INTRODUCTION

The purpose of the BSL Standards and Guidelines package is to establish guidelines and practices to be followed by engineers in designing street lighting systems.

Benefits of this package include providing engineers with direction resulting in increased productivity by streamlining the design process, and increased efficiency by establishing a centralized source of up-to-date reference for current standards and procedures.

The overall quality in street lighting designs will be enhanced by requiring engineers to adhere to the Bureau’s current design and construction policies.

Senior Engineering Managers, Division Managers and/or Street Lighting Engineering Associate III’s will be empowered by the Director to approve design recommendations and/or final street lighting construction plans upon full implementation of the BSL Standards and Guidelines package.
The Design Standards and Guidelines manual was initiated in June of 1997 to establish uniform guidelines and practices to be followed by engineers in designing street lighting systems. The purpose of the manual is to provide designers with direction, set standards and policy.

The goal of this manual is to provide street lighting engineers with clear direction in order to increase productivity by streamlining design procedures, and increase efficiency by establishing a centralized source of up-to-date reference for current standards and procedures. In addition, this package will enhance the quality of design and empower the Street Lighting Engineering Associate III’s, Division and Senior Engineering Managers.

The manual contains the following:

- Guidelines for levels of approval of street lighting design recommendations and final plans.
- Illumination standards for various areas and roadways (including pedestrian ways).
- Equipment Selection Standards
- Bureau policy in relation to various design requirements.
- Approved Planning Routes and areas.
- Design Recommendation checklist and final plan checklist.

This manual and directive will be updated on a semi-annual basis by the Senior Manager in charge of the design divisions.

Director
Bureau of Street Lighting

Revised Date: 05/09/2007
Attachments: Design Standards and Guidelines Manual
Distribution: All Engineering Division
GUIDELINES FOR LEVELS OF APPROVAL OF STREET LIGHTING DESIGN RECOMMENDATIONS & FINAL PLANS

The following are the requirements that a plan must meet in order for the supervisor or manager to sign the Design Recommendation and/or final plan.

DESIGN RECOMMENDATION APPROVALS

STREET LIGHTING ASSOCIATE III

- Projects with less than 20 poles of the following selection: 40’ Davit, CD-953, CD-929, Gardco Semi-Spherical, CD-851 and CD-808Z.
- The design must fall within the parameters of the Equipment Selection Guidelines (pg. 12)
- Pedestrian Tunnel Closure Projects.

DIVISION ENGINEER APPROVAL

- Projects 21 to 75 poles of the following selection: 40’ Davit, CD-953, CD-929, Gardco Semi-Spherical, CD-851 and CD-808Z.
- The design must fall within the parameters of the Equipment Selection Guidelines (pg. 12)
- Upgrade Projects (E&C and STM) with NO Proposition 218 impact.

SENIOR ENGINEERING MANAGER APPROVAL

- Projects greater than 75 poles on streets where we are matching an existing system.

DIRECTOR APPROVAL

- All Design Recommendations of politically sensitive/high profile projects.
- Any Project that the Division Manager or Senior Engineering Manager considers pertinent for the Director’s review and approval.
- All projects that do not fall within the above categories.
- All projects with ornamental pole installations.
FINAL PLAN APPROVALS

STREET LIGHTING ASSOCIATE III

- Street Lighting relocation projects (normally referred to as “A” or “X” permit projects)
- Encroachment permits
- Sewer and Storm repair plans requiring BSL approval.
- Projects with less than 20 poles of the following selection: 40’ Davit, CD-953, CD-929, Gardco Semi-Spherical, CD-851 and CD-808Z, and that fall within the parameters of the Equipment Selection Guidelines.
- Pedestrian Tunnel Closure Projects.

DIVISION ENGINEER APPROVAL

- Projects 21 to 75 poles of the following selection: 40’ Davit, CD-953, CD-929, Gardco Semi-Spherical, CD-851 and CD-808Z, and that fall within the parameters of the Equipment Selection Guidelines.
- Upgrade projects (E& C and STM) with NO Proposition 218 impact.

SENIOR ENGINEERING MANAGER APPROVAL

- All BSL advertised projects.
- Projects greater than 75 poles on streets where design is matching an existing system.

DIRECTOR APPROVAL

- All politically sensitive/high profile projects.
- Any Project that the Division Engineer or Senior Engineering Manager considers pertinent for the Director’s review and approval.
- All projects that do not fall within the above categories.
- All projects with ornamental pole installations.
ILLUMINATION STANDARDS

ILLUMINATION STANDARDS RP-8-2000

A. RECOMMENDATIONS FOR LIGHTING LEVELS FOR ROADWAYS AND SIDEWALKS IN LUX (FC)

The illumination standards for roadway lighting will be adhered to by all engineers.

Illuminance Method – Recommended Values

<table>
<thead>
<tr>
<th>Road and Pedestrian Conflict Area</th>
<th>Pavement Classification (Minimum maintained Average Values)</th>
<th>Uniformity Ratio $E_{av}/E_{min}$</th>
<th>Veiling Luminance Ratio $L_{uav}/L_{Lv}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>Pedestrian Conflict</td>
<td>R1 lux/fc</td>
<td>R2 &amp; R4 lux/fc</td>
</tr>
<tr>
<td>Freeway Class A</td>
<td>High</td>
<td>10.0/1.0</td>
<td>14.0/1.4</td>
</tr>
<tr>
<td>Freeway Class</td>
<td>High</td>
<td>6.0/0.6</td>
<td>9.0/0.9</td>
</tr>
<tr>
<td>Expressway</td>
<td>High</td>
<td>12.0/1.2</td>
<td>17.0/1.7</td>
</tr>
<tr>
<td>Majo</td>
<td>Medium</td>
<td>8.0/0.8</td>
<td>12.0/1.2</td>
</tr>
<tr>
<td>Major</td>
<td>Low</td>
<td>6.0/0.6</td>
<td>9.0/0.9</td>
</tr>
<tr>
<td>Collector</td>
<td>Medium</td>
<td>8.0/0.8</td>
<td>12.0/1.2</td>
</tr>
<tr>
<td>Collector</td>
<td>Low</td>
<td>4.0/0.4</td>
<td>6.0/0.6</td>
</tr>
<tr>
<td>Collector</td>
<td>Medium</td>
<td>6.0/0.6</td>
<td>9.0/0.9</td>
</tr>
<tr>
<td>Collector</td>
<td>Low</td>
<td>3.0/0.3</td>
<td>4.0/0.4</td>
</tr>
</tbody>
</table>

Recommended Illuminance for the Intersection of Continuously Lighted Urban Streets (Based on the values in Table 2 for R2 and R3 pavement classifications)

<table>
<thead>
<tr>
<th>Functional Classification</th>
<th>Average Maintained Illumination at Pavement by Pedestrian Area Classification</th>
<th>$E_{av}/E_{min}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lux/fc</td>
<td>High</td>
</tr>
<tr>
<td>Major/Major</td>
<td>34.0/3.4</td>
<td>26.0/2.6</td>
</tr>
<tr>
<td>Major/Collector</td>
<td>29.0/2.9</td>
<td>22.0/2.2</td>
</tr>
<tr>
<td>Major/Local</td>
<td>26.0/2.6</td>
<td>20.0/2.0</td>
</tr>
<tr>
<td>Collector/Collector</td>
<td>24.0/2.4</td>
<td>18.0/1.8</td>
</tr>
<tr>
<td>Collector/Local</td>
<td>21.0/2.1</td>
<td>16.0/1.6</td>
</tr>
<tr>
<td>Local/Local</td>
<td>18.01/1.8</td>
<td>14.0/1.4</td>
</tr>
</tbody>
</table>
**Vertical Illuminance (walkways, bikeways, stairways)**

Vertical illuminance may be utilized where it appears necessary to provide a sense of security in order to recognize if another person is likely to be friendly, indifferent or aggressive. It is recommended that in these areas the design for vertical illuminance shall adhere to the specifications set forth for semi cylindrical illuminance in IES “Recommended lighting for walkways and Class 1 bikeways” DG-5-94.

