Attachment J

Title 24 Efficiency Report

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"63 Years Serving the Architectural and Development Communities"

Energy and Water Efficiency Compliance Report

HELLMAN & LOBER
CONSULTING MECHANICAL ENGINEERS

To: City of Los Angeles Department of City Planning

From: Hellman & Lober, Inc.

Date: July 20, 2022

Subject: CEQA Exemption (8) Energy and Water Efficiency Compliance for 12727 Washington Boulevard, Culver City CA

A. EXECUTIVE SUMMARY

The purpose of this memo is to describe how the proposed mixed used building located in 12727 Washington Blvd will meet the 21155.1 CEQA exemption for transit priority project subsection (a) (8) requirement for energy and water efficiency. The proposed building consists 6-story mixed used project with 144 residential units and 21,000 SF of retail space and 2,200 SF amenity. The building also includes two underground parking and an ADA parking in the first floor level.

The Subsection (a) (8) requirement:

The buildings in the transit priority project are 15 percent more energy efficient than required by Chapter 6 of Title 24 of the California Code of Regulations and the buildings and landscaping are designed to achieve 25 percent less water usage than the average household use in the region.

The energy and water efficiency compliance strategies are separately described below.

- **Energy Use. 17.4% better than allowed by Title 24, Part 6 2019**
- **Water Use. 27.4% below the MWD baseline**

B. ENERGY EFFICIENCY

Regulatory Framework

Subsection (a) (8) requires that a project be 15 percent more energy efficient than required by Title 24, Part 6, the California Energy Code *(note:* it's officially *Part* 6 of the California Code of Regulations, not *Chapter* 6 as it's titled in the CEQA language).

Title 24 is updated, typically every three years. Title 24 2019 has been approved and took effect January 1, 2020. Projects will need to comply under the Title 24 version in effect when filing a building permit application.Title 24, Part 6 provides two compliance paths:

1. The *Prescriptive Path,* under which projects must implement a specified list of strategies.

2. The *Performance Path,* under which projects use California Energy Commission- approved energy modeling software to demonstrate that projects meet the required level of energy performance (typically stated in kBTUs/square foot/year). Under the Performance Path, project teams can utilize any energy efficiency strategy as long as the required energy performance level is met.

To enable the Building Official to readily confirm compliance with the Subsection (a) (8) requirement of 15 percent more efficient than Title 24, Part 6, the project must use the Performance Path.

C. ENERGY MODELLING PROCESS

Preliminary whole building energy modeling was conducted to determine the anticipated Title 24 energy code performance. The following sections provide greater detail into the energy modeling process, the necessary design measures, and the resulting performance.

The preliminary energy modeling was done using Energypro Version 8.3 an approved software by the California Energy Commission for Title 24 compliance. Because a full compliance model requires a level of detail and design complexity not yet available for this project, we utilized the software in non-compliance mode to generate proposed and Title 24 baseline models to compare energy performance of the current design concepts.

Figure 1: Rendering South Façade - Washington Blvd.

Figure 2: Rendering South Façade – Zanja St.

Figure 3: Rendering East Corner South Façade.

1. Energy Model Input

The energy model considers the following characteristics of the Project: Site and Climate

The project is located in 12727 Washington Blvd. Culver City, CA

- Latitude / Longitude : 34.’ N / 118.4’ W
- Climate Zone : CA Zone 8
- Weather File : HAWTHORNE-NORTHROP-FLD_722956 CZ2010.epw
- Summer Design DB/WB : 88 deg. F/ 69 deg. F
- Winter Median of Extremes : 35 deg. F

2. Energy Efficiency Measures

The energy efficiency measures used in the design and analysis of the project are summarized in this section. The measures are organized into categories (building envelope, lighting, HVAC, domestic water heating and renewables).

Building Envelope

1. Wood-framed exterior walls with R-21 batt insulation: This

high density insulation provides a greater R-value which improves insulation and, hence, reduces heating and cooling energy use.

2. Wood-framed roofs with R-38 batt insulation: The thickness of the proposed insulation also increases the R-value, reducing heating and cooling energy use.
3. Overhanging balconies for solar shading: Projecting balconies provide shading for windows that keep solar heat out, which reduces cooling energy use. Another benefit is reduced glare, which makes the space more comfortable.
4. High-performance windows with dual-paned low-emissivity glazing: Dual-paned windows provide additional insulation over single-paned windows, while high performance, low-emissivity coatings help to let in mostly visible light while blocking unwanted wavelengths that let in heat without light. These combined effects reduce cooling energy during the summer and heating during the winter.

