

# REQUEST FOR TENDER

**Tender number 1121**

**For Energy Efficient LED Lighting Retrofit of the City's  
Public Domain Lighting Luminaires**

**The Council of the City of Sydney**

Town Hall House  
456 Kent Street  
SYDNEY NSW 2000

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*city of villages*

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**VOLUME 1  
SECTION 1  
INTRODUCTION**

The Council of the City of Sydney ("Council") invites tenders for the carrying out of the design, supply, installation and commissioning of an energy efficient light emitting diode (LED) retrofit of the City's 8559 luminaires in public domain lighting locations. The objective of the tender is to reduce electricity consumption and greenhouse gas emissions by a minimum of 40% of the wattage levels listed at Annexure 1 to this document while retaining existing lighting levels and glare control.

Tenderers must submit tenders in the manner required by this request for tender.

## **1 BACKGROUND**

The City of Sydney covers approximately 26.15 square kilometres, has a population of approximately 170,000 and is a major commercial hub which contributes 25% of New South Wales' GDP and 8% of Australia's GDP.

Sustainable Sydney 2030 is the City's vision to make Sydney green, global and connected by 2030 - reflecting our residents' aspirations for our local government area.

Following comprehensive consultation on the future of our city, Sustainable Sydney 2030 outlines how the City can significantly reduce greenhouse gas emissions and take a holistic approach to planning Sydney's future.

The City has recently carried out two phases of a trial of LED Technology at various sites. The results have given the City confidence to progress to a roll out of that technology throughout the Local Government Area (LGA) and to establish minimum targets for energy savings and greenhouse gas emission reductions.

### **Vision**

The vision to make Sydney green, global and connected includes a target to achieve a 70% reduction in greenhouse gas emissions from 2006 levels by 2030.

Around 31% per cent of the city's emissions are from the public domain lighting, and this is where one of the most cost-effective emissions reduction potential lies. Early action is crucial if the City is to realise this target as the City must forward plan investment in critical infrastructure.

### **Achieving target**

The key to achieving this ambitious target is a co-ordinated effort to promote energy efficiency.

Achievement includes promoting peak electricity demand management and the development of a local energy and water generation, distribution and supply network. Automated waste collection and treatment; green infrastructure that will deliver electricity, heating and cooling; trigeneration; non potable/recycled water and automated waste collection network are other measures to deliver product more cleanly, efficiently, and with lower emissions intensity.

It is intended that this approach will achieve:

- Lower greenhouse gas emissions.
- Reduced waste of energy.
- Reduced peak electricity demand.
- More renewable energy.

- Improved energy security and 'climate proof' energy infrastructure, without compromising regulated service quality and security of supply requirements.
- Reduced waste of potable water.
- Utilisation of waste as a materials recovery and renewable gases and water resource.
- Setting in place a green infrastructure that can utilise natural gas today and renewable gases in the future.
- Lower future energy costs for households and businesses.

## **Green infrastructure**

The City is leading the way with the development of a Green Infrastructure Plan and the implementation of a series of 'show by doing' projects for the City's own buildings and operations. This tender is for the LED lighting retrofit of the City's own public domain lighting to reduce electricity consumption and greenhouse gas emissions by at least 40% from the existing wattage levels, which are set out at Annexure 1 to this document.

## **2 PROJECT REQUIREMENTS**

### **General**

The following section outlines the City's anticipated project requirements.

As part of the vision to facilitate a 70% reduction in greenhouse gas emissions by 2030, the City is seeking to implement an energy efficient LED lighting retrofit on its public domain lighting (8559 luminaires). This will include public domain lighting located on streets or in parks and plazas. The City is implementing this project as a 'show by doing' project. The Contractor is required to implement and guarantee its own tender proposals, technologies and performance measures to reduce electricity consumption and greenhouse gas emissions on the City's public domain lighting from 2005/06 levels by 2014/15. The minimum reduction targets are as follows:

- reduction in electricity consumption and green house gas emissions by a minimum of 40%.

The electricity consumption levels for all of the City's public domain lighting luminaires as at 2005/06 are set out at Annexure 1 to this document. It is highly desirable for the new energy efficiency luminaires to include Smart Controls to monitor and record energy use and detect failures while retaining existing lighting levels. Luminaires must also have the ability to dim and switch lights in real-time operation.

For the avoidance of doubt this request for tender is for a turnkey contract for the design, supply, installation and commissioning of energy efficient LED lighting retrofit on part or all of the City's public domain lighting luminaires. It is not a request for tender for design and/or project management only or a two stage tender process. Tenders must include the full cost of the design, supply, installation, commissioning and maintenance during the stated warranty period of the energy efficient LED lighting retrofit on the City's public domain lighting.

The City's major energy consuming public domain lighting includes the following:

1. Smartpole Lighting
2. Park Lighting
3. Other Public Domain Lighting

Tenderers are invited to submit a tender for any or all of the above public domain lighting types. The City may, in its absolute discretion:

1. appoint a single Contractor to perform the works on all public domain lighting types;
2. appoint separate Contractors to perform the works on each of the public domain lighting types; or
3. not appoint any Contractor as a result of this tender process.