**B. RECOMMENDED ILLUMINATION LEVELS FOR MISCELLANEOUS SYSTEMS**

The following is a summary of the lighting levels for special situations, as recommended by IES Standard Practice for Roadway Lighting, RP-8, 2000.

**Stairways**

Minimum average illumination level for stairways with low Pedestrian Conflict Areas and on a medium Density Residential are 4 Lux (0.4 fc) with uniformity ratio of 4:1. Also refer to DG-5-94 for additional criteria.

**Bikeways**

Minimum average horizontal illumination Bikeways (Class 1) with High Pedestrian Conflict Areas are 10 Lux (1.0 fc) with uniformity ratio of 4:1. Also refer to DG-5-94 for additional criteria.

**Mid-Block Crosswalks**

Crosswalks traversing roadways in the middle of blocks without signalization should be provided with additional illumination. The average illumination level in the crosswalk area should at least be equal to that provided at the intersection of two major streets; i.e., about 34 lux (3.4Fc). The uniformity ratio should be no more than 3:1.

**Railroad Crossings**

Illumination level over track area, starting 100 feet (30 meters) before the crossing and ending 100 feet (30 meters) beyond the crossing, should be in accordance with Table D1 and table D2 on RP-8-2000, but never less than 9 Lux (0.9FC). The uniformity ratio should be no more than 4:1. Refer to DIRECTIVE #397.

**Around Public Facilities** (i.e. schools, parks, recreation centers, etc.)

Illumination levels for the surrounding roadways should be considered as Medium Pedestrian Conflict area and follows the IES guidelines. The uniformity ratio should be no more than 3:1.

**Parking Lots**

Illumination levels for parking lots should have an average illumination level of 22 Lux (2.0 fc) for LADOT open parking lots and uniformity ratio of 3:1. Also refer to RP-20-98 for additional criteria.

**Tunnels**

The main objective in tunnel lighting design is to provide a lighting system for a given tunnel meets the visibility requirements for day and night conditions. The following issues need to be addressed when designing tunnel lighting for both daytime and nighttime values: threshold zone, transition zone, and tunnel interior zone. Many factors determine luminance values for tunnel lighting design. Refer to IESNA RP-22, 1996 for classification of your tunnel and appropriate lighting levels.
Cultural Historical Structures

All designers shall be aware of the Historical Cultural Monuments listing as published by the Cultural Affairs Department. Bureau district maps should refer to this document for all Historical Cultural monuments. In accordance with the State Historical Building Code these structures may be restricted in modifications to electroliers such as different spacing or height. In these cases the Bureau shall try to achieve the highest level possible not to exceed IES standards.

Bus Stop Facilities

Illumination levels over a Bus Stop area should have an average illumination level of 25 lux (2.5 FC). The uniformity ratio is at 3:1. Lighting levels should be in addition to the level provided by the regular street lighting system. Typically these facilities are 80’ in length and are provided with three lighting fixtures attached at 15’ height. Also refer to RP-33-99 and G-1-03 for additional criteria.

Architectural Lighting Design Considerations

The purpose of an architectural lighting system is to highlight, enhance, and accentuate the outstanding architectural features of a bridge. Architectural lighting projects are subjective to artistic impressions or interpretations.

There are no current City adopted lighting standard or IES requirements for illumination levels for the bridge’s handrails, arches, columns, approach gates, and piers. Considerations for exterior lighting (as suggested by IES Lighting Handbook, 8TH Edition, Chapter 22) design include:

- COMMUNITY THEMES (in architecture and in lighting)
- LIGHTING ORDINANCES (light Pollution and light trespass)
- SURROUNDING BRIGHTNESS (bright downtown industrial)

Engineers may consider utilizing the following equipment:

1. Floodlight luminaires* with narrow vertical beam type distributions (for example, 35 degree vertical spread to minimize light spillage, projecting 50 feet) may be utilized for approach columns, pier columns, and arches.

2. Floodlight luminaires* with wide vertical beam type distributions may be utilized for spans.

3. High wattage metal halide lamp (typical for architectural applications).

4. Weatherproof fixture.

*Recommend using luminaires with filters giving BSL the option (flexibility) to change light color. Recommend setting field angles of luminaires at nighttime evaluation.

Ease of installation and maintenance of fixture also need to be examined by engineers. Moreover, conduit exposure must be minimized and / or eliminated especially for historical bridges.
C. MISCELLANEOUS

**Streetscape Facilities**

Illumination levels for streetscape projects that provide full pedestrian lighting on sidewalks should have a minimum average illumination level of 10 Lux (1.0 FC). The uniformity ratio should be designed for 3:1. This lighting level should be in addition to the level provided by the regular street lighting system. Also refer to RP-33-99, DG-5-94 and G-1-03 for additional criteria.

**Approved Planning Areas and Planning Routes**

Every design engineer shall be aware of the list of approved Planning Areas and Routes. These areas and routes have been designated for a certain type of pole and are approved by the Cultural Affairs Commission. A complete list of all approved segments is kept on file at the records counter.

**BSL Lighting Analysis Software**

Two software programs (Lumen Micro and Simply Roadway from Lighting Technologies) are available in BSL to run lighting analysis. Help files and User’s guide are available in the BSL network system. Lighting calculation report requirements and format are determined at each division and/or section.

**BSL Database-Projects**

The BSL network system has a direct link to the BSL-Projects in Microsoft Access. This is a Database that contains specific design Bid/Award, Construction, financial and other information about the BSL projects. To view the database just clicks ok at the opening window. To edit projects in the database, get the User ID from your supervisor. Section Heads are responsible for updating this database on regular basis when changes occurred.

**BSL-SL Explorer**

This is another BSL network system tool that provides extensive existing system information on your desktop; pole type, circuit information, DWP O/H maps, Aerial Photo, Assessments, As Build, etc. can be found with this tool.

**Series Circuit Conversions**

It is the intention of this Bureau to convert all series circuits to multiple circuits by 2007. All projects should make an effort to do this type of conversions; in addition a special box should be added on the plan’s front sheet indicating the series circuit number and the number of poles that were converted.

**DESIGN CONSIDERATIONS**

A. **BSL DIRECTIVE NO. 246**

Cutoff luminaires shall be installed in accordance with BSL Directive No. 246 ($DIRECTV/0246).

B. **EQUIPMENT UNIFORMITY**

Engineers will give consideration to match existing / adjacent equipment for uniformity for areas absent of an established planning route.

C. **SPECIAL CIRCUMSTANCES**
Engineers will discuss all special circumstances with Division Managers. Resolutions will be reflected in the final street lighting construction plan.

D. **GENERAL ORDER NO. 95**
The overhead electric line construction rules will be adhered to by all engineers. Refer to Rules For OVERHEAD ELECTRIC LINE CONSTRUCTION; General Order No. 95 – State of California Public Utilities Commission. Engineer should be familiar with Table 1 and Rule 58.2-A.

E. **SUBSTRUCTURES**
Engineers will verify substructures with City records to modify street lighting design and eliminate underground construction conflicts. Substructures in proximity to BSL installations are required to be included in the street lighting plans.

F. **LIGHT TRESPASS**
Engineers will make every effort to minimize light trespass onto state highways, private property and non public right-of-way.

G. **RAILROADS**
Engineers will make every effort to install an additional luminaire oriented perpendicular to the railroad (never closer than 10 meter (or 33 feet) see RP—8-00 p.42, D2 part b) on the closest electrifier to the railroad without violating encroachment.

H. **SALVAGE LIST**
Engineers will contact the Field Operations Division and adhere to the procedures for salvaging equipment in accordance to GED Bulletin NO. 106 (BULLETIN/GED0106).

I. **CHECKLIST**
The Division Engineer shall thoroughly review all items listed in the checklist (Appendix A) with the project engineer and assure compliance.

J. **VARIANCE LIST**
Engineers shall examine all factors affecting design and specify any deviation with the design guidelines described herein. Such deviations shall be included in the Variance List which must accompany plans when submitted for final approval.

K. **GENERAL NOTE NO. 1**

L. **ADA REQUIREMENTS**
The 1990 Americans with Disabilities Act will be adhered to by all engineers. ($DIRECTV/0343). 48” is the minimum clearance taking the set-back of pole into consideration. In some very special situations, a 36” clearance can be specified.

