

**ENGINEER'S REPORT**

**FOR THE**

**CITY OF LOS ANGELES**  
**BUREAU OF STREET LIGHTING**



REGARDING STREET LIGHTING MAINTENANCE ASSESSMENTS IN THE

**KLING STREET AND MORELLA AVENUE**  
**LIGHTING DISTRICT**

IN CONFORMANCE WITH PROPOSITION 218

PREPARED April 3, 2019

**Project ID No. 4989**

**Transmittal No. 2 to the Report of the Board of Public Works**

**CITY OF LOS ANGELES  
BUREAU OF STREET LIGHTING**

**ENGINEER'S REPORT**

**Subject:** Description of how the City finances the cost of street lighting operation and maintenance, how these assessments were calculated, and how this complies with Section 4 of Proposition 218, Article XIII D of the California Constitution, in regards to the subject street lighting maintenance assessment district(s).

**Abstract:** The Bureau of Street Lighting, for the Board of Public Works, administers and operates the street lighting system of the City. This includes managing the financing of the system. By Council Policy, about 80% of the streetlights are financed through street lighting maintenance assessments to benefiting properties, and the rest through the LADWP.


Proposition 218, section 4 (b), requires that "...All assessments shall be supported by a detailed engineer's report prepared by a registered professional engineer certified by the State of California..." It further requires in section 4 (f) that "...in any legal action contesting the validity of any assessment, the burden shall be on the agency to demonstrate that the property or properties in question receive a special benefit over and above the benefits conferred on the public at large and that the amount of any contested assessment is proportional to, and no greater than, the benefits conferred on the property or properties in question..."

The purpose of this report is to respond to the specific requirements of Proposition 218 and State law, for the subject street lighting maintenance assessment district(s) – Diagram with City page number 15251.

Prepared by:

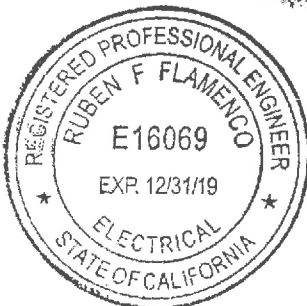
  
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Prop. 218 Compliance Section

Approved by:

  
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Street Lighting Assessment Division, Bureau of Street Lighting

R.E. NO. E16069

Date 4/4/19



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### Refer to the Report of the Board of Public Works For The Following Transmittals

1. Ordinance(s) of Intention for the Proposed Assessment District(s)
2. Assessment Diagram(s) for the Proposed Assessment District(s) – City page number **15251**
3. Assessment Roll(s) for the Proposed Assessment District(s)

## **SUMMARY**

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This engineer's report will explain the methodology for the calculation of the street lighting operation and maintenance assessments, the City's policy between special and general benefit and information about the subject project.

## **STREET LIGHTING TYPES AND FINANCING**

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There are three types of street lighting in the City of Los Angeles, each with different purposes, physical characteristics and financing modes. The following is a brief description of each:

- A. SPECIAL BENEFIT** is the direct street lighting benefit to a property, and to its owner or users, based on the existence of the nearby street lighting systems that is designed to illuminate the roadway and sidewalk adjacent to the specific property at night. When there is a single streetlight in front of or near the property in question, there is special benefit to the extent that the roadway and sidewalk are illuminated, notwithstanding that the street lighting system for the block is incomplete. Proposition 218 allows the assessment of properties which receive special benefit, to the extent that the assessment is not greater than the reasonable cost of the proportional special benefit conferred on those parcels.

Special Benefit street light systems are permanent streetlight systems designed to meet City standards of illumination which provide special benefit to nearby properties. These are generally systems with steel or concrete poles, underground wiring, intended to be part of a complete system providing a designed level of illumination and uniformity on the roadway and sidewalk areas. These systems are generally installed through either, assessments to nearby benefiting properties, grants or through requirements on private developments, and are owned by the Department of Public Works. The financing of their entire costs of operation and maintenance is through the annual assessment of nearby properties that are determined to receive special benefit. All general benefits, if any, to the surrounding community and public in general from these special benefit streetlight systems are intangible and are not quantifiable.

