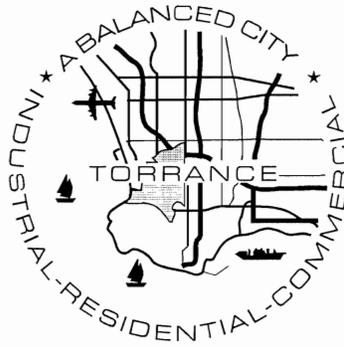


**PROJECT MANUAL FOR LIGHTING RETROFITS**  
B 2014-54



**OCTOBER 2014**

## TABLE OF CONTENTS

	<u>Page No.</u>
<b>A. NOTICE INVITING BIDS</b>	<b>3</b>
<b>B. INSTRUCTIONS TO BIDDERS</b>	<b>6</b>
<b>C. SPECIAL PROVISIONS</b>	<b>14</b>
<b>D. BID DOCUMENTS</b>	<b>27</b>
Bidder's Proposal	
Addenda Acknowledgment	
Contractor's Affidavit	
Bid Bond (10% of Bid)	
List of Subcontractors	
References	
<b>E. DOCUMENTS TO BE COMPLETED AND DELIVERED TO THE CITY AS PART OF CONTRACT WITH CITY</b>	<b>38</b>
Performance Bond (100% of Bid)	
Labor and Material Bond (100% of Bid)	
Contract – Public Works Agreement	
Verification of Insurance Coverage (Certificates and Endorsements)	
<b>F. PROJECT SPECIFICATIONS</b>	

**PART A**

**NOTICE INVITING BIDS**

**CITY OF TORRANCE  
CALIFORNIA**

**NOTICE INVITING BIDS**

Notice is hereby given that sealed proposals for performing the following described work will be received at the office of the City Clerk of the City of Torrance, California, until **3:00 p.m. on Wednesday, November 5, 2014** after which time they will be publicly opened and read at 3:15 p.m. in the Council Chambers of said City:

**Bid for Lighting Retrofits  
B2014-54**

Plans, Bid Proposal (for reference only) and Specifications are available for viewing and printing from the City's website at <http://www.torranceca.gov/25079.htm>.

**There will be a mandatory pre-bid conference held on Wednesday, October 22, 2014 at 9:00 a.m. commencing at City Yard, City Services Building, 20500 Madrona Avenue Torrance, CA 90503.** Please note we will be going to multiple locations please plan your time accordingly. The City of Torrance will consider the bidder as non-responsive if the bidder does not attend the mandatory pre-bid conference. **Addenda will be issued only by email and only to those attended the mandatory pre-bid conference.** All addenda must be acknowledged. Failure to acknowledge addenda on the bid forms provided may render the proposal non-responsive and cause it to be rejected.

An official bid proposal packet, which includes: bid proposal forms, and a bound Specifications booklet may be obtained at the Office of the City Clerk (310) 618-2870, \$ 15.00 if picked up at City Hall, or payment of \$ 20.00 if requested by mail. Both amounts include tax. Neither amount is refundable. A prospective bidder must provide to the City Clerk's office, the firm's name, address, telephone and fax number, a contact person and a valid email address.

If requesting any item(s) by mail, please send check to the following:

**CITY OF TORRANCE  
OFFICE OF THE CITY CLERK  
3031 TORRANCE BLVD  
TORRANCE, CA 90503-2970  
ATTN: B2014-54**

The project estimate is between \$ 450,000- 500,000. The work shall be completed within ninety (90) calendar days of receipt of the Notice to Proceed (NTP). The ninety (90) calendar day schedule includes: completion of contractual paperwork, submittal review, lead time for materials and onsite work. Bids are required for the entire work described herein.

Successful bidder must have at the time of submitting the bid:

- Have a valid C-10 Electrical Contracting License
- Have 5 years in operation under the current license. Transfer of responsible personnel from other firms to a company in operation for less than 5 years does not comply with this requirement.

In addition, the retrofit work must be accomplished in a professional and expedient manner. Therefore the bidder must have a recent history for successful completion of similar work. To verify prior history of completing the work of this scope, bidders must provide the following references.

Bidder must have completed two (2) retrofit projects of a similar size and scope valued at \$200,000 in each of the last (3) years.

**OR**

Bidder must have completed lighting retrofits for building total value exceeding \$500,000 *per year* in the last three (3) years.

Building renovations which include new lighting as a portion of the work do not qualify. References must be proven by copies of executed contracts if requested by the City.

Per Division 2, Chapter 2 of the Torrance Municipal Code, the Torrance City Council may reject any and all bids, waive any informality or irregularity in such bids, and determine the lowest responsible bidder.

No Facsimile Bids shall be accepted by the City.

Non-prevailing wage project

By order of the City Council of the City of Torrance, California.

For further information, please contact Diane Megerdichian, Sr. Business Manager General Services Department at 310-781-7151 or [dmegerdichian@torranceca.gov](mailto:dmegerdichian@torranceca.gov). If emailing questions, please put project title in the subject line.

**PART B**

**INSTRUCTIONS TO BIDDERS**

**CITY OF TORRANCE  
CALIFORNIA**

**INSTRUCTIONS TO BIDDERS**

A. QUALIFICATION OF BIDDERS

1. Competency of Bidders

The Bidder shall be thoroughly competent and capable of satisfactorily performing the Work covered by the Bid. As specified in the Bid Documents, the Bidder shall furnish statements of previous experience on similar work. When requested, the Bidder shall also furnish a plan of procedure proposed; organization, machinery, plant and other equipment available for the Work; evidence of financial condition and resources; and any other documentation as may be required by the City to determine if the Bidder is responsible.

2. Contractor's License

At the time of submitting the Bid, the Bidder shall be licensed as a contractor in accordance with the provisions of Chapter 9, Division 3, of the California Business and Professions Code. The required prime contractor license class for the Work is shown in the project Notice Inviting Bids. However, the City reserves the right to award the Contract to a contractor with another class if the City determines that the license is proper for the work.

B. BIDDER RESPONSIBILITY

A responsible Bidder is a Bidder who has demonstrated the attribute of trustworthiness, as well as ability, fitness, capacity and experience to satisfactorily perform the work.

Bidders are notified that, in accordance with Division 2, Chapter 2 of the Torrance Municipal Code, the City Council may determine whether the Bidder is responsible based on a review of the Bidder's performance on other contracts.

If, based on the provision and criteria in Division 2, Chapter 2 of the Torrance Municipal Code, the General Services Director proposes not to recommend the award of contract to the apparent low bidder, the Director shall notify the Bidder in writing of its intention to recommend to the City Council that the Council award the contract to the next lowest responsible bidder. If the Bidder presents evidence in rebuttal to the recommendation, the Director shall evaluate the merits of such evidence, and based on that evaluation, make a recommendation to the City Council.

C. ADDENDA TO THE CONTRACT DOCUMENTS

The City reserves the right to revise or amend these specifications prior to the date set for opening bids. Revisions and amendments, if any, will be announced by an addendum to this bid. If the revisions require additional time to enable Bidders to respond, the City may postpone the opening date accordingly. In such case, the addendum will include an announcement of the new opening date.

All addenda must be attached to the bid. Failure to attach any addendum may render the bid non-responsive and cause it to be rejected.

D. PREPARATION OF THE BID

1. Examination of Site, Plans and Specifications

Bidders shall examine the site of the work and acquaint themselves with all conditions affecting the work. By submitting a bid, the bidder shall be held to have personally examined the site and the drawings, to have carefully read the specifications, and to have satisfied itself as to its ability to meet all the difficulties attending the execution of the proposed contract before the delivery of this proposal, and agrees that if awarded the contract, will make no claim against the City based on ignorance or misunderstanding of the plans, specifications, site conditions and/or contract provisions.

The Contractor shall have included in the contract price a sufficient sum to cover all items, including labor, materials, tools, equipment and incidentals, that are implied or required for the complete improvements as contemplated by the drawings, specifications, and other contract documents.

2. Bid Instructions and Submissions

The Bid shall be submitted on the Bid Proposal forms included in the Specifications. All Bid Documents must be completed, executed and submitted with Bid by Bidder. Required seven (7) Bid Proposal Documents:

1. Bidder's Proposal
2. Addenda Acknowledgment
3. Contractor's Affidavit
4. Bid Bond (10% of Bid)
5. List of Subcontractors
6. References (1 pages)
7. Bidder's Information (2 pages)

All prices submitted will be considered as including any and all sales or use taxes. In case of a discrepancy between a unit bid price and total bid, the unit price shall prevail.

E. BID FORM/BOND

The Bid must be accompanied by cash, a certified or cashier's check, or a surety bond (bid bond) payable to the City of Torrance. Bids must be submitted on the proposal forms furnished by the City Clerk's office. The Bid Guaranty shall be in an amount equivalent to at least 10% of the Total Contract Bid Price.

Within ten (10) days after the award of the contract, the City Clerk will return the proposal guarantees accompanying those proposals, which are not to be considered in making the award. All other proposal guarantees will be held until the contract has been finally executed, after which they will be returned to the respective bidders whose proposals they accompany.

F. AFFIDAVIT

An affidavit form is enclosed. It must be completed signifying that the bid is genuine and not collusive or made in the interest or on behalf of any person not named in the bid, that the bid has not directly or indirectly induced or solicited any other Bidder to put in a sham bid or any other person, firm, or corporation to refrain from bidding, and that the Bidder has not in any manner sought by collusion to secure for itself an advantage over any other Bidder. Any bid submitted without an affidavit or in violation of this requirement will be rejected.

G. NONRESPONSIVE BIDS AND BID REJECTION

1. A Bid in which bid proposal documents are not completed, executed and submitted may be considered non-responsive and be rejected.
2. A Bid in which the Contract Unit Prices are unbalanced, which is incomplete or which shows alteration of form or irregularities of any kind, or which contains any additions or conditional or alternate Bids that are not called for, may be considered non-responsive and be rejected.

H. AWARD OF CONTRACT

In accordance with Division 2, Chapter 2 of the Torrance Municipal Code, the City Council reserves the right to reject any and all bids received, to take all bids under advisement for a period not-to-exceed sixty (60) days after date of opening thereof, to waive any informality or irregularity in the Bid, and to be the sole judge of the merits of material included in the respective bids received.

This bid does not commit the City to award a contract or to pay any cost incurred in the preparation of a bid. All responses to this bid become the property of the City of Torrance.

I. NOTICE OF INTENT TO AWARD

Approximately two (2) weeks prior to the anticipated City Council meeting awarding a contract as a result of the RFP or bid, results will be posted on the City of Torrance Web site [www.Torranceca.gov](http://www.Torranceca.gov) and may be found by clicking on the following:

- Government
- Current Bids and RFPs
- View evaluated results of Bids and RFPs tentatively scheduled for recommendation of award to the City Council [here](#).

J. BID PROTEST PROCEDURES

Please refer to City of Torrance website link below to obtain the City's Protest Procedures. [http://www.torranceca.gov/PDF/Bid\\_RFP\\_Protest\\_Procedures.pdf](http://www.torranceca.gov/PDF/Bid_RFP_Protest_Procedures.pdf)

K. EXECUTION OF CONTRACT

After the Contract is awarded, the awarded bidder shall execute the following five (5) documents:

1. Performance Bond (100% of Bid)
2. Labor and Material Bond (100% of Bid)
3. Contract – Contract Services Agreement
4. Verification of Insurance Coverage (Certificates and Endorsements)
5. Business License Application Form

The contract shall be signed by the successful bidder and returned, together with the contract bonds and evidence of required insurance coverage, **within ten (10) working days**, not including Sundays, after the bidder has received notice that the contract has been awarded. Failure to execute the contract as specified above shall be just cause for annulment of the award and forfeiture of the proposal guarantee. The Contract shall not be considered binding upon the CITY until executed by the authorized CITY officials.

Bond amounts shall be as provided in Section 2-4 of the Standard Specifications for Public Works Construction. The Performance Bond shall be required to remain in effect for one (1) year following the date specified in the City's Notice of Completion, or, if no Notice of Completion is recorded for one (1) year following the date of final acceptance by the City Manager.

L. PERMITS, LICENSES AND CONTRACT SERVICES AGREEMENT

The Contractor shall procure and execute all permits, licenses, pay all charges and fees, and give all notices necessary and incidental to completion of Work. The Contractor shall execute a Contract Services Agreement. No fee is charged for a permits issued by the City of Torrance for a City project. The Contractor shall obtain a City of Torrance Business License. To obtain a Torrance Business License please call 310-618-5923.

M. INSURANCE

The Contractor shall maintain Automobile Liability, General Liability and Workers' Compensation Insurance as specified in the Contract Services Agreement included in the Project Specifications.

N. SUBCONTRACTS

Each Bidder shall comply with the Chapter of the Public Contract Code including sections 4100 through 4113. The Contractor shall perform, with its own organization, Contract work amounting to at least 50 percent of the Contract price. When a portion of an item is subcontracted, the value of the work subcontracted will be based on the estimated percentage of the Contract Unit Price, determined from information submitted by the Contractor, subject to approval by the City Manager.

O. TRAFFIC CONTROL- Not applicable

P. PRE-BID INQUIRIES

Bidders with pre-bid inquiries must submit questions in writing to the General Services Department. Any and all questions must be emailed to Diane Megerdichian, Business Manager at [DMegerdichian@torranceca.gov](mailto:DMegerdichian@torranceca.gov). Please list "**Lighting Retrofits**" in the subject line of the email. For questions of a general nature, bidders may contact Diane Megerdichian directly at 310-781-7151

Q. RESPONSIBILITY OF CITY.

The City of Torrance shall not be held responsible for the care or protection of any material or parts of the work prior to final acceptance, except as expressly provided in these specifications.

R. CONSTRUCTION SCHEDULE AND PRECONSTRUCTION CONFERENCE.

The office staff of the City is currently operating on a 9/80 work week; therefore, City Hall is closed every other Friday.

In accordance with the herein Special Provisions, after notification of award and prior to start of any work, **the Contractor shall submit to the City for approval its proposed Construction Schedule within ten (10) working days from the date of Notice of Proceed.** At least two (2) days, exclusive of Saturdays, Sundays and holidays, prior to commencement of work, the Contractor shall attend a pre-construction conference.

**The Contractor will provide all product and equipment submittals to the City of Torrance or designated consultant within ten (10) working days from the date of Notice to Proceed.** The Contractor shall immediately order materials requiring a delivery delay upon receipt of a written notice from the City that the City Council has approved an Award of Contract. Contractor shall provide written proof(s) of timely material order(s) and shall include any delivery delays in the Construction Schedule.

