megawatt-hours, respectively, of additional energy.

Prior to its expiration on September 30, 2017, Metropolitan was party to a 30-year Service and Interchange Agreement with Southern California Edison ("Edison"), which included provisions for the sharing between Metropolitan and Edison of the benefits realized by the integrated operation of Edison's and Metropolitan's electric systems. Under this agreement Edison also provided Metropolitan with varying amounts of additional energy (benefit energy) for CRA pumping. Metropolitan power purchases have replaced benefit energy and the additional costs have been reflected in the CRA power cost projections for fiscal year 2019-20 and the ten-year financial forecast.

To replace the services previously provided by Edison under the Service and Interchange Agreement, Metropolitan has negotiated new agreements with several parties. In particular, Metropolitan has agreements with the Arizona Electric Power Cooperative ("AEPSCO") to provide transmission and energy purchasing services to support CRA power operations. The term of these agreements extends to December 31, 2035.

State Water Project. The State Water Project's power requirements are met from a diverse mix of resources, including State-owned hydroelectric generating facilities. DWR has a long-term contract with Metropolitan (hydropower), and short-term contracts with Metropolitan (hydropower), Kern River Conservation District (hydropower), Northern California Power Agency (natural gas generation), Wells Fargo Company (Solar), Dominion Solar Holdings (Solar), and S-Power Corporation (Solar). The remainder of the State Water Project power needs is met by purchases from the California Independent System Operator.

DWR is seeking renewal of the license issued by FERC for the State Water Project's Hyatt-Thermalito hydroelectric generating facilities at Lake Oroville. A Settlement Agreement containing

recommended conditions for the new license was submitted to FERC in March 2006. That agreement was signed by over 50 stakeholders, including Metropolitan and other State Water Contractors. With only a few minor modifications, FERC staff recommended that the Settlement Agreement be adopted as the condition for the new license. DWR issued a final EIR for the relicensing project on July 22, 2008. On August 21, 2008, Butte County and Plumas County filed separate lawsuits against DWR challenging the adequacy of the final EIR. This lawsuit also named all of the signatories to the Settlement Agreement, including Metropolitan, as “real parties in interest,” since they could be adversely affected by this litigation. On May 16, 2012, the trial court found that the EIR prepared in conjunction with the relicensing was adequate and dismissed the lawsuit against DWR. On August 7, 2012, Butte and Plumas Counties filed a notice of appeal. Briefing on the appeal was completed in May 2013. Supplemental briefing was completed in the fall of 2016. Oral argument was held on September 24, 2018. Regulatory permits and authorizations are also required before the new license can take effect. In December 2016, NMFS issued a biological opinion setting forth the terms and conditions under which the relicensing project must operate in order to avoid adverse impacts to threatened and endangered species. This was the last major regulatory requirement prior to FERC issuing a new license. Following the 2017 Oroville Dam spillway incident, Butte County, the City of Oroville, and others requested that FERC not issue a new license until an Independent Forensic Team (“IFT”) delivered their final report to FERC and FERC has had adequate time to review the report. The Final IFT report was delivered on January 5, 2018. DWR submitted a plan to address the findings of the report to FERC on March 12, 2018. See “METROPOLITAN’S WATER SUPPLY–State Water Project –2017 Oroville Dam Spillway Incident.” Metropolitan anticipates that FERC will issue the new license; however, the timeframe for FERC approval is not currently known. However, FERC has issued one-year renewals of the existing license since its initial expiration date on January 31, 2007 and is expected to issue successive one-year renewals until a new license is obtained.

DWR receives transmission service from the CAISO. The transmission service providers participating in the CAISO may seek increased transmission rates, subject to the approval of FERC. DWR has the right to contest any such proposed increase. DWR may also be subject to increases in the cost of transmission service as new electric grid facilities are constructed.

On September 10, 2018, Governor Brown signed SB 100 into law, which took effect on January 1, 2019. SB 100 establishes a goal of providing 100 percent carbon-free electricity by 2045 and increases the 2030 Renewables Portfolio Standard (“RPS”) requirement for retail electric utilities from 50 percent to 60 percent. Simultaneously, the Governor announced Executive Order B-55-18 directing state agencies to develop a framework to achieve and maintain carbon neutrality by 2045. Metropolitan and DWR are not subject to the RPS requirements. However, as a state agency, DWR is subject to the Executive Order. DWR has an existing climate action plan in order to achieve carbon neutrality by 2045.

October 9, 2019, Governor Newsom signed SB 49 into law. SB 49 requires Natural Resources, in collaboration with the Energy Commission and the Department of Water Resources to assess by January 1, 2022 the opportunities and constraints for potential operational and structural upgrades to the State Water Project to aid California in achieving its climate and energy goals, and to provide associated recommendations consistent with California’s energy goals.

Defined Benefit Pension Plan and Other Post-Employment Benefits

Metropolitan is a member of the California Public Employees’ Retirement System (“PERS”), a multiple-employer pension system that provides a contributory defined-benefit pension for substantially all Metropolitan employees. PERS provides retirement and disability benefits, annual cost-of-living adjustments and death benefits to plan members and beneficiaries. PERS acts as a common investment and administrative agent for participating public entities within the State. PERS is a contributory plan deriving funds from employee contributions as well as from employer contributions and earnings from investments. A menu of

benefit provisions is established by State statutes within the Public Employees' Retirement Law. Metropolitan selects optional benefit provisions from the benefit menu by contract with PERS.