**VOLUME 1  
SECTION 2  
KEY CONDITIONS OF TENDER**

<b>Name of Tender</b>	<b>Energy Efficiency LED Lighting Retrofit of the City's Public Domain Lighting Luminaires</b>
<b>Tender Number</b>	<b>1121</b>
<b>Closing Date</b>	<b>12 April 2011</b>
<b>Closing Time</b>	<b>11:00am</b>
<b>Contact Person</b>	<p><b>All enquiries</b> relating to this tender should be directed <b>by e-mail</b> to the Council's Tendering Officer as follows:</p> <p>Paul Brown Tel: 02 9265 9364 Fax: 02 9265 9697 Email: pbrown@cityofsydney.nsw.gov.au</p>
<b>Lodging a Tender</b>	<p>Tenders must be lodged with Council by the closing date and time and in accordance with the standard conditions of tender at the following address or fax (refer to volume 1, section 3, condition 5):</p> <p style="text-align: center;">Tender Box Town Hall House Level 2 456 Kent Street SYDNEY NSW 2000 Fax: 02 9265 9697</p> <p>The Tender box is accessible between the hours of 8am and 6pm, Monday to Friday.</p>
<b>Number of Copies</b>	Submit, as hard copies, <b>one original and three copies</b> of the tender and attachments, signed as required. The front page of each copy (including all supporting information) must be endorsed by the tenderer as a true copy.
<b>Tender Documents</b>	<p>The documents that comprise the request for tender include:</p> <ol style="list-style-type: none"> <li>1. Tender Conditions &amp; Forms</li> <li>2. Specifications</li> <li>3. Drawings</li> <li>4. General Conditions of Contract</li> <li>5. Appendices</li> </ol>
<b>General Conditions of Contract</b>	<p>The general conditions of contract for this tender will consist of</p> <p><b>AS4902 – Design and Construct</b></p>

**VOLUME 1  
SECTION 3  
STANDARD CONDITIONS OF TENDER**

**1. REQUEST FOR TENDER**

This request for tender consists of the documents identified in the key conditions of tender. Where there is any doubt about the meaning of this request for tender, the rules governing the interpretation of the Contract will apply to resolve the ambiguity.

All information submitted by a tenderer as part of an expression of interest (if applicable) is deemed to form part of the tender as if reproduced and submitted in full as part of the tender.

The Council may from time to time issue addenda to amend, alter or clarify the form and contents of the request for tender. Council may include in addenda any queries received regarding the tender. The addenda will be issued before the closing date and upon issue, will form part of the request for tender. Tenderers must acknowledge receipt of the addenda when submitting the tender.

To the extent there is any inconsistency between the request for tender and addenda, the addenda will prevail. Where more than one addendum is issued, the latest addenda will prevail.

The key and standard conditions in this request for tender, and the process of assessing tenders, is not intended to create legal relations, contractual or otherwise. In accordance with standard condition 11, a contractual relationship only comes into effect when a written contract is executed between the Council and the preferred tenderer.

**2. TENDERING PROCEDURE**

**2.1 Tenderers' Briefing**

Council may offer briefings to tenderers from time to time. At the briefing, Council's representative will discuss, answer or clarify any issues raised by a tenderer about any requirements in the request for tender. Council is not obliged to answer any questions before the briefing.

**2.2 Information and Enquiries**

Where a tenderer has any doubt about the meaning of any aspect of the request for tender, the tenderer must make enquiries about and clarify matters with Council's Tendering Officer. All enquiries about the request for tender must be referred in writing to Council's Tendering Officer.

**All communications related to this RFT should be addressed to the Council's Tendering Officer (via the contact details specified in the key conditions) and not to other Council officers or other persons. The attention of tenderers is drawn to condition 2.6.**

**2.3 Site Visits**

Tenderers may inspect the site (if applicable) through prior arrangement with Council's Tendering Officer. Tenderers must take their own precautions upon visiting the site.

## 2.4 Discrepancies, Errors and Omissions

Tenderers must carefully and thoroughly consider and check the request for tender and must notify Council's Tendering Officer in writing of any errors, ambiguities, discrepancies, inconsistencies or omissions in the request for tender. Council will not be liable for any such error, ambiguity, discrepancy, inconsistency or omission.

## 2.5 Tenderer to Rely on Own Enquiries

All information in the request for tender and in the briefing (if any) is provided for the assistance of tenderers only. Tenderers acknowledge in receiving this request for tender and in submitting any tender that they have relied entirely on their own knowledge and enquiries and they do not rely on any warranties or representations made or purportedly made to them by or on behalf of Council.

Council will not be liable for any representations or warranties made or purportedly made by Council's representative, Council's agents or any other person or company on Council's behalf, whether in the request for tender, the briefing (if any) or otherwise.

## 2.6 Tenderer Not to Solicit Council Personnel

Subject to condition 2.2, tenderers (or any representative of a tenderer) must not at any time before Council makes a final decision to accept a tender, contact or interview or attempt to interview or to discuss or to attempt to discuss with Council members, employees, authorised representatives other than Council's Tendering Officer in accordance with the request for tender, any matter about the tender or any other tender submitted in response to the request for tender. Council reserves the right to reject any tender submitted by a tenderer which contravenes this condition.

For clarity, a representative of a tenderer, for the purpose of this condition, includes a person or other legal entity who acts at the request of a tenderer or its agent. Also, this condition does not prevent ordinary business or other contact arising from or pertaining to Council functions (so long as that contact is not used to interview or attempt to interview or to discuss or to attempt discussion on any matter relating the tender).

## 3. COMPLETION OF TENDER

Unless indicated otherwise in the request for tender, a tenderer must **complete all parts** of the tender forms and submit an offer to carry out the work under the Contract in accordance with the request for tender. Council may reject any tender which does not provide all the required information.

Tenderers must submit a tender by completing and signing the tender forms in the manner as follows:

- (a) If the tenderer is a corporation, in accordance with Section 127 of the Corporations Act 2001.
- (b) If the tenderer is an individual, by the person tendering and the signature must be witnessed.
- (c) If the tenderer is an unincorporated joint venture or partnership (including a business or trade name), each member of the joint venture or partnership must execute the tender in the manner set out in conditions 3(a) and (b).

## 4. CONFORMING AND ALTERNATIVE TENDERS

All tenderers must complete the statement of conformance as part of the tender.

A tenderer may also submit an alternative non-conforming tender. Any alternative non-conforming tender must satisfy the objectives of Council in issuing the request for tender, the requirements of the specifications and Contract.

Failure to comply with any condition of tender may render the tender non-conforming.

## **5. LODGEMENT OF TENDER**

Tenders must be placed in the tender box or lodged by facsimile by the closing time on the closing date in accordance with the key conditions of tender.

Tenders lodged by facsimile will only be accepted in accordance with the *Local Government (General) Regulation* and where:

- (a) the tender is received **in full** by Councils' Procurement Section on fax number (02) 9265 9697 before the closing time on the closing date ; and
- (b) the original of the tender is received by Council within three (3) business days.