S. PROGRESS OF THE WORK AND TIME FOR COMPLETION

The Contractor shall begin work after the mailing, from the City Manager to the Contractor, by first class mail, postage prepaid, of a Notice to Proceed. **The Contractor shall diligently prosecute the same to completion within ninety (90) calendar days of the start date specified in said Notice.** The ninety calendar schedule includes, completion of contractual paper work, equipment material submittal review, the lead time for materials and equipment, and on site work.

During periods when weather or other conditions are unfavorable for construction, the Contractor shall pursue only such portions of the work as shall not be damaged thereby. No portions of the work whose acceptable quality or efficiency will be affected by any unfavorable conditions shall be constructed while those conditions exist. It is expressly understood and agreed by and between the Contractor and the City that the Contract time for completion of the work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

T. LIQUIDATED DAMAGES

The Contractor agrees that failure to complete work within the time allowed will result in damages being sustained by the City. Contractor and City agree that failure to complete the project will result in inconvenience to the citizens of Torrance and the City of Torrance and their customers using the affected areas. Such delay will also result in the necessity of several inspections each day to ensure that the project is properly progressing. The parties also agree that failure to complete the project on time will prevent the City from having the use of the facility. Therefore, the parties agree such damages among others are, and will continue to be, impracticable and extremely difficult to determine, but that **five hundred (\$500) per calendar day** is the minimum value of such costs to the City and is a reasonable amount that the Contractor agrees to reimburse the City for each calendar day of delay in finishing the work in excess of the time specified for completion, plus any authorized time extensions.

Execution of the contract under these specifications shall constitute agreement by the Contractor and the City that five hundred Dollars (\$500) per calendar day is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs. Said amount may be reduced by the City if work is sufficiently completed within the allotted time so that the damages are minimized.

The Contractor will not be assessed liquidated damages for any delay in completion of the work when such delay was caused by the failure of the City or the owner of a utility to provide for removal or relocation of the existing utility facilities; provided, however, that the Contractor shall have given the City and the owner of a utility timely notice of the interference. "Timely notice" shall be defined as a verbal notice (to be followed up in writing) no later than one (1) hour after initial discovery of the interference unless the City Representative is present, in which case notice shall be given immediately in writing to the City Manager.

U. GENERAL PREVAILING WAGE RATE

Not applicable

V. PRELIMINARY NOTICES

Preliminary Notices should be mailed to the following address.

Diane Megerdichian  
General Services Department  
3350 Civic Center Drive  
Torrance, CA 90503

**PART C**  
**SPECIAL PROVISIONS**

## **SECTION A. GENERAL**

The Project Specifications for all work on this project are the specifications contained in the “**Project Manual for Lighting Retrofits**”, prepared by the City of Torrance.

These Specifications are intended to govern all aspects of the appurtenant construction including, but not limited to, materials, methods and details, except as modified herein or as inconsistent with the provisions hereof.

### DEFINITIONS

Whenever the following terms are used, they shall be understood to mean and refer to the following:

Agency or City - City of Torrance.

Board- The City Council of the City of Torrance herein referred to as City Council.

CITY- The General Services Director of the City of Torrance, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

Laboratory - The designated laboratory authorized by the City of Torrance to test materials and work involved in the contract.

## **SECTION B. REFERENCE TO STANDARDS OR PUBLICATIONS**

Any reference made in the Contract Documents to any specification, standard, or publication of any organization shall, in the absence of a specific designation to the contrary, be understood to refer to the latest edition of the specification, standard, or publication in effect as of the date of advertising the work, except to the extent that said standard or publication may be in conflict with applicable laws, ordinances, or governing codes. Contractors should be aware of all new code requirements (such as Cal-Green) when dealing with HVAC and other general building work. No requirements of these specifications or the drawings shall be waived because of any provisions of, or omission from, said standards or publications.

## SECTION C. DESCRIPTION OF THE WORK

1. Scope of the Work. The work to be done consists of furnishing all labor, materials, tools, equipment and incidentals complete the lighting retrofits as shown in the specifications prepared by the City of Torrance.

## SECTION D. GENERAL PROCEDURES

1. Specifications and Drawings Complementary. The Specifications and Drawings are complementary, and what is called for in one shall be as binding as if called for in both.
2. Order of Precedence of Contract Documents. In resolving conflicts resulting from conflicts, errors, or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:
  1. Change Orders (including Plans and Specifications attached thereto).
  2. Permits Issued by other agencies.
  3. Contract Services Agreement
  4. Addenda
  5. Special or General Provisions.
  6. Plans
  7. City Standard Plans
  8. Instructions to Bidders
  9. Reference Specifications

Within the Specifications the order of precedence is as follows:

1. Addenda/Change Orders
2. Permits from other agencies/supplemental agreements
3. Special or General Provisions
4. Instructions to Bidders
5. Referenced Standard Plans
6. Referenced Specifications

With reference to the Plans/Drawings the order of precedence is as follows:

1. Change Orders plans govern over Addenda and Contract Drawings
  2. Addenda plans govern over Contract plans.
  3. Contract plans govern over standard plans
  4. Detail plans govern over general plans
  5. Figures govern over scaled dimensions
3. Discrepancies in the Contract Documents. Any discrepancies, conflicts, errors or omissions found in the Contract Documents shall be promptly reported in writing to the City Manager, who will issue a correction in writing. The Contractor shall not take advantage of any such discrepancies, conflicts, errors or omissions, but shall comply with any corrective measures regarding the same prescribed by the City Manager, and no additional payment or time shall be allowed therefor.

If discrepancies are discovered between the drawings and the specifications, and no specific interpretation is issued prior to bidding, the decision regarding this interpretation shall rest with the City Manager. The Contractor shall be compelled to act on the City Manager's decision as directed. In the event the installation is not in compliance with the direction of the City Manager, the installation shall be corrected by and at the expense of the Contractor at no additional cost to the City.

See Section E of these Special Provisions for "Claims".

4. Errors and Omissions. If the Contractor, in the course of the work, becomes aware of any claimed errors or omissions in the contract documents or in the City's field work, he shall immediately inform the City Manager. The City Manager shall promptly review the matter, and if the City Manager finds an error or omission has been made the City Manager shall determine the corrective actions and advise the Contractor accordingly. If the corrective work associated with an error or omission increases or decreases the amount of work called for in the Contract, the City shall issue an appropriate Change Order. After discovery of an error or omission by the Contractor, any related work performed by the Contractor shall be done at its risk unless authorized by the City Manager.
5. Changed Conditions. The plans for the work show conditions as they are believed by the City Manager to exist, but it is not intended or to be inferred that the conditions as shown thereon constitute a representation by the City that such conditions are actually existent, nor shall the City be liable for any loss sustained by the Contractor as a result of any variance of the conditions as shown on the plans and the actual conditions revealed during the progress of the work or otherwise. The word "conditions" as used in this paragraph includes, but is not limited to, site conditions, both surface and subsurface.  
  
The Contractor shall examine the site, compare it with the drawings and specifications and shall satisfy itself as to the conditions under which the work is to be performed. The Contractor shall ascertain and check the location of all existing structures, utilities and equipment, which may affect its work. The Contractor shall be responsible to re-examine the site, as necessary, for performance of change orders or other proposed changes, which may affect its work. No allowance shall subsequently be made on the Contractor's behalf for any extra expense or loss of time, which is incurred due to failure or negligence on its part to make such examination.
6. As-built Drawings. The Contractor shall maintain a control set of Plans and Specifications on the Work site at all times. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on this control set to show as-built conditions. Upon completion of the Work, the Contractor shall submit the control set to the Engineer for approval. Final payment will not be made until this requirement is met.
7. Construction Staking. The Contractor is responsible for all construction staking and shall be responsible for the cost of any restaking required due to disturbance caused by its operations, failure to protect the work site from vandalism or other causes of loss.

8. Notice to Proceed. Notwithstanding any other provisions of the Contract, the Contractor shall not be obligated to perform any work and the City shall not be obligated to accept or pay for any work performed by the Contractor prior to delivery of a Notice to Proceed. The City's knowledge of work being performed prior to delivery of the Notice to Proceed shall not obligate the City to accept or pay for such work. The Contractor shall provide all required contract bonds and evidences of insurance prior to commencing work at the site.
9. Delay in Obtaining Materials. No extension of time will be granted for a delay caused by the inability to obtain materials unless the Contractor either obtains advance written approval from the City Manager or obtains from the supplier and furnishes to the City Manager documentary proof that such materials could not be obtained due to war, government regulations, labor disputes, strikes, fires, floods, adverse weather necessitating the cessation of work, or other similar action of the elements. The Contractor is required to order materials in a timely manner as specified in the "Instruction to Bidders".
10. Inspection and Testing. The Work is subject to inspection and approval by the CITY or any authorized representative. The Contractor shall notify the CITY a minimum of 48 hours in advance of the required inspection.

The CITY will make, or have made, such inspections and tests, as he deems necessary to see that the Work is in conformance with the Contract Documents. The contractor will responsible for coordinating the inspections and tests and pay for all related costs for inspections and tests. In the event such inspections or tests reveal noncompliance with the Contract Documents, the Contractor shall bear the cost of such corrective measures as deemed necessary by the CITY, as well as the cost of subsequent re-inspection and re-testing.

Work done in the absence of inspection by the CITY may be required to be removed and replaced under the inspection of the CITY, and the entire cost of removal and replacement, including the cost of all materials which may be furnished by the CITY and used in the work thus removed, shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not. Work covered without the approval of the CITY shall, if so directed, be uncovered to the extent required by the CITY, and the Contractor shall similarly bear the entire cost of performing all the work and furnishing all the materials necessary for the removal of the covering and its subsequent replacement, including all costs for additional inspection.

The CITY and any authorized representatives shall at all times have access to the Work during its construction at shops and yards as well as the Work site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with the Contract Documents.

Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

11. Project Schedule

Within ten (10) working days after the receipt of the Notice to Proceed, the Contractor shall submit a proposed construction schedule to the CITY for approval. The schedule shall be in accordance with section 11 and shall be in sufficient detail to show

chronological relationship of all activities of the Work. These include, but are not limited to: estimated starting and completion dates of various activities, submittal of shop drawings to the Engineer for approval, procurement of materials and scheduling of equipment.

No work may be started until the Schedule has been approved in writing. The work shall be scheduled to assure that construction will be completed within the specified time. The Contractor shall be responsible for coordination of all phases of the operation so that the time schedule can be met.

During construction, the Contractor shall also submit to the CITY, a two-week "look ahead" construction schedule during the construction progress meetings held biweekly.

If the Contractor decides to make a major change in the method of operations after commencing construction, or if the schedule fails to reflect the actual progress, the Contractor shall submit to the CITY a revised construction schedule in advance of beginning revised operations.

Sequence of Construction - The Contractor shall sequence the Work in a manner to expeditiously complete the project with a minimum of inconvenience to the CITY or adjacent owners.

The construction schedule shall conform to the following criteria:

- 1) The schedule shall be prepared using the latest version of Primavera, Microsoft Project or approved equal.
- 2) Work activities shall be based on the following:
  - a) Contract Unit Price items shall be subdivided into those portions to be constructed during each stage or phase of construction. (if applicable)
  - b) Lump sum items shall be subdivided into those portions to be constructed during each stage or phase of construction.
- 3) Utility relocations and/or coordination by the Contractor per section 14 of these Special Provisions shall be considered as activities.
- 4) Required submittals, working and shop drawings shall be included as activities.
- 5) The procurement of construction materials and equipment with long lead times for deliveries shall be included as activities.
- 6) Work to be performed by subcontractors shall be identified and shown as work activities.
- 7) Start and completion dates of each activity shall be illustrated.
- 8) Completion of all Work under the Contract shall be within the time specified in these Special Provisions and in accordance with the Plans and Specifications.

12. Mobilization

12.1 Scope. Mobilization shall include the provision of the Construction Schedule; NPDES Construction Permit, Best Management Practices and Storm Water Pollution Prevention Plan, site review; obtaining all permits, insurance, and bonds; moving onto the site all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities, and removal of same at completion of the project; all as required for the proper performance and completion of the work.

Mobilization shall include, but not be limited to, the following principle items.

- (a) Submittal and modification, as required, of the Construction Schedule.
- (b) All associated documentation and submittals as required.
- (c) Installing temporary construction power and wiring.
- (d) Establishing fire protection system.
- (e) Developing construction water supply.
- (f) Providing on-site sanitary facilities and portable water facilities, as required.
- (g) Arranging for and erection of Contractor's work and storage yard.
- (h) Submittal of all required insurance certificates and bonds, including subcontractors.
- (i) Obtaining all required permits.
- (j) Posting all OSHA required notices and establishment of safety programs.
- (k) Have the Contractor's superintendent at the job site full-time.
- (l) Pot-holing and other research and review as necessary to verify site conditions and utility locations, including research and review as necessary for change orders.
- (m) Demobilization.

13. Markup.

The markups mentioned hereinafter shall include, but are not limited to, all costs for the services of superintendents, project managers, timekeepers and other personnel not working directly on the change order, and pickup or yard trucks used by the above personnel. These costs shall not be reported as labor and equipment elsewhere except when actually performing work directly on the change order and then shall be reported at the labor classification of the work performed.

The following percentages shall apply for additional work:

Profit	5% maximum
Overhead	5% maximum

Subcontractor markup: maximum allowed is 10% for profit and overhead on the subcontractor's costs.

To the sum of the costs and markups provided for in this subsection, one (1) percent shall be added as compensation for bonding.

14. Utilities. The Contractor shall provide coordination with all the utility companies involved and shall provide protection from damage to their facilities. The Contractor shall be responsible for repair or replacement to said facilities made necessary by its failure to provide required protection. The Contractor is required to include utility requirements in the Construction Schedule.

The Contractor shall be solely responsible to check all utility record maps, books, and/or other data in the possession of the CITY, other agencies, and/or all utility companies, and no allowance shall be made for any failure to have done so.

The Contractor shall utilize the services of "Underground Service Alert - Southern California" for utility locating in all public right-of-ways by calling 1-800-227-2600 at least 48 hours prior to any excavation.

15. Completion, Acceptance and Warranty. If, in the CITY's judgment, the Work has been completed and is ready for acceptance, the CITY will so certify and will determine the date when the Work was completed. This will be the date when the Contractor is relieved from responsibility to protect the Work. The CITY may cause a Notice of Completion to be filed and recorded with the Los Angeles County Recorder's Office. At the CITY's option, the CITY may certify acceptance to the City Council who may then cause a Notice of Completion to be filed and recorded with the Los Angeles County Recorder's Office.

Manufacturer's warranties and guaranties furnished for materials used in the Work and instruction sheets and parts listed supplied with materials shall be delivered to the CITY prior to acceptance of the Work. The duration of the warranty or guaranty shall be the standard of the industry with a minimum of 1 year from the date of Notice of Completion or Date of Acceptance.