Metropolitan makes contributions to PERS based on actuarially determined employer contribution rates. The actuarial methods and assumptions used are those adopted by the PERS Board of Administration ("PERS Board"). Employees hired prior to January 1, 2013 are required to contribute 7.00 percent of their earnings (excluding overtime pay) to PERS. Pursuant to the current memoranda of understanding, Metropolitan contributes the requisite 7.00 percent contribution for all employees represented by the Management and Professional Employees Association, the Association of Confidential Employees, Supervisors and Professional Personnel Association and AFSCME Local 1902 and who were hired prior to January 1, 2012. Employees in all four bargaining units who were hired on or after January 1, 2012 but before January 1, 2013, pay the full 7.00 percent contribution to PERS for the first five years of employment. After the employee completes five years of employment, Metropolitan contributes the requisite 7.00 percent contribution. Metropolitan also contributes the entire 7.00 percent on behalf of unrepresented employees. Employees hired on or after January 1, 2013 and who are "new" PERS members as defined by Public Employees' Pension Reform Act of 2013 pay a member contribution of 6.00 percent in fiscal years 2018-19 through 2019-20 and 7.25 percent in fiscal year 2020-21. In addition, Metropolitan is required to contribute the actuarially determined remaining amounts necessary to fund the benefits for its members.

The contribution requirements of the plan members are established by State statute and the employer contribution rate is established and may be amended by PERS. The fiscal year 2018-19 contribution was based on the June 30, 2016 valuation report, the fiscal year 2019-20 contribution is based on the June 30, 2017 valuation report, and the fiscal year 2020-21 contribution is based on the June 30, 2018 valuation report. For fiscal year 2018-19, the PERS' projected investment return (the discount rate) was 7.375 percent. The discount rate established by PERS for fiscal year 2019-20 is 7.25 percent and will be 7.00 percent for fiscal year 2020-21.

For fiscal year 2018-19, Metropolitan was required to contribute 25.97 percent of annual projected payroll. Metropolitan's actual contribution for fiscal year 2018-19 was \$68.3 million or 32.14 percent of annual covered payroll, of which \$11.8 million or 5.56 percent was for Metropolitan's pick-up of the employees' 7.00 percent share. For fiscal years 2019-20 and 2020-21, Metropolitan is required to contribute 29.97 percent and 32.43 percent, respectively, of annual projected payroll, in addition to member contributions paid by Metropolitan.

Metropolitan's required contributions to PERS fluctuate each year and include a normal cost component and a component equal to an amortized amount of the unfunded liability. Many assumptions are used to estimate the ultimate liability of pensions and the contributions that will be required to meet those obligations. The PERS Board has adjusted and may in the future further adjust certain assumptions used in the PERS actuarial valuations, which may increase Metropolitan's required contributions to PERS in future years. Accordingly, Metropolitan cannot provide any assurances that its required contributions to PERS in future years will not significantly increase (or otherwise vary) from any past or current projected levels of contributions.

As part of the June 30, 2014 actuarial valuation, the PERS Board adopted changes in demographic assumptions. The most significant of these was the improvement in post-retirement mortality acknowledging greater life expectancies and expected continued improvements. On December 21, 2016, the PERS Board approved lowering the discount rate to 7.00 percent over a three-year period. PERS has estimated that with a reduction in the rate of return to 7.00 percent, most employers could expect a rate increase of 1.00 percent to 3.00 percent of normal cost as a percent of payroll for miscellaneous plans and an increase in payments toward unfunded accrued liabilities of between 30 to 40 percent. As a result, required contributions of employers, including Metropolitan, are expected to increase.

Beginning with fiscal year 2017-18 PERS began collecting employer contributions towards the plan’s unfunded liability as dollar amounts instead of the prior method of contribution rate. This change addresses potential funding issues that could arise from a declining payroll or reduction in the number of active members in the plan.

On December 19, 2017, the PERS Board adopted new actuarial assumptions based on the recommendations in the December 2017 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases and inflation assumption for public agencies. These new assumptions were incorporated in the June 30, 2017 actuarial valuation and reflected in the required contribution for fiscal year 2019-20. In addition, the Board adopted a new asset portfolio as part of its Asset Liability Management. The new asset mix supports a 7.00 percent discount rate. The reduction of the inflation assumption will be implemented in two steps in conjunction with the decreases in the discount rate. For the June 30, 2017 valuation an inflation rate of 2.625 percent was used and for the June 30, 2018 and subsequent valuations, an inflation rate of 2.50 percent was/will be used.

The PERS Board has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the five-year ramp-up and ramp-down on unfunded accrued liability bases attributable to assumption changes and non-investment gains/losses. The new policy removes the five-year ramp-down on investment gains/losses. These changes will apply only to new unfunded accrued liability bases established on or after June 30, 2019.

The following table shows the funding progress of Metropolitan’s pension plan.

Valuation Date	Accrued Liability (\$ in billions)	Market Value of Assets (\$ in billions)	Unfunded Accrued Liability (\$ in billions)	Funded Ratio
6/30/18 ⁽¹⁾	\$2.433	\$1.744	\$(0.689)	71.7%
6/30/17	\$2.269	\$1.651	\$(0.618)	72.7%
6/30/16	\$2.166	\$1.524	\$(0.642)	70.3%
6/30/15	\$2.060	\$1.556	\$(0.504)	75.5%
6/30/14	\$1.983	\$1.560	\$(0.423)	78.7%
6/30/13	\$1.805	\$1.356	\$(0.449)	75.1%

⁽¹⁾ Most recent actuarial valuation available.

Source: California Public Employees’ Retirement System.