Tenders sent by post and received by Council after the closing date will be deemed to have been received before the closing date only if:

- (a) the envelope bears a postal authority post mark clearly indicating that the time and date of posting were before the closing time on the closing date; and
- (b) the tender would have been able to have been received by Council by the closing time on the closing date in the usual course of business.

Any other tenders received by Council after the closing date will not, unless the *Local Government (General) Regulation* provides otherwise, be considered by Council.

All tenders lodged will become the property of Council and on no account will they be returned to the tenderer.

## **6. EXTENSION OF TIME**

Council may, at its absolute discretion, extend the closing date for the submission of tenders. Tenderers may also request Council to extend the closing date for the submission of tenders by written application to Council's Tendering Officer. Any such request must be received by Council's Tendering Officer at least three (3) business days before the closing date, and must provide sufficient reasons to support the request.

## **7. TENDER VALIDITY PERIOD**

Any tender will be an irrevocable offer by the tenderer to carry out the work under the Contract subject to the conditions set out in the request for tender. The offer will remain open for acceptance by Council for a period of 120 calendar days from the closing date.

## **8. COUNCIL'S RIGHTS**

Without limiting its rights at law or otherwise, Council reserves the right in its absolute discretion at any time to do one or any combination of the following:

- (a) evaluate tenders as Council sees appropriate in the context of its requirement for the works or services;
- (b) cease to proceed with the process outlined in this request for tender or any subsequent process;

- (c) accept all or part of a tender;
- (d) reject any tender; or
- (e) accept a non-conforming tender.

Council is not bound to accept the lowest or any tender.

Where a tender is accepted no binding obligations arise until the terms of all documentation have been approved by Council and the documents executed on behalf of Council.

## **9. ASSESSMENT CRITERIA**

Tenders will be examined and evaluated according to the following criteria:

- a) The lump sum price / schedule of prices
- b) Key personnel/subcontractors, experience in
  - manufacture of LED luminaires
  - installation & maintenance in public domain lighting
- c) Proposed Program for completion of the works as required under the specification
- d) Methodology for installation of proposed lighting and the Recycling Process for obsolete luminaires including lamps
- e) Luminaire Aesthetics.
- f) Energy & Emission Savings and conformance with the requirements of the specification.
- g) Warranties / Lamp Life at 30% Depreciation.
- h) Occupational Health & Safety
- i) Insurances
- j) Financial stability and financial position of the tenderer

The above criteria are not in order of priority and nor will they be given equal weight in evaluation.

## **10. ADDITIONAL INFORMATION**

Without in any way limiting the *Local Government (General) Regulation*, Council may require further information from tenderers for the purposes of clarification or explanation of their tender. This includes holding interviews with some or all tenderers, including any personnel nominated by the tenderer in the tender or expression of interest.

## **11. ACCEPTANCE OF TENDER & CONTRACT**

If the Council accepts a tender it will issue a letter of acceptance to the successful tenderer. This letter of acceptance does not create a contract with the tenderer. The Council and preferred tenderer are legally bound only when a written Contract is

executed by the parties. Lodgement of a tender will itself be an acknowledgement and representation by the tenderer that it agrees to comply with the Contract in its entirety.

## **12. CONFIDENTIALITY**

Information provided in this request for tender or imparted to any tenderer as part of the tendering process must only be used for the purpose of preparing and submitting a tender response. Receipt of this document implies acceptance of this condition.

Information supplied by a tenderer will not be treated as commercially sensitive or confidential unless specifically requested by the tenderer. Information received by Council may be subject to disclosure to the public under the Freedom of Information Act unless it has been provided in confidence, relates to commercially sensitive information or falls within an exemption from disclosure under that Act.

## **13. BUSINESS WITH BURMA**

The City has a specific requirement that Council will not, in certain circumstances, purchase goods or services provided by those who, Council is aware, conduct business in, or with, Burma, or who are willing to do so, until democracy has been restored and human rights violations have ceased.

If a bidder is aware that any goods or services provided as part of their bid are subject to the abovementioned clause, these goods or services should be highlighted within their bid and provide the reasons for their inclusion.

## **14. CONFLICT OF INTEREST**

In this clause “conflict of interest” means an actual or potential pecuniary or non pecuniary conflict of interest (see the Council’s Code of Conduct at <http://www.cityofsydney.nsw.gov.au/Council/FormsPoliciesPublication/Policies.asp> under Governance for further explanation of these terms). Tenderers must disclose any conflict of interest in undertaking the requirements of the specifications and contract. Where a tenderer has a conflict of interest, the tenderer must provide Council in writing with detailed information about the nature and scope of the conflict of interest and include details of any arrangements proposed to resolve or manage the conflict of interest should the tenderer be awarded the contract. Based on the information provided by the tenderer, Council will make the final decision regarding the tenderers conflict of interest. If a conflict of interest is not disclosed by a tenderer and Council then becomes aware of the conflict, tenderers may be excluded from this Tender and/or any future process by which Council is seeking the provision of goods or services.

Additional information relating to the City’s requirements of Bidders regarding how to tender, frequently asked questions and ethical business conduct can be found on the website at <http://www.cityofsydney.nsw.gov.au/Business/TendersEOIQuotes/default.asp>

**VOLUME 1  
SECTION 4  
TENDER FORMS**

The following tender forms **must be completed** as part of this request for tender:

Part 1	Execution by Tenderer
Part 2	Schedule of Prices
Part 3	Statutory Declaration
Part 4	Statement of Conformance
Part 5	Acknowledgement of Addenda & Notices
Part 6	Insurance and Disability Details
Part 7	Company Profile
Part 8	References
Part 9	Previous Work Experience
Part 10	Current Commitments
Part 11	Specified Personnel
Part 12	Proposed Sub-contractors & Suppliers
Part 13	Environmental Management
Part 14	Proposed Pedestrian & Traffic Management Plan
Part 15	Proposed Program & Methodology
Part 16	Proposed Schedule of Plant & Equipment
Part 17	Details of Luminaires
Part 18	Warranties
Part 19	Occupational Health & Safety
Part 20	Smart Controls Option
Part 21	Key Performance Indicators

**PART 1  
EXECUTION BY TENDERER**

I/We having read, understood and fully informed myself/ourselves of the contents, requirements and obligations of the request for tender, submit this tender for the performance by myself/ourselves of the **Energy Efficient LED Retrofit of the City's Public Domain Lighting Luminaires** for the Council of the City of Sydney.