The prime contractor will be required to warranty the entire project regardless of whether warranties from subcontractors are also required. Coordination and correction of any issue related to project scope that arises during that one (1) year warranty period will be the responsibility of the prime contractor.

Manufacturer's warranties shall not relieve the Contractor of liability under these Specifications. Such warranties only shall supplement the Contractor's responsibility.

The CITY may require a manufacturer's warranty on any product offered for use.

16. Contractor's Representative. The Contractor's Representative shall be approved by the CITY prior to the start of the Work. If the designated representative is rejected, the Contractor shall immediately designate another representative in writing and submit to the City for consideration. The CITY shall have the authority to require the Contractor to remove its representative and/or alternate representative at any time and at no cost to the CITY.

17. Requirements for Recycling Construction Materials

The City of Torrance requires that all demolition projects and construction or remodeling projects valued at \$100,000 or more must recycle or reuse at least 50% of the materials that leave the project site and 100% of excavated soil and land-clearing debris. A Waste Management Plan (WMP) form is part of the permit process for projects that meet these criteria. The WMP form is available at the permit counter or a downloadable form is available here:

<http://www.torranceca.gov/PDF/WMPFormRevised2012onestop.pdf>

Step 1 - when applying for the permit, you must complete the WMP form stating that at least 50% of the waste generated by the project will be recycled or reused and that 100% of excavated soil and land-clearing debris will be recycled or reused.

Step 2 - collect and keep all receipts and records of the disposal, recycling, donations, and reuse of the materials from your project. Receipts must show material type, tonnage or weight, how the materials were treated, the facility used, and the address of the jobsite.

Step 3 - complete the WMP by attaching the receipts listing the actual disposal and recycling that occurred and submitting the WMP to Public Works for approval. This is required before your project can get its final inspection.

***Failure to fulfill the requirements of the WMP process will result in penalties of \$5,000 for construction projects and \$10,000 for demolition projects, as per the Torrance Municipal Code.***

For additional information concerning recycling or recycling facilities please visit the City of Torrance Public Works Department website at <http://www.torranceca.gov/8614.htm>

**SECTION E. PAYMENTS TO CONTRACTOR AND CLAIMS**

1. Breakdown of Contract Prices. The Contractor shall, within ten (10) working days of receipt of a request from the City, submit a complete breakdown of lump sum bid prices showing the value assigned to each part of the work, including an allowance for profit and overhead. The breakdown shall include separate line for each subcontractor's bid and/or contract amount. In submitting the breakdown, the Contractor certifies that it is not unbalanced and that the value assigned to each part of the work represents its estimate of the actual cost, including profit and overhead, of performing that part of the work. The breakdown shall be sufficiently detailed to permit its use by the City Manager as one of the bases for evaluating requests for payment. No extra costs shall be allowed for these breakdowns.
  
2. Payment for Labor and Materials. The Contractor shall pay and cause the subcontractors to pay any and all accounts for labor, including Worker's Compensation premiums, State Unemployment and Federal Social Security payments and all other wage and salary deductions required by law. The Contractor also shall pay and cause the subcontractors to pay any and all accounts for services, equipment and materials used by it and the subcontractors during the performance of work under this contract. All such accounts shall be paid as they become due and payable. If requested by the City Manager, the Contractor shall immediately furnish the City with proof of payment of such accounts.
  
3. Additional Work. Payment for additional work and all expenditures in excess of the bid amount must be authorized in writing by the City Manager. Such authorization shall be obtained by the Contractor prior to engaging in additional work. It shall be the Contractor's sole responsibility to obtain written approval from the City Manager for any change(s) in material or in the work proposed by suppliers or subcontractors. No payment shall be made to the Contractor for additional work which has not been approved in writing, and the Contractor hereby agrees that it shall have no right to additional compensation for any work not so authorized.
  
4. Claims. The Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the City, or the happening of any event, thing or occurrence, unless he shall have given the City due written notice of potential claim as hereinafter specified.

The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. Said notice shall be submitted on a form approved by the City at least forty-eight (48) hours (two working days) in advance of performing said work, unless the work is of an emergency nature, in which case the Contractor shall notify and obtain approval from the Inspector prior to commencing the work. The City Manager may require the Contractor to delay construction involving the claim, but no other work shall be delayed, and the Contractor shall not be allowed additional costs for any said delay but may be allowed on extension of time if the City Manager agrees that the work delayed is a controlling element of the Construction Schedule. The Contractor shall be required to submit any supporting data

(or a detailed written explanation justifying further delay) within five (5) Work Days of a request from the City Manager and shall be responsible for any delays resulting from late and/or incomplete submittals. By submitting a Bid, the Contractor hereby agrees that this Section shall supersede Sections 6-6.3 and 6-6.4 of the Standard Specifications.

The City shall be the sole authority to interpret all plans, specifications and contract documents, and no claim shall be accepted which is based on the Contractor's ignorance, misunderstanding or noncompliance with any provision or portion thereof.

The Contractor shall be responsible to provide all data and to obtain all approvals required by said Specifications. No claims or extras shall be approved by the City unless all work was done under the direction of and subject to the approval of the Inspector.

It is the intention of this Subsection that differences between the parties arising under and by virtue of the Contract be brought to the attention of the City Manager at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that it shall have no right to additional compensation for any claim that may be based on any such act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was filed.

5. Noncompliance with Plans and Specifications. Failure of the Contractor to comply with any requirement of the Plans and Specifications, and/or to immediately remedy any such noncompliance upon notice from the City Manager, may result in suspension of Contract Progress Payments. Any Progress Payments so suspended shall remain in suspension until the Contractor's operations and/or submittals are brought into compliance to the satisfaction of the City Manager. No additional compensation shall be allowed as a result of suspension of Progress Payments due to noncompliance with the plans or specifications. The Contractor shall not be permitted to stop work due to said suspension of Progress Payments.

6. Request for Payment. Contractor shall submit all requests for payment on AIA Document G702 – Application and Certificate for Payment and G703- Continuation Sheet. For each item provide a column for listing: Item Number; Description of Work; Scheduled Value, Previous Application; Authorized Change Orders; Total completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

Prior to submittal of said form, all items for which payment is requested shall be checked and approved in writing by the City Manager. No payments will be made unless all back-up data is submitted with the payment request and the Progress Payment Invoice is signed by both Contractor and Manager.

The City will retain 5 percent of the value of all work done and materials installed as part security for fulfillment of the contract by Contractor. The full 5 percent retention will be retained on all payments for 35 days after the filing of the Notice of Completion. In addition 125% of the amount of the “unreleased” STOP notice will be withheld.

There shall be no separate payment for any relocations, barriers or forms, grading or temporary construction required to construct the improvements herein. Payment for these items shall be absorbed in the Bid Prices for the applicable work to which they are appurtenant, and no extra costs shall be allowed.

The payment of amounts due to the Contractor shall be contingent upon the Contractor furnishing the City with a release of all claims against the City arising by virtue of the Contract related to said amounts. It is the contractor's responsibility to provide the correct releases in order to obtain payment by the City. The Contractor shall provide the City with Unconditional Lien Release on Final Payment with a zero balance is required from all material suppliers and subcontractors with the request for final payment.

#### MISCELLANEOUS INFORMATION

The Contractor shall provide materials as specified AND associated parts necessary for a complete and usable project.

The City shall provide allowable working hours for each area/building after contract award. Contractor work shall be scheduled around owner work schedules. A schedule shall be provided and updated by the Contractor.

Work may be scheduled at any time, 24 hours a day, 7 days a week.  
Work during normal business hours, afterhours, and weekends should be expected.

Available times for each area will be given 7 calendar days in advance.

A minimum continuous 6 hour block of time will be provided for each day of work so as to allow continuous work in the respective area.

Bucket or boom lifts will be necessary to access areas where from directly under the lighting equipment is not possible. The Contractor is responsible for rental of all equipment

Contractor staff shall be properly licensed, trained or certified by proper authority as applicable or use of all equipment.

#### SUBSTITUTIONS:

The Owner has full discretion on approval of substitution requests

Substitutions of equal or better materials or equipment may be presented for approval at least 10 days BEFORE the bid opening date. Substitution requests must contain the following information:

- a) Manufacturer
- b) Model
- c) Part number
- d) Complete product description to include:
  1. Energy use
  2. Life span
  3. Manufacturer warranty (this does not relieve the contractor of warranty times listed in this specification)
  4. Cost
  5. Location of Manufacture.
  6. Availability (specific sources: address, phone, website, point of contact)
  7. Delivery date (if approved)

Installation of a requested substituted product will be required at the City's request to verify lighting output under actual field conditions prior to approval. Procurement and installation of contractor recommended substitute items is at the contractor's expense during pre-bid testing

Adequate contractor staff shall be available to complete work in a timely manner.

Work shall not occur on the following days/holidays without prior approval

New Year's Eve  
New Year's Day  
Martin Luther King Birthday  
Lincolns Birthday  
Presidents Day  
Good Friday through Easter Sunday  
Armed Forces Day  
Memorial Day  
4<sup>th</sup> of July  
Labor Day  
Veterans Day  
Thanksgiving  
Day after Thanksgiving  
Christmas Eve  
Christmas Day

Requests to shut down utility service must be requested in writing 7 calendar days in advance

**PART D**

**BID DOCUMENTS**

Retrofit Type	Existing Fixture or Lamp Count	Existing Fixture/Lamp Type	Proposed Fixture/Lamp Description	Fixture, Lamp & Ballast Specifications	Unit Cost (\$)	Extension (\$)
A	3	50W Halogen MR16 (H50/LV)	10W Integral LED Lamp	Philips 10MR16ENDF24/3000DIM	\$	\$
B	12	Exterior Recessed 70W & 100W High Pressure Sodium Lamps	43W Integral LED Lamp	MaxLite BLHR43UN50	\$	\$
C	30	Shoebox Fixture w/ 200W Pulse Start Metal Halide Lamp	78W LED Area Lighter	RAB ALED2T78N	\$	\$
D	10	Bollard w/ 70W Metal Halide Lamp	38W LED Bollard Fixture	LSI Industries XBVRF ID LED 24 400 CW UE BRZ 45	\$	\$
E	9	Cobrahead w/ 150 High Pressure Sodium Lamp	53W LED Cobrahead Fixture	CREE BXSP B HT 2ME A 40K-UL SV	\$	\$
F	1	Cobrahead w/ 250 High Pressure Sodium Lamp	101W LED Cobrahead Fixture	CREE BXSP C HT 2ME E 40K-UL SV	\$	\$
G1	59	Surface Mounted Low-bay w/ 100W High Pressure Lamp	20W LED Box Fixture (dimable)	DECO D536-LED2050UNVBZ (dimable)	\$	\$
G2	168	Recessed 2x2 Fixture w/ 250W High Pressure Lamp	58W LED Canopy Fixture (dimable)	Precision Paragon P2C-QCF-UL-24C-F-51K-GCO (dimable)	\$	\$
G3	89	Pendant Mounted High-bay w/ 400W High Pressure Lamp	120W LED Luminaire (dimable)	DECO DHB-LED1205085UNVAL (dimable)	\$	\$
G4	31	Surface Mounted High-bay w/ 100W High Pressure Lamp	20W LED Box Fixture (dimable)	DECO D536-LED2050UNVBZ (dimable)	\$	\$
G5	13	Wallpack Fixture w/ 150W High Pressure Sodium Lamp	30W LED Luminaire	RAB WPLED26	\$	\$
G6	59	Surface Mounted High-bay w/ 150W High Pressure Lamp	59W LED Luminaire	RAB GLED52	\$	\$
H	21	54W to 100W Incandescent Lamps	11W Integral LED Lamp	Philips 11A16/END/2700 DIM 6/1	\$	\$
I	9	Pole Flood Fixture w/ Various Type & Wattage Lamps	78W LED Exterior Flood Fixture	RAB FXLED78TN	\$	\$
J	25	Exterior Flood Fixture w/ Various Type & Wattage Lamps	41W LED Exterior Flood Fixture	RAB FLED39N	\$	\$
K	3	Exterior Flood Fixture w/ 400W Pulse Start Metal Halide Lamp	106W LED Area Lighter	RAB ALED3T105N	\$	\$
L	10	Exterior Flood Fixture w/ 400W Pulse Start Metal Halide Lamp	202W LED Exterior Flood Fixture	EcoPower EP-FLB-NW/200-UNIVUS-120	\$	\$

Retrofit Type	Existing Fixture or Lamp Count	Existing Fixture/Lamp Type	Proposed Fixture/Lamp Description	Fixture, Lamp & Ballast Specifications	Unit Cost (\$)	Extension (\$)
M1	7	4' strip fixture with 1 standard F34T12 lamp and a generic 0.87 BF magnetic ballast	1 high lumen F28T8 lamp and an extra efficient 0.77 BF instant start ballast	Lamp, Ballast, Lamp Socket only Lamp: F28T8/841 XP Ballast: B232UNVEL-A	\$	\$
M2	28	4' strip fixture with 2 standard F34T12 lamps and a generic 0.87 BF magnetic ballast	2 high lumen F28T8 lamps and an extra efficient 0.77 BF instant start ballast	Lamp, Ballast, Lamp Socket only Lamp: F28T8/841 XP Ballast: B232UNVEL-A	\$	\$
M3	61	4' strip fixture with 3 standard F34T12 lamps and a generic 0.87 BF magnetic ballast	2 high lumen F28T8 lamps and an extra efficient 0.77 BF instant start ballast with conversion kit	CKU-BC-2L-T8-1X4-UW-WA-S8M-UL-L-P-IS-UE (Precision-Paragon [P2])	\$	\$
M4	11	4' strip fixture with 4 standard F34T12 lamps and a generic 0.87 BF magnetic ballast	2 high lumen F28T8 lamps and an extra efficient 0.77 BF instant start ballast, with conversion kit	CKU-BC-2L-T8-1X4-UW-WA-S8M-UL-L-P-IS-UE (Precision-Paragon [P2])	\$	\$
M5	9	2 x 2 troffer fixture with 2 standard F34T12 U-T lamps and a generic 0.87 BF magnetic ballast	3 F17T8 lamps and an extra efficient 0.77 BF instant start ballast, with conversion kit	TKU-2X2-3L-T8-WA-UL-L-P-IS-UE (Precision-Paragon [P2])	\$	\$
M6	17	8-foot strip fixture with 2 standard F96T12 lamps and a generic 0.87 BF magnetic ballast	2 high lumen F96T8 lamps and an extra efficient Normal BF instant start ballast	Lamp, Ballast, Lamp Socket only Lamp: F96T8/SP42/ECC Ballast: GE259WV-N	\$	\$
N1	68	Sport Lighters w/ 1000W Metal Halide Lamp	750W Pulse Start Metal Halide Lamp & Ballast Retrofit	Lamp: MS750/PS/BU-HOR/BT37 Ballast: M149	\$	\$
N2	30	Shoebox Fixtures w/ 1000W Metal Halide Lamp	575W Sport Lighter Fixture	National Lighting Solutions NL-S-CM-2-T4TT-575PS-MTAP-AKM-BRZ	\$	\$
N3	12	Flood Fixtures w/ 1000W Metal Halide Lamp	155W LED Flood Fixture	RAB FXLED150SFN	\$	\$
N4	1	Shoebox Fixtures w/ 1000W Metal Halide Lamp	223W LED Area Lighter	Mount: Cree OSC-AA BZ Luminaire: Cree OSC A NM 3WE S 40K-UL BZ	\$	\$
O	55	Exterior Pathway Fixture w/ 150W High Pressure Sodium Lamp	90W LED Area Lighter	RAB ALED5178N	\$	\$
P	40	Exterior Acorn Fixture w/ 150W High Pressure Sodium Lamp	56W LED Retrofit Kit	Relume UAG2-D48-D5-NW-UL-X	\$	\$
Q1	6	Wallpack Fixture w/ Various Type & Wattage Lamps	15W LED Wallpack Fixture	RAB WPLED13	\$	\$
Q2	1	Wallpack Fixture w/ 150W High Pressure Sodium Lamp	20W LED Wallpack Fixture	RAB WPLED18N	\$	\$
Q3	4	Wallpack Fixture w/ Various Type & Wattage Lamps	60W LED Wallpack Fixture	RAB WPLEDC52	\$	\$
			<b>Total</b>		\$	\$



**ACKNOWLEDGMENT OF ADDENDA RECEIVED**

B2014-54

The Bidder shall acknowledge the receipt of addenda by placing an "X" by each addendum received.