The market value of assets reflected above is based upon the most recent actuarial valuation as of June 30, 2018. The actuarial valuation as of June 30, 2019 is not expected to be available before summer 2020. In light of recent declines in the stock markets in the U.S. and globally, such market value is expected to have declined significantly since that time. See also “INTRODUCTION–COVID-19 Pandemic.” The June 30, 2020 valuation report will be used to establish the contribution requirements for fiscal year 2022-23, and it is not possible to predict where the market will be as of that date given the recent extraordinary market

conditions. Significant losses in market value or failure to achieve projected investment returns could substantially increase unfunded pension liabilities and future pension costs. However, as noted above, under the amortization policy adopted by PERS, changes in the unfunded accrued liability due to actuarial gains or losses are amortized over a fixed 20-year period with a five-year ramp up at the beginning and a five-year ramp down at the end of the amortization period, as a result of which the immediate fiscal impact of any one year's negative return on Metropolitan's contribution rates is reduced.

Effective July 1, 2014, Metropolitan implemented Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27* (GASB 68), affecting the reporting of pension liabilities for accounting purposes. Under GASB 68, Metropolitan is required to report the Net Pension Liability (*i.e.*, the difference between the Total Pension Liability and the Pension Plan's Net Position or market value of assets) in its financial statements.

For Metropolitan's fiscal year ended June 30, 2019 financial statements, the Net Pension Liability reported for the Miscellaneous Plan was \$634.0 million (a decrease of \$26.9 million over the prior year), representing a Total Pension Liability as of such date of \$2,376.7 million (an increase of \$61.5 million over the prior year) less the Plan Fiduciary Net Position as of such date of \$1,742.7 million (an increase of \$88.4 million over the prior year). For fiscal year 2018-19, the Miscellaneous Plan Net Pension Liability as a percentage of covered-employee payroll was 309.84 percent and the Plan Net Position as a percentage of the Total Pension Liability was 73.32 percent. The Net Pension Liability for Metropolitan's Miscellaneous Plan for the fiscal year ended June 30, 2019 was measured as of June 30, 2018, and the Total Pension Liability used to calculate the Net Pension Liability was determined by an annual actuarial valuation as of June 30, 2017.

For Metropolitan's fiscal year ended June 30, 2018 financial statements, the Net Pension Liability reported for the Miscellaneous Plan was \$660.9 million (an increase of \$73.3 million over the prior year), representing a Total Pension Liability as of such date of \$2,315.2 million (an increase of \$200.2 million over the prior year) less the Plan Fiduciary Net Position as of such date of \$1,654.3 million (an increase of \$126.9 million over the prior year). For fiscal year 2017-18, the Miscellaneous Plan Net Pension Liability as a percentage of covered-employee payroll was 331.81 percent and the Plan Net Position as a percentage of the Total Pension Liability was 71.45 percent. The Net Pension Liability for Metropolitan's Miscellaneous Plan for the fiscal year ended June 30, 2018 was measured as of June 30, 2017, and the Total Pension Liability used to calculate the Net Pension Liability was determined by an annual actuarial valuation as of June 30, 2016.

For more information on the plan, see APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2019 AND JUNE 30, 2018 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2020 AND 2019 (UNAUDITED)."

Metropolitan currently provides post-employment medical insurance to retirees and pays the post-employment medical insurance premiums to PERS. On January 1, 2012, Metropolitan implemented a longer vesting schedule for retiree medical benefits, which applies to all new employees hired on or after January 1, 2012. Payments for this benefit were \$30.1 million in fiscal year 2017-18 and \$27.3 million in fiscal year 2018-19. Under Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, Metropolitan is required to account for and report the outstanding obligations and commitments related to such benefits, commonly referred to as other post-employment benefits ("OPEB"), on an accrual basis.

The actuarial valuation dated June 30, 2017, was released in March of 2018. The next OPEB actuarial report will be as of June 30, 2019 and is expected to be completed in late spring or early summer of

2020. The 2017 valuation indicated that the Actuarially Determined Contribution (“ADC” formerly referred to as the Annual Required Contribution) in fiscal year 2018-19 was \$27.3 million and that the ADC will be \$28.1 million and \$29.0 million in fiscal years 2019-20 and 2020-21, respectively. The ADC was based on the entry-age normal actuarial cost method with contributions determined as a level percent of pay. The actuarial assumptions included the following:

	June 30, 2017 Valuation
Investment Rate of Return	6.75%
Inflation	2.75%
Salary Increases	3.00%
Health Care Cost Trends	Medicare – starting at 6.5%, grading down to 4.0% over fifty-seven years. Non-Medicare – starting at 7.5%, grading down to 4.0% over fifty-seven years.
Mortality, Termination, Disability	CalPERS 1997-2011 Experience Study Mortality projected fully generational with Scale MP-2017
Affordable Care Act (ACA) Excise Tax	2% load on retiree medical premium subsidy

As of June 30, 2017, the date of the most recent OPEB actuarial report, the unfunded actuarial accrued liability was estimated to be \$235.5 million and projected to be \$226.1 million at June 30, 2018. The amortization period for the unfunded actuarial accrued liability is 23 years closed with 19 years remaining as of fiscal year end 2018 and the amortization period of actuarial gains and losses is 15 years closed. Adjustments to the ADC include amortization of the unfunded actuarial accrued liability and actuarial gains and losses.

In September 2013, Metropolitan’s Board established an irrevocable OPEB trust fund with the California Employers’ Retiree Benefit Trust Fund. The market value of assets in the trust as of June 30, 2019 was \$266.9 million. As part of its biennial budget process, the Board approved the full funding of the ADC for fiscal years 2018-19 and 2019-20.

As noted above, the COVID-19 pandemic and related economic consequences have disrupted financial markets and resulted in significant stock market declines. Declines in the market value of the OPEB trust fund or failure to achieve projected investment returns could negatively affect the funding status of the trust fund and increase ADCs in the future. See also “INTRODUCTION–COVID-19 Pandemic.”