I/We hereby offer to design, supply and install the goods and/or services described in the tender at the prices offered being Tender A \$ ..... **excluding GST (insert lump sum price)** with Smart Controls and Tender B \$ ..... **excluding GST (insert lump sum price)** without Smart Controls for Parts A, B, C and D, upon and subject to the key and standard conditions of tender and general conditions of contract set out in the request for tender. This offer remains open for acceptance for 120 calendar days from the tender closing date.

<i>Name of Tenderer</i>	
<i>Subsidiary Company (if applicable)</i>	
<i>Address of Tenderer</i>	
<i>Postal Address</i>	
<i>Refer enquiries to: (name, telephone number and email address)</i>	
<i>Phone Number</i>	<i>Fax Number</i>
<i>Legal Entity</i>	<i>ABN</i>
<i>Signature and Date</i>	<i>Official Position Held</i>
<i>Signature of Witness</i>	<i>Address of Witness</i>

**PART 2**  
**SCHEDULE OF TECHNICAL DATA AND PRICES**

**Note:**

- Tenderers must complete all sections of the table for a public domain lighting type that the tender submission relates to. If a tenderer is not tendering for a public domain lighting type the tenderer should insert the word “Nil” in those sections of the table.
- Rates provided in the tables must include all costs relating to the Project, including but not limited to design, supply, installation, commissioning, maintenance, labour, site occupancy approvals and traffic and site management.
- Greenhouse gas reductions will be calculated using the formula of 1.07kg CO<sub>2</sub>/kWh.
- Tenderers must complete and return as part of the Returnable Forms the attached document: **[Part A B C D – Schedule of Rate.xls]** (Excel Format).
  - Part A - Smartpoles
  - Part B - Park Lighting
  - Part C - Other Public Domain Lighting
  - Part D – Cost Total Summary Tables

**PART 3  
STATUTORY DECLARATION**

..... of .....  
do solemnly and sincerely declare, in respect of the Contract for **Energy Efficient LED Lighting Retrofit of the City's Public Domain Lighting Luminaires** that:

1. I hold the position of ..... and am duly authorised by ..... ("the Tenderer") to make this declaration on its behalf and do so to the best of my knowledge, information and belief as to the accuracy of the material contained herein and after due enquires in relation to such material.
2. (a) Neither the Tenderer nor any of its servants or agents has entered into any contract, agreement or understanding to pay any money to any trade association in respect of the Contract; or  
(b) The Tenderer has entered into a contract, arrangement or understanding to pay ..... the sum of \$..... in the event of the Tenderer being awarded the Contract referred to above.

***(Delete whichever alternative is not relevant)***

3. Neither the Tenderer nor any of its servants or agents had any knowledge of the price of any other tenderer prior to submitting its Tender nor did the Tenderer disclose to any rival Tenderer the Tenderer's tendered price prior to closing of Tenders.
4. Neither the Tenderer nor any of its servants or agents has entered into a contract, arrangement or understanding having the result that on being awarded it would pay to any unsuccessful Tenderer any moneys in respect of or in relation to the Tender or any contact resulting there from.
5. The Tenderer is not aware of any fact, matter or thing which would materially affect the decision of Council in accepting the Tender, except as disclosed in the Tender.
6. The contents of the Tender are true and correct.
7. At the time of submitting its Tender, the Tenderer has made reasonable enquiries and:
  - (a) is not aware of any undisclosed actual or potential conflict of interest that exists or may arise in the [performance of the Contract](#) should the tenderer be successful as a result of this RFT process;

**OR** *[strike out whichever is inapplicable]*

- (b) discloses the following actual or potential conflict of interest that exists or may arise in the [performance of the Contract](#) should the tenderer be successful as a result of this RFT process:



**PART 4**  
**STATEMENT OF CONFORMANCE**

***[Delete whichever is not applicable:]***

- The tender does conform with the request for tender; or
- The tender does not conform with the request for tender. The areas in which the tender does not conform and the reasons for this non-conformance are as follows:

**PART 5**  
**ACKNOWLEDGEMENT OF ADDENDA & NOTICES**

I / We, **[insert full name of Tenderer]**, acknowledge receipt of the following:

*[Tenderers must fully describe all documents including addenda, and any notices, which are issued by Council]*

**PART 6  
INSURANCE AND DISABILITY DETAILS**

1. Provide details of insurance currently held by you and any proposed sub-contractor which would be extended to provide cover for work under the Contract.

Insurance Type	Policy No.	Extent of Cover		Expiry Date	Name of Insurer
		Per Incident \$A	Aggregate		
Workers Compensation/ Accident Insurance					
Public Liability					
Plant and Equipment					
Motor Vehicles					
Professional Indemnity					
Other					

Copies of all insurance certificates are required to be submitted as part of the tender response.

2. Provide details of current registration with long service and superannuation bodies.
3. Provide details of any disability action plan or disability specific policies and procedures (excluding standard EEO documentation).

**PART 7  
COMPANY PROFILE**

Tenderers must provide the following information:

- Details of the size of your organisation
- Details of your corporate structure
- Brief history of your organisation
- Details of quality assurance systems and/or procedures
- Details of your organisations experience in LED lighting technologies and projects of a similar nature

**PART 8  
REFERENCES**

Tenderers must provide names, phone numbers and addresses of no fewer than three client references.

Name:	
Address:	
Telephone:	
Fax:	
Contact:	

Name:	
Address:	
Telephone:	
Fax:	
Contact:	

Name:	
Address:	
Telephone:	
Fax:	
Contact:	

**PART 9  
PREVIOUS WORK EXPERIENCE**

Tenderers must provide details of recent projects that demonstrate expertise applicable to the nominated works.