M. **CUL-DE-SAC DESIGNS**
Engineers will use pole locations under Case I or Case II for standard cul-de-sacs whenever possible in accordance with GED Bulletin No. 66. Engineers will be responsible for assuring compliance with this practice. ($BULLETIN/SID0026).

N. **TRAFFIC CONFLICT AREAS**
The traffic conflict area requirements per GED Bulletin No. 114 will be adhered to by all engineers ($BULLETIN/GED0114).
The engineer will determine the length of the left turn pocket to be used for TCA calculations based on field conditions and acceptable engineering practices and policies.

The illumination level within a TCA shall be at least that which is recommended in RP-8-00. Refer to table on this manual on page 9.

Engineers shall review BSL Directive No.392 regarding BSL/DOT Agreements for Procedure and responsibilities at intersections.

O. **ENCROACHMENT PERMIT-CALTRANS**
Engineers proposing improvements within 100 feet of a State Highway need to verify with CALTRANS if an Encroachment Permit is necessary.

P. **GENERAL ORDER NO. 128**
The underground construction rules will be adhered to by all engineers.

Q. **TEMPORARY LIGHTING**
Alternate roadway lighting shall be provided during construction in accordance to General Note No.5. The temporary street lighting system must be in operation prior to removing the existing street lighting system. If a project is constructed in phases the designer may need to complete a temporary lighting plan. This must meet the current existing lighting standards on the project area.

Temporary lighting systems are required for all public right-of-ways (roadways, sidewalks, walkways, underpasses, overpasses, detour roads, etc.) where existing street lighting systems are being replaced or new street lighting systems are being constructed. The second condition refers to areas with no existing lighting before construction begins – Utilitarian lighting is not considered a lighting system.

- The temporary street lighting system shall be in operation prior to removing the existing street lighting system or constructing the new street lighting system.
- The temporary street lighting system shall provide an average illumination and uniformity ratio (ave./min.) to meet current City adopted illumination levels.
- The Contractor shall make arrangements with power utility company for service or shall provide an alternate power supply.
- The temporary street lighting system must be in operation from dusk to dawn.
- The contractor is responsible for restoring streetlights out of service within 24 hours.
- The contractor shall be responsible (including all related costs) for the installation, operation, maintenance, removal, and liability of the temporary street lighting system (equipment).
- Streetlights installed on temporary traffic signal poles shall be in accordance with the latest LADOT specifications.

For specific and complete information on Temporary Street Lighting requirements refer to Section 02790 - street lighting on MTA contracts, Street Lighting Specifications; and the BSL Special Specifications for the Construction Of Street Lighting Systems.
R. **DOWNTOWN RAIL TRANSIT (Construction Management Committee permit)**

For work to be done in the “downtown” area, a note requiring the contractor to obtain a permit from the “Downtown Construction Management Committee” must be placed on the plan. The note must instruct the bidder to take this permitting requirement, and any working hour restrictions or any lane restrictions imposed, into account when submitting his bid.

S. **TWINKLE LIGHTS (Receptacles) attached to Electroliers**

This Bureau has a policy in regards to connecting twinkle lights to existing or new street lighting systems. Refer to “Twinkle lights (Receptacles) attached to Electroliers Report included here as Appendix C.

T. **LAMPS – HPS/IGNITRON**

The standard lamp type for the City of Los Angeles is HPS/Ignitron. Any design deviations need to be approved by the Senior Engineering Manager. Refer to Directive No. 404.

U. **GENERAL BENEFIT - STREETLIGHTS AT INTERSECTIONS**

Refer to Directive No. 405.

V. **EXECUTIVE DIRECTIVE NO. CP.AV-1**

This Executive Directive prohibits any construction on major streets during rush hour - 6 am to 9 am and 3:30 pm to 7:00 pm.

W. **STREET LIGHTING OUTAGES DURING CONSTRUCTION**

Refer to Directive No. 409.

X. Intentionally Blank.

Y. Intentionally Blank.

Z. **REAL-TIME WIRELESS REPORTING SYSTEM - TELEMICS**

All new Multiple, Cobrahead type installations should specify the use of Telemics Access Point and Telemics Check Point. Attention should be given to the location of Access Points as some installations might not need it.

**ELECTRICAL STREET LIGHTING DESIGN**

As a part of the design of street lighting systems, it is essential that the project engineer make all calculation and determinations with respect to the following criteria.
VOLTAGE DROP (MULTIPLE CIRCUITS)

Voltage drop is an essential design criterion to ensure proper operation of the system, the voltage provided by DWP is normally a 120/240 or 240/480 volt system. The voltage at the end of a circuit shall not be less than 5% of the voltage at the beginning of the circuit. A voltage drop in excess of 5% may cause the luminaries at the end of a circuit run to either not operate or provide reduced lumen output.

A computer program (BSL-Voltage Drop calculator) is also available on your desktop. This tool is in compliance with LA DWP requirements and has a help file which describes how to use it.

Please refer to the “Street Lighting Guide to Electrical Requirements” for proper voltage drop analysis. Supervisors should have a copy of this document.

For Series Circuits, DWP is responsible for calculations, your coordination and communication with DWP is required.

WIRE SIZE (MULTIPLE CIRCUITS)

The wire size is dependent on the ampacity required by the proposed circuit load and any anticipated future loads as well as the voltage drop calculations. The wire shall be sized according to the NEC section 310-15. When sizing the wire for ampacity, using NEC Table 310-16, the wire size is assumed to have a 75 degree Celsius rating unless otherwise specified on the plan for a higher temperature. Wire size may be increased to alleviate a voltage drop problem. The smartest wire size allowed for street lighting design is #6 AWG for the street lighting system. A #10 AWG solid (wire) is required in the electroliers. For Series Circuits, wire size #8 AWG Solid Copper for 5000V operation is typically specified.

CONDUIT SIZE

The minimum size conduit used shall be 1 ½ “rigid galvanized steel. Conduit shall be sized according to NEC table 3B. Suggestion: minimum 2” for all street crossings. Exception shall be permitted near the beach area where PVC may be used in order to prevent rusting problems from the salty water condition.

Conduit shall be sized so that it is only filled (by wires) to 40% of the allowed according to NEC table 3B in order to prevent maintenance problems. The minimum size conduit used shall be 1 1/2” rigid galvanized steel.

Under very special economic circumstances and after addressing technical and maintenance concerns 1“ conduit might be allowed – approval by the Senior Engineering Manager is required.

SYSTEM PROTECTION

All street lighting systems shall be protected by an overcurrent device. This is in the form of a fuse or circuit breaker. The fuse or circuit breaker shall be sized in accordance with NEC Section 240-3. The minimum size fuse and circuit breaker used for a service point shall be 30 amps (Slow blow). The minimum size fuse for electroliers is 10 Amps (Slow Blow).

When circuit breakers are to be utilized, the following note shall be placed on the plans: “The neutral wire shall only be grounded at the service point and an additional ground wire shall be added to ground all steel components of the system.”
PULLBOXES

All new electrolier locations should be specified to have a Type 2 pullbox. Minimum size shall be Type 3 for all service point locations. Consideration needs to be given to intersections and special locations where a minimum size type 3 shall be specified. In addition, some locations required special metal frame pullboxes to protect them from heavy traffic.

METERED SERVICES

Bikeway and Architectural Lighting for Historic Bridge Projects are the only type of projects that are typically been required to have metered services (Check with Sr. Engineers for changes in this Policy). To provide this type of service, engineers will be required to work with service equipment enclosures, power meters, panel boards, relays, etc. Design engineers should discuss all design requirements, specifications and equipment with their Section Supervisors and Division Engineer; all information needs to be specified on construction plans and approved by DWP.

EQUIPMENT SELECTION STANDARDS

The equipment selection standards for roadway lighting will be adhered to by all engineers. When designing a street lighting system the selection of a pole is the basis for the entire design process including Design Recommendation to plan preparation. These guidelines are not absolute and many factors need to be taken into account when designing a system. Traffic poles (CD954, Cal type, Camera pole, etc) for common approval are not subject to this selection process. Some factors include the existing system, community/ Council Office sensitivity, and overhead or underground conflicts just to name a few.