Addendum No. 1 \_\_\_\_\_

Addendum No. 2 \_\_\_\_\_

Addendum No. 3 \_\_\_\_\_

Addendum No. 4 \_\_\_\_\_

Addendum No. 5 \_\_\_\_\_

Addendum No. 6 \_\_\_\_\_

Addendum No. 7 \_\_\_\_\_

Addendum No. 8 \_\_\_\_\_

If an addendum or addenda have been issued by the City and not noted above as being received by the Bidder, the Bid Proposal may be rejected.

\_\_\_\_\_  
Bidder's Signature

\_\_\_\_\_  
Date



**CONTRACTOR'S AFFIDAVIT B2014-54 (CONTINUED)**

7. That the Contractor did not, directly or indirectly, submit the Contractor's bid price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any individual or group of Individuals, except to the City of Torrance, or to any person or persons who have a partnership or other financial interest with said Contractor in its business.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Subscribed and Sworn to  
before me this \_\_\_\_\_ (Contractor)  
of \_\_\_\_\_, 20\_\_\_\_\_ (Title)

\_\_\_\_\_  
Notary Public in and for said  
County and State.  
(Seal)

**BID BOND**

B2014-54

**KNOW ALL MEN BY THESE PRESENTS:** That we, \_\_\_\_\_

\_\_\_\_\_ as principal, and \_\_\_\_\_ as sureties, are held and firmly bound unto the City of Torrance, State of California, in the penal sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_), for the payment whereof we hereby bind ourselves, our successors, heirs, executors or administrators jointly and severally, firmly by these presents.

The condition of this obligation is such that, whereas the above bounded principal is about to file with and submit to the City of Torrance a bid or proposal for the performance of certain work as required in the City of Torrance, Project No. B2014-54, said work being: Lighting Retrofits, in compliance with the Specifications therefore under an invitation of said City contained in a notice or advertisement for bids or proposals; now if the bid or proposal of said principal shall be accepted and if said work be thereupon awarded to the principal by said City and if the said principal shall enter into a contract with the said City in accordance with said bid or proposal, or if the bid or proposal of the said principal is rejected, then this bond shall be void and of no effect and otherwise in full force and effect.

**WITNESS** our hands this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety/Attorney-in-Fact

\_\_\_\_\_  
Signature

Name: \_\_\_\_\_  
Local Address: \_\_\_\_\_  
Phone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_

### LIST OF SUBCONTRACTORS

The Bidder is required to fill in the following blanks in accordance with the provisions of the Subletting and Subcontracting Fair Practices Act (Chapter 2 of Division 5, Title 1 of the Government Code of the State of California) and should familiarize itself with Section 2-3 of the Standard Specifications.

1. Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

2. Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

3. Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

4. Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

Subcontractors must be properly licensed under the laws of the State of California for the type of work which they are to perform. Do not list alternate subcontractors for the same work.

The Bidding Contractor must include each subcontractor's contract license number (AB 44). An inadvertent error in listing the subcontractor's license number shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive, if the corrected contractor's license number is submitted to the public entity by the prime contractor within 24 hours after the bid opening-provided that the correct license number corresponds to the submitted name and location of the subcontractor.

### REFERENCES

(Bidder must have completed two (2) lighting retrofit projects similar size and scope valued at \$200,000 each or Bidder must have completed lighting retrofits for a building total value exceeding \$ 500,000 per year). The references must reflect this requirement.

1. Name (Firm/Agency): \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Title of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Date of Completion \_\_\_\_\_ Contract Amount:\$ \_\_\_\_\_

2. Name (Firm/Agency): \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Title of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Date of Completion \_\_\_\_\_ Contract Amount:\$ \_\_\_\_\_

3. Name (Firm/Agency): \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Title of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Date of Completion \_\_\_\_\_ Contract Amount:\$ \_\_\_\_\_

4. Name (Firm/Agency): \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Title of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Date of Completion \_\_\_\_\_ Contract Amount:\$ \_\_\_\_\_

**Bidder's Information**

The bidder must provide a detailed list of the trades and the description of the work they will perform with their own company for this project.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

Contractor's License No.: \_\_\_\_\_ Class: \_\_\_\_\_

Date first obtained: \_\_\_\_\_

Has License ever been suspended or revoked? \_\_\_\_\_

If yes, describe when and why \_\_\_\_\_

Any current claims against License or Bond? \_\_\_\_\_

If yes, describe claims: \_\_\_\_\_

Type of entity (check one)

\_\_\_\_\_ Incorporated \_\_\_\_\_ Partnership \_\_\_\_\_ Sole Proprietorship

If incorporated, in what state \_\_\_\_\_

Federal Tax ID Number # \_\_\_\_\_

Principals in Company (List all - attach additional sheets if necessary):

<u>NAME</u>	<u>TITLE</u>	<u>LICENSE NO.</u> (If Applicable)
_____	_____	_____
_____	_____	_____
_____	_____	_____

**PART E**

**DOCUMENTS TO BE COMPLETED  
AND DELIVERED TO CITY AS PART  
OF CONTRACT WITH THE CITY**

**PERFORMANCE BOND**

**KNOW ALL MEN BY THESE PRESENTS:**

That we, \_\_\_\_\_ as Principal(s) and \_\_\_\_ a \_\_\_\_\_ corporation, incorporated, organized, and existing under the laws of the State of \_\_\_\_\_, and authorized to execute bonds and undertakings and to do a general surety business in the State of California, as Surety, are jointly and severally held and firmly bound unto the City of Torrance, a municipal corporation, located in the County of Los Angeles, State of California, in the full and just sum of: \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves and our respective heirs, executors, administrators, representative, successors and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that: WHEREAS, said Principal(s) have/has entered into, or are/is about to enter into, a certain written contract or agreement, dated as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, with the said City of Torrance for the LIGHTING RETROFITS B2014-54, all as is more specifically set forth in said contract or agreement, a full, true and correct copy of which is hereunto attached, and hereby referred to and by this reference incorporated herein and made a part hereof;

**NOW, THEREFORE**, if the said Principal(s) shall faithfully and well and truly do, perform and complete, or cause to be done, performed and complete, each and all of the covenants, terms, conditions, requirements, obligations, acts and things, to be met, done or performed by said Principal(s), including any guarantee period as set forth in, or required by, said contract or agreement, all at and within the time or times, and in the manner as therein specified and contemplated, then this bond and obligation shall be null and void; otherwise it shall be and remain in full force, virtue and effect.

The said Surety, for value received, hereby stipulates and agrees that no amendment, change, extension of time, alteration or addition to said contract or agreement, or of any feature or item or items of performance required therein or there under, shall in any manner affect its obligations on or under this bond; and said Surety does hereby waive notice of any such amendment, change, extension of time, alteration, or addition to said contract or agreement, and of any feature or item or items of performance required therein or there under.

**PERFORMANCE BOND B2014- (CONTINUED)**

In the event any suit, action or proceedings is instituted to recover on this bond or obligation, said Surety will pay, and does hereby agree to pay, as attorney's fees for said City, such sum as the Court in any such suit, action or proceeding may adjudge reasonable.

**EXECUTED, SEALED AND DATED** this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

CORPORATE SEAL

PRINCIPAL(S):

BY \_\_\_\_\_

BY \_\_\_\_\_

CORPORATE SEAL

SURETY:

BY \_\_\_\_\_

Name: \_\_\_\_\_  
Local Address: \_\_\_\_\_  
Phone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_

**LABOR AND MATERIAL BOND**  
B2014-54

**KNOW ALL MEN BY THESE PRESENTS:**

That we, \_\_\_\_\_  
As Principal(s) and \_\_\_\_\_ a  
corporation, incorporated, organized, and existing under the laws of the State of  
\_\_\_\_\_, and authorized to execute bonds and undertakings and to do a general  
surety business in the State of California, as Surety, are jointly and severally held and firmly  
bound unto:

- (a) The State of California for the use and benefit of the State Treasurer, as ex-officio Treasurer and custodian of the Unemployment Fund of said State; and
- (b) The City of Torrance, California; and
- (c) Any and all persons who do or perform or who did or performed work or labor upon or in connection with the work or improvement referred to in the contract or agreement hereinafter mentioned; and
- (d) Any and all materialmen, persons, companies, firms, association, or corporations, supplying or furnishing any materials, provisions, provender, transportation, appliances or power, or other supplies used in, upon, for or about or in connection with the performance of the work or improvement contracted to be executed, done, made or performed under said contract or agreement; and
- (e) Any and all persons, companies, firms, associations, or corporations furnishing, renting, or hiring teams, equipment, implements or machinery for, in connection with, or contributing to, said work to be done or improvement to be made under said contract or agreement; and
- (f) Any and all persons, companies, firms, associations, or corporations who supply both work and materials;

and whose claim has not been paid by said Principal(s), in full and just sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), lawful money of the United States of America, for the payment of which will and truly to be made, said Principal(s) and said Surety do hereby bind themselves and their respective heirs, executors, administrators, representatives, successors and assigns, jointly and severally, firmly by these presents.

**LABOR AND MATERIAL BOND (CONTINUED)**

**THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, THAT: WHEREAS,** said Principal(s) have/has entered into or are/is about to enter into a certain written contract or agreement, dated as of the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_, with the City of Torrance for the LIGHTING RETROFITS, B2014-54, all as is more specifically set forth in said contract or agreement, a full, true and correct copy of which is hereunto attached, and hereby referred to and by this reference incorporated herein and made a part hereof;

**NOW, THEREFORE,** if the said Principal(s) (or any of his/her, its, or their subcontractors) under said contract or agreement fails or fail to pay:

- (1) For any materials, provisions, provender, transportation, appliances, or power, or other supplies; or
- (2) For the hire of any teams, equipment, implements, or machinery; or
- (3) For any work or labor; supplies, furnished, provided, used, done or performed in, upon, for or about or in connection with the said work or improvement; or
- (4) For amounts due under the Unemployment Insurance Act of the State of California with respect to such work or improvement;

the Surety on this bond will pay the same in an amount not exceeding the sum hereinabove specified in this bond; and, also, in case suit is brought upon this bond, said Surety will (and does hereby agree to) pay a reasonable attorney's fee, to be fixed and taxed as costs, and included in the judgment therein rendered.

This bond shall (and it is hereby made to) insure to the benefit of any and all persons entitled to file claims under Section 1192.1 of the Code of Civil Procedure of the State of California, so as to give a right of action to them or their assigns in any suit brought upon this bond, all as contemplated under the provisions of Section 4205 of the Government Code, and of Chapter 1 of Title 4 of Part 3 of the Code of Civil Procedure, of the State of California.

This bond is executed and filed in connection with said contract or agreement hereunto attached to comply with each and all of the provisions of the laws of the State of California above mentioned or referred to, and of all amendments thereto, and the obligors so intend and do hereby bind themselves accordingly.

**LABOR AND MATERIAL BOND B2014-54 (CONTINUED)**

The said Surety, for value received, hereby stipulates and agrees that no amendment, change, extension of time, alteration, or addition to said contract or agreement, or of any feature or item or items of performance required therein or thereunder, shall in any manner affect its obligations on or under this bond; and said Surety does hereby waive notice of any such amendment, change, extension of time, alteration, or addition to said contract or agreement, and of any feature or item or items of performance required therein or thereunder.

**EXECUTED, SEALED AND DATED** this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

CORPORATE SEAL

PRINCIPAL:

BY \_\_\_\_\_

CORPORATE SEAL

SURETY:

BY \_\_\_\_\_

Name: \_\_\_\_\_  
Local Address: \_\_\_\_\_  
Phone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_

## **CONTRACT SERVICES AGREEMENT**

This CONTRACT SERVICES AGREEMENT ("Agreement") is made and entered into as of Date (the "Effective Date"), by and between the CITY OF TORRANCE, a municipal corporation ("CITY"), and Contractor Name, type of entity ("CONTRACTOR").

### **RECITALS:**

- A. The CITY wishes to retain the services of an experienced and qualified CONTRACTOR to Description of Project Project Name & Bid Number;
- B. In order to obtain the desired services, The CITY has circulated a Notice Inviting Bids for the Description of Notice Inviting Bid Project Name & Bid Number (the "NIB"); and
- C. CONTRACTOR has submitted a Bid (the "Bid") in response to the NIB. CONTRACTOR represents that it is qualified to perform those services requested in the Plans and Specifications. Based upon its review of all Bids submitted in response to the NIB, The CITY is willing to award the contract to CONTRACTOR.

### **AGREEMENT:**

#### **1. SERVICES TO BE PERFORMED BY CONTRACTOR**

CONTRACTOR will provide the services and install those materials listed in the Plans and Specifications, which are on file in the General Services Department. The NIB and the Plans and Specifications are made a part of this Agreement. A copy of the Bid is attached as Exhibit A.