The following information is to be provided for each project separately:

- Company and address
- Name of project location
- Name and telephone number of principal contact
- Description of works undertaken (or services provided)
- Project value
- Project period

**PART 10**  
**TENDERER'S CURRENT COMMITMENTS**

Tenderers must list the current projects the organisation is engaged in or committed to.

The following information is to be provided for each project separately:

- Company and address
- Name of project location
- Name and telephone number of principal contact
- Description of works undertaken (or services provided)
- Project value
- Project period

**PART 11**  
**SPECIFIED PERSONNEL**

Tenderers must nominate the names of proposed **key personnel for the project**, listing their qualifications, level of expertise, relevant experience and percentage of time to be allocated on the work under the Contact.

The following information is to be provided for each person separately:

- Full Name of Specified Person
- Position Held
- Percentage of Time on the Project
- Qualifications – including staff accreditation
- Level of Expertise

**PART 12**  
**PROPOSED SUB-CONTRACTOR'S & SUPPLIERS**

Tenderers must list all proposed sub-contractors and suppliers intended to be engaged by the tenderer in the performance of the work under the Contract.

The following information is to be provided for each sub-contractor or supplier separately:

- Sub-Contractor or Supplier
- Nature of Work

**PART 13**  
**ENVIRONMENTAL MANAGEMENT**

1. Tenderers must provide details of their environmental systems, accreditations and/or procedures together with the following:
  - Details of initiatives planned and/or undertaken to reduce your environmental impacts, including carbon footprint
  - Examples of environmentally responsible business practices related to this tender
2. Tenderers must provide a full description of the proposed environmental management plan to be implemented as part of this project if applicable. This environmental plan must include the disposal of lamps removed as part of the works.

**PART 14**  
**PROPOSED PEDESTRIAN & TRAFFIC MANAGEMENT PLAN**

Tenderers must provide sample pedestrian and traffic management plans for managing the works under the Contract.

**PART 15**  
**PROPOSED PROGRAM & METHODOLOGY**

Tenderers must submit a proposed program and methodology for the carrying out of the work under the Contract in compliance with Volume 2. The program must contain such information as required by the Contract.

**PART 16**  
**PROPOSED SCHEDULE OF PLANT & EQUIPMENT**

Tenderers must list all items of plant and equipment proposed to be used in connection with performing the work under the Contract.

**PART 17**  
**DETAILS OF LUMINAIRES AND LUMINAIRES AESTHETICS**

Tenderers must provide sufficient information to describe all materials comprising the luminaires (housing, optical materials, colour, etc.) to be used in the works under the Contract. Required information also includes photographs and other display materials for each of the proposed luminaires, including how the proposed luminaires will appear mounted on lighting columns, brackets and wall mountings.

Tenderers must also provide additional detailed information as specified in clause 2.1 of Volume 2.

## PART 18 WARRANTIES

Tenderers must provide details of all relevant warranties/guarantees provided as part of the works under the Contract. Separate warranties/guarantees must be provided for each type LED/Driver/luminaire/smart control life or other component of the Works.

**Please note:** Tenderers will be responsible for ALL works to replace or fix failed luminaires or other components of the Works including plant, labour, materials and any permits required during the warranty/guarantee period. Requirement relating to life expectancy, life span and warranty terms are contained at clause 2.10 of Volume 2.

LED lamps must have a minimum functional life expectancy or lifespan of at least 30,000 hours at 30% lumen depreciation as specified in IES LM-79 and LM-80, as those standards are amended from time to time. The extent of the functional life expectancy or life span forms part of the tender evaluation criteria. The tenderer must submit evidence satisfactory to the Principal that establishes the claimed life expectancies.

LED lamps and luminaires must have a product warranty of at least 5 years.

**PART 19**  
**OCCUPATIONAL HEALTH & SAFETY**

As part of its duty of care obligations, the City of Sydney requires **all successful bidders** employed by the Council to comply with OH&S Legislation, Australian Standards, relevant Codes of Practice and the Council's OH&S Policy in accordance with:

- The legislative obligations placed upon all employers with respect to the Occupational Health and Safety Act 2000, and the OH&S Regulation 2001; and
- The Council's OH&S Policy Statement as provided in this part.

The following questionnaire (Form A) forms part of Council's tender evaluation process and is to be completed by tenderers and subsequently submitted with their offer.

***Failure to meet this criterion will result in the submitted tender being excluded from the evaluation process.***

Organisations who have successfully completed projects with a value greater than \$250,000 for the City in the previous three (3) years are not required to complete this section. (This is only applicable to projects awarded from 2007). Tenderers must nominate the project details and the date awarded below:

Project details: \_\_\_\_\_  
(include Tender No. if applicable)

Date Project awarded: \_\_\_\_\_

Should the bidder prove successful, the Council will monitor the contract for its duration to ensure that the Contractor manages the project effectively, meets the Council's OH&S requirements and complies with the relevant OH&S legislation to ensure that neither the Contractor, the Council, nor their employees, are placed at risk of injury or prosecution. Tools and forms for this process will be provided by the Council to the Contractor unless the Contractor can demonstrate that the Contractor's Instruments (tools and forms) are sufficient for the process.

Reference shall be made to the OH&S information provided within the specification documents to ensure –

- The site specific hazard information and controls are addressed within the relevant site OH&S Documentation; and
- Adequate resources are allocated for the site specific hazards and the proposed controls.

In the event of the bidder being successful, the Contractor shall be appointed as 'Principal Contractor' and the following statement shall be implemented –

"Under the terms of this contract, you (contractor) will be responsible at all times for the construction work until the work is completed. You (contractor) are hereby authorised to exercise the authority for City of Sydney to discharge the responsibilities of a Principal Contractor for the purposes of Chapter 8 of the NSW

OHS Regulation 2001. City of Sydney, through its Contract Manager, retains the right, through inspection, consultation and audit, to ensure that all contract requirements and OHS Legislative requirements are being met.” Requirements of the Occupational Health and Safety Regulation 2001 Clause 210, subclause (2).