As of the fiscal year ended June 30, 2018, Metropolitan implemented Governmental Accounting Standards Board Statement No. 75, Accounting and Financial Reporting of Postemployment Benefits Other than Pensions, which resulted in the inclusion of Net OPEB liabilities and OPEB related deferred outflows and inflows on Metropolitan’s Statements of Net Position. In addition, \$128.9 million of beginning net position for 2018 was restated to record beginning deferred OPEB contributions and Net OPEB liability.

For Metropolitan’s fiscal year ended June 30, 2019 financial statements, the Net OPEB Liability reported was \$228.3 million (a decrease of \$12.2 million over the prior year), representing a Total OPEB

Liability as of such date of \$468.2 million (an increase of \$20.1 million over the prior year) less the Plan Fiduciary Net Position as of such date of \$239.9 million (an increase of \$32.3 million over the prior year). For fiscal year 2018-19, the Net OPEB Liability as a percentage of covered-employee payroll was 11.58 percent and the Plan Net Position as a percentage of the Total OPEB Liability was 51.23 percent. The Net OPEB Liability for the year ended June 30, 2019 was measured as of June 30, 2018, and the Total OPEB Liability used to calculate the Net OPEB Liability was determined by an annual actuarial valuation as of June 30, 2017.

For Metropolitan's fiscal year ended June 30, 2018 financial statements, the Net OPEB Liability reported for the Miscellaneous Plan was \$240.6 million (a decrease of \$15.4 million over the prior year), representing a Total OPEB Liability as of such date of \$448.1 million (an increase of \$19.4 million over the prior year) less the Plan Fiduciary Net Position as of such date of \$207.5 million (an increase of \$34.8 million over the prior year). For fiscal year 2018, the Net OPEB Liability as a percentage of covered-employee payroll was 120.78 percent and the Plan Net Position as a percentage of the Total OPEB Liability was 46.31 percent. The Net OPEB Liability for Metropolitan's Miscellaneous Plan for the year ended June 30, 2018 was measured as of June 30, 2017, and the Total OPEB Liability used to calculate the Net OPEB Liability was determined by an annual actuarial valuation as of June 30, 2017.

HISTORICAL AND PROJECTED REVENUES AND EXPENSES

The "Historical and Projected Revenues and Expenses" table below provides a summary of revenues and expenses of Metropolitan prepared on a modified accrual basis. This is consistent with the biennial budget for fiscal years 2020-21 and 2021-22, which includes a ten-year financial forecast. The table does not reflect the accrual basis of accounting, which is used to prepare Metropolitan's annual audited financial statements. The modified accrual basis of accounting varies from the accrual basis of accounting in the following respects: depreciation and amortization are not recorded and payments for debt service and pay-as-you-go construction are recorded when paid. Under the modified accrual basis of accounting, revenues are recognized in the fiscal year in which they are earned, and expenses are recognized when incurred. Thus water revenues are recognized in the month the water transaction occurs and expenses are recognized when goods have been received and services have been rendered. The change to modified accrual accounting is for budgeting purposes and Metropolitan will continue to calculate compliance with its rate covenant, limitations on additional bonds and other financial covenants in the Revenue Bond Resolutions in accordance with their terms.

The projections are based on assumptions concerning future events and circumstances that may impact revenues and expenses and represent management's best estimates of results at this time. See the footnotes to the table below entitled "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" for relevant assumptions, including projected water transactions and the average annual increase in the effective water rate, and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" for a discussion of potential impacts. Some assumptions inevitably will not materialize, and unanticipated events and circumstances may occur. Therefore, the actual results achieved during the projection period will vary from the projections and the variations may be material. The budget and projection information, and all other forward-looking statements in this Appendix A, are based on current expectations and are not intended as representations of facts or guarantees of future results.

The COVID-19 outbreak is a significant new development that is currently materially adversely affecting global, national, State, and local economic activity and prospects. Because of the unprecedented nature of the COVID-19 pandemic, historical data may not be an accurate predictor of future performance. Accordingly, any trends that may be suggested by historical data, information for fiscal year 2019-20 results through March 2020 and budgets or projections described herein which pre-date the onset of the COVID-19

emergency or do not include information regarding its impact should be considered in light of a possible or probable negative impact of COVID-19. Moreover, the COVID-19 pandemic is ongoing and possible future impacts involve many developing and unknown outcomes, several of which are identified in the discussion included under “INTRODUCTION- COVID-19 Pandemic.”

As discussed under “INTRODUCTION–COVID-19 Pandemic,” Metropolitan modified certain assumptions made in its preliminary biennial budget as initially presented to the Board in February 2020 following the onset of the COVID-19 outbreak to consider certain then-anticipated effects of COVID 19, primarily potential effects on the regional economy, financial impacts to member agencies and impacts on construction schedules and timing of capital expenditures. The biennial budget for fiscal years 2020-21 and 2021-22, and water rates and charges for calendar years 2021 and 2022 as adopted by the Board on April 14, 2020, reflect these adjustments. In recognition of the changed circumstances and the ongoing uncertainties related to COVID-19 (including those referenced above), as part of its approval of the biennial budget for fiscal years 2020-21 and 2021-22, Metropolitan’s Board action includes a review of the adopted budget and rates no later than September 2020 to consider further impacts resulting from the COVID-19 crisis.

As noted herein, the financial projection for fiscal year 2019-20 reflects revised projections based on results through March 2020, and the financial projections for fiscal years 2020-21 through 2024-25 reflect the biennial budget for fiscal years 2020-21 and 2021-22 and ten-year financial forecast provided therein. The financial projections include Metropolitan’s share of the forecasted costs associated with the planning of a single tunnel Bay-Delta conveyance project. See “METROPOLITAN’S WATER SUPPLY–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities; Delta Conveyance” in this Appendix A.