MAJOR & SECONDARY HWYS.

40' DAVITS (40'metal pole) - Downtown & Heavy Commercial
CD 959C (31'metal pole) - Light Commercial, Intermediate and Residential Areas

Major and Secondary highways, as defined by the Community plans, have roadway widths of 24m (80') and 22.2m (74') respectively. Sidewalks range from 3m (10') to 3.6m (12') either with complete concrete sidewalk or parkway and sidewalk.

ALTERNATIVES: CD 953C, CD 814E, CD 929C - These three poles may be considered when it is important to match the existing system.

COLLECTOR STREETS

CD 855 (30'9" concrete pole)

Collector streets, as defined by the Community plans, are 13.2m (44') in roadway width.
Sidewalks ranging from 2.4m (8') to 3m (10'). Many collector streets are not at their full roadway width. If this is the case then before changing your design to CD 851 consider that at some time in the future BOE will widen the street. It may be a good idea to investigate future street improvements.

**ALTERNATIVES:** CD 953C, CD 814 - These two poles may be considered when it is important to match the existing system.

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**LOCAL STREETS**

**CD 851** (26' concrete pole)

Local streets as defined by the Community plans are 12m (40') in width. Sidewalks ranging from 2.1m (7') to 3m (10'). There are many different types of poles on local streets such as CD 808Z, CD 813, to ornamental style. If your project is in an area with predominantly a different style then you may want to consider that type of pole if the lighting requirements are met.

**ALTERNATIVE:** CD 808Z - this pole may be considered when it is important to match the existing system.

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**PEDESTRIAN LIGHTING SYSTEMS and SECURITY LIGHTING SYSTEMS**

Several designs are acceptable to the Bureau for these types of projects. The Bureau's publication LET US LIGHT YOUR WAY shows 6 different design options, including the Shepards Crook, the Modern Semi-Hemisphere and the Fluted Tapered Pole with "S" Arm. Refer to that publication for additional design options.

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**EXCEPTIONS TO EQUIPMENT SELECTION GUIDELINES**

1. Planning routes/areas and streetscape plans adopted by the Cultural Affairs Commission.
2. Streetscape plan designs adopted by the Cultural Affairs Commission.
3. Historical restoration / preservation and dedication projects (e.g. Times Mirror Square). Historical monuments identified by the State Historical Building code (e.g. Historical Bridges).
4. Scenic highways (Mulholland Drive) and community sensitive areas (Westwood, Century City, Hancock Park).
5. Special interest locations (schools, parks, churches).
7. Environmental Impact Reports.
Alternatives may be considered when it is important to match the existing system. An existing system is defined as a complete system with more than 10 poles in staggered, one sided or opposite system. To qualify for the alternative the proposed project must be directly adjacent to or within the existing system.

EQUIPMENT APPROVAL PROCESS

All equipment specified on the plans must be either on the approved equipment list or approved through the Testing and Equipment Evaluation Section of the Bureau. (Refer to the Bureau of Street Lighting – Special Specifications for Construction of Street Lighting Systems.)

Equipment on the Approved Equipment list
This equipment may be specified on the plans as approved by the responsible party signing the final plan document.

Equipment NOT on the Approved Equipment List
If non-standard equipment (equipment not listed under the Approved Equipment List of the “Blue book”) is selected for a project, an evaluation request shall be submitted to the TEE Section immediately after design recommendation is approved. The designer is responsible for specifying complete catalog numbers for verification of equipment availability. The TEE section shall be given 60 days to complete the evaluation.

Spare Equipment
If non-standard equipment is specified and approved by TEE the designer shall, upon confirmation with FOD, add a 10% increase in material of that equipment to be delivered in accordance with General Note No. 10. An E mail or letter stating the project title, equipment to be delivered, and quantity shall be forwarded to FOD for their reference.

General BSL Equipment Requirements:

- Finish- Only the Painting Method is approved, and shall be accomplished using a two-part Epox polyurethane system. Power Coating is not an acceptable method to finish equipment.

- Molded Globes- Globes, lens and prismatic refractors must be made of glass. Polycarbonate material is not acceptable.

AutoCAD and Plan Drafting Standards

- All plans should be prepared using the standard BSL Block sheets available in AutoCAD. Use the latest AutoCAD version in BSL.
- All plans should be prepared using the Standard AutoCAD BSL Directory and Drafting Templates.
- Quantity Take Off (QTO) of all plans should be prepared using the above AutoCAD tools.
PROPOSITION 218 DUE PROCESS

All projects that will increase existing assessments or add new assessment charges (new Construction or Maintenance and Operation) must go through Proposition 218 Due Process. This Process is regulated by Proposition 218 Law, as well as the Los Angeles Municipal Code.

Engineers will adhere to the following procedure for Due Process for authorized and non-authorized street lighting projects.

a. At the initiation of the design of a street lighting project the engineering group shall take into account the effect of Proposition 218. The Proposition 218 Section shall be consulted if the effect is unclear.

b. Once a design has been decided upon and proposed electrolier locations are known a copy of the plans shall be forwarded to the Proposition 218 with a project timeline to determine the urgency and timing of the ballot process. The time required for a regular Prop. 218 process is between 5 and 6 months. Special approved requests to “expedite” the process might take between 4 and 5 months.

c. The design section will be responsible to notify the Council Office and all affected agencies when deemed appropriate that an Assessment Ballot Process is required per Proposition 218.

d. In the event that plans must be completed and signed off prior to the completion of the Proposition 218 ballot process, the Engineers will add special notes on the street lighting (front sheet) construction plan.

NOTICE TO CONTRACTOR

STREET LIGHTING CONSTRUCTION SPECIFIED HEREON SHALL NOT BEGIN UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE BUREAU OF STREET LIGHTING THAT THE LEGAL REQUIREMENTS OF PROPOSITION 218 HAVE BEEN SATISFIED.

e. Proposition 218 Section should create a schedule for all the proposition 218 activities. This schedule showing the critical dates of the process should be given to the design section. Internal BSL design Section should be informed by the Proposition 218 Section of the following critical information: Prop. 218 St. Lighting Maintenance Assessment Notification, Mailing Date and Election Results.
Appendix A

Design Recommendation and Plan Review Checklist
**DESIGNER’S CHECKLIST**

**PROJECT TITLE:**

**PROJECT TYPE:**

**ALTERNATIVES:**

<table>
<thead>
<tr>
<th>FEATURES</th>
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<tbody>
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<tr>
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<tr>
<td>Construction with adjacent system</td>
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<tr>
<td>Consistent with approved master plan/ plan route</td>
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<td>Age of the system</td>
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<td>Narrow sidewalk and curbs</td>
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<td>Map</td>
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</table>
PLAN REVIEW CHECKLIST

PROJECT TITLE: ____________________________________________________________  W.O__________________

INITIAL ______________________

DESIGNER NAME: ________________________________________________________ (PLEASE PRINT)

1. Is the plan scope appropriate (compare to authority)?
   a) Boundaries and streets to be included (regarding street improvements or City Boundary).
   b) Type of work (also consider financing—adequate and properly used).

2. Have all existing and proposed reference plans (s/l installation, E&C/STM conversion, and other street improvement) been considered, and plotted on plan as necessary and properly coordinated; and proposed plans reviewed for status and probability of construction, after the final plan is drafted, as well as in the preliminary design.

3. Are the design recommendation and plan consistent, and are the design decisions still appropriate? Revisions needed? IES standards appropriately applied?

4. Have all other agencies (Council Office, Recreation and Parks, Engineering, DOT, other City Departments, Cal-Trans, other Cities, etc.) been coordinated with? Have City boundary situations been resolved?

5. Does the plan specification for pole types and illumination levels coordinate well with adjacent pole types and illumination levels?

6. Have special field conditions been allowed for in the design?
   a) Trees (Contact Tree-Trimming Section)
   b) Hillside, signals, freeways, etc. cutoff luminaires
   c) Narrow sidewalks and curbs
   d) Curves
   e) Existing luminaires within the project boundaries which could be converted if financing rules allow.
   f) Railroad Crossings
   g) Substructures
   h) DWP Clearances (overhead, pole locations, vaults, etc…)

7. Have we considered modifications to nearby luminaires (cutoff, HPS) to create a uniform lighting condition in this area?