#### **2. TERM**

Unless earlier terminated in accordance with Paragraph 4 below, this Agreement will continue in full force and effect for One/Two Year(s) from the Effective Date.

#### **3. COMPENSATION**

##### **A. CONTRACTOR's Fee.**

For services rendered pursuant to this Agreement, CONTRACTOR will be paid in accordance with CONTRACTOR's Bid; provided, however, that in no event will the total amount of money paid the CONTRACTOR, for services initially contemplated by this Agreement, exceed the sum of \$Insert Dollar Amount ("Agreement Sum"), unless otherwise first approved in writing by the CITY.

##### **B. Schedule of Payment.**

Provided that the CONTRACTOR is not in default under the terms of this Agreement, upon presentation of an invoice, CONTRACTOR will be paid monthly, within 30 days after the date of the monthly invoice.

#### 4. TERMINATION OF AGREEMENT

##### A. Termination by CITY for Convenience.

1. CITY may, at any time, terminate the Agreement for CITY's convenience and without cause.
2. Upon receipt of written notice from CITY of such termination for CITY's convenience, CONTRACTOR will:
  - a) cease operations as directed by CITY in the notice;
  - b) take actions necessary, or that CITY may direct, for the protection preservation of the work; and
  - c) except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.
3. In case of such termination for CITY's convenience, CONTRACTOR will be entitled to receive payment for work executed; and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

##### B. Termination for Cause.

1. If either party fails to perform any term, covenant or condition in this Agreement and that failure continues for 15 calendar days after the nondefaulting party gives the defaulting party notice of the failure to perform, this Agreement may be terminated for cause; provided, however, that if during the notice period the defaulting party has promptly commenced and continues diligent efforts to remedy the default, the defaulting party will have such additional time as is reasonably necessary to remedy the default.
2. In the event this Agreement is terminated for cause by the default of the CONTRACTOR, the CITY may, at the expense of the CONTRACTOR and its surety, complete this Agreement or cause it to be completed. Any check or bond delivered to the CITY in connection with this Agreement, and the money payable thereon, will be forfeited to and remain the property of the CITY. All moneys due the CONTRACTOR under the terms of this Agreement will be retained by the CITY, but the retention will not release the CONTRACTOR and its surety from liability for the default. Under these circumstances, however, the CONTRACTOR and its surety will be credited with the amount of money retained, toward any amount by which the cost of completion exceeds the Agreement Sum and any amount authorized for extra services.
3. Termination for cause will not affect or terminate any of the rights of the CITY as against the CONTRACTOR or its surety then existing, or which may thereafter accrue because of the default; this provision is in addition to all other rights and remedies available to the CITY under law.

### C. Termination for Breach of Law.

In the event the CONTRACTOR or any of its officers, directors, shareholders, employees, agents, subsidiaries or affiliates is convicted (i) of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of a contract or subcontract; (ii) under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects responsibility as a public consultant or contractor; (iii) under state or federal antitrust statutes arising out of the submission of bids or proposals; or (iv) of violation of Paragraph 19 of this Agreement; or for any other cause the CITY determines to be so serious and compelling as to affect CONTRACTOR's responsibility as a public consultant or contractor, including but not limited to, debarment by another governmental agency, then the CITY reserves the unilateral right to terminate this Agreement or to impose such other sanctions (which may include financial sanctions, temporary suspensions or any other condition deemed appropriate short of termination) as it deems proper. The CITY will not take action until CONTRACTOR has been given notice and an opportunity to present evidence in mitigation.

### 5. **FORCE MAJEURE**

If any party fails to perform its obligations because of strikes, lockouts, labor disputes, embargoes, acts of God, inability to obtain labor or materials or reasonable substitutes for labor or materials, governmental restrictions, governmental regulations, governmental controls, judicial orders, enemy or hostile governmental action, civil commotion, fire or other casualty, or other causes beyond the reasonable control of the party obligated to perform, then that party's performance shall be excused for a period equal to the period of such cause for failure to perform.

### 6. **RETENTION OF FUNDS**

CONTRACTOR authorizes the CITY to deduct from any amount payable to CONTRACTOR (whether or not arising out of this Agreement) any amounts the payment of which may be in dispute or that are necessary to compensate the CITY for any losses, costs, liabilities, or damages suffered by the CITY, and all amounts for which the CITY may be liable to third parties, by reason of CONTRACTOR's negligent acts or omissions or willful misconduct in performing or failing to perform CONTRACTOR's obligations under this Agreement. In the event that any claim is made by a third party, the amount or validity of which is disputed by CONTRACTOR, or any indebtedness exists that appears to be the basis for a claim of lien, the CITY may withhold from any payment due, without liability for interest because of the withholding, an amount sufficient to cover the claim. The failure of the CITY to exercise the right to deduct or to withhold will not, however, affect the obligations of CONTRACTOR to insure, indemnify, and protect the CITY as elsewhere provided in this Agreement.

**7. THE CITY'S REPRESENTATIVE**

City Representative is designated as the "City Representative," authorized to act in its behalf with respect to the work and services specified in this Agreement and to make all decisions in connection with this Agreement. Whenever approval, directions, or other actions are required by the CITY under this Agreement, those actions will be taken by the City Representative, unless otherwise stated. The City Manager has the right to designate another City Representative at any time, by providing notice to CONTRACTOR.

**8. CONTRACTOR REPRESENTATIVE(S)**

The following principal(s) of CONTRACTOR are designated as being the principal(s) and representative(s) of CONTRACTOR authorized to act in its behalf with respect to the work specified in this Agreement and make all decisions in connection with this Agreement:

Representative 1  
Representative 2

**9. INDEPENDENT CONTRACTOR**

The CONTRACTOR is, and at all times will remain as to the CITY, a wholly independent contractor. Neither the CITY nor any of its agents will have control over the conduct of the CONTRACTOR or any of the CONTRACTOR's employees, except as otherwise set forth in this Agreement. The CONTRACTOR may not, at any time or in any manner, represent that it or any of its agents or employees are in any manner agents or employees of the CITY. CITY has no duty, obligation, or responsibility to CONTRACTOR's agents or employees under the Affordable Care Act. CONTRACTOR is solely responsible for any tax penalties associated with the failure to offer affordable coverage to its agents and employees under the Affordable Care Act and any other liabilities, claims and obligations regarding compliance with the Affordable Care Act with respect to CONTRACTOR's agents and employees. CITY is not responsible and shall not be held liable for CONTRACTOR's failure to comply with CONTRACTOR's duties, obligations, and responsibilities under the Affordable Care Act. CONTRACTOR agrees to defend, indemnify and hold CITY harmless for any and all taxes and penalties that may be assessed against CITY as a result of CONTRACTOR's obligations under the Affordable Care Act relating to CONTRACTOR's agents and employees.

**10. BUSINESS LICENSE**

The CONTRACTOR must obtain a City business license prior to the start of work under this Agreement, unless CONTRACTOR is qualified for an exemption.

**11. OTHER LICENSES AND PERMITS**

CONTRACTOR warrants that it has all professional, contracting and other permits and licenses required to undertake the work contemplated by this Agreement.

**12. FAMILIARITY WITH WORK**

By executing this Agreement, CONTRACTOR warrants that CONTRACTOR (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, CONTRACTOR warrants that CONTRACTOR has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services set forth in this Agreement. Should CONTRACTOR discover any latent or unknown conditions that will materially affect the performance of the services set forth in this Agreement, CONTRACTOR must immediately inform the CITY of that fact and may not proceed except at CONTRACTOR's risk until written instructions are received from the CITY.

**13. CARE OF WORK**

CONTRACTOR must adopt reasonable methods during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and other components to prevent losses or damages, and will be responsible for all damages, to persons or property, until acceptance of the work by the CITY, except those losses or damages as may be caused by the CITY's own negligence.

**14. CONTRACTOR'S ACCOUNTING RECORDS; OTHER PROJECT RECORDS**

Records of the CONTRACTOR's time pertaining to the project, and records of accounts between the CITY and the CONTRACTOR, will be kept on a generally recognized accounting basis. CONTRACTOR will also maintain all other records, including without limitation specifications, drawings, progress reports and the like, relating to the project. All records will be available to the CITY during normal working hours. CONTRACTOR will maintain these records for three years after final payment.

**15. INDEMNIFICATION**

CONTRACTOR will indemnify, defend, and hold harmless CITY, the City Council, each member thereof, present and future, its officers, agents and employees from and against any and all liability, expenses, including defense costs and legal fees, and claims for damages whatsoever, including, but not limited to, those arising from breach of contract, bodily injury, death, personal injury, property damage, loss of use, or property loss however the same may be caused and regardless of the responsibility for negligence. The obligation to indemnify, defend and hold harmless includes, but is not limited to, any liability or expense, including defense costs and legal fees, arising from the negligent acts or omissions, or willful misconduct of CONTRACTOR, its officers, employees, agents, subcontractors or vendors. It is further agreed, CONTRACTOR's obligations to indemnify, defend and hold harmless will apply even in the event of concurrent negligence on the part of CITY, the City Council, each member thereof, present and future, or its officers, agents and employees, except for liability resulting solely from the negligence or willful misconduct of CITY, its officers, employees or agents. Payment by CITY is not a condition precedent to

enforcement of this indemnity. In the event of any dispute between CONTRACTOR and CITY, as to whether liability arises from the sole negligence of the CITY or its officers, employees, agents, subcontractors or vendors, CONTRACTOR will be obligated to pay for CITY's defense until such time as a final judgment has been entered adjudicating the CITY as solely negligent. CONTRACTOR will not be entitled in the event of such a determination to any reimbursement of defense costs including but not limited to attorney's fees, expert fees and costs of litigation.

**16. NON-LIABILITY OF THE CITY'S OFFICERS AND EMPLOYEES**

No officer or employee of the CITY will be personally liable to CONTRACTOR, in the event of any default or breach by the CITY or for any amount that may become due to CONTRACTOR.

**17. INSURANCE**

A. CONTRACTOR must maintain at its sole expense the following insurance, which will be full coverage not subject to self insurance provisions:

- (1) Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:
  - (a) Primarily Bodily Injury with limits of at least \$500,000 per person, \$1,000,000 per occurrence; and
  - (b) Primary Property Damage of at least \$250,000 per occurrence; or
  - (c) Combined single limits of \$1,000,000 per occurrence.
- (2) General Liability including coverage for premises, products and completed operations, independent contractors, personal injury and contractual obligations with combined single limits of coverage of at least \$2,000,000 per occurrence.
- (3) Workers' Compensation with limits as required by the State of California and Employers Liability with limits of at least \$1,000,000.

B. The insurance provided by CONTRACTOR will be primary and non-contributory.

C. The CITY of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer must be named as additional insureds under the automobile and general liability policies.

D. CONTRACTOR must provide certificates of insurance and/or endorsements to the City Clerk of the City of Torrance before the commencement of work.

- E. Each insurance policy required by this Paragraph must contain a provision that no termination, cancellation or change of coverage can be made without thirty days notice to the CITY.
- F. CONTRACTOR must include all subcontractors as insureds under its policies or must furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors will be subject to all of the requirements of this Paragraph 17.

**18. SUFFICIENCY OF INSURERS**

Insurance required by this Agreement will be satisfactory only if issued by companies admitted to do business in California, rated "B+" or better in the most recent edition of Best's Key Rating Guide, and only if they are of a financial category Class VII or better, unless these requirements are waived by the Risk Manager of the CITY ("Risk Manager") due to unique circumstances. In the event the Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to the CITY, the CONTRACTOR agrees that the minimum limits of any insurance policies and/or the performance bond required by this Agreement may be changed accordingly upon receipt of written notice from the Risk Manager; provided that CONTRACTOR will have the right to appeal a determination of increased coverage by the Risk Manager to the City Council of the CITY within 10 days of receipt of notice from the Risk Manager.

**19. CONFLICT OF INTEREST**

- A. No officer or employee of the CITY may have any financial interest, direct or indirect, in this Agreement, nor may any officer or employee participate in any decision relating to the Agreement that effects the officer or employee's financial interest or the financial interest of any corporation, partnership or association in which the officer or employee is, directly or indirectly interested, in violation of any law, rule or regulation.
- B. No person may offer, give, or agree to give any officer or employee or former officer or employee, nor may any officer or employee solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any way pertaining to any program requirement, contract or subcontract, or to any solicitation or proposal.

**20. NOTICE**

- A. All notices, requests, demands, or other communications under this Agreement will be in writing. Notice will be sufficiently given for all purposes as follows:
  - 1. Personal delivery. When personally delivered to the recipient: notice is effective on delivery.

2. First Class mail. When mailed first class to the last address of the recipient known to the party giving notice: notice is effective three mail delivery days after deposit in an United States Postal Service office or mailbox.
3. Certified mail. When mailed certified mail, return receipt requested: notice is effective on receipt, if delivery is confirmed by a return receipt.
4. Overnight delivery. When delivered by an overnight delivery service, charges prepaid or charged to the sender's account: notice is effective on delivery, if delivery is confirmed by the delivery service.
5. Facsimile transmission. When sent by fax to the last fax number of the recipient known to the party giving notice: notice is effective on receipt. Any notice given by fax will be deemed received on the next business day if it is received after 5:00 p.m. (recipient's time) or on a non-business day.
7. Addresses for purpose of giving notice are as follows:

CONTRACTOR: Contractor's Name and Address

Fax: Insert Fax Number

CITY: City Clerk  
 City of Torrance  
 3031 Torrance Boulevard  
 Torrance, CA 90509-2970  
 Fax: (310) 618-2931

with a copy to: Attn: Project Manager's Name  
 Department Name  
 Address  
 Torrance, CA 90503  
 Fax: Insert Fax Number

- B. Any correctly addressed notice that is refused, unclaimed, or undeliverable because of an act or omission of the party to be notified, will be deemed effective as of the first date the notice was refused, unclaimed or deemed undeliverable by the postal authorities, messenger or overnight delivery service.
- C. Either party may change its address or fax number by giving the other party notice of the change in any manner permitted by this Agreement.

**21. PROHIBITION AGAINST ASSIGNMENT AND SUBCONTRACTING**

This Agreement and all exhibits are binding on the heirs, successors, and assigns of the parties. The Agreement may not be assigned or subcontracted by either the CITY or CONTRACTOR without the prior written consent of the other.

**22. INTEGRATION; AMENDMENT**

This Agreement represents the entire understanding of the CITY and CONTRACTOR as to those matters contained in it. No prior oral or written understanding will be of any force or effect with respect to the terms of this Agreement. The Agreement may not be modified or altered except in writing signed by both parties.

**23. INTERPRETATION**

The terms of this Agreement should be construed in accordance with the meaning of the language used and should not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction that might otherwise apply.