Metropolitan’s resource planning projections are developed using a comprehensive analytical process that incorporates demographic growth projections from recognized regional planning entities, historical and projected data acquired through coordination with local agencies, and the use of generally accepted empirical and analytical methodologies. See “METROPOLITAN’S WATER SUPPLY–Integrated Water Resources Plan” in this Appendix A. Due to the variability of supplemental wholesale water transactions and unpredictability of future hydrologic conditions, projections of the volume of annual water transactions are based on projections in Metropolitan’s latest Board adopted Integrated Resources Plan, the 2015 IRP Update and recently recalibrated by Metropolitan’s Water Resource Management for the biennial budget for fiscal years 2020-21 and 2021-22 and ten-year financial forecast provided therein.

Nevertheless, Metropolitan’s assumptions have been questioned by directors representing SDCWA on Metropolitan’s Board. Metropolitan has reviewed SDCWA’s concerns and, while recognizing that assumptions may vary, believes that the estimates and assumptions that support Metropolitan’s projections are reasonable based upon history, experience and other factors as described herein.

Metropolitan’s projections of the level of water transactions are the result of a comprehensive retail demand, conservation, and local supply estimation process, including supply projections from member agencies and other water providers within Metropolitan’s service area. Retail demands for water are estimated with a model driven by projections of relevant demographics provided by SCAG and SANDAG. Retail demands are adjusted downward for conservation savings and local supplies, with the remainder being the estimated demand for Metropolitan supplies. Conservation savings estimates include all conservation programs in place to date as well as estimates of future conservation program goals outlined in the 2015 IRP Update. See “CONSERVATION AND WATER SHORTAGE MEASURES” in this Appendix A. Local supplies include water produced by local agencies from various sources including but not limited to groundwater, surface water, locally-owned imported supplies, recycled water, and seawater desalination (see “REGIONAL WATER RESOURCES” in this Appendix A). For example, water transactions projections for fiscal year 2019-20 assumed that local projects such as groundwater recovery and desalination projects (see “REGIONAL WATER RESOURCES–Local Water Supplies” in this Appendix A) would become

operational and produce local supplies in 2019. For additional description of Metropolitan’s water transactions projections, see “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.

The water transactions projections used to determine water rates and charges assume an average year hydrology. Actual water transactions are likely to vary from projections. As shown in the chart entitled “Historical Water Transactions” below, transactions can vary significantly from average and demonstrates the degree to which Metropolitan’s commitments to meet supplemental demands can impact transactions. In years when actual transactions exceed projections, the revenues from water transactions during the fiscal year will exceed budget, potentially resulting in an increase in financial reserves. In years when actual transactions are less than projections, Metropolitan uses various tools to manage reductions in revenues, such as reducing expenses below budgeted levels, reducing funding of capital from revenues, and drawing on reserves. See “METROPOLITAN REVENUES–Financial Reserve Policy” in this Appendix A. Metropolitan considers actual transactions, revenues and expenses, and financial reserve balances in setting rates for future fiscal years.

Projections in the following table reflect revised projections for fiscal year 2019-20 based on results through March 2020. Financial projections for fiscal years 2020-21 through 2024-25 reflect the biennial budget for fiscal year 2020-21 and 2021-22 and ten-year financial forecast provided therein. This includes the issuance of \$510 million of bonds for fiscal years 2020-21 through 2024-25 to finance the CIP. See “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” and “CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing” in this Appendix A.

Water transactions were 1.42 million acre-feet in fiscal year 2018-19. Water transactions are projected to be 1.48 million acre-feet for fiscal year 2019-20, 1.60 million acre-feet for fiscal years 2020-21 through 2022-23, 1.64 million acre-feet for fiscal year 2023-24, and 1.69 million acre-feet for fiscal year 2024-25. Rates and charges will increase by 3.0 percent on January 1, 2021 and by 4.0 percent on January 1, 2022. Rates and charges are projected to increase 5.0 percent for each of calendar years 2023 and 2024, and 4.0 percent for calendar year 2025. Actual rates and charges to be effective in 2023 and thereafter are subject to adoption by Metropolitan’s Board.

The projections were prepared by Metropolitan and have not been reviewed by independent certified public accountants or any entity other than Metropolitan. Dollar amounts are rounded.

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HISTORICAL AND PROJECTED REVENUES AND EXPENSES^(a)
Fiscal Years Ended June 30
(Dollars in Millions)