8. Are electrical service arrangements, loads, overhead clearances, and data complete, consistent with BSL practices, and economically reasonable?

9. Have we considered conversion of existing series lights to multiple?

10. Is the spacing on each street adequate not only to meet our standards, but also to satisfy the residences and business? Are special locations such as alleys, cul-de-sacs, and street intersections adequately lighted by nearby streetlights?

11. Has the Field Operations Division been consulted, given input regarding equipment reusability and items to salvage or discard, and is this information accurately shown on the plan?

12. Have existing and potential maintenance agreement locations been identified, and have they been properly identified on the plan, and has notification been made to the Project Management Division?

13. Are non-street lighting sheets of the plan available, complete, and consistent with the design? (Traffic signals, substructures, sewers and street plan, etc.).

14. Have all unusual items or problems been discussed and resolved at appropriate levels?
# PLAN REVIEW CHECKLIST

**PROJECT TITLE:** ____________________________________________________________ W.O____________

**INITIAL**

**DESIGNER NAME:** ____________________________________________________________ (PLEASE PRINT)

15. Have we included TCA calculations in the Final Package?
16. Has this plan been circulated for in-house plan review (Directive 359)?
17. Have we checked if this project is in agreement with the Planning Route?
18. Have we included the updated project schedule with the Final Package?
19. Does this project qualify for Prop. 218 election? If yes, verify final results of election.

21. Do all conversions of existing luminaries adhere to BSL policies (Bulletin 36 and Directive 246)

22. Has the front sheet been completed and checked for accuracy?
   - Project title, work order number, signature block, reference map & plan block, sheet number, number of units, drawing scale
   - Key map, project limits with appropriate street classifications, index to sheets
   - General notes, delta notes, supplemental notes

23. Has the street lighting sheets been completed and checked for accuracy?
   - Circuit diagram
   - Existing plan and post references
   - Roadway and sidewalk dimensions, proposed electrolite spacing
   - Locations of traffic poles consistant with traffic sheets, if any
   - S/L details properly scaled and referenced

24. Do the substructure sheets list critical substructure sizes, and are they readable and complete.

25. Has the equipment been submitted to the TEE Section for preliminary evaluation? Has the TEE Section signed off on it?

26. Does the equipment description match the catalog number? Is the catalog number complete? Has the equipment been properly described?

27. Has spare equipment to be delivered to the yard been included on the material list?

**REVIEWED BY:** _____________________________________________ **DATE:** ________________________
Appendix B

INFORMATION AND NOTES
ARterial Streets

Major Highway—Class I
At intersections with other Major Highways, the larger widths shown in parentheses should be provided, as determined by LA DOT, utilizing a Standard Flare Section.

Major Highway—Class II
At intersections where LA DOT has determined that dual turn lanes are required, the larger widths shown in parentheses shall be provided, utilizing a Standard Flare Section.

Secondary Highway

Transitional Extensions
Where a designated Major Highway (Class I or II) or a Secondary Highway crosses another designated arterial street and then changes in designation to a street of lesser standard width, the street of lesser standard width shall be widened on both sides from the intersection to the width of the higher designation and tapered in a Standard Flare Section, as shown below, to provide an orderly transition.

Standard Flare Section (Plan View)

Alleys

Standard Turning Area (Plan View)

Standard Cross-Section

Minimum Turning Area (Plan View)

NOTE: Dimensions shown herein are not to scale.

Prepared in cooperation with the Departments of Transportation and City Planning

Bureau of Engineering

Department of Public Works

City of Los Angeles
STANDARD STREET CONDITIONS

1. City Council may, by ordinance, adopt specific standards for individual streets which differ from these official standard street dimensions. Community Plans should be reviewed for designation of Pedestrian Priority Street Segments of arterial streets which would require wider sidewalks than those indicated on this Standard Plan.

2. Sidewalk widths for non-arterial streets shall be the minimum shown hereon. Greater widths, up to full width between curb and property line, with tree wells, shall be required where commercial and multiple residential frontage, schools, areas of heavy pedestrian traffic or other special circumstances indicate the need.

3. Except for special conditions or as otherwise provided, sidewalk shall be placed as close to the property line as possible.

4. Where sidewalk is constructed adjacent to the curb it shall have a minimum width of 10 feet inclusive of curb thickness except for hillside streets, noncontinuous local streets and industrial streets.

5. Where sidewalk is constructed on the fill or low side of a hillside street, a berm may be required on private property.

6. Easements may be required in addition to the widths shown hereon, where necessary for the installation of public utilities or for widened sidewalks (minimum 15-foot width) adjacent to transit stations.

7. Fifty-foot curb radii (instead of the standard 35' curb radii) shall be provided for cul-de-sacs in industrial areas.

8. Private street development should conform to the standard public street dimensions shown on this sheet, where appropriate. Variations may be approved on a case-by-case basis.

9. For intersections of streets the following dedications shall apply:
   a. Intersections of arterial streets with any other street: 15'x15' cut corner OR 20' curved corner radius.
   b. Intersections of non-arterial and/or hillside streets: 10'x10' cut corner OR 15' curved corner radius.

10. Hillside Collector Streets. In hillside areas where topography or other environmental considerations, documented to the satisfaction of the City Engineer, would render full street improvements infeasible, the roadway width of the hillside collector street may be reduced to no less than 32 feet, provided that parking is limited to one side only.
<table>
<thead>
<tr>
<th>Ref. No.</th>
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<th>Approval Date</th>
<th>Approved Pole Type</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>96th St. &amp; Bellanca Ave. between Belford Ave. &amp; Century Blvd.</td>
<td>12/15/94</td>
<td>40' M.H. Baseless</td>
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<tr>
<td></td>
<td>* 96th St. at Bellanca Ave., Southerly Corner CPC 87-0137 BC 400026</td>
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<td>Oct. Concrete</td>
</tr>
<tr>
<td>2</td>
<td>Amalfi Dr. between Sunset Blvd. &amp; Channel Rd.</td>
<td>06/15/95</td>
<td>CD808X</td>
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<tr>
<td></td>
<td>* Amalfi Dr. (395) SE'ly side SLY'O Upper Mesa Rd. BD 401151</td>
<td></td>
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<td>Local streets w/in res. area bnded by Burbank Blvd. (N), Magnolia Blvd. (S), Lankershim Blvd. (E), &amp; Laurel Canyon Blvd. (W)</td>
<td>08/03/95</td>
<td>CD851A</td>
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<tr>
<td></td>
<td>* Burbank Blvd. &amp; Beck Ave. SW Corner Tract 48088 BD 202113</td>
<td></td>
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<td>4</td>
<td>La Tuna Canyon Rd. bet. Sunland Blvd. &amp; Tujunga Canyon Blvd., Del Arroyo Dr. from La Tuna Canyon Rd. to its N'ly end</td>
<td>02/02/95</td>
<td>40' Davit &amp; CD808X</td>
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<td>* Del Arroyo Dr. N/O La Tuna Canyon Rd PMLA 6238 BD 200607</td>
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<td>Local Streets within the residential area bounded by Wicks St., San Fernando Rd., Tuxford St., and Laurel Canyon Blvd.</td>
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<td>* Gaffey St. &amp; Alma St. S/O 30th St. (General Improvement) BD 600246</td>
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<td>40' M.H.</td>
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<td></td>
<td>* North Broadway, Gates St., Manito Ave. &amp; Thomas St. BD 000863</td>
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<td>Octag. Concrete</td>
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<td>Local streets with roadway of 30' or less in area Bounded By Ventura Blvd., Havenhurst Ave., Mulholand Dr., &amp; Alonzo Ave.</td>
<td>03/16/95</td>
<td>CD813</td>
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<td>* Oak View Dr. 1423’ to 1289’ E/O Louise Ave. PMLA 6961 BC 202460</td>
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<td>Olympic Blvd. from San Diego Fwy to Santa Monica City Boundary</td>
<td>12/01/94</td>
<td>40' Davit</td>
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<td></td>
<td>* Olympic Blvd. (11727), NW/S from Barrington Ave. to Stoner Ave. BD 401112</td>
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<td>08/03/95</td>
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<td>* Penfield Ave. (Pvt. Street) Topham St. to Calvert St. BD 202529</td>
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<td>San Fernando Rd. between: Glendale Fwy to Verdugo Rd. , Verdugo Rd. to Ave. 26</td>
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<td>40' M.H. Davit DBl arm</td>
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<td>* San Fernando Rd. (SW/S 515’ SE/O to 179’ NW/O Edward Ave. ZA 93-0686 (CUB) BD 001098</td>
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<td>40' M.H. Davit Single arm</td>
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<td>San Fernando Rd. - From City Boundary between City of L.A. and City of San Fernando to I-5 near Tuxford St.</td>
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<td>* Sunset Blvd. (16019') &amp; Muskingum Ave. NE Corner BC 401222</td>
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18 Local Streets bounded by Lankershim Blvd., Tuxford St., San Fernando Rd., and Strathern St.
   - Troost Ave. W/S 124' s/o to 214' s/o Cantara St. BD 202642
   - Wyandotte St. 515' to 415' E/O Gloria Ave. BD 202408
   - Van Nuys Blvd. NW/S Lev Ave. to 230' SW/O Lev Ave. BD 202621
09/05/96 CD851A