## THE CITY OF SYDNEY'S OCCUPATIONAL HEALTH AND SAFETY POLICY

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### POLICY STATEMENT

The City of Sydney is committed to the occupational health, safety and welfare of all its' employees, those contracted to perform work on behalf of the City of Sydney, and volunteers/visitors to the City of Sydney's premises and locations where work is being carried out. The City of Sydney regards its' occupational health and safety responsibilities with the utmost importance and as such, resources will be made available to comply with all relevant Acts and Regulations to ensure the workplace is safe and without risk to health.

### PRINCIPLES

All managers and employees of the City of Sydney, including contractors, volunteers and visitors have a shared responsibility for contributing to the health and safety of all persons in the workplace. The promotion, maintenance and dissemination of occupational health and safety information is primarily the responsibility of management. Management at all levels, in consultation with employees, have the responsibility for developing, implementing and keeping under review the City of Sydney's OH&S program.

### OBJECTIVES

This policy provides the framework for:

- the development of safe methods of work
- the achievement of a safe working environment
- the promotion of good health within the work force
- reducing the number and severity of injuries in the workplace
- complying with all relevant Acts, Regulations, Standards and Codes of Practice.

### STRATEGIES

#### OHS Risk Management

The City of Sydney will establish and maintain a documented occupational health and safety system with procedures for identifying, assessing and controlling workplace hazards.

#### Consultation

- An Occupational Health and Safety Committee comprising of employee and management representatives will be maintained to provide an effective consultative mechanism. Employees are able to provide input into the occupational health and safety policy and program. Management representatives who have the necessary power to authorise committee recommendations have been appointed to the committee.
- Management will consult with contractors, volunteers and visitors when planning the work to determine the most effective means of ensuring both parties fulfil their Occupational Health and Safety responsibilities.
- For further information on the City of Sydney's commitment to consultation refer to the OH&S Consultation Statement.

## Executive Management Review/Action Plan

In order to implement the general provisions of this policy the OH&S Manager will facilitate an annual review by the Executive Management Team of the Occupational Health and Safety Management System and develop an Action Plan to be implemented. Managers will use the outcomes of the Executive review to aid in the development of OHS objectives and targets for their business units.

## RESPONSIBILITIES

### Managers:

- Each manager is required to ensure that this policy and the Occupational Health and Safety program are developed and effectively implemented in areas under their control, and to support supervisors and hold them accountable for their specific responsibilities.
- Implementation of this policy and the associated program activities will be evaluated as part of the Performance Feedback System.
- Implementation of the City of Sydney's Occupational Health and Safety Risk Management procedures shall be a primary responsibility for managers in each area.

### Supervisors

- Each first line supervisor is responsible, and will be accountable, for taking all practical measures to ensure that the workplace under their control is safe and without risks to health, and that the behaviour of all persons in the workplace is safe and without risks to health.
- The supervisor will be held accountable for detecting any unsafe or unhealthy conditions or behaviour.
- If supervisors do not have the necessary authority to fix a problem, they will be held accountable for reporting the matter promptly, together with any recommendations for remedial action to a manager with the necessary authority to affect a remedy.

### Employees

- All employees are required to cooperate with the Occupational Health and Safety policy and program to ensure their own health and safety and the health and safety of others in the workplace.
- All employees will carry out their work according to the safe systems of work, use personal protective equipment (PPE) provided and use all plant, materials, tools and substances in the manner for which they are intended.

### Contractors and Sub-Contractors

Contractors and sub-contractors engaged to perform work on the City of Sydney's premises or locations are required, as part of their contract, to comply with the City of Sydney's occupational health and safety policies, procedures and programs and to observe directions on health and safety from designated officers of the City of Sydney. Failure to comply or observe a direction will be considered a breach of the contract and sufficient grounds for termination of the contract.

### Volunteers and Visitors

All volunteers and visitors are required to cooperate with the Occupational Health and Safety policy and program in order to assist the City to fulfil its obligations toward volunteers and visitors. This includes participating in OHS training when required, complying with the established safe systems of work and wearing the appropriate Personal Protective Equipment when required.

## OCCUPATIONAL HEALTH AND SAFETY PROGRAM

In order to implement the general provisions of this policy, a program of activities and procedures will be developed, reviewed and updated, and effectively carried out. The program will relate to all aspects of occupational health and safety including, but not limited to:

- OHS training and education – general and hazard specific

- work system and procedure design, workplace design and safe work methods
- changes to work methods and practice
- emergency procedures and drills
- provision of OHS services, equipment and facilities
- workplace inspections, risk assessments and safety plans
- reporting and recording of incidents, accidents, injuries and illnesses
- provision of information to employees, contractors, sub-contractors, volunteers and visitors.

#### **RELEVANT LEGISLATION**

- Occupational Health and Safety Act 2000
- Occupational Health and Safety Regulation 2001

#### **RELATED POLICIES/PROCEDURES**

- Occupational Health and Safety Procedures Manual
- Alcohol and Other Drugs Policy
- Infectious Disease Policy
- Personal Protective Equipment Policy
- OHS Consultation Statement
- Locally Developed Procedures and Work Methods
- Return to Work and Injury Management Programs
- Workers Compensation Procedures
- Grievance Handling Procedures
- Discipline Policy and Procedures

#### **EVALUATION**

- The City of Sydney is committed to the establishment of measurable objectives and targets for OHS to ensure continuous improvement aimed at the elimination of work related illness and injury. The effectiveness of the policy will be measured by the:
  - development and implementation of business unit objectives and targets by business unit managers
  - the number of safety actions signed off as completed by managers
  - decrease in lost time due to illness and injury, and a resulting reduction in workers compensation liability

#### **RESOURCE IMPLICATIONS**

- Appointment of an OH&S Manager, OHS Project Manager, 2 x OH&S Advisors, and an OH&S Project Officer
- Budgetary provision for the Occupational Health and Safety Program

- Allocation of time for effective safety training of the workforce

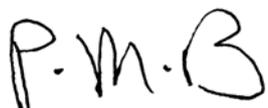
**NEXT REVIEW DATE**

August 2011

**ENDORSEMENT**

This policy has been reviewed by the Occupational Health and Safety Manager in consultation with the Occupational Health and Safety Committee.