	Actual			Projected					
	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Revenues ^(b)	\$1,151	\$1,285	\$1,149	\$1,238	\$1,429	\$1,476	\$1,542	\$1,667	\$1,793
Additional Revenue Sources ^(c)	184	172	170	165	168	175	183	189	202
Total Operating Revenues	1,335	1,457	1,319	1,403	1,597	1,651	1,725	1,856	1,995
O&M, CRA Power and Water Transfer Costs ^(d)	(559)	(568)	(569)	(654)	(726)	(750)	(796)	(847)	(877)
Total SWC OMP&R and Power Costs ^(e)	(368)	(395)	(347)	(382)	(504)	(513)	(546)	(507)	(529)
Total Operation and Maintenance	(927)	(963)	(916)	(1,036)	(1,230)	(1,263)	(1,342)	(1,354)	(1,406)
Net Operating Revenues	\$ 408	\$ 494	\$ 403	\$ 367	\$ 367	\$ 388	\$ 383	\$ 502	\$ 589
Miscellaneous Revenue ^(f)	18	27	22	17	25	26	27	27	28
Transfer from Reserve Funds ^(g)	33	1	--	--	--	--	--	--	--
Sales of Hydroelectric Power ^(h)	21	24	18	19	21	22	23	14	14
Interest on Investments ⁽ⁱ⁾	4	8	34	18	18	18	18	18	19
Adjusted Net Operating Revenues ^(j)	484	554	477	421	431	454	451	561	650
Senior and Subordinate Obligations ^(k)	(308)	(340)	(333)	(272)	(291)	(298)	(306)	(323)	(320)
Funds Available from Operations	\$ 176	\$ 214	\$ 144	\$ 149	\$ 140	\$ 156	\$ 145	\$ 238	\$ 330
Debt Service Coverage on all Senior and Subordinate Bonds ^(l)	1.57	1.63	1.43	1.55	1.48	1.52	1.47	1.74	2.03
Funds Available from Operations	\$ 176	\$ 214	\$ 144	\$ 149	\$ 140	\$ 156	\$ 145	\$ 238	\$ 330
Other Revenues (Expenses)	(4)	(5)	(6)	(7)	(8)	(7)	(7)	(8)	(8)
Pay-As-You Go Construction	(132)	(98)	(128)	(30)	(110)	(135)	(180)	(180)	(210)
Pay-As-You Go Funded from Replacement & Refurbishment Fund Reserves	1	1	--	--	--	--	--	--	--
Total SWC Capital Costs Paid from Current Year Operations	(45)	(21)	(4)	(6)	(4)	(10)	12	(8)	(24)
Remaining Funds Available from Operations	(4)	91	6	106	18	4	(30)	42	88
Fixed Charge Coverage ^(m)	1.37	1.53	1.42	1.51	1.46	1.47	1.53	1.69	1.89
Property Taxes	116	131	145	143	140	140	140	140	140
General Obligation Bonds Debt Service	(22)	(20)	(14)	(13)	(7)	(8)	(2)	(2)	(2)
SWC Capital Costs Paid from Taxes	(94)	(111)	(131)	(130)	(133)	(132)	(138)	(138)	(138)
Net Funds Available from Current Year	\$ (4)	\$ 91	\$ 6	\$ 106	\$ 18	\$ 4	\$ (30)	\$ 42	\$ 88

Source: Metropolitan.

(Footnotes on next page)

(Footnotes to table on prior page)