**B. GENERAL BENEFIT** is defined as a benefit to properties in the surrounding community or a benefit to the public in general resulting from the improvements, activities or services to be provided by the assessment levy. These benefits include the benefit from street lighting systems for locations that do not benefit specific properties, as well as interim lighting for minimal traffic safety on wooden power poles and permanent lighting at intersections with mast arm or traffic vehicular heads. Any special benefit from these lights will be intangible and not quantifiable in relation to their General Benefit use. Proposition 218 requires the City to finance general benefit costs from other than property assessments. These costs are financed from public funds.

General Benefit lighting systems are permanent street light system and which illuminate vehicular and pedestrian bridges and tunnels; intersections with mast arm or traffic vehicular heads; and other locations where there are no adjacent or nearby properties which receive direct, special benefit. These are part of a complete system for the structure, or street, providing a designed level of illumination and uniformity on the roadway and sidewalk areas. The financing of their entire costs of operation and maintenance is through public funds and/or Department of Water and Power funds. These systems are generally installed with public funding, and owned by the Department of Public Works.

**C. UTILITARIAN LIGHTING** is a general benefit type of street lighting that is installed, operated and maintained by the Department of Water and Power. These lights are mounted on wooden power poles, and do not have a designed average level of uniformity or illumination. These lights are considered interim, minimal safety lighting for specific locations where there are no permanent street lighting systems. The costs of operation are financed through the Department of Water and Power. However, for "continuous utilitarian lighting" systems, or "continuous alley lighting", the lighting benefit associated with these systems exceeds standard lighting requirements, therefore these special systems are considered as systems with a special benefit component.

## **HOW MAINTENANCE ASSESSMENTS ARE CALCULATED**

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Based on Council Policy, Los Angeles Administrative Code, annual City Budgets, and assessment proceedings, assessments are for the total estimated amount of the cost of operation and maintenance.

**All costs of street lighting maintenance and operation for the subject lighting systems deemed as special benefit are to be assessed - none are to be financed with public funds.**

The total estimated amounts of revenues and operating costs for previously assessed parcels are shown in the annual reports for the Los Angeles City Street Lighting Maintenance Assessment District (LACLD). The assessment rates are based on these estimates, which rely on actual costs for previous years, and on historic relationships between the different rates.

Proper maintenance and operation of the streetlight infrastructure benefits all properties within the District by providing security, safety, and community character and vitality.

In addition, Proposition 218, the "Right to Vote on Taxes Act" which was approved on the November 1996 statewide ballot and added Article XIID to the California Constitution, requires that a parcel's assessment may not exceed the reasonable cost for the proportional special benefit conferred on that parcel. Article XIID provides that only special benefits are assessable and the City must separate the general benefits from the special benefits. It also requires that publicly owned properties, which benefit from the improvements, be assessed.

## **METHODOLOGY**

The process of determining maintenance assessments for each parcel is based on evaluating three areas of calculation which are relative to the amount of special benefit received. These areas of calculation are: equivalent dwelling units (EDU), benefit zones (rates), and adjustment factors.

### **Assessment Calculation for a Parcel**

$$\text{Assessment Cost} = (\text{Equivalent Dwelling Units}) \times (\text{Benefit Zone Rate}) \times (\text{Adjustment Factor})$$

$$\text{Where, Adjustment Factor} = (\text{Benefit Factor}) \times (\text{Partial Lighting Factor}) \times (\text{Lot Shape Factor})$$

The following section explains each area of calculation in more detail:

### **EQUIVALENT DWELLING UNITS**

The calculation will take into account the different land uses on the properties for comparative purposes. (E.g. A vacant property vs. a multiple family property vs. a commercial property.)

**The medium density single-family residential parcel has been selected as the basic unit for calculation of assessments;** therefore, the medium density single-family residential parcel is defined as one (1) Equivalent Dwelling Unit (EDU). The calculation methodology developed relates all other land uses, and their respective lot sizes, to the medium density single-family residential land use. The determination of the EDU takes into account two factors in relation to a SFR: land use, and the lot size.