**AUTHORISATION**

 28.1.09

**Monica Barone**

Chief Executive Officer

**FURTHER INFORMATION**

Human Resources Unit, Level 5 Town Hall House

Work Cover Authority NSW 13 10 50

# Form A

**This form is to be completed by the Tenderer and is to accompany the tender submission. It will be completed by the City of Sydney during the tender review process**

Tenderers are reminded that Form B has also been provided with the tender documentation as a guide to the OHS criteria against which you will be assessed. You do not need to complete Form B but rather ensure the documents you submit meet the criteria as outlined in that form. It would greatly assist The City during the review and verification process if you would take the time to reference documents in relation to the criteria in Form B.

**NB: If the OHS Component of the Tender is not satisfactory the Tender will be rejected.**

## **Tenderer Occupational Health and Safety Management System Documentation – Level 1 Contract.**

*This questionnaire is part of Council's tender evaluation process and is to be completed by tenderers and submitted with their tender offer. The objective of the questionnaire is to provide an overview of the status of the tenderers Occupational Health and Safety Management System. Tenderers will be required to verify their responses noted in the questionnaire by providing evidence of their ability and capacity to meet contract requirements.*

### **Certification**

*“The information that is provided in and with this questionnaire is an accurate summary of the company's occupational health and safety management system”.*

**Company Name:** \_\_\_\_\_

**Signed:** \_\_\_\_\_ **Name:** \_\_\_\_\_

**Position:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Contract Details

**Contract Name:** \_\_\_\_\_

**Tender Number:** \_\_\_\_\_

## Tenderer OHS Management System Documentation - Level 1 Contract Questionnaire

### 1. OHS Management System

Documentation Requirement	Provided COS use only	Verified COS use only	Compliant with Form B criteria Yes or No COS use only
1.1 Please provide a copy of your Occupational Health and Safety Management System and/or Policies and Procedures Manual			
1.2 Please indicate below what, if any, <b>external</b> certification (eg: Safety Map, NSCA 5-Star System, Construction Agency Coordination Committee) has been done for your OHS Management System and what the level of that certification is.  _____  _____			

### 2. OR, if you do not wish to supply your manual, please provide the following documents.

Documentation Requirement	Reference or Document Number	Provided COS use only	Verified COS use only	Compliant with Form B Criteria Yes or No COS use only
<b>2.1 OHS Policy and Management</b>				
2.1.1 OHS Policy				
2.1.2 Responsibility statements, duty statements or job descriptions which address OHS responsibility and accountability for all levels of staff.				
<b>2.2 Safe Work Organisation</b>				
2.2.1 Safe Work Method Statement preparation procedures, blank forms and examples.				
2.2.2 Company Safety Rules and Instructions.				
2.2.3 Emergency Procedures development.				
2.2.4 Permit to Work Procedures and forms.				
2.2.5 Accident/Incident/Near Miss reporting, recording and investigation procedures and forms (including examples).				
2.2.6 Plant maintenance, inspection, recording and operating procedures.				

<b>Documentation Requirement</b>	<b>Manual Page No. Reference or Document Number</b>	<b>Provided COS use only</b>	<b>Verified COS use only</b>	<b>Compliant with Form B Criteria Yes or No COS use only</b>
2.2.7 Hazardous substances storage, handling, recording and risk assessment procedures.				
2.2.8 Manual Handling Risk Management Procedures.				
<b>2.3 OHS Training</b>				
2.3.1 OHS training recording procedures and forms.				
2.3.2 Recording procedures for General Health and Safety Induction and Work Activity Based Health and Safety Inductions.				
2.3.3 Procedures for conducting and recording Site Specific Health and Safety Inductions.				
<b>2.4. OHS Workplace Inspection</b>				
2.4.1 Procedures for Health and Safety Inspection of sites.				
2.4.2 Site Health and Safety Inspection Checklists and Report Forms.				
2.4.3 Procedures for the reporting and recording of hazards.				
2.4.4 Procedures, forms and guidelines for the risk assessment and risk control for reported hazards.				
<b>2.5 OHS Consultation</b>				
2.5.1 OHS Consultation Statement or procedures for consultation.				
<b>2.6 OHS Performance Monitoring</b>				
2.6.1 OHS statistical recording and analysis procedures.				
2.6.2 Procedures for the dissemination of OHS information to employees.				

### 3. OHS Offences

<b>Documentation Requirement</b>	<b>Provided COS use only</b>	<b>Verified COS use only</b>	<b>Compliant With Form B criteria Yes or No COS use only</b>
3.1 Please attach details of any prosecution of the Company for OHS offences in any State or Commonwealth jurisdiction.			

**4. Company References**

Please provide the following information for the three (3) most recent contracts completed by the company:

	<b>Contract 1</b>	<b>Contract 2</b>	<b>Contract 3</b>
<b>Contract Description</b>			
<b>Client</b>			
<b>Contact Person or Position</b>			
<b>Phone No:</b>			
<b>Number of lost time injuries</b>			
<b>Number of days on contract</b>			
<b>Total days lost due to injuries</b>			

Further comments about your previous OHS Performance to support your Tender

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**To be Completed by Person Evaluating the Tender**

*C of S use only*

**Name of Person Evaluating Tender:** \_\_\_\_\_

*Please Print*

**Date:** \_\_\_\_\_ **Position:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

	<b>Contract 1</b>	<b>Contract 2</b>	<b>Contract 3</b>
Was previous OHS Performance Acceptable? Yes or No			
Were Corrective Actions Issued Yes or No			
Did Work Cover issue fines or take evidence for prosecution on? Yes or No			
Did the Contractor correct identified OHS Issues appropriately? Yes or No			

**PART 20**  
**SMART CONTROLS OPTION**

As specified in Clause – Smart Controls Option – Volume 2 Tenderers must provide details of their proposed smart controls system and what it can provide in the smart control of LED public domain lighting.