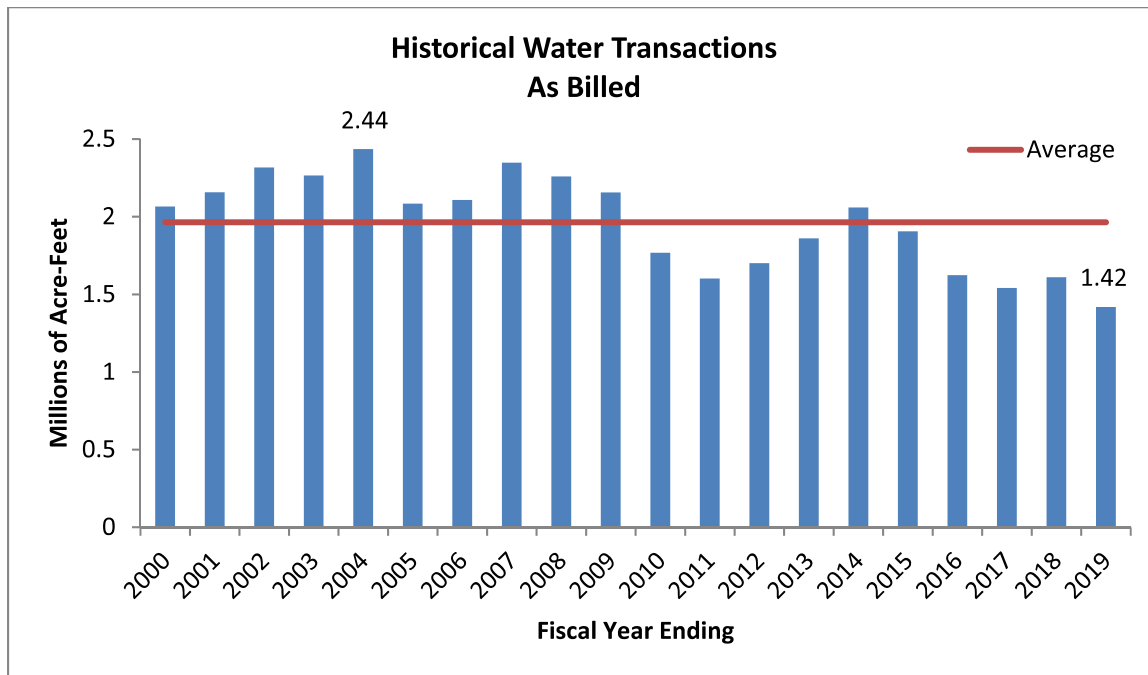
- (a) Unaudited. Prepared on a modified accrual basis. Projected revenues and expenses in fiscal year 2019-20 are based on results through March 2020 and revised from the projections provided in the adopted biennial budget for fiscal years 2018-19 and 2019-20. Projections for fiscal year 2020-21 through fiscal year 2024-25 are based on assumptions and estimates used in the biennial budget for fiscal years 2020-21 and 2021-22 and ten-year financial forecast provided therein, and reflect the projected issuance of additional bonds. See “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.
- (b) Water Revenues include revenues from water sales, exchanges, and wheeling. During the fiscal years ended June 30, 2017 through June 30, 2019, annual water transactions (in acre-feet) were 1.54 million, 1.61 million, and 1.42 million, respectively. See the table entitled “Summary of Water Transactions and Revenues” under “METROPOLITAN REVENUES—Water Revenues” in this Appendix A. The water transactions projections (in acre-feet) are 1.48 million acre-feet for fiscal year 2019-20, 1.60 million acre-feet for fiscal years 2020-21 through 2022-23, 1.64 million acre-feet for fiscal year 2023-24, and 1.69 million acre-feet for fiscal year 2024-25. Projections reflect adopted overall rate and charge increases of 3.0 percent effective on January 1, 2021 and 4.0 percent effective on January 1, 2022. Rates and charges are projected to increase an average of 5.0 percent in each of calendar years 2023 and 2024, and an average of 4.0 percent for calendar year 2025, subject to adoption by Metropolitan’s Board. See “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.
- (c) Includes revenues from water standby, readiness-to-serve, and capacity charges. The term Operating Revenues excludes *ad valorem* taxes. See “METROPOLITAN REVENUES—Other Charges” in this Appendix A.
- (d) Water Transfer Costs and Regional Recycled Water Program planning costs (described under “REGIONAL WATER RESOURCES—Local Water Supplies – Recycled Water-Metropolitan Regional Recycled Water Program”) are included in operation and maintenance expenses for purposes of calculating the debt service coverage on all Obligations.
- (e) Includes on- and off-aqueduct power and operation, maintenance, power and replacement costs payable under the State Water Contract and Bay-Delta conveyance planning costs. See “METROPOLITAN EXPENSES—State Water Contract Obligations” in this Appendix A. See also “METROPOLITAN’S WATER SUPPLY—State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities; Delta Conveyance” in this Appendix A.
- (f) May include lease and rental net proceeds, net proceeds from sale of surplus property, reimbursements, and federal interest subsidy payments for Build America Bonds.
- (g) Reflects transfers from the Water Management Fund, the Water Stewardship Fund, and the Water Rate Stabilization Fund, of \$33 million in fiscal year 2016-17, and \$1 million in fiscal year 2017-18, to fund a like amount of costs for conservation and supply programs. See “MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.
- (h) Includes CRA power sales.
- (i) Does not include interest applicable to Bond Construction Funds, the Excess Earnings Funds, other trust funds and the Deferred Compensation Trust Fund.
- (j) Adjusted Net Operating Revenues is the sum of all available revenues that the revenue bond resolutions specify may be considered by Metropolitan in setting rates and issuing additional Senior Revenue Bonds and Senior Parity Obligations and Subordinate Revenue Bonds and Subordinate Parity Obligations.
- (k) Includes debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds, Subordinate Parity Obligations, and additional Revenue Bonds (projected). Includes refinancing of \$100 million Senior Lien Note and issuance of \$170 million in additional Revenue Bonds for fiscal year 2019-20 (which has occurred). Assumes issuance of approximately \$100 million in additional Revenue Bonds in fiscal years 2020-21, approximately \$90 million in each of fiscal years 2021-22 and 2024-25 and approximately \$120 million in each of fiscal years 2022-23 and 2023-24 as provided in budget assumptions for the biennial budget for fiscal years 2020-21 and 2021-22 and ten-year financial forecast provided therein. Fiscal year 2017-18 debt service increased by \$15.3 million for debt service prepaid through bond refunding transactions in June 2018, rather than on July 1, 2018 and fiscal year 2018-19 debt service is therefore reduced by \$15.3 million. Fiscal year 2018-19 debt service increased by \$28.5 million for debt service prepaid in June 2019, rather than on July 1, 2019 and fiscal year 2019-20 debt service is therefore reduced by \$28.5 million. See “CAPITAL INVESTMENT PLAN—Capital Investment Plan Financing” in this Appendix A.
- (l) Adjusted Net Operating Revenues, divided by the sum of debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds and Subordinate Parity Obligations, including the subordinate lien California Safe Drinking Water Revolving Fund Loan (prior to its discharge in 2017) and projected Revenue Bonds. See “METROPOLITAN EXPENSES—Outstanding Senior Revenue Bonds and Senior Parity Obligations” and “—Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations” in this Appendix A.
- (m) Adjusted Net Operating Revenues, divided by the sum of State Water Contract capital costs paid from current year operations and debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds and Subordinate Parity Obligations, including the subordinate lien California Safe Drinking Water Revolving Fund Loan (prior to its discharge in 2017) and additional Revenue Bonds (projected).

MANAGEMENT’S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES

Water Transactions Projections

The water transactions in the table above for fiscal year 2018-19 were 1.42 million acre-feet. The water transactions forecast is 1.48 million acre-feet for fiscal years 2019-20, 1.60 million acre-feet for fiscal years 2020-21 through 2022-23, 1.64 million acre-feet for fiscal year 2023-24, and 1.69 million acre-feet for fiscal year 2024-25, consistent with the biennial budget and ten-year financial forecast. For purposes of comparison, Metropolitan’s highest level of water transactions during the past 20 fiscal years was

approximately 2.44 million acre-feet in fiscal year 2003-04 and the lowest was 1.42 million acre-feet in fiscal year 2018-19. The chart below shows the volume of water transactions over the last 20 fiscal years.



Water Revenues

Metropolitan relies on revenues from water transactions for about 75 percent of its total revenues. In adopting the budget and rates and charges for each fiscal year, Metropolitan’s Board reviews the anticipated revenue requirements and projected water transactions to determine the rates necessary to produce the required revenues to be derived from water transactions during the fiscal year. Metropolitan sets rates and charges estimated to provide operating revenues sufficient, with other sources of funds, to provide for payment of its expenses. See “HISTORICAL AND PROJECTED REVENUES AND EXPENSES” in this Appendix A.