Land Use of the parcel The EDU is adjusted in accordance with the land use of the property. The factor assigned is related to the approximate use or trips generated for a particular property type. For example, multiple family residences, with many dwelling units, will have more use of the property and of a street lighting system, compared to SFR. Similarly, vacant properties and agricultural properties of similar size, will have less use and benefit, compared to SFR. The land use adjustment determines the proportional special benefit that the parcel derives from the use of the street lighting system within the vicinity.

Size of the parcel One of the factors in determining the EDU of all properties is evaluating the size of a parcel compared to the average lot size of a medium density SFR. Based on an analysis of all of the properties within the City of Los Angeles, it has been determined that the average medium SFR lot size is approximately 7,000 to 8,000 sq. ft. From this same data, the EDU conversion factor is adjusted proportionally with respect to various land use distributions across eight lot size categories. They are: less than 0.1 acres, 0.1 to 0.2 acres, 0.2 to 0.4 acres, 0.4 to 0.8 acres, 0.8 to 1.5 acres, 1.5 to 3.0 acres, 3.0 to 6.0 acres, and greater than 6.0 acres.

Table 1, on the following page, summarizes the EDU conversion factors for various land uses and their respective lot sizes.

**TABLE 1 - EQUIVALENT DWELLING UNIT (EDU)**

LAND USE		ACREAGE								
		< 0.1	0.1-0.2	0.2-0.4	0.4-0.8	0.8-1.5	1.5-3.0	3.0-6.0	> 6.0	
<b>RESIDENTIAL</b>	<b>SINGLE FAMILY</b>	0.75	1	1.25	1.5	1.75	2	2.25	2.5	
	<b>MULTI-FAMILY</b> <small>APARTMENTS, CONDOS, PRIVATE COMMUNITIES</small>	2 - 4 units	1.5	1.75	3.25	5.5	8	11	14	18
		5 - 15 units	1.75	2	3.75	6.25	9	13	15	21
		16 - 25 units	2	2.5	4.5	7	10	15	17	25
		26 - 50 units	2.5	3	5	8	11.5	17	19	30
		> 50 units	3	4	6	9.5	13	19	25	40
<b>NON-RESIDENTIAL</b>	<b>COMMERCIAL INSTITUTION GOVERNMENT</b>	0.75	1.25	2	4	6	11.5	20	40	
	<b>INDUSTRIAL UTILITY</b>	0.5	1	1.25	2.25	4	7	10	25	
	<b>MOBILE HOME PARKS</b>	0.35	0.75	1	1.75	3	4.25	7.5	15	
	<b>VACANT AGRICULTURE</b>	0.25	0.5	0.75	1.25	1.75	3.5	4.5	8	

**RESIDENTIAL**

Residential properties include single family residential parcels and multiple family residential parcels.

- Single Family Residential (SFR) Parcels: All SFR parcels with lot sizes equal to 0.1 acre, and up to 0.2 acre, are considered medium density SFR, and are assigned the value of 1 equivalent dwelling unit (EDU).
- Multi-Family Residential (MFR) Parcels: The equivalencies of multi-residential land uses, such as apartments, condominiums, and private communities, are calculated based on their respective population densities (dwelling units to lot size), and their residential land uses as they relate to the medium-density SFR. These factors are derived from trip generation rates and estimated wastewater usage, which are both related to population density and usage.

**NON-RESIDENTIAL**

Non-residential properties include commercial, government, institutional (such as schools, churches and hospitals), industrial, utility, mobile homes, parks, vacant lots, and agricultural.

- Vacant and agricultural properties consist of parcels with few or no improved structures. Utilization of vacant property is significantly less than improved property, therefore receive substantially less lighting benefit.

**BENEFIT ZONES (RATES)**

Benefit Zones are used to differentiate between the different types of lighting services each parcel receives. These zones indicate the type of lighting system used (i.e. ornamental, modern, pedestrian, etc.), as well as the location where the lighting system will be installed (i.e. arterial, residential, etc.)

Each benefit zone will have a specific assessment rate associated with it. The rates associated with these zones have been set in accordance to the Bureau's current maintenance district. These rates include costs for energy, maintenance, administration and eventual replacement.