19 Local Streets bounded by, but not included, Woodley Ave., Saticoy St., Haskell Ave. and Sherman Way
   - Wyandotte St. 515' to 415' E/O Gloria Ave. BD 202408
   - Van Nuys Blvd. NW/S Lev Ave. to 230' SW/O Lev Ave. BD 202621
08/15/96 CD851A

20 Local Streets bounded by Simi Valley Fwy (North), Golden State Fwy (East), Osborne St. (South), and Woodman Ave. (West)
07/18/96 CD855A

21 Pacific Ave. between Washington Street and Culver Blvd.
   - Voyage St. & Pacific Ave. SW Corner PMLA 5544 BCX8075
22 Hazeltine Ave. between Sherman Way and Ventura Blvd,
   - Riverside Dr. & Hazeltine Ave. SE Corner CPC 94-0287
   - Sunset Blvd., St Andrews Pl., De Longpre Ave., Wilton Place & Hollywood Blvd. BD 001192
24 Local streets w/in the residential area bounded by Barrington Ave., Wilshire Bl., Montana Ave., San Vicente Bl. & Bundy Dr.
   - Darlington Ave. (11706) S/S, W/O Barrington Ave. BD 401220
25 Vermont Ave. between 10 Fwy and Los Feliz Blvd.
26 Vista Del Mar from Culver Blvd. to Waterview Ave.
   - Vista del Mar (W/S) Alley E/O Surf St. to Waterview St. BC XX8878
27 Local Streets within area generally bounded by De Soto Ave., Sherman Way, Mason Ave. and Vanowen St.
   - Gazette Ave. W/S - 40' N/O to 161' S/O Gaviot St. BC 202581
28 Local Streets bounded by Vanowen St., Lankershim Blvd., Victory Blvd., and Laurel Canyon Blvd.
   - Vanowen St. & Morella Ave. SE Corner ZA 96-0326; BD 202655
29 Local Streets bounded by the Golden State (5) Freeway, Roxford St., San Fernando Rd., and Hubbard St.
   - Encinitas Ave. & Larchmpt St. NW Corner ZA 94-0947; BC 202656
30 Collector & Local Streets bounded by Ventura Blvd. (North), Reseda Blvd. (East), Wells Dr. (South), and Serrania Ave. (West)
   - Serrania Ave. E/S 1345' to 1841' S/O Ventura Blvd. T 50969 BD 202239
31 Marco Place between Walgrove Ave. and Frances Ave.
   - Beethoven St. (3604) & Marco Pl. SE Corner BD 401170
32 Oxford Ave. between Marr St. and Oxnard Ave.
   - Oxford Ave. SW/S SE/O Washington Blvd. BD 401188
33 Wellesley Ave. between Wilshire Blvd. and Santa Monica Blvd.
   - Wellesley Ave. SW/O (1337-39) from 145' to 155' NW/O Rochester Ave. BD 401195
34 Local streets within the residential area bounded by Saticoy St. (N), Sherman Way (S), Kester Ave. (E), & Sepulveda Bl. (W)
   - Lighting for Laurelgrove Ave. & Ped. Bridge W/O. E6000396
35 Colorado Blvd. between Glendale Fwy and Monte Bonito Dr.
   - Colorado Blvd. N/S b/w 534' w/o & 72' w/o Patrick Way PMLA 3580; BC XX3712
36 Local Streets within Residential Area bounded by Moorpark St., Laurel Canyon Blvd., Ventura Blvd. & Whitsett Ave.
   - Moorpark St. & St. Clair Ave., SE Corner Tract 47249; BD 202031
37 Local Streets bounded by Santa Monica Blvd., San Diego Fwy (405), Olympic Blvd. & Bundy Dr.
   - Colby Ave. & Federal Ave. S/O La Orange Ave. BD 401229
03/21/96 CD851A
03/02/95 CD851A
03/21/96 CD851A
03/12/96 CD851A
12/12/96 CD808Z
12/12/96 CD855A
38 Local Streets bounded by Lankershim Blvd., Vanowen St., City of Burbank Boundary, & Camarillo St.
  * Huston St. & Vineland Ave. SW Corner ZA 89-1076 BC 202683

39 Vermont Ave. between 6th St. and the Santa Monica (10) Freeway
  * Vermont Ave. from Wilshire to 205' N/O Wilshire and Alley N/O Wilshire BD 001288

40 Local Streets bounded by Strathern St., Clybourne Ave., Sherman Way, Lankershim Blvd., Runnymede St., and Laurel Cyn Bl.
  * Cohasset St. S/S 465' to 550' W/O Vineland Ave. BD 202664

41 Western Ave. between Manchester Ave. & Century Blvd.
  * Western Ave. (W/S) between 88th and 89th Streets. ZA96-0454 BD001313

42 Local streets within the residential area bounded by Ventura Blvd., Cahuenga Ave., 134 Fwy & 101 Fwy
  * Landale St. - 621' to 740' w/o Lankershim Blvd. BD-202333

43 Voyage St. between Pacific Ave. & Ocean Front Walk
  * Voyage St. & Pacific Ave. SW Corner MLPA 5544 BC-XX8075

44 Local Streets bounded by Centinela Ave., San Diego Fwy (405), La Tijera Blvd., & La Cienega Blvd.
  * Knowlton Place (6920-6932) E/S, S/O Knowlton St. BD-401254

45 Local streets bounded by Lindley Ave., Parthenia St., Balboa Blvd. and Roscoe Blvd.
  * Shoemborn St. & Zelzah Ave. Lighting District, A-11 Act W.O. L970037

46 Local streets bounded by Washington St., Lincoln Ave. and Los Angeles City Limit
  * Howard St. & Thatcher Ave. Lighting District W.O. L9670040

47 San Fernando Road - Sepulveda Blvd. to City/County of LA
  * San Fernando Road S/S 1650' to 2340' NW/O Balboa Blvd. BC-202618

48 Foothill Blvd. - Foothill Fwy (210) to Roxyford St.
  * Foothill Blvd. (S/S) 1270' to 480' E/O Oden St. BD-202496

49 Maxella Ave. between Lincoln Blvd. and Alla Rd.
  * Maxella Ave. (13355) and Glencoe Ave. NE Corner BD-401265

50 Redwood Ave. between Washington Blvd. and Mindanao Way
  * Maxella Ave. and Redwood Ave. NE Corner BD-401281

51 Wicks St. between San Fernando Rd. and Arleta Ave.
  * Wicks St. and Telfair Ave. SE Corner BD-202686

52 Telfair Ave. between Truesdale St. and Lankershim Blvd.
  * Wicks St. and Telfair Ave. SE Corner BD-202686

53 San Fernando Rd. - Golden St. Fwy (I-5) to City of Burbank
  * San Fernando Rd. - Olinda St. to Strathern St. Sun Valley Phase II - LANI Project.