Metropolitan’s Board has adopted annual increases in water rates each year beginning with the rates effective January 1, 2004. See “METROPOLITAN REVENUES—Rate Structure” and “—Classes of Water Service” in this Appendix A. On April 14, 2020, the Board adopted average increases in rate and charges of 3.0 percent, to become effective on January 1, 2021, and 4.0 percent, to become effective on January 1, 2022. Rates and charges are projected to increase 5.0 percent for each of calendar years 2023 and 2024, and 4.0 percent for calendar year 2025. Actual rates and charges to be effective in 2023 and thereafter are subject to adoption by Metropolitan’s Board.

Projected Fiscal Year 2019-20 Results

Projections for fiscal year 2019-20, in the table above, are revised from the projections adopted in the fiscal year 2018-19 and 2019-20 biennial budget and based on results through March 2020. Financial projections for fiscal years 2020-21 through 2024-25 are reflected in the fiscal year 2020-21 and 2021-22 biennial budget and ten-year financial forecast provided therein. The fiscal year 2020-21 and 2021-22 biennial budget and rates set the stage for predictable and reasonable rate increases over the ten-year planning period, with Board adopted overall rate increases of 3.0 percent for calendar year 2021 and 4.0 percent for calendar year 2022. The fiscal year 2020-21 and 2021-22 biennial budget and ten-year financial forecast includes rate increases of 5.0 percent for each of calendar years 2023 and 2024, and 4.0 percent for calendar year 2025. Actual rates and charges to be effective in 2023 and thereafter are subject

to adoption by Metropolitan's Board as part of the biennial budget process, at which point the ten-year forecast will be updated as well. Increases in rates and charges reflect the impact of reduced water transactions projections, increasing operations and maintenance costs, and increasing State Water Project costs, when compared to prior fiscal years.

Operation and maintenance expenses in fiscal year 2019-20 are projected to be \$1,036 million, which represents approximately 69.6 percent of total costs. These expenses include the costs of labor, electrical power, materials and supplies of both Metropolitan and its contractual share of the State Water Project. Metropolitan's operation and maintenance expenses are projected to be \$116 million under budget in fiscal year 2019-20. Comparatively, operations and maintenance expenses in fiscal year 2018-19 were \$916 million, which represents approximately 60.3 percent of total costs. Overall, projected expenses for the twelve months ending June 30, 2020 are \$1.5 billion. This is \$255 million, or 14.6 percent, less than budgeted expenses.

Fiscal year 2019-20 revenue bond debt service coverage is projected to be 1.55x and fixed charge coverage to be 1.51x. Fiscal year 2019-20 capital expenditures, currently estimated at \$300.8 million, will be primarily funded by the proceeds of bonds (approximately \$270 million) issued for Fiscal Year 2019-20 for such purpose or to refinance notes issued for such purpose and the remainder from pay-as-you-go funding. Metropolitan's unrestricted reserves are projected to be approximately \$487 million at June 30, 2020. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A. This amount does not include funds held in the Exchange Agreement Set-Aside Fund.

As discussed under "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" and noted above, projections for fiscal year 2019-20 are based on results through March 2020, which reflect limited data with respect to the impacts of the COVID-19 pandemic. Metropolitan's biennial budget for fiscal years 2020-21 and 2021-22, adopted by the Board on April 14, 2020, and the financial projections for fiscal years 2020-21 through 2024-25 included in the ten-year financial forecast provided therein, reflect adjustments made to the underlying assumptions to consider certain then-identified potential effects of the COVID-19 outbreak. Metropolitan is continuing to monitor the pandemic but is not yet able to fully predict the effect it will have on Metropolitan's financial performance or operations. Metropolitan's financial results, including potentially for fiscal year 2019-20, as well as subsequent fiscal years during the fiscal years 2020-21 through 2024-25 projection period are likely to be impacted by subsequent developments relating to the COVID-19 pandemic and its consequences. Metropolitan's Board action on April 14, 2020 to adopt the biennial budget for fiscal years 2020-21 and 2021-22, and water rates and charges for calendar years 2021 and 2022, includes a review of the adopted budget and rates no later than September 2020 to consider further impacts resulting from the COVID-19 crisis.

See also the "Management's Discussion and Analysis" contained in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2019 AND JUNE 30, 2018 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2020 AND 2019 (UNAUDITED)."

Appendix G

Water Supply Assessment Checklist

Water Supply Assessment Checklist

Water Code Section	Water Supply Assessment Content	Page # in WSA
10910(c)(2)	Incorporate data from UWMP.	1-35
10910(d)(1)	Identification of existing water supply entitlements, water rights, or water service contracts relevant to identified water supply for proposed project, and description of quantity of water received in prior years.	18-35
10910(d)(2)(A)	Written contracts or other proof of entitlement to an identified water supply.	18-35
10910(d)(2)(B)	Capital outlay program for financing the delivery of a water supply that has been adopted.	35
10910(d)(2)(C)	Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.	12-35
10910(d)(2)(D)	Any necessary regulatory approval to deliver/convey the water supply.	12-35
10910(f)(1)	Review of any information contained in the UWMP relevant to the identified water supply for the proposed project.	1-35
10910(f)(2)	Description of any groundwater basin(s) from which proposed project will be supplied. For basins with adjudicated groundwater pumping rights, include a copy of the order/decree adopted by the court or the board and a description of quantity of groundwater public water system has the legal right to pump under the order/decree.	18-20, 23-26 Appendix D
10910(f)(3)	Description and analysis of amount and location of groundwater pumped for the past 5 years from any groundwater basin from which the proposed project will be supplied.	23-26
10910(f)(4)	Description and analysis of amount and location of groundwater that is projected to be pumped from any basin to provided water to the proposed project.	18-20, 23-26
10910(f)(5)	Analysis of sufficiency of groundwater from the basins from which the proposed project will be supplied to meet projected water demand of the proposed project.	18-20, 23-26