**24. SEVERABILITY**

If any part of this Agreement is found to be in conflict with applicable laws, that part will be inoperative, null and void insofar as it is in conflict with any applicable laws, but the remainder of the Agreement will remain in full force and effect.

**25. TIME OF ESSENCE**

Time is of the essence in the performance of this Agreement.

**26. GOVERNING LAW; JURISDICTION**

This Agreement will be administered and interpreted under the laws of the State of California. Jurisdiction of any litigation arising from the Agreement will be in Los Angeles County, California.

**27. COMPLIANCE WITH STATUTES AND REGULATIONS**

CONTRACTOR will be knowledgeable of and will comply with all applicable federal, state, county and city statutes, rules, regulations, ordinances and orders.

**28. WAIVER OF BREACH**

No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default will impair the right or remedy or be construed as a waiver. A party's consent or approval of any act by the other party requiring the party's consent or approval will not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and will not be a waiver of any other default concerning the same or any other provision of this Agreement.

**29. ATTORNEY'S FEES**

Except as provided for in Paragraph 15, in any dispute, litigation, arbitration, or other proceeding by which one party either seeks to enforce its rights under this Agreement (whether in contract, tort or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing party will be awarded reasonable attorney's fees, together with any costs and expenses, to resolve the dispute and to enforce any judgment.

**30. EXHIBITS**

All exhibits identified in this Agreement are incorporated into the Agreement by this reference.

**31. CONTRACTOR'S AUTHORITY TO EXECUTE**

The persons executing this Agreement on behalf of the CONTRACTOR warrant that (i) the CONTRACTOR is duly organized and existing; (ii) they are duly authorized to execute this Agreement on behalf of the CONTRACTOR; (iii) by so executing this Agreement, the CONTRACTOR is formally bound to the provisions of this Agreement; and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which the CONTRACTOR is bound.

CITY OF TORRANCE,  
a Municipal Corporation

Firm Name  
Type of Entity

\_\_\_\_\_  
Patrick J. Furey, Mayor

By: \_\_\_\_\_  
Signer Name, Title

ATTEST:

\_\_\_\_\_  
Rebecca Poirier, MMC  
City Clerk

APPROVED AS TO FORM:

JOHN L. FELLOWS III  
City Attorney

By: \_\_\_\_\_

Attachment:     Exhibit A: Bid

**EXHIBIT A**

**Bid**

**PART F**

**PROJECT SPECIFICATIONS**

## Other Information

**The Contractor shall provide materials as specified AND associated parts necessary for a complete and usable project.**

- The Contractor shall field verify the following information prior to purchasing new fixtures and lamps:
  - Replacement fixtures shall be compatible in size and shape as existing and shall fit into existing space and connect to existing lighting circuiting.
  - Voltage: 120, 277 or 480-V ac. Field verify prior to purchase or provide multitap ballast.
  - Mounting: Match existing fixture mounting.
  - Nominal Dimensions: Match existing.
  - Ballast Types and Features: Electronic and Electronic Dimming as required.
  - External Finish: Match existing.
  - Trim and Hardware: Match existing.
  - Special Environmental Conditions: Damp or wet location listed as required to match existing.
- The City shall provide allowable working hours for each area/building after contract award.
- Contractor work shall be scheduled around owner work schedules. A schedule shall be provided and updated by the Contractor.
- Work may be scheduled at any time, 24 hours a day, 7 days a week.
- Work during normal business hours, afterhours, and weekends should be expected
- Available times for each area will be given 7 calendar days in advance.
- A minimum continuous 6 hour block of time will be provided for each day of work so as to allow continuous work in the respective area.
- Bucket or boom lifts will be necessary to access areas where from directly under the lighting equipment is not possible. The Contractor is responsible for rental of all equipment
- Contractor staff shall be properly licensed, trained or certified by proper authority as applicable or use of all equipment.

**SUBSTITUTIONS:****The Owner has full discretion on approval of substitution requests**

Substitutions of equal or better materials or equipment may be presented for approval at least 10 days BEFORE the bid opening date. Substitution requests must contain the following information:

- a) Manufacturer
- b) Model
- c) Part number
- d) Complete product description to include:
  1. Energy use
  2. Life span
  3. Manufacturer warranty (this does not relieve the contractor of warranty times listed in this specification)
  4. Cost
  5. Location of Manufacture.
  6. Availability (specific sources: address, phone, website, point of contact)
  7. Verification of DLC or Energy Star qualified for LED fixtures/lamps, and verification of approved High Performance T8 lamps and ballasts.
  8. Delivery date (if approved)

Installation of a requested substituted product will be required at the City's request to verify lighting output under actual field conditions prior to approval. Procurement and installation of contractor recommended substitute items is at the contractor's expense during pre-bid testing

Adequate contractor staff shall be available to complete work in a timely manner.

Work shall not occur on the following days/holidays without prior approval

New Year's Eve  
New Year's Day  
Martin Luther King Birthday  
Lincolns Birthday  
Presidents Day  
Good Friday through Easter Sunday  
Armed Forces Day  
Memorial Day  
4<sup>th</sup> of July  
Labor Day  
Veterans Day  
Thanksgiving  
Day after Thanksgiving  
Christmas Eve  
Christmas Day

Requests to shut down utility service must be requested in writing 7 calendar days in advance

## SECTION 16511 - INTERIOR &amp; EXTERIOR LIGHTING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. City of Torrance Lighting Reports, Schedules, Building and Lamp Spread Sheets, and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Interior lighting fixtures with lamps, and ballasts.
  - 2. Lighting fixtures mounted on exterior building surfaces.
  - 3. Exterior Park and area lighting fixtures with lamps and ballasts.
  - 4. Accessories, including lighting fixture retrofitting.
  - 5. Lamps and Ballasts.

## 1.3 DEFINITIONS

- A. BF: Ballast factor. Ratio of lighting output of a given lamp(s) operated by the subject ballast to the light output of the same lamp(s) when operated on an ANSI reference circuit.
- B. CRI: Color-rendering index.
- C. CU: Coefficient of utilization.
- D. LER: Luminaire efficacy rating, is calculated according to NEMA LE 5. This value can be estimated from photometric data using the following formula:
  - 1. LER is equal to the product of total rated lamp lumens times BF times luminaire efficiency, divided by input watts.
- E. RCR: Room cavity ratio.

## 1.4 SUBMITTALS

- A. Product Data: For each type of lighting fixture, ballast, or lamp scheduled arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
  - 1. Physical description of fixture, including dimensions and verification of indicated parameters.
  - 2. Fluorescent and high-intensity-discharge ballasts.
  - 3. Lamps.

- B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.
- C. Wiring Diagrams: Power, signal, and control wiring.
- D. Product Certificates: For each type of ballast for dimmer-controlled fixtures, signed by product manufacturer.
- E. Source quality-control test reports.
- F. Field quality-control test reports.
- G. Operation and Maintenance Data: For lighting equipment and fixtures and maintenance manuals. Include the following:
  - 1. Catalog data for each fixture. Include the diffuser, ballast, and lamps installed in that fixture.
- H. Warranties: Special warranties specified in this Section.

#### 1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.
- C. NFPA 101 Compliance: Comply with visibility and Luminance requirements for exit signs.
- D. Fluorescent Lamps: All lamps must be listed as high performance (HP) T8 Lamps and must be listed at <http://library.cee1.org/content/commercial-lighting-qualifying-products-lists>.
- E. Fluorescent Ballasts: All ballasts must be listed as high performance (HP) ballasts, and be listed at <http://library.cee1.org/content/commercial-lighting-qualifying-products-lists>.

#### 1.6 COORDINATION

- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

#### 1.7 WARRANTY

- A. **Special Warranty for Fluorescent Ballasts:** Manufacturer's standard form in which ballast manufacturer agrees to repair or replace ballasts that fail in materials or workmanship within specified warranty period.

- B. The Owner retains the option at its discretion to replace failed lamps or ballasts. In these instances the contractor shall provide a new ballast and/or lamp as applicable for each owner installed replacement. Replacement parts shall be provided within 2 weeks of notification. Verify available warranties for units and components and insert number in subparagraph below
1. Warranty Period for Electronic Ballasts: Five years from date of Substantial completion.
- C. Manufacturer's Special Warranty for T8 Fluorescent Lamps: Manufacturer's standard form, made out to Owner and signed by lamp manufacturer agreeing to replace lamps that fail in materials or workmanship, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below. Verify available warranties for units and components and insert number in subparagraph below.
1. Warranty Period: **One year** from date of Substantial Completion.

## 1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. **Lamps: 5 for every 100** of each type and rating installed. Furnish at least one of each type.
  2. **Plastic Diffusers and Lenses: 1 for every 15** of each type and rating installed. Furnish at least one of each type.
  3. **Ballasts/Drivers/Starters: 1 for every 50** of each type and rating installed. Furnish at least three (3) of each type.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, product specified.
  2. Products: Subject to compliance with requirements, provide one of the products specified.

### 2.2 FIXTURES AND COMPONENTS, GENERAL

- A. Rebate Program Compliance: Fixtures, retrofit kits, lamps, ballasts, and other installed materials **MUST** be compliant with current Southern California Edison rebate programs. The contractor **SHALL** confirm acceptance with SCE for all materials or equipment used.
- B. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

- C. Incandescent Fixtures: Not allowed. Provide fixtures with CFL or LED replacement lamps with equal lumen output.
- D. Fluorescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.
- E. HID Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5B.
- F. Metal Parts: Free of burrs and sharp corners and edges.
- G. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- H. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- I. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
  - 1. White Surfaces: 91 percent.
  - 2. Specular Surfaces: 90 percent.
  - 3. Diffusing Specular Surfaces: 75 percent.
  - 4. Laminated Silver Metallized Film: 90 percent.
- J. Plastic Diffusers, Covers, and Globes:
  - 1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
    - a. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless different thickness is indicated.
    - b. UV stabilized.
  - 2. Glass: Annealed crystal glass, unless otherwise indicated.

## 2.3 LIGHTING FIXTURES

- A. Fixture.
  - 1. Products: Replacement fixtures shall be compatible in size and shape as existing and shall fit into existing space and connect to existing lighting circuiting. Field verify prior to purchase.
  - 2. Note that the high bay LED fixtures at the City Services require a plug in connection to existing power. Contractor shall install a NEW male connector to fit the existing female connection. The current plug is as follows:

PASS & SEYMOUR - S-2348-DF - PLUG, NON-NEMA, 3 WIRE, 14A, 120-480V

The Contractor is responsible to be comply with all present or new code requirements for installation work.

3. Retrofit kits and materials shall be compatible in size and shape as existing and shall fit into existing space and connect to existing lighting circuiting. Field verify prior to purchase.
4. Voltage: 120, 277 or 480-V ac. Field verify or provide multitap ballast.
5. Mounting: Match existing fixture mounting.
6. Nominal Dimensions: Match existing.
7. See Editing Instruction No. 6 in the Evaluations for discussion of lamp current crest factor.
8. Lamps: As indicated in survey schedule.
9. Ballast Types and Features: Electronic and Electronic Dimming as required, field verify.
10. Lens: Match existing.
11. External Finish: Match existing.
12. Trim and Hardware: Match existing.
13. Special Environmental Conditions: Damp or wet location listed as required to match existing.
14. Submit Sample.

#### 2.4 LED Fixtures

- A. Rebate Program Compliance: Ballasts/starters/drivers MUST be compliant with current Southern California Edison rebate programs as applicable.
- B. LED fixtures and retrofit solutions MUST be qualified by The DesignLights Consortium®, and be listed at <http://www.designlights.org/>

#### 2.5 FLUORESCENT LAMP BALLASTS

- A. Rebate Program Compliance: Ballasts MUST be compliant with current Southern California Edison rebate programs as applicable. Note that some lamps, ballasts and associated hardware require dimming capability.
- B. Description: Include the following features, unless otherwise indicated:
  1. Ballasts MUST be listed as High-Performance (HP) T8 lamps and HP ballasts, and be listed at <http://library.cee1.org/content/commercial-lighting-qualifying-products-lists>

2. Designed for type and quantity of lamps indicated at full light output. Provide emergency battery ballasts for operation of 1 lamp for 90 minutes at 1400 lumen output. Use ballast to replace existing emergency ballast.
- C. Electronic ballasts for linear lamps shall include the following features:
1. Comply with NEMA C82.11.
  2. Ballast Type: Instant start, unless otherwise indicated.
  3. Programmed Start: Ballasts with two-step lamp starting to extend life of frequently started lamps.
  4. Sound Rating: A.
  5. Total harmonic distortion rating of less than 20 percent according to NEMA C82.11.
  6. Transient Voltage Protection: IEE C62.41, Category A.
  7. Operating Frequency: 20kHz or higher.
  8. Lamp Current Crest Factor: Less than 1.7.
  9. Parallel Lamp Circuits: Multiple lamp ballasts connected to maintain full light output on surviving lamps if one or more lamps fail.
- D. Ballasts for compact lamps in recessed fixtures shall have the following features, unless otherwise indicated:
1. Type: Electronic.
  2. Power Factor: 90 percent, minimum.
  3. Flicker: Less than 5 percent.
  4. Lamp Current Crest Factor: Less than 1.7.
  5. Electronic Ballast Operating Frequency: 20kHz or higher.
  6. Lamp end-of-life detection and shutdown circuit.
  7. Transient Protection: Comply with IEEE C62.41 for Category A1 locations.
- E. Ballasts for compact lamps in non-recessed fixtures shall include the following features, unless otherwise indicated.
1. Power Factor: 90 percent, minimum.
  2. Ballast Coil Temperature: 65 deg C, maximum
  3. Transient Protection: Comply with IEEE C62.41 for Category A1 locations.
- F. Ballasts for dimmer-controlled fixtures shall comply with general and fixture-related requirements above for electronic ballasts and the following features:
1. Dimming Range: 100 to 5 percent of rated lamp lumens.
  2. Ballast Input Watts: Can be reduced to 20 percent of normal.
  3. Compatibility: Certified by manufacturer for use with specific dimming system indicated.
- 2.6 HIGH-INTENSITY-DISCHARGE LAMP BALLASTS
- A. General: Comply with NEMA C82.4 and UL 1029. Shall include the following features, unless otherwise indicated.
1. Type: Constant-wattage autotransformer or regulating high-power-factor type.