Lighting

1. Optimized façade to capitalize on natural daylight first: Optimizing the façade is a means of balancing the amount of glazing. Windows let in natural daylight, which allows electric lights to be turned off, but they also bring in additional heating and cooling when compared to an insulated wall. The result is a building that provides ample daylighting while not being excessive, decreasing overall lighting, heating and cooling energy use.
2. High-efficacy, LED lamp types for common areas: High-efficacy LED fixtures provide more lumens (light output) per watt (electric input) than other lamps like fluorescent or incandescent.
3. Daylighting controls for all indoor, nonresidential spaces: Also known as “daylight harvesting,” these controls sense the amount of natural daylight entering a space to automatically dim the electric lights, saving energy while maintaining light levels.
4. Occupancy controls with dimming for most common area lighting: Occupancy controls sense when spaces are vacant for a period of time and automatically turn off lights, saving energy as compared to leaving them on.

HVAC System

1. High-efficiency 19 SEER split system heat pumps for heating, ventilating and air-conditioning (HVAC) serving the residential units. Split system heat pumps have one outdoor unit connected to one indoor fan coil unit (FCU). Seasonal energy efficiency ratio (SEER) represents the “average” efficiency of HVAC equipment. By increasing this value over typical code-minimum efficiencies, the equipment consumes less electricity to provide heating and cooling. Providing individual systems for each apartment allows the system to be powered from the tenant’s electric meter, which tends to encourage more responsible use and lower energy consumption.
2. The public areas have been provided with VRF Heat Recovery units which is more efficient than standard split heat pump.

Domestic Water Heating

1. Centralized, condensing hot water system: Centralized water heating systems are larger and use more efficient equipment than individual heating within the units. Condensing systems offer higher efficiencies (”95%) as compared with non-condensing units (”80%). They have recirculation controls to keep water in the lines hot and reduce wasted water. They also make it easier to integrate into renewable energy systems like solar hot water.
2. High-efficiency water fixtures: Using more efficient fixtures inherently uses less hot water, which reduces energy used for water heating (also saving potable water). This is not considered in the energy model, but is certainly an added sustainability measure.

Energy Model Results

Energy modeling resulted in a preliminary design that anticipates using

17.4% better than Title 24-2019 energy code requirements. Refer to the table and figure below to see additional details about the result by each energy end-use at this stage. See APPENDIX A for additional information.

C1. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ²-yr)			
COMPLIES			
Energy Component	**Standard Design (TDV)**	**Proposed Design (TDV)**	**Compliance Margin (TDV)[1]**
Space Heating	2.74	1.66	1.08
Space Cooling	26.29	21.30	4.99
Indoor Fans	16.09	12.53	3.56
Heat Rejection	1.07	--	1.07
Pumps & Misc.	2.66	--	2.66
Domestic Hot Water	17.16	16.25	0.91
Indoor Lighting	16.10	16.10	--
ENERGY STANDARDS COMPLIANCE TOTAL	**82.11**	**67.84**	**14.27 (17.4%)**
[1] Notes: The number in parenthesis following the Compliance Margin in column 4. represents the Percent Better than Standard.			

Disclaimer

Estimates of cost or energy savings represent HLI's professional opinion. Energy savings and costs may be affected by factors outside of HLI control and HLI does not guarantee or represent that the actual cost or energy consumption will not vary from any such estimates.

The modeling approach taken does not guarantee compliance with code or that all credits submitted will be achieved. It will be a collaborative effort to ensure that the project as a whole achieves its energy related goals. All savings and cost estimates in the report are for informational purposes and are not to be construed as a design document or as guarantees.