The assessment each parcel receives will be relative to the proportioned benefit received from each benefit zone. Parcel receiving benefit from multiple lighting systems, may be included in multiple benefit zones relative to the proportioned benefit.

Zones may be adjusted due to any identified general benefit component. For parcels on corners with more than one lit side, the parcel will be zoned per the side that the property takes access. We have determined that there are seven (7) different levels of benefit within the District, and these are distinguished by different zone designations. The zones identified below are assumed to utilize energy efficient lamps. Any request for lamps that are not energy efficient or require additional maintenance will need to be evaluated and the rate will need to be adjusted accordingly.

**TABLE 2 – BENEFIT ZONE SUMMARY**

<b>BENEFIT ZONE</b>	<b>DESCRIPTION</b>	<b>RATE</b>
<b>Zone 1</b>	This zone is an ornamental lighting system on residential streets. This lighting system generally is used to illuminate the roadway and sidewalk areas.	<b>\$109.74</b>
<b>Zone 2</b>	This zone is a modern lighting system on residential streets.	<b>\$81.35</b>
<b>Zone 3</b>	This zone is a modern lighting system on arterial streets.	<b>\$181.36</b>
<b>Zone 4</b>	This zone is applied to lighting systems that require additional maintenance or energy greater than standard energy efficient lamps.	<b>\$28.71</b>
<b>Zone 5</b>	This zone is for special stand alone pedestrian electroliers on arterial streets. The lighting system provides illumination for pedestrian use only. This zone would be in addition to zone's 1, 2, 3 or 4.	<b>\$119.27</b>
<b>Zone 6</b>	This zone is for special pedestrian systems that are attached to existing roadway electroliers. This zone would be in addition to zone's 1, 2, 3 or 4.	<b>\$71.93</b>
<b>Zone 7</b>	This zone is for continuous utilitarian alley lighting. This type of lighting consists of simple 100W HPS luminaires mounted to existing wooden power poles. Standard util lighting (general benefit) is spaced no closer than 300 feet to another existing street lighting source. Continuous utilitarian alley lighting (special benefit) exceeds this standard, and may be spaced at closer intervals.	<b>\$33.43</b>

The following table provides more detail regarding the maximum assessment rates for each of the Zones:

**TABLE 3 – ASSESSMENT RATE DETAILS**

ZONE	Admin & Eng	Energy (ECA, Utility Users Tax)	Replace	Repair	Tree Trim	Total BU	Total FY 2004-05 Max \$/BU *	Total FY 2019-20**
1	\$541,745	\$ 1,175,461.83	\$450,130	\$548,859	\$120,264	34,343.44	\$82.59	\$109.74
2	\$6,008,929	\$10,636,819.25	\$4,992,757	\$6,087,840	\$1,333,943	474,857.79	\$61.20	\$81.35
3	\$2,252,888	\$ 4,622,360.97	\$1,871,902	\$2,282,474	\$500,126	84,486.29	\$136.47	\$181.36
4	\$5,967	\$ 315,887.76	\$0	\$6,045	\$0	15,182.44	\$21.60	\$28.71
5	\$205,715	\$ 536,528.47	\$170,926	\$208,416	\$45,667	13,273.31	\$89.78	\$119.27
6	\$762	\$ 297,504.72	\$14,284	\$772	\$0	6,336.65	\$54.14	\$71.93
<b>TOTAL</b>	<b>\$9,016,006</b>	<b>\$17,584,563</b>	<b>\$7,500,000</b>	<b>\$9,134,407</b>	<b>\$2,000,000</b>	<b>N/A</b>	<b>\$45,234,970</b>	<b>N/A</b>

\* The amounts of the assessments designated in the assessment roll may be increased annually, without further notice or ballot, by no more than the annual Consumer Price Index (CPI) for the Los Angeles area, as provided by the U.S. Dept. of Labor (Bureau of Labor Statistics). The annual Consumer Price Index (CPI) will be calculated from the calendar year (January 1- December 31) just prior to the assessment period affected (July 1- June 30).

\*\*Assessment Rate adjusted by 3.81% in February 2019 for the annual Consumer Price Index (CPI) for the 2018 calendar year (January 1 - December 31).

Note: Duplexes are charged 130% of the normal rate. Triplexes are charged 140% of the normal rate. Four-plexes are charged 150% of the normal rate. SFR parcels on arterial streets (zone 3) are charged 75% of the normal rate.

**ADJUSTMENT FACTORS**

These include benefit factors, partial lighting factors, and lot shape factors. Benefit Factors will define the benefit associated with the use of the property. Partial lighting factors will define the proportion of lighting benefit received by the affected properties. Lot shape factors will provide adjustments for odd shaped lots where the available benefiting frontage is disproportionate to the relative amount of lighting benefit received (e.g. flag-lots, corner lots, etc.).

**Benefit Factors -** The EDU rates are modified by Benefit Factors that relate to how a particular land use benefits from streetlights. The amount of benefit received will vary with the different land use on the property. There are two categories from which the benefit of a parcel is derived:

1. **Security and Safety Benefit.** The prevention of crime and the alleviation of the fear of crime at the assessed properties, and the prevention of local pedestrian and traffic accidents related to the assessed properties.
2. **Community Character and Vitality Benefit.** The promotion of social interaction, promotion of business and industry, and the contribution to a positive night time visual image for the assessed properties.

To assign the benefit factors, each land use is compared to residential properties. Residential properties are the base properties and are assigned benefit factors of 1 for both the "Security and Safety Benefit" and the "Community Character and Vitality Benefit". Commercial and Parks benefit similarly to residential property and therefore are assigned the same benefit factors. Industrial and utility properties receive benefits from added security and safety, but receive little to no benefit for community character and vitality, as the nature of these properties do not promote either. Likewise, vacant and agriculture properties receive benefits from added security and safety, although not at nearly the level of a developed property, but receive little benefit from additional community character and vitality.

Table 4 on the following page provides a summary of the Benefit Factors that are applied.



**Table 4 – STREET LIGHTING BENEFIT FACTORS**

Land Use	Residential (non-arterial)	Residential (arterial)	Commercial	Institutional (schools)	Utility, Industrial	Park	Vacant, Agriculture
<b>Security and Safety</b>	1	1	1	1	1	1	0.5
<b>Community Character and Vitality</b>	1	0.5	1	0.5	0	1	0.5
<b>Subtotal:</b>	2	1.5	2	1.5	1	2	1
<b>Applied Benefit Factor</b>	1	0.75	1	0.75	0.5	1	0.5

**Partial Lighting Factors** - The EDU rates are further modified by Partial Lighting Factors that take into consideration the amount of benefiting frontage lit by the streetlights. If almost the entire frontage of a parcel is lit, then the Partial Lighting Factor is 1.0. If the frontage of a parcel is not fully lit, then a Partial Lighting Factor of 0.75, 0.50 or 0.25 will be applied depending on the percentage of frontage lit.

**Lot Shape Factors** - Lot shape factors will provide adjustments for odd shaped lots where the available benefiting frontage is disproportionate to the relative amount of lighting benefit received. For lots where the amount of lighting benefit received exceeds normal design standards, the assessment will be increased 10%. An example of this case would be corner lots with two or more benefiting sides, compared to similar shaped mid-block lots with only one benefiting side (normal configuration). For lots where the amount of lighting benefit received is less than comparable lots of similar size and land use, such as flag-lots, compound flag lots, or complex lots, they will receive assessment discounts of 25%, 50%, and 75%, respectively.

The actual assessments levied in any fiscal year will be as approved by the City Council and may not exceed the maximum assessment rate without receiving property owner approval for increase. The actual annual assessment rates for each Zone will be calculated each year based on the estimated costs of operating and maintaining the street lighting system in the following fiscal year. **The funding source to repair and maintain the City of Los Angeles' general benefit lights are not included in the estimated annual budget.**

For parcels with mixed use, such as a commercial / residential combination, the benefit units are calculated for each use separately, and the higher of the two calculations will be used.

**It is our conclusion that the proposed street lighting maintenance assessments follow the methodology described above.**

## SPECIFICATIONS FOR THE OPERATION OF STREET LIGHTING MAINTENANCE DISTRICTS IN THE CITY OF LOS ANGELES FOR 2019-20

**WORK TO BE DONE.** The work and improvement to be done shall be the operation, including furnishing electric energy and timing/switching; maintenance, including lamp changing, emergency services, pole painting, fixture cleaning and glassware replacement, and rehabilitation, which includes modernization and replacement of systems; repairs, including poles, conduit, wiring and fusing, and fixtures repair and replacement; management of the funds, records, engineering, equipment approval and testing, administration and assessments, buildings, vehicles, equipment and materials; and related activities for the street lighting system designated herein under the "MAINTENANCE ASSESSMENT DISTRICT," – Diagram with City page number **15251**, for the fiscal year ending June 30, 2020, in accordance with the report of the Board of Public Works therefore, on file in the office of the City Clerk.

**AUTHORITY.** The said work and improvement is to be made under and is to be governed in all particulars by the Charter of the City of Los Angeles, Section 580 and other sections; the Los Angeles Administrative Code, Section 6.95-6.127; Proposition 218 (Articles XIII C and XIII D of the California Constitution), and the Ordinance of Intention to be hereafter adopted therefore.

**LIGHTING SYSTEM.** The street lighting system consists of electroliers, luminaires, and lamps, together with the necessary conduits, cables, wires and other appurtenances. Plans showing the location and description of said equipment are on file in the office of the Bureau of Street Lighting and are hereby referred to and made a part of these specifications. The properties to be benefited by the work and improvement are designated in the assessment diagrams on file in the office of the Bureau of Street Lighting, Assessment Engineering Division, and are hereby referred to and made a part of the specifications.

**OPERATION SCHEDULES.** The lighting system shall be lighted in accordance with the All Night and 1:00 a.m. schedules of operation, and minor exceptions, as agreed upon by the Department of Public Works and the Department of Water and Power, or other utility suppliers.

**ELECTRIC ENERGY.** It is contemplated that the City of Los Angeles, through its Department of Public Works, will purchase electric energy as it may deem necessary from the Department of Water and Power, or other utility suppliers, in accordance with the terms, conditions, and rates prescribed for in such services as have been agreed upon by the Board of Public Works and the utility supplier, and approved by the City Council.

**MAINTENANCE.** The Department of Public Works will itself perform the work, or will contract for certain work with the Department of Water and Power, or private companies, in providing normal maintenance for the following district(s), in accordance with the terms, and conditions as prescribed for in such services as have been agreed upon by the Board of Public Works and the supplier, and approved by the City Council.

### MAINTENANCE ASSESSMENT DISTRICT TITLE

#### KLING STREET AND MORELLA AVENUE Lighting District

**REPAIRS.** The Department of Public Works, will itself perform the repair work, or will contract for certain work with private companies, provide the materials, equipment and expense, appliances, and other appurtenances and appurtenant work necessary to repair the street lighting system. This may also require approval by the City Council.



**CITY OF LOS ANGELES**  
**LIGHTING MAINTENANCE ASSESSMENT ROLL**

(Under Secs. 6.95-6.127 of the Los Angeles Administrative Code)

**For the Maintenance and the Furnishing of Electric Energy for the Lighting of**

.....  
***KLING ST & MORELLA AVE***  
 .....

***LIGHTING DISTRICT***  
 .....

as shown on the assessment diagram recorded in the Bureau of Street Lighting in Assessment Map Book 25

Page 0251, for the Fiscal Year of 2019-2020, in accordance with:

Ordinance of Intention No. \_\_\_\_\_

**ESTIMATE COST**

Electric Energy .....  
 Maintenance .....  
 Incidentals .....  
**Total** .....  
 Less Unexpended Balance .....  
**Balance** .....  
**AMOUNT ASSESSED TO PROPERTY OWNERS** .....

Dollars	Cents
\$181	00
\$168	00
\$69	00
\$417	00
\$0	00
\$417	00
\$417	00