2. Minimum Starting Temperature: Minus 22 deg F, Minus 30 deg C for single-lamp ballasts.
  3. Normal Ambient Operating Temperature: 104 deg F, 40 deg C.
  4. Open-circuit operation that will not reduce average life.
- B. Low-Noise Ballasts: Manufacturers' standard epoxy-encapsulated models designed to minimize audible fixture noise.
- C. High-Pressure-Sodium Ballasts: Solid-state igniter/starter with an average life in pulsing mode of 10,000 hours at an igniter/starter-case temperature of 90 deg C.
1. Instant-Restrike Device: Solid-state potted module, mounted inside high-pressure-sodium fixture and compatible with high-pressure-sodium lamps, ballasts, and sockets up to 150 W.
    - a. Restrike Range: 105- to 130-V ac.
    - b. Maximum Voltage: 250-V peak or 150-V ac RMS.

## 2.7 EXIT SIGNS

- D. General: Comply with UL 924; for sign colors, and lettering size, comply with authorities having jurisdiction.
- E. Internally Lighted Signs:
1. Lamps for AC Operation: Fluorescent, 2 for each fixture, 20,000 hours of rated lamp life, or LEDs, 50,000 hours minimum rated lamp life.
- F. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
1. Battery: Sealed, maintenance-free, nickel-cadmium type.
  2. Charger: Fully automatic, solid-state type with sealed transfer relay.
  3. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.

## 2.8 FLUORESCENT EMERGENCY LIGHTING FIXTURES

- G. Internal Type: Self-contained, modular, battery-inverter unit factory mounted within fixture body. Comply with UL 924.
1. Emergency Connection: Operate one fluorescent lamp continuously. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture ballast.
  2. Night Light Connection: Operate on fluorescent lamp continuously.
  3. Test Switch and Light-Emitting-Diode Indicator Light: Visible and accessible without opening fixture or entering ceiling space.
  4. Battery: Sealed, maintenance-free, nickel-cadmium type with minimum seven-year nominal life.

5. Charger: Fully automatic, solid-state, constant-current type.

## 2.9 FLUORESCENT LAMPS

- A. Lamps MUST be listed as High-Performance (HP) T8 lamps and HP ballasts, and be listed at <http://library.cee1.org/content/commercial-lighting-qualifying-products-lists>.
- B. Low-Mercury Lamps: Comply with Federal toxic characteristic leaching procedure test, and yield less than 0.2 mg of mercury per liter, when tested according to NEMA LL 1.
- C. T8 rapid-start low-mercury lamps, rated 28 W maximum, 2950 initial lumens (minimum), CRI of 80 (minimum), color temperature of 4100 K, and average rated life of 30,000 hours, unless otherwise indicated.
- D. T8 rapid-start low-mercury lamps, rated 17 W maximum, nominal length of 24 inches 610 mm, 1330 initial lumens (minimum), CRI of 80 (minimum), color temperature of 4100 K, and average rated life of 30,000 hours, unless otherwise indicated.
- E. Compact Fluorescent Lamps: CRI 82 (minimum), color temperature 4100, average rated life of 10,000 hours at 3 hours operation per start, unless otherwise indicated.
  1. T4, Twin Tube: Rated 5 W, 250 initial lumens (minimum).
  2. T4, Twin Tube: Rated 7 W, 400 initial lumens (minimum).
  3. T4, Twin Tube: Rated 9 W, 600 initial lumens (minimum).
  4. T4, Twin Tube: Rated 13 W, 825 initial lumens (minimum).
  5. T4, Double-Twin Tube: Rated 13 W, 900 initial lumens (minimum).
  6. T4, Double-Twin Tube: Rated 18 W, 1250 initial lumens (minimum).
  7. T4, Double-Twin Tube: Rated 26 W, 1800 initial lumens (minimum).

## 2.7 HIGH-INTENSITY-DISCHARGE LAMPS

- A. High-Pressure-Sodium Lamps: NEMA C78.42, wattage and burning position as scheduled, CRI 21 (minimum), color temperature 2100, and average rated life of 24,000 hours.
- B. Low-Pressure-Sodium Lamps: NEMA C78.41.
- C. Metal-Halide Lamps: ANSI C78.1372, wattage and burning position as scheduled, CRI 65 (minimum), and color temperature 3800 and minimum life of 15,000 hours for 250 watt, 20,000 hours for 400 watt.

## 2.8 INTEGRAL LED LAMPS

- A. Rebate Program Compliance: Ballasts MUST be compliant with current Southern California Edison rebate programs as applicable.
- B. LED integral lamps (screw-based or pin-based) MUST be ENERGY STAR-qualified, and be listed at:

[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=LB](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=LB)

## 2.9 FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 16 Section “Basic Electrical Materials and Methods” for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: ½-inch (13mm) steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. Twin-Stem Hangers: Two, ½-inch (13mm) steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated, 12 gage (2.68 mm).
- E. Wires for Humid Spaces: ASTM A580/A 580M, Composition 302 or 304 annealed stainless steel, 12 gage (2.68 mm).
- F. Rod Hangers: 3/16-inch- (5-mm-) minimum diameter, cadmium-plated, threaded steel rod.
- G. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.
- H. Aircraft Cable Support: Use cable, anchorages, and intermediate supports recommended by fixture manufacturer.

## 2.10 FINISHES

- A. Fixtures: Manufacturers’ standard, unless otherwise indicated.
  - 1. Paint Finish: Applied over corrosion-resistant treatment or primer, free of defects
  - 2. Metallic Finish: Corrosion resistant.

## 2.11 LIGHTING CONTROL DEVICES

- A. Dimming Ballast Controls: Sliding-handle type with on/off control; compatible with ballast and having light output and energy input over the full dimming range.
- B. Occupancy Sensors: Adjustable sensitivity and off delay time range of 5 to 15 minutes.
  - 1. Device Color: (Selected by COT)
    - a. Wall Mounted: Ivory.
    - b. Ceiling Mounted: White.
  - 2. Occupancy detection indicator.
  - 3. Combination Sensor: Ultrasonic and infrared technologies combined.

## 2.12 FLUORESCENT FIXTURE RETROFIT MATERIALS

- A. Comply with UL 1598 listing requirements.
  - 1. Reflector Kit: UL 1598, Type I, Suitable for two- to four-lamp, surface-mounted or recessed lighting fixtures by improving reflectivity of fixture surfaces.
  - 2. Ballast and Lamp Change Kit: UL 1598, Type II. Suitable for changing existing ballast, lamps, and sockets as scheduled.
- B. Retrofit Kits shall be as listed in the light survey bid forms or equal. Any substitutions must be approved PRIOR to presentation of bids.

## 2.13 SOURCE QUALITY CONTROL

- A. Provide services of a qualified, independent testing and inspecting agency to factory test fixtures with ballasts and lamps; certify results for electrical ratings and photometric data.
- B. Factory test fixtures with ballasts and lamps; certify results for electrical ratings and photometric data.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
- B. Support for Fixtures in or on Grid-Type Suspended Ceilings: Use grid as a support element.
  - 1. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than 6 inches (150 mm) from lighting fixture corners.
  - 2. Support Clips: Fasten to lighting fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.
  - 3. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two ¾ inch (20-mm) metal channels spanning and secured to ceiling tees.
- C. Suspended Lighting Fixture Support:
  - 1. Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.
  - 2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
  - 3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
- D. Cleaning Fixtures:
  - 1. Clean interior and exterior of fixture to be relamped or retrofitted including all lens. Return fixture to like new condition. Clean all visible supports and hardware.

## E. Retrofit Fixture:

1. Remove existing lamps, sockets (tomb stones) ballasts and wiring. Replace ballasts with new energy efficient ballast, number of lamps to match lamps connected in fixture per survey schedule. Provide multiple ballasts to match dual level switching. Secure ballasts and sockets and rewire per manufacturer's instruction. Provide new sockets. Relamp with new FT8 lamps to match length. Ensure type and placement of sockets matches new lamps. For fixtures to be delamped, position sockets of remaining lamps symmetrically and uniformly to provide uniform and even light output. Replace existing lens with new lens.

## 3.2 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

## 3.3 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Verify normal operation of each fixture after installation.
- C. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.
- D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.
- E. Corroded Fixtures: During warranty period, replace fixtures that show any signs of corrosion.

END OF SECTION 16511

Retrofit Type	Facility	Fixture Location	Fixture Type	Replacement Description	Fixture Quantity	Lamps/Fixture	Lamp Quantity	Existing Watts/Lamp	Existing Watts/Fixture	Proposed Watts/Fixture	Proposed Manuf.	Proposed M/N	Operating Hours	Baseline kWh/fixture	Proposed kWh/fixture	Savings kWh/fixture	Total kWh Savings	Service Account Address
B	Airport	Outside waiting area	Exterior recessed	Exterior HPS to LED	4	1	4	70	95	43	Mankie	BHR4QJUN50	4,380	416.1	188.3	227.8	911	3301 Airport Dr, Torrance, CA 90505
C	Airport	Back parking area	Light Pole Shoebox (1-ftx)	Exterior PSMH to LED	3	1	3	200	232	78	RAB	ALED278N	4,380	1,016.2	341.6	674.5	2,024	3301 Airport Dr, Torrance, CA 90505
C	Airport	Back parking area	Light Pole Shoebox (2-ftx)	Exterior PSMH to LED	4	1	4	200	232	78	RAB	ALED278N	4,380	1,016.2	341.6	674.5	2,698	3301 Airport Dr, Torrance, CA 90505
C	Airport	Front parking area	Light Pole Shoebox (1-ftx)	Exterior PSMH to LED	3	1	3	200	232	78	RAB	ALED278N	4,380	1,016.2	341.6	674.5	2,024	3301 Airport Dr, Torrance, CA 90505
C	Airport	Front parking area	Light Pole Shoebox (2-ftx)	Exterior PSMH to LED	10	1	10	200	232	78	RAB	ALED278N	4,380	1,016.2	341.6	674.5	6,745	3301 Airport Dr, Torrance, CA 90505
C	Airport	Near control tower	Light Pole Shoebox (1-ftx)	Exterior PSMH to LED	2	1	2	200	232	78	RAB	ALED278N	4,380	1,016.2	341.6	674.5	1,349	3301 Airport Dr, Torrance, CA 90505
D	Airport	Path lighting	Bollards	Exterior MH to LED	10	1	10	70	95	38	LSI Industries	XBWR/ID LED 24 400 CW UE BRZ 55	4,380	416.1	166.4	249.7	2,497	3301 Airport Dr, Torrance, CA 90505
I	Airport	Flag pole	Exterior flood	Exterior MH to LED	2	1	2	150	190	78	RAB	FKLED28TN	4,380	832.2	341.6	490.6	981	3301 Airport Dr, Torrance, CA 90505
I	Airport	Near control tower	Exterior flood	Exterior MH to LED	2	1	2	150	190	78	RAB	FKLED28TN	4,380	832.2	341.6	490.6	981	3301 Airport Dr, Torrance, CA 90505
I	Airport	Courtyard	Exterior flood	Exterior MV to LED	3	1	3	175	205	78	RAB	FKLED28TN	4,380	897.9	341.6	556.3	1,669	2320 W. Carson St, Torrance, CA 90501
J	Attic	Building Exterior	Exterior flood	Exterior CFL to LED	6	1	6	32	32	41	RAB	FLED39N	4,380	140.2	179.6	-39.4	-237	2320 W. Carson St, Torrance, CA 90501
J	Attic	Basketball court	Exterior flood	Exterior incan to LED	2	1	2	75	75	41	RAB	FLED39N	4,380	328.5	179.6	148.9	298	2320 W. Carson St, Torrance, CA 90501
J	Attic	Front entrance	Exterior flood	Exterior incan to LED	7	1	7	75	75	41	RAB	FLED39N	4,380	328.5	179.6	148.9	1,042	2320 W. Carson St, Torrance, CA 90501
A	Barnett	Cafeteria	recessed - H50/LV	50W Halogen MH16 to LED	3	1	3	50	50	10	Philips	10MR46E0529/3000DIM	2,000	100.00	20.00	80.00	240	1318 Carvens Ave, Torrance, CA 90501
M2	City Hall	Penthouse	strip - F42EE	4-foot T12 to 28W T8	11	2	22	34	72	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	72.00	66.00	6.00	132	3031 Torrance Blvd, Torrance, CA 90503
M2	City Hall	Roof access stairs	surface mounted - F42EE	4-foot T12 to 28W T8	1	2	2	34	72	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	72.00	66.00	6.00	12	3031 Torrance Blvd, Torrance, CA 90503
M2	City Hall	Roof access stairs	surface mounted - F42EE	4-foot T12 to 28W T8	1	2	2	34	72	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	72.00	66.00	6.00	12	3031 Torrance Blvd, Torrance, CA 90503
M6	City Hall	Penthouse	strip - F82EE	8-foot T12 to 59W T8	1	2	2	60	123	110	Balistic: GE	Lamp: F96T8/541/ECO	2,000	123.00	110.00	13.00	26	3031 Torrance Blvd, Torrance, CA 90503
H	City Hall E Annex	2nd floor exterior	Exterior recessed	60W incan to LED	13	1	13	60	60	11	Philips	11A19/FEND/2700 DIM 6/1	4,380	262.8	48.2	214.6	2,790	3031 Torrance Blvd, Torrance, CA 90503
H	City Hall E Annex	Office	screw-in - I52	52W incan to LED	3	1	3	52	52	11	Philips	11A19/FEND/2700 DIM 6/1	2,000	104.00	22.00	82.00	246	3031 Torrance Blvd, Torrance, CA 90503
H	City Hall E Annex	Risk Management stairs	screw-in - I52	52W incan to LED	3	1	3	52	52	11	Philips	11A19/FEND/2700 DIM 6/1	2,000	104.00	22.00	82.00	246	3031 Torrance Blvd, Torrance, CA 90503
H	City Hall E Annex	Roof stairs	screw-in - I75	75W incan to LED	2	1	2	75	75	11	Philips	11A19/FEND/2700 DIM 6/1	2,000	150.00	22.00	128.00	256	3031 Torrance Blvd, Torrance, CA 90503
M1	City Hall E Annex	Kitchen	1x4 troffer - F41EE	4-foot T12 to 28W T8	2	1	2	34	43	26	Balistic: UTL	Lamp: F28T8/841 XP	2,000	86.00	52.00	34.00	68	3031 Torrance Blvd, Torrance, CA 90503
M1	City Hall E Annex	Closet	pendant - F41PL	4-foot T12 to 28W T8	1	1	1	34	43	26	Balistic: UTL	Lamp: F28T8/841 XP	2,000	86.00	52.00	34.00	34	3031 Torrance Blvd, Torrance, CA 90503
M1	City Hall E Annex	Men's RR	surface mounted - F41EE	4-foot T12 to 28W T8	2	1	2	34	43	26	Balistic: UTL	Lamp: F28T8/841 XP	2,000	86.00	52.00	34.00	68	3031 Torrance Blvd, Torrance, CA 90503
M1	City Hall E Annex	Women's RR	surface mounted - F41EE	4-foot T12 to 28W T8	2	1	2	34	43	26	Balistic: UTL	Lamp: F28T8/841 XP	2,000	86.00	52.00	34.00	68	3031 Torrance Blvd, Torrance, CA 90503
M2	City Hall E Annex	HR Boiler Room	strip - F42EE	4-foot T12 to 28W T8	1	2	2	34	72	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	72.00	66.00	6.00	12	3031 Torrance Blvd, Torrance, CA 90503
M3	City Hall E Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	6	3	18	34	115	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	76.67	44.00	32.67	588	3031 Torrance Blvd, Torrance, CA 90503
M3	City Hall E Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	76.67	44.00	32.67	196	3031 Torrance Blvd, Torrance, CA 90503
M3	City Hall E Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	10	3	30	34	115	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	76.67	44.00	32.67	980	3031 Torrance Blvd, Torrance, CA 90503
M3	City Hall E Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	76.67	44.00	32.67	196	3031 Torrance Blvd, Torrance, CA 90503
M3	City Hall E Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	3	3	9	34	115	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	76.67	44.00	32.67	294	3031 Torrance Blvd, Torrance, CA 90503
M3	City Hall E Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Balistic: UTL	Lamp: F28T8/841 XP	2,000	76.67	44.00	32.67	196	3031 Torrance Blvd, Torrance, CA 90503