**PART 21  
KEY PERFORMANCE INDICATORS**

**Key Performance Indicators - Lighting and Electrical Upgrade Works**

Key deliverable(s)	Weighting (Total must equal 100)	0 Completely failed specification for that deliverable	1	2 Achieved specification for that deliverable	3	4 Exceeded specification for that deliverable	Total Score (For that deliverable)
Reduction in Energy	40						
Compliance with Specification & Standard of Work	10						
Contract Administration	10						
OH&S Performance	20						
Environmental Performance	10						
Traffic Management	10						
<b>Total - (out of 400)</b>							
<b>Performance Review Result (%) - (Total / 400 x 100)</b>							

**Performance Review Result**

	<b>Consider termination (Speak with Procurement)</b>	<b>Issue Notice to Perform</b>	<b>Status quo</b>	<b>Exercise Option (Extend Term)</b>
<b>Score</b>	≤30%	31-49%	50-69%	70-100%

## VOLUME 2 SPECIFICATIONS

### 2.1 General Requirements

Any design and installation works to be carried out in conjunction with this Contract must comply with the higher of the appropriate Australian or International standard or code of practice and otherwise in accordance with the instructions of the Superintendent.

The Contractor is deemed to be aware of the contents and requirements of the above documents and to have included within the tender sum for all requirements therein. A non-exhaustive list of regulations, standards and codes of practice is set out at clause 2.25, Volume 2 of this Contract.

Installation drawings, photographs and documents and how the Contractor proposes to meet this Specification must accompany the tender.

Tenderers must also provide details of the componentry and performance of the luminaires, this will include but not be limited to:

- LED chip manufacturer
- LED lamp functional life at 30% lumen depreciation
- LED lamp rated lumen output
- LED lamp binning
- Optical variation during life
- LED Driver voltage range
- Luminaire illuminance at ground level (in lux)
- Luminaire operating temperatures
- Correlated Colour temperature
- Colour Rendering Index
- Photometric Data in IESNA & CIE format
- Aesthetics and appearance of the luminaires, including showing how the luminaires will appear mounted on lighting columns, brackets, walls and ceiling mountings by providing photographs or diagrams
- LM- 79 & LM-80 compliance
- Component materials including housing

Housing materials should be primarily constructed of metal. Finish should be powder coated and rust resistant. Drivers must be mounted internally, be replaceable and accessible without tools. All screws shall be stainless steel. Captive screws are needed on any components that require maintenance after installation. No parts should be constructed of polycarbonate unless it is UV stabilized (lens discoloration will be considered a failure under warranty). Ingress Protection shall be rated a minimum of IP65

Prior to commencing installation of the lighting retrofit, the Tenderers must confirm that all luminaires proposed have been submitted to and approved by Australian Energy Market Operator (AEMO, the body responsible for unmetered load table listings in Australia).

Required minimum Reductions in Electricity Consumption and Greenhouse Gas Emissions Key Performance Criteria and Guarantees shall be:

### Reduction in Electricity Consumption

*(Minimum of 2,665,553kWh pa (minimum Smartpoles 1,210,148kWh pa: Parks 978,573kWh pa: Other PD Lighting 476,831kWh pa)*

### Reduction in CO<sub>2</sub> Equivalent Emissions

*(Minimum of 2,852 Tonnes of CO<sub>2e</sub> pa (minimum Smartpoles 1,295T CO<sub>2</sub> pa; Parks 1,047T CO<sub>2</sub> pa; Other PD Lighting 510T CO<sub>2</sub> pa)*

The minimum reductions in electricity consumption and greenhouse gas emissions key performance criteria are absolute reductions which at least must be delivered by the Contractor. The Contractor may deliver more than any of the specified minimum absolute reductions in electricity consumption and greenhouse gas emissions, particularly as the reduction in greenhouse gas emissions is the primary purpose of this tender and forms part of the tender assessment criteria. Details of how the delivery of the required reductions will be measured by the City are provided at clause 2.9 of Volume 2.

## 2.2 Description of Works

### 2.2.1 Energy Efficient LED Lighting Retrofit

The work covered in this Specification is for:

- the complete design, supply, installation, commissioning and maintenance of the energy efficient LED lighting retrofit of the City's public domain lighting; and
- associated engineering works necessary,

to deliver the minimum absolute reductions in electricity consumption as detailed in clause 2.9. Existing illuminance or lighting levels must be maintained. No increase in intrusive light levels into properties will be acceptable. The City's major energy consuming public domain lighting includes the following:

1. Smartpoles
2. Parks
3. Other Public Domain Lighting

If a Contractor is tendering for all the foregoing lighting types, the Contractor may select any combination of those areas in which to tender to carry out the energy efficient LED lighting retrofit works in order to deliver the minimum absolute reductions in electricity consumption. The individual projects in individual areas with their individual reductions in electricity consumption and the individual area tendered prices are to be inserted in the respective Item No. in Part 2 – Schedule of Technical Data and Prices.

The engineering works required are detailed in the following clauses, tables and accompanying drawings and comprise:-

### 2.2.2 Energy Efficient LED Lighting Retrofit

Energy efficient LED lighting retrofit technologies includes, but is not restricted to:

- Energy efficient LED lighting luminaires
  - Correlated Colour Temperature for luminaires should not exceed:

- Smartpole Lighting 4000k;
  - Park Lighting 5000k;
  - Other Lighting 4000k
- Energy Management Systems, including lighting controls (dimming/switching remotely/detect failures) and monitoring, recording of energy use and must be
  - Compatible with all manufacturers of control gear
  - Capable of dimming variable percentages
  - Capable of communicating 2-way with individual and group luminaires
  - Web based
  - Include software upgrades for the duration of warranty/guarantee period
  - Fail in “on” mode
  - Default to internal clock with scheduling capacity
  - Encrypted
  - Capable of producing interactive maps that provide geographical representation of luminaires
  - Capable of expansion

### **2.2.3 LED Binning Process**

The Contractor must select the LED lights from the manufacturer’s highest intensity bin, ie. with highest lumen