54 Winnetka Ave. from Plummer St. to Nordoff St.
  * Winnetka Ave. and Prairie St. SW Corner BC-202708

55 Local streets bounded by Normandie Ave., Martin Luther King Jr. Blvd., Harbor (110) Freeway and Manchester Ave.
  * Vermont Ave. E/S at 58th Street S/S BD-001327

56 Local streets bounded by San Fernando Rd., Forest Lawn Memorial Park, Roderick Pl., Roderick Rd., and Fletcher Dr.
  * Weldon Ave. and Southerly Corner T-51718 BD-001137

57 Local streets within the residential area bounded by Woodman Ave., Roscoe Blvd., Ventura Canyon Ave., Wentworth St., Arleta Ave., Hollywood Fwy., & Sherman Way (Excluding the area with existing CD813 electroliers)
  * Roscoe Blvd., S/S 440' E/O to 50' W/O Nagle Ave. BD-202701
58 Sawtelle Blvd. between Santa Monica Blvd. and Exposition Blvd.
  * Olympic Blvd. and Sawtelle Blvd. N/E Corner BD-401283
  * Central Ave. - Santa Monica Fwy to Slauson Ave.
    * Central Ave. - 22nd St. to 41st St. (Replacement Lighting District)
59 Residential area bounded by Wilshire Blvd., Bundy Dr., Barrington Ave., and Santa Monica Blvd.
  * Texas Ave. (12016) S/S, E/O Bundy Dr. (Private Development) BD-401285
61 Main St., Spring St., Temple St. and First St.
  * Main St, Spring St. and Temple St. (City Hall Seismic Rehabilitation) BD-001101
62 Local & Collector streets bndd by Melrose Ave., Fairfax Ave., Beverly Blvd., La Cienega Blvd., and the City of W. Hollywood
  * Sweetzer Ave. E/S S/O Melrose Ave. T-52268 BD-041295
63 Wilshire Blvd. from City of Beverly Hills to Malcolm Ave.
  * Wilshire Blvd. (10400) S/S from Beverly Glen Blvd to Holmby Ave.
64 Local & Collector Streets bndd by the Los Angeles River, N. Broadway, College St., North Main St., Vignes St., and Cesar Chavez A
  * North Spring St., N. Main St., Sotello St., Memminger St.
65 North Main St. between Daly St. and Alameda St. (with the exception of Bridge Lighting
  * North Spring St., N. Main St., Sotello St., Memminger St.
66 Local and collector streets bndd by the Hollywood (170) Frwy., the Ventura (101) Frwy., Whitsett Ave., and Magnolia Blvd.
  * Riverside Dr. and Morella Ave., SW Corner Tract 49638 BD-202745
67 Riverside Dr. between the Hollywood (170) Frwy. and Whitsett Ave.
  * Riverside Dr. and Morella Ave., SW Corner Tract 49638 BD-202745
68 Local and collector streets bndd by Roscoe Blvd., Canoga Ave., Saticoy St. and Topanga Canyon Blvd.
  * Owensmouth Ave. and Saticoy St. NE Corner BC-202759
69 Strathern St. (Secondary Hwy) between Laurel Canyon Ave. and Coldwater Canyon Ave.
  * Strathern St. from Whitsett Ave. to Bellaire Ave. 66000410
70 Local and Collector Streets bounded by Roxford St. (East), San Fernando Rd. (South), Foothill Frwy (North)
71 Major & Collector Sts. bndd by Washington Blvd. (N), Santa Fe Ave. (W), 25th St. (S), Soto St. (E)
  * Alameda Corridor-Washington Blvd. and Santa Fe Ave. Grade Separation Improvements
72 Local & Collector Sts. bndd by Pacific Ave., 26th St., Hamilton Ave., Alma Ave. & 19th St.
  * Pacific Ave. and Hamilton Ave. SW Corner BC-600280
73 Local & Collector Sts. bndd by the San Diego(405) Fwy, Saticoy St., Roscoe Blvd. & the Van Nuys Airport.
  * Strathern St. N/S 41F E/O to 660 W/O Gloria Ave. BD-202785
  * Sunburst St. & Oso St. SE Corner BC-202788
75 Local & Collector Streets bounded by Lomita Blvd., Harbor (110) Frwy, Pacific Coast Hwy, and Normandie Ave.
  * Vermont Ave. and Pacific Coast Hwy, NW Corner BD-600267
76 Broadway between Aliso St. & Pico Blvd.
  * Broadway between Fifth St. & Olympic Blvd. E60000515
77 Erwin St. from Laurel Canyon Blvd. to Vineeland Ave.
  * Lankershim Blvd. & Erwin St. NE Corner BD-202498
78 Local & Collector Sts. bounded by Chatsworth St., Canoga Ave., Lassen St. & De Soto Ave.
  * Varie Ave. & Devonshire St., NW Corner ZA97-0487 BC-202816
79 Staples Center Arena—Figueroa St. between 11th St. & Pico Blvd., 11th Street between Figueroa St. & Sentous St.
80 Winnetka Ave. between Simi Valley (118) FWY. & Sesnon Blvd.
* Winnetka Ave. & Rinaldi St. NE Corner  BD-202657

81 Local & Collector Streets bounded by Woodman Ave., Plummer St., Nordhoff St. & Sepulveda Blvd.
* Tupper St. & Tobias Ave., SW Corner  BD-202744

82 190th Street from Western Ave. to Figueroa St.
* 190th St. @ Normandie Ave., SW Corner  BD 600278

83 Abbot Kinney between S. Venice Blvd. & Washington Blvd.
* Oxford Avenue SW/S N/O Washington Blvd.  BD 401288

84 Local & Collector Streets bounded by Van Nuys Blvd., Glenoaks Blvd., 118 Frw., & Foothill Blvd.
* Mercer Street 660' SW/O Borden Ave. to Glenoaks Blvd.  BD-202772

85 Local & Collector Streets bounded by Victory Blvd., White Oak Ave., Topham St., & Lindley Ave.
* Topham St. N/S 263'E/O Lindley Ave. to Lindley Ave.  BD-202742

86 Local & Collector Streets bounded by Van Nuys Blvd., Terra Bella St. and Foothill Freeway
* Pierce St. & Hunnewell Ave. SE Corner  BC-202859

* Sunset Blvd. N/S between Crescent Heights Blvd. & Laurel Cyn. Blvd.  BD-401337

88 Local & Collector Streets bounded by Washington Blvd., Washington St., Lincoln Blvd. & Admiralty Way
* Princeton Drive & Thatcher Ave., SE Corner  BC-401354

89 Local & Collector Streets Bounded by Olympic Blvd., Bundy Dr., the 10 Frw & the 405 Frw.
* Pico Blvd. & Harrington Ave., NE Corner  BD-401333

90 Calabasas Road from Mulholland Drive to Parkway Calabasas
* Mulholland Drive (NL/Y/S) & Calabasas Road to Valmar Road  BC-200672

91 Washington Blvd. from Overland Ave. to Hughes Ave.
* Dunn Dr. & Washington Blvd. NW Corner  BD-401291

92 Magnolia Blvd. from Hollywood Frw (170) to Whitsett Ave.
* Magnolia Blvd. fr. Hollywood Frw. (170) to Cofax Ave.  EXX81127
Appendix C

TWINKLE LIGHTS (RECEPTACLES) POLICY
Twinkle Lights (Receptacles) attached to Electroliers

REPORT
March 25, 2002

This report summarizes the issue of installing twinkle lighting (receptacles) on electroliers.

BACKGROUND
The communities and Council Offices have requested that in certain areas of the City receptacles be installed on street lighting poles to accommodate seasonal twinkle lighting. Currently there are five locations (number of streetlights unknown) in the City that twinkle lighting exists as a permanent receptacle. At these locations the receptacles are connected to the street lighting circuit.

DWP and BSL have been discussing this issue to attempt to arrive at a permanent solution and process to handle these requests. The following report identifies concerns, and a recommended solution.

DISCUSSION

Based on discussion from weekly meetings between DWP and BSL a system configuration has been proposed.