APPENDIX A: ENERGY MODEL INPUTS

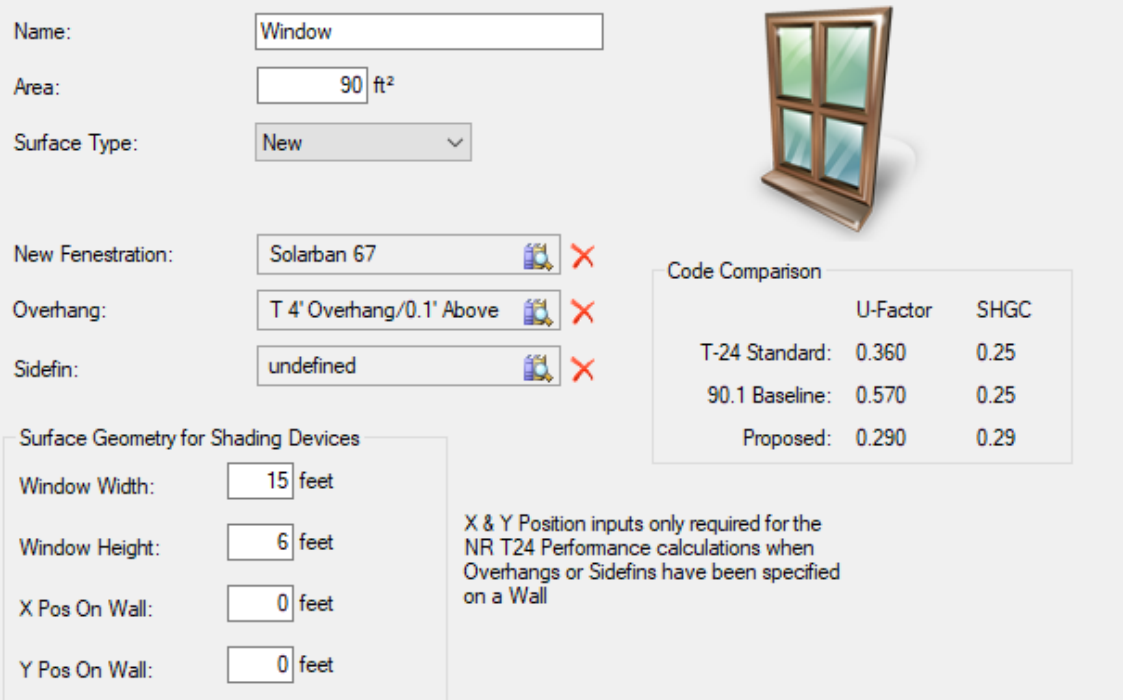
This section provides information on the detailed information that was specified in the energy models. The tables include:

- Characteristics of Fenestration — Describes the window framing and glazing properties used for the proposed design as well as for the Title 24 Standard building model.
- Characteristics of Opaque Constructions — Describes the roof, wall and floor construction types for the proposed design as well as for the Title 24 Standard building model.

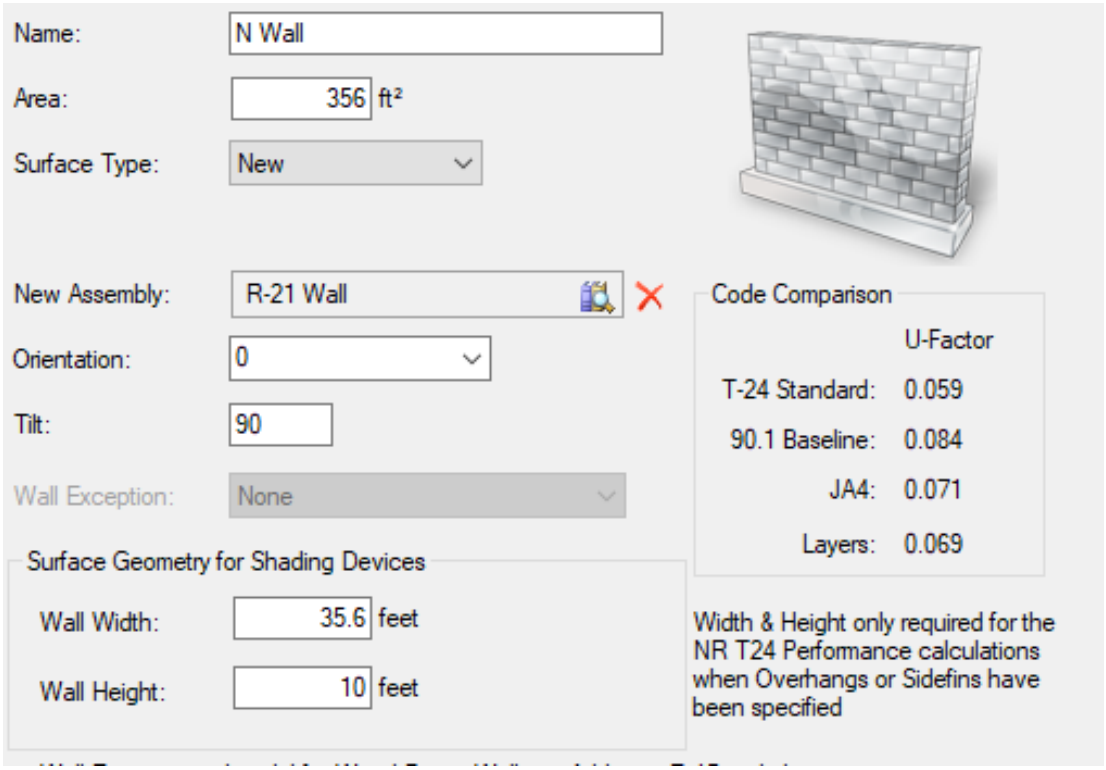
- Characteristics of HVAC and DHW Systems — Describes the heating, ventilation and air-conditioning (HVAC) and domestic hot water (DHW) systems in the proposed design model as well as for the Title 24 Standard building model.

Each table lists both the characteristics of the proposed design and that of the Title 24 Standard building so that they can be compared against one another. For example, the proposed roof has a better U-factor than the Title 24 model, which means the proposed roof will provide more insulating value and, hence, lower heat loss in the winter and heat gain in the summer.

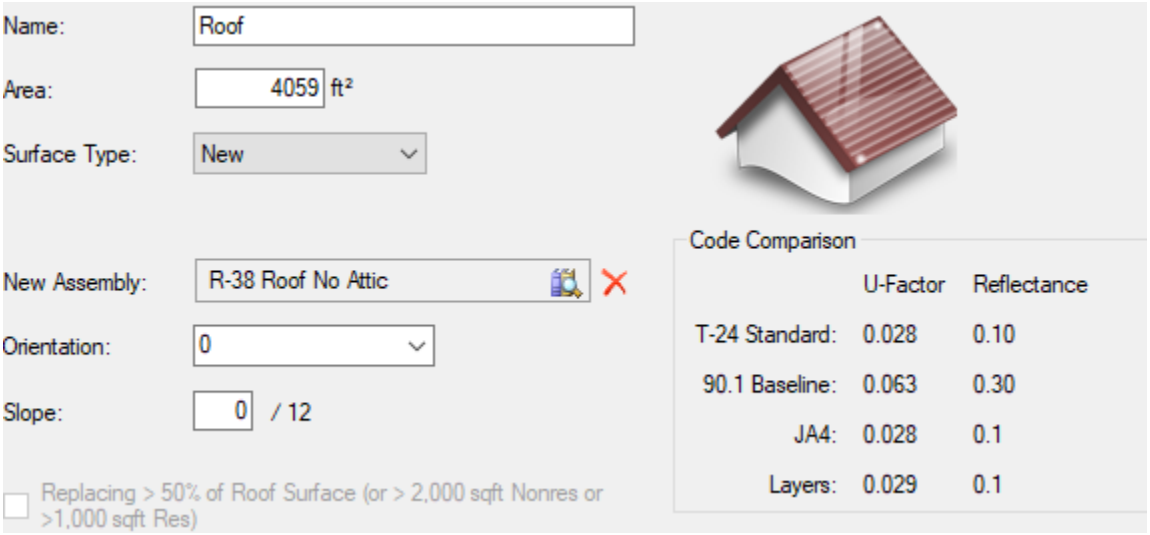
- FENESTRATION: Dual Pane Low-E



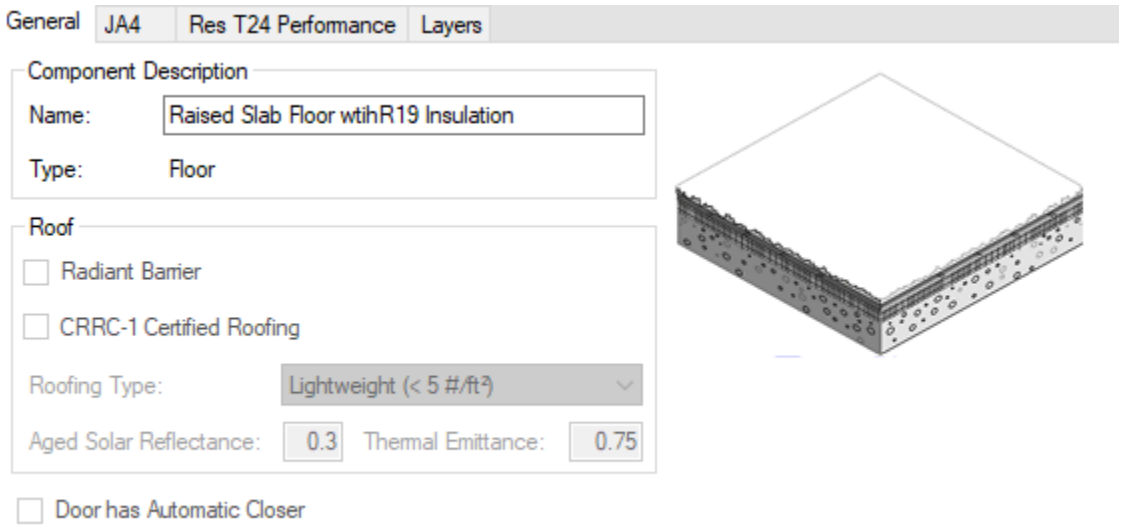
- WALL: Wood Framed with R21 Batt Insulation



- ROOF: Wood Framed with R38 Batt Insulation



- RAISED FLOOR: Concrete Slab with R19 Insulation



D. WATER EFFICIENCY

1. Regulatory Framework

Public Resources Code Sec. 21155.1 (a)(8) requires that each project achieve a 25 percent water use reduction from the *regional average household water use.*

The Project will be required to comply with Ordinance No. 170,978 (Water Management Ordinance), which imposes numerous water conservation measures and Ordinance No. 180,822 (Water Efficiency Requirements for New Development). It will also comply with the 2017 Los Angeles Green Building Standards Code which contains higher standards for water use efficiency than the 2017 California Green Building Standards Code (CalGreen). Table 1 in the previous section shows the comparison of maximum allowable fixture flow rates between the two building codes.

According to the *Metropolitan Water District Water Tomorrow Annual Report to the California State Legislature, Covering Fiscal Year 2015/16 (page 2),* the average regional Gallons Per Capita Per Day Usage (p. 2) is 131 gallons (http://www.mwdh2o.com/PDF_About_Your_Water/SB60_2017_condensed.pdf) [Accessed 07/19/2018].

Per the *City Planning Demographics Unit - 2016,* the Los Angeles average multifamily unit household size is 2.43. Therefore, the average Los Angeles multi-family residence water use per day is 318.33 gallons (131 gallons x 2.43 people).

2. Water Efficient Features of the Project

The following are some of the water efficient features of the Project. They are based on applicable California Green Building Code and City of Los Angeles Building Code requirements:

- High Efficiency Toilets with flush volume of 1.28 gallons of water per flush or less
- High Efficiency Urinals with 0.125 GPF
- Showerheads with flow rate of 1.8 gallons per minute or less
- High Efficiency Clothes Washers - residential with Energy Star certification
- Lavatory Faucet with flow rate of 0.5 gallons per minute or less for Commercial and 1.5 gallons per minutes for Residential
- Kitchen Faucets with flow rate of 1.5 gallons per minute or less for Retail/Commercial
- Domestic Water Heating System located proximity to point(s) of use
- Water-Saving Pool Filter
- Pool/Spa recirculating filtration equipment
- Pool splash troughs around the perimeter that drain back into the pool
- Meter on the pool make-up line Leak Detection System for swimming pools and spas
- Drip/Subsurface Irrigation (Micro-Irrigation)
- Proper Hydro-zoning/ (groups plants with similar water requirements together)
- Zoned Irrigation
- Landscaping Contouring to minimize precipitation runoff
- Drought Tolerant Plants

3. Water Use Calculation

The following table shows the estimated water usage of the Project taking into consideration detailed project information, including the quantity and type of fixtures, occupant use, irrigation demand and amenities water use.

Residential water use is based on the calculation that 144 dwelling

units would result in an estimated 433 occupants, per City Planning Demographics Unit (2016) rate of 2.43 occupants per unit. The occupant use of the Amenity and Common areas are based on Table A, Chapter 4 of the California Plumbing Code. The irrigation demand was calculated by the landscape architect per California Water Efficient Landscape Ordinance. The water use of the pool and water features was calculated by the pool consultant.

Table 4. Title 24 Part 11 CalGreen Whole Building Water Use Calculation

Fixture Type	Flow Rate[1] (gpm/gpf)		Duration (min or # flush)		Daily Uses'		Occupants'		Proposed Gallons per Day
RESIDENTIAL WATER USE									
Showerheads	1.8	x	8	x	1	x	433	=	6,235.20
Lavatory faucets	1.2	x	0.25	x	5	x	433	=	649.50
Kitchen faucets	1.5	x	4	x	1	x	433	=	2,598.00
Water closets (M)	1.28	x	1	x	5	x	216.5	=	1,385.60
Water closets (F)	1.28	x	1	x	5	x	216.5	=	1,385.60
Clothes washers (gal/person-day)'					5.08	x	433	=	2,199.64
Dishwashers (gal/person-day) [6]					0.43	x	433	=	186.19
Residential Total									14,639.73
RETAIL WATER USE									
Lavatory faucets	0.4	x	0.25	x	3	x	26	=	7.8
Water closets (M)	1.28	x	1	x	3	x	13	=	49.92
Water closets (F)	1.28	x	1	x	3	x	13	=	49.92
Urinal	0.125	x	1	x	2	x	13	=	3.25
Retail Total									110.89
RESTAURANT WATER USE									
Lavatory	0.4	x	0.25	x	3	x	260	=	78

faucets									
Kitchen sinks	1.8	x	4	x	3	x	260	=	5,616
Waterclosets(M)	1.28	x	1	x	3	x	130	=	499.2
Waterclosets(F)	1.28	x	1	x	3	x	130	=	499.2
Urinal	0.125	x	1	x	2	x	130	=	32.5
Comm.Dishwasher	1.67	x	60	x	4	x		=	400.8
Restaurant Total									7,125.70

AMENITY / COMMON AREA WATER USE				
Room	Area	Occupant Load Factor'	Occupants	Gallons per Day
Fitness[7]	2,773	30	92	2008.73
Plaza/Roof Terrace[7]	15,674	200	78	1,697.02
Community Rooms[7]	3,693	30	123	528.86
[illegible][8,8a]				433
Spa[9,9a]				83
Water Feature[10]				125
Irrigation[11]				421.53
Cooling Tower[10]				8,112
Parking Structure[10]	117,589 sq. ft.			2,351.78
Amenity / Common Area Total				15,760.92

OFFICE WATER USE				
Office[7]	31,508	200	158	3,517.87
Office Total				3,517.87
Proposed Design — Total Water Demand (GPD)				41,155.11
Proposed Design - Water Use / Household (GPD)				231.21
Baseline — Total Water Demand (GPD)[14]				56,662.74
Baseline - Water Use / Household (GPD)[14]				318.33
PERCENT REDUCTION FROM BASELINE				27.4%

Notes

1. Flow rates are the maximum allowed under City of Los Angeles Green Building Code (Form GRN 17).

2. Daily uses per CalGreen Building Standards Code, Chapter 8 - Compliance Forms, Worksheets and Reference Material.
3. For Residential Water Use occupancy based on 144 dwelling units x 2.43 occupants per household. For Retail and Restaurant Water Use occupancy based on load factor per CPC Section 422.0, Table A.
4. Occupancy load factor per CPC Section 422.0, Table A.
5. Clothes Washer in each unit. Los Angeles Green Building Code requires Energy Star certified units. Typical Energy Star unit = 3.2 WF (Water Factor) = 5.08 gal per person per day.
6. Dishwasher assumed in each unit. Los Angeles Green Building Code requires Energy Star certified units. Typical Energy Star unit = 4 GPC (Gallons per Cycle) = 0.43 gal per person per day.
7. Amenity / Common Area square footage based on architectural plans.
    a. Per pool consultant, pool surface 908.25 SF. Approx. %" loss per day (splash and evaporation), or 425 gallons to be made up per day.Based on the draining half of the pool every five (5) years. Pool capacity of 25,544 gallons. (25,544 gallons / 0.5) / 5 years = 2,555 gallons per year or 7 gallons per day.
8. Per pool consultant, spa surface 130 SF. Approx. 1" loss per day (splash and evaporation), or 82 gallons to be made up per day.
    a. Based on the draining half of the spa every five (5) years. Spa capacity of 130 gallons. (130 gallons / 0.5) / 5 years = 220 gallons per year or 0.6 gallons per day.
9. Water feature estimate surface 200 SF. Approx. 1" loss per day, or 125 gallons to be made up per day.
10. Irrigation usage is based on the Maximum Applied Water Allowance from the California Water Model Efficiency Landscape Ordinance. 153,859 gallons per year (421.53 gallons per day.)
11. Based on 26 gpm evaporation for the two (2) cooling towers with operation at 8 hours per day, 7 days per week and 65% load capacity.
12. Based on the City of Los Angeles Department of Public

Works - Bureau of Sanitation Sewer Generation Rates
(0.02 gallons per sq. ft.)

13. Based on the regional average for Los Angeles multi-family residence water demand per day of
318.33 gallons (131 gallons x 2.43 people). The Project has 144 residenial units.

4. Water Usage

It is estimated that the Project will use an average of 41,155.11 gallons per day of water. With 144 residential units, the household water use is approximately 231.21 gallons per day, compared to the baseline calculation of 318.33 gallons per day.

In conclusion, the Project is designed to achieve approximately 27.4% less water usage than the average household in the region.

These calculations are used to show a relative comparison between the Project and the regional average household water use. There are a range of water efficiency measures that can achieve the required reduction. The final combination of water efficient features is best selected during the final design of the Project, when other options may be considered.

City of Los Angeles

Los Angeles Department of Water and Power - Water System

SAR NUMBER **98736**

Fire Service Pressure Flow Report

SERVICE NUMBER **639648**

For: **12727 WASHINGTON BLVD** Approved Date: **7-12-2022**

Proposed Service **8 INCH** off of the

8 inch main in **ZANJA ST** on the **SOUTH** side approximately

100 feet **NORTH** of **NORTH** of **WASHINGTON BLVD** The System maximum pressure is

78 psi based on street curb elevation of **41** feet above sea level at this location.

The distance from the DWP street main to the property line is feet

System maximum pressure should be used only for determining class of piping and fittings.

Residual Flow/Pressure Table for water system street main at this location

Flow (gpm)	Press. (psi)	Flow (gpm)	Press. (psi)	Flow (gpm)	Press. (psi)
0	60	2190	42		
460	59	2255	41		
670	58	2320	40		
830	57	2380	39		
970	56	2440	38		
1095	55	2500	37		
1210	54				
1315	53				
1415	52				
1505	51				
1595	50				
1680	49				
1760	48				
1835	47				
1910	46				
1985	45				
2055	44				
2125	43				

These values are subject to change due to changes in system facilities or demands.

Meter Assembly Capacities

Domestic Meters	
1 inch =	56 gpm
1-1/2 inch =	96 gpm
2 inch =	160 gpm
3 inch =	220 gpm
4 inch =	400 gpm
6 inch =	700 gpm
8 inch =	1500 gpm
10 inch =	2500 gpm

Fire Service	
2 inch =	250 gpm
4 inch =	600 gpm
6 inch =	1400 gpm
8 inch =	2500 gpm
10 inch =	5000 gpm

FM Services	
8 inch =	2500 gpm
10 inch =	5000 gpm

Notes: DO NOT SELL SERVICE. Customer will need to make financial arrangements for 50'-8" main extension in addition to all new service fees in order to provide water service at this location. Fire flows on this form are for 8" FS only. DO NOT SELL COMBO.

This information will be sent to the Department of Building and Safety for plan checking.

This SAR is valid for one year from 07-12-22. Once the SAR expires, the applicant needs to re-apply and pay applicable processing fee.

For additional information contact the Water Distribution Services Section **WESTERN (213) 367-1225**

MARK PATTERSON	MARK PATTERSON	110-153
Prepared by	**Approved by**	**Water Service Map**