Q2	Entradero Park	Outside RR	Wallpack	Exterior HPS to LED	1	1	150	188	20	RAB	WPLED18N	4,380	823.4	87.6	735.8	736	5500	Towers St, Torrance, CA 90503	
O	Entradero Park	Path lighting	Light Pole	Exterior HPS to LED	15	1	15	150	188	90	RAB	ALED578N	4,380	823.4	394.2	429.2	6,439	5500	Towers St, Torrance, CA 90503
E	Entradero Park	Parking lot	Cobra head	Exterior HPS to LED	9	1	9	150	188	53	Cre	BXSP B HT 2ME 4 40K-UL SV	4,380	823.4	232.1	591.3	5,322	5500	Towers St, Torrance, CA 90503
O	De Petrola Park	Path lighting	Light Pole	Exterior HPS to LED	21	1	21	150	188	90	RAB	ALED578N	4,380	823.4	394.2	429.2	9,014	90505	25615 Lay Meadow Dr, Torrance, CA
F	De Petrola Park	Park area	Cobrahead	Exterior HPS to LED	1	1	1	250	295	101	Cre	BXSP C HT 2ME 4 40K-UL SV	4,380	1,292.1	442.4	849.7	850	90505	25615 Lay Meadow Dr, Torrance, CA
M6	City Center Library	Penthouse	strip - R82EE	8-foot T12 to 28W T8	8	2	16	60	123	110	Ballast GE	2,000	123.00	110.00	13.00	208	3031	Torrance Blvd, Torrance, CA 90503	
M4	City Center Library	Penthouse	strip - F44EE	4-foot T12 to 28W T8	11	4	44	34	144	66	Ballast UTL	2,000	72.00	33.00	39.00	1716	3031	Torrance Blvd, Torrance, CA 90503	
M2	City Center Library	Penthouse	strip - F42EE	4-foot T12 to 28W T8	2	2	4	34	72	66	Ballast UTL	2,000	72.00	66.00	6.00	24	20500	Madrone Ave, Torrance, CA 90503	
N1	City Yard	Parking Lot Poles	Sport lighter flood	Exterior MH to PSMH	34	1	34	1000	1080	825	Ballast UTL	4,380	4,730.4	3,613.5	1,116.9	37,975	20500	Madrone Ave, Torrance, CA 90503	
M2	City Yard	Services Building, roof access stairs	strip - F42EE	4-foot T12 to 28W T8	2	2	4	34	72	66	Ballast UTL	2,000	72.00	66.00	6.00	24	20500	Madrone Ave, Torrance, CA 90503	
I	City Yard	Parking Lot Poles	Pole flood	Exterior MV to LED	2	1	2	250	290	78	RAB	FXLED37N	4,380	1,270.2	341.6	928.6	1,857	20500	Madrone Ave, Torrance, CA 90503
G6	City Yard	Services Bldg, Outside Perimeter	Surface mounted high bay	Exterior HPS to LED	59	1	59	150	188	59	RAB	GLED52	4,380	823.4	258.4	565.0	33,336	20500	Madrone Ave, Torrance, CA 90503
G5	City Yard	Services Bldg, 2nd Floor	Surface mounted wall pack	Interior HPS to LED	13	1	13	150	188	30	RAB	WPLED26	3,744	703.9	112.3	591.6	7,690	20500	Madrone Ave, Torrance, CA 90503
G4	City Yard	Services Bldg, 2nd Floor	Surface mounted high bay	Interior HPS to LED	31	1	31	100	138	20	DECO	D536-LED2050UNV(BZ) (dimnable)	3,744	516.7	74.9	441.8	13,696	20500	Madrone Ave, Torrance, CA 90503
G3	City Yard	Services Bldg, 2nd Floor	Surface mounted high bay	Interior HPS to LED	89	1	89	400	465	120	DECO	DH6-LED2050SUNV(AL) (dimnable)	3,744	1,741.0	449.3	1,291.7	114,960	20500	Madrone Ave, Torrance, CA 90503
G2	City Yard	Services Bldg, 1st Floor	2x2 recessed	Interior HPS to LED	168	1	168	250	295	58	Precision Paragon	P2C-QC-F-UL-24C-F-51K-GCO (dimnable)	3,744	1,104.5	217.2	887.3	149,071	20500	Madrone Ave, Torrance, CA 90503
G1	City Yard	Services Bldg, 1st Floor	Surface mounted low bay	Interior HPS to LED	59	1	59	100	138	20	DECO	D536-LED2050UNV(BZ) (dimnable)	3,744	516.7	74.9	441.8	26,066	20500	Madrone Ave, Torrance, CA 90503
B	City Yard	Services Bldg, 2nd Floor (elevator)	Recessed	Exterior HPS to LED	2	1	2	100	138	43	MaxLite	BH4RH3UN50	4,380	416.1	188.3	227.8	911	20500	Madrone Ave, Torrance, CA 90503
B	City Yard	Services Bldg, 1st Floor (elevator)	Recessed	Exterior HPS to LED	6	1	6	100	138	43	MaxLite	BH4RH3UN50	4,380	416.1	188.3	227.8	911	20500	Madrone Ave, Torrance, CA 90503
M6	City Hall W. Annex	West Annex Groundskeeper	strip - R82EE	8-foot T12 to 28W T8	8	2	16	60	123	110	Ballast GE	2,000	123.00	110.00	13.00	208	3031	Torrance Blvd, Torrance, CA 90503	
M2	City Hall W. Annex	HVAC rooms, Grounds keepers shops, youth services	strip - F42EE	4-foot T12 to 28W T8	10	2	20	34	72	66	Ballast UTL	2,000	72.00	66.00	6.00	120	3031	Torrance Blvd, Torrance, CA 90503	
G3	City Hall E. Annex	Shipping/receiving	Wallpack	Exterior MV to LED	3	1	3	250	290	61	RAB	WPLED52	4,380	1,270.2	267.2	1,003.0	3,009	3031	Torrance Blvd, Torrance, CA 90503
M5	City Hall E. Annex	Rotunda (top of stairs)	2x2 troffer - F02EE	U-T12 to 17W T8	3	3	9	34	72	44	Ballast GE	2,000	48.00	29.33	18.67	168	3031	Torrance Blvd, Torrance, CA 90503	
M5	City Hall E. Annex	Hallway	2x2 troffer - F02EE	U-T12 to 17W T8	6	3	18	34	72	44	Ballast GE	2,000	48.00	29.33	18.67	336	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Kitchen	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	File room	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Conference room	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Printing room	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	6	3	18	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	588	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	6	3	18	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	588	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	5	3	15	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	490	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	6	3	18	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	588	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	6	3	18	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	588	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	5	3	15	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	490	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	6	3	18	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	588	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	98	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	4	3	12	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	392	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	5	3	15	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	490	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	2	3	6	34	115	66	Ballast UTL	2,000	76.67	44.00	32.67	196	3031	Torrance Blvd, Torrance, CA 90503	
M3	City Hall E. Annex	Office	2x4 troffer - F43EE	4-foot T12 to 28W T8	1	3	3	34	115	66	Ballast UTL	2,							

	Retrofit Type	Facility	Fixture Location	Fixture Type	Replacement Description	Fixture Quantity	Lamps/Fixture	Lamp Quantity	Existing Watts/Lamp	Existing Watts/Fixture	Proposed Watts/Fixture	Proposed Manuf.	Proposed M/N	Operating Hours	Baseline kWh/fixture	Proposed kWh/fixture	Savings kWh/fixture	Total kWh Savings	Service Account Address
K	Gunsaur Park	Park area		Light Pole Shoebox (1-fix)	Exterior PSMH to LED	3	1	3	400	456	106	RAB	ALED3105N	4,380	1,997.3	464.3	1,533.0	4,599	17800 Gramercy Pl, Torrance, CA 90504
N2	Hickory Park	Tennis court		Light Pole Shoebox (1-fix)	Exterior MH to PSMH	6	1	6	1000	1080	575	National Lighting Solutions	NLS-CM-2-T4TT-575FS-MTAP-AKM-BRZ	2,190	2,365.2	1,259.3	1,106.0	6,636	2851 232nd St, Torrance, CA 90505
O	Hickory Park	Path lighting		Light Pole	Exterior HPS to LED	13	1	13	150	188	90	RAB	ALED378N	4,380	823.4	394.2	429.2	5,580	2851 232nd St, Torrance, CA 90505
C	Lago Seco Park	Parking lot		Light Pole Shoebox	Exterior MH to LED	8	1	8	250	295	78	RAB	ALED378N	4,380	1,292.1	341.6	950.5	7,604	23705 Ocean Ave, Torrance, CA 90501
N3	Lago Seco Park	Basketball court		Light Pole Flood (2-fix)	Exterior MH to PSMH	12	1	12	1000	1080	155	RAB	FLED3105FN	2,190	2,365.2	339.5	2,025.8	24,309	23705 Ocean Ave, Torrance, CA 90501
P	Lago Seco Park	Community garden		Light Pole Acorn	Exterior HPS to LED	40	1	40	150	188	55.7	Relume	UAG2-D48-D5-NW-UL-X	4,380	823.4	244.0	579.5	23,179	23705 Ocean Ave, Torrance, CA 90501
J	Paradise Park	Men's RR		Exterior flood	Exterior MH to LED	1	1	1	100	128	41	RAB	FLED39N	4,380	560.6	179.6	381.1	381	5006 Lee St, Torrance, CA 90503
J	Paradise Park	Women's RR		Exterior flood	Exterior MH to LED	1	1	1	100	128	41	RAB	FLED39N	4,380	560.6	179.6	381.1	381	5006 Lee St, Torrance, CA 90503
J	Paradise Park	Men's RR		Exterior flood	Exterior MH to LED	1	1	1	75	75	41	RAB	FLED39N	4,380	328.5	179.6	148.9	149	5006 Lee St, Torrance, CA 90503
J	Paradise Park	Women's RR		Exterior flood	Exterior MH to LED	1	1	1	75	75	41	RAB	FLED39N	4,380	328.5	179.6	148.9	149	5006 Lee St, Torrance, CA 90503
N2	Paradise Park	Tennis courts		Light Pole Shoebox (1-fix)	Exterior MH to PSMH	8	1	8	1000	1080	825	National Lighting Solutions	NLS-CM-2-T4TT-575FS-MTAP-AKM-BRZ	2,190	2,365.2	1,806.8	558.5	4,468	5006 Lee St, Torrance, CA 90503
N2	Paradise Park	Tennis courts		Light Pole Shoebox (2-fix)	Exterior MH to PSMH	8	1	8	1000	1080	825	Solutions	NLS-CM-2-T4TT-575FS-MTAP-AKM-BRZ	2,190	2,365.2	1,806.8	558.5	4,468	5006 Lee St, Torrance, CA 90503
M4	Paradise Park	Park Area		Light Pole Shoebox (1-fix)	Exterior MH to PSMH	1	1	1	1000	1080	223	Cree	Luminaire: Cree OSQA NM 3ME 5.0K-UL 8Z	2,190	2,365.2	488.4	1,876.8	1,877	5006 Lee St, Torrance, CA 90503
O	Paradise Park	Park area		Light Pole	Exterior HPS to LED	6	1	6	150	188	90	RAB	ALED378N	4,380	823.4	394.2	429.2	2,575	5006 Lee St, Torrance, CA 90503
Q1	Paradise Park	Table area		Wallpack	Exterior MH to LED	3	1	3	100	128	15	RAB	WLED13	4,380	560.6	65.7	494.9	1,485	5006 Lee St, Torrance, CA 90503
J	Walteria Park	Shuffle board		Exterior Flood (2-fix)	Exterior HPS to LED	4	1	4	100	138	41	RAB	FLED39N	4,380	604.4	179.6	424.9	1,699	3855 242nd St, Torrance, CA 90505
J	Walteria Park	Playground		Exterior flood	Exterior MH to LED	2	1	2	150	190	41	RAB	FLED39N	4,380	832.2	179.6	652.6	1,305	3855 242nd St, Torrance, CA 90505
L	Walteria Park	Park Area		Exterior flood (2-fix)	Exterior PSMH to LED	6	1	6	400	456	202	EcoPower	EP-FB-NW/200-UNIVUS-120	4,380	1,997.3	884.8	1,112.5	6,675	3855 242nd St, Torrance, CA 90505
L	Walteria Park	Sports field		Exterior flood	Exterior PSMH to LED	4	1	4	400	456	202	EcoPower Lamp: SYLVANIA Ballast: ULT	EP-FB-NW/200-UNIVUS-120 Lamp: M750/PS/BU-HOR/BI37 Ballast: ULT	4,380	1,997.3	884.8	1,112.5	4,450	3855 242nd St, Torrance, CA 90505
M1	Walteria Park	Sports field		Sport lighters	Exterior MH to PSMH	34	1	34	1000	1080	825	Ballast: ULT	WLED13	2,190	2,365.2	1,806.8	558.5	18,987	3855 242nd St, Torrance, CA 90505
Q1	Walteria Park	building exterior		Wallpack	Exterior HPS to LED	3	1	3	100	128	15	RAB	WLED13	4,380	560.6	65.7	494.9	1,485	3855 242nd St, Torrance, CA 90505
Q3	Walteria Park	building exterior		Wallpack	Exterior HPS to LED	1	1	1	200	250	61	RAB	WLED32	4,380	1,095.0	267.2	827.8	828	3855 242nd St, Torrance, CA 90505