Several concerns were addressed including safety, mapping, maintenance, system expansion, system reliability, and billing. The desired system would have the street lighting circuit and receptacle circuit on separate services and separate meters. This would eliminate the need to use TAPA installations or have the receptacles attached to the street lighting circuits.

RECOMMENDATION
The following outlines the proposed configuration of a system with receptacles mounted on streetlight poles. (see the attached diagram)

SYSTEM CONFIGURATION
1. The systems would have separate conduits and separate pullboxes.

2. The receptacle wiring would be in a separate raceway within the pole up to the receptacle.

3. BSL would maintain the receptacle circuit. (no third party would be involved)

4. The services will be obtained through the DWP Service Planning Group. The system will be serviced from a meter pedestal. The meter pedestal will have a revenue meter for the receptacle circuit and a TDK meter for the street lighting circuit. BSL or the third party will pay for the
meter pedestal. BSL will pay for the cost of installing the TDK meter (material and labor) and the third party will pay for the cost of installing the revenue meter (material and labor). The two disconnects will be equipped with a "handle ties" or "master handle" such that both systems will be either, on at the same time or off at the same time.

5. The street lighting system would have a LS-2 rate and the receptacle will be at a A1B rate.

6. BSL will submit final plans to DWP Street Lighting Design Group before the circuits are energized. Billing will be based on the final plans. BSL will submit the as-built plans to DWP Street Light Design. Group for records purposes and to adjust billing if the as-built plans differ from the final plans.

7. DWP will resume normal maintenance on the electroliers.

8. The metered energy consumption for the receptacles will be billed to the third party who applied for service. If no third party applied for service or if BSL applied for service on behalf of a third party, the energy consumption will be billed to BSL. The streetlights will be billed to BSL through the street light billing system (LS-2 rate).

The proposed configuration (attachment A) and procedures are recommended by:

Norma Marrero, St. Ltg Eng.
Bureau of Street Lighting

Joe Vail, Transmission & Distribution Dist. Supervisor
Department of Water and Power

Jerry Dlay, El. Eng. Assoc. II
Department of Water and Power

Frank Sandovol, St. Ltg. El. Sup. III
Bureau of Street Lighting
TWINKLE LIGHTING AND STREET LIGHTING SINGLE LINE DIAGRAM

EXHIBIT A
On February 5, 2001, the Board of Public Works adopted the 2000 Edition of the American National Standard Practice for Roadway Lighting RP-8 as the standard for design of electrolizer street lighting systems in the City of Los Angeles. The adoption of these standards results in some changes to the Bureau's present street lighting practices which conform to the 1977 RP-8.

The changes in the new standard do not significantly raise lighting levels but better define the science of lighting to reduce glare and more accurately reflect pedestrian activity for the purpose of street lighting design. Some of the more significant changes include illumination level changes, incorporation of veiling luminance, and definitions of pedestrian activity levels.

The issuance of this directive instructs all divisions to apply the design standards outlined in the 2000 Edition of RP-8 as follows:

- As of June 1, 2001, all design projects that have not identified a typical design spacing to achieve a lighting standard shall conform to the revised criteria of the 2000 Edition.

- The Private Development Division shall ensure that preliminary plans submitted after June 15, 2001 will adhere to the revised criteria of the 2000 Edition.

- The Bureau will be adhering to the illuminance method for all designs.

Attached is a summary of some of these significant changes to the street lighting design criteria in RP-8-00. This summary in no way addresses the entire document and each Division Manager is responsible for reviewing and applying the 2000 Edition of the American National Standard Practice for Roadway Lighting RP-8 to all design projects as outlined in this Directive and attachments.

Ed Ebrahimian, Director
Bureau of Street Lighting

Attachment: Summary of changes to design criteria in RP-8-00

SB:rm (L:\$DIRECTV/0397 revision)
Date: November, 2011
Distribution: All Engineering Staff
SUMMARY OF CHANGES AND BSL MODIFICATIONS TO DESIGN CRITERIA
PER RP-8-00

(pg) – refers to the Roadway Lighting RP-8-00

The RP-8 2000 is modified for Bureau of Street Lighting design as follows:

Pg 42, Annex D2 – 4a
Lighting on roadway of track crossing area, starting 30 meters before the crossing and ending 30 meters beyond the crossing, should be 1.5 times the roadway illuminance value for a continuous lit roadway, but never less than illuminance of .9 footcandles. This requirement shall extend to full length of roadways and sidewalks along non-separated/unguarded railroad tracks. Uniformity and veiling luminance criteria shall be in accordance with Table D1.

Pg 13, Section 3.6.4
…Traffic conflict areas other than those of continuously lighted streets should be lit to illuminance values 50% higher than required for the street. This refers to a situation where only one street has a continuous lighting system. …

Pg 12, Table 5
The line for Mixed Vehicle and Pedestrian *** values shall be omitted.

Pg 5, Table 1
For the purpose of BSL design, R4, “Road Surface Classification”, shall not be used.

The following is a summary of the significant changes in the RP-8-2000

1. Change in the levels of illumination and uniformity ratio. See Table 1, page 3 of this document. The illumination levels for the most have been changed downward for roadways. Uniformity ratios are altered for collector and local. (pg. 8)

2. The IES refers to pedestrian use areas in lieu of the land use. See the definition of these areas in Table 1, page 3 of this document. The designer shall make a determination of which area criteria to use based on his/her familiarity with the projects nighttime activity.

3. Change in the levels of illuminance and uniformity ratio for walkways/pedestrian areas (sidewalk) in the roadway’s right-of-way. These values have been increased for all categories and specifically high pedestrian use areas. (pg. 8)

4. Addition of Veiling Luminance Ratio for design of roadway lighting. This is a measure of disability glare. This glare alters the apparent brightness of any object within the visual field and the background against which it is viewed. This calculation is the Roadway Veiling Luminance (max) divided by the average luminance. (pg. 8)

5. Mid block crosswalks are no longer 1.5 times the footcandle of the roadway. The level is placed at 3.4 footcandles, equivalent to two major streets. (pg. 10-11)

6. TCA calculations – The uniformity ratio has now been specified for all roadways. In addition, they are only recommended for intersections of continuously lighted streets. They are not all at 3:1 uniformity ratio. (Table 9 – pg 15)
7. Addition of a recommended values for isolated traffic conflict areas which is an intersection of two (2) streets with a non-continuous lighting system, .9FC/4:1 uniformity ratio (.3 Lvmax/Lavg). This refers to a situation where both streets do not have a continuous lighting system. (pg. 41)

8. Pedestrian walkways (including sidewalks) – Criteria for vertical illuminance requirements are now specified and required. (pg. 11, 12)

9. Criteria for pedestrian tunnels and the pedestrian portion of Pedestrian Vehicular underpasses. (Table 8 – pg. 13)

10. Specific reference to driveways serving high volume activities (ex. Home Depot) should be illuminated to major/major (3.4 fc). (pg. 12)

*This summary in no way addresses the entire document of the RP-8-00.
*Page numbers refer to the RP-8-00 document.

Date: November, 2011
SB:rm (L:$directive#0397 revision)
### TABLE 1

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**Pedestrian Areas Sidewalk**

**High Pedestrian Conflict Areas** (Pedestrian activity between 6 PM to 7 PM – over 100) – Areas with significant numbers of pedestrians expected to be on the sidewalks or crossing the streets during darkness. Examples are downtown retail areas, near theaters, concert halls, stadiums, and transit terminals.

**Medium Pedestrian Conflict Areas** (Pedestrian activity between 6 PM to 7 PM – 11 to 100) – Areas where lesser numbers of pedestrians utilize the streets at night. Typical are downtown office areas, block with libraries, apartments, neighborhood shopping, industrial, older city areas, and street with transit lines.

**Low Pedestrian Conflict Areas** (Pedestrian activity between 6 PM to & PM – 10 or fewer) – Areas with very low volumes of night pedestrian usage. These can occur in any of the cited roadway classifications but may be typified by suburban single family streets, very low density residential developments, and rural or semi-rural areas.

**Rural areas are set at .2fc for sidewalks**

SB:rm (L:\$DIRECTIVE/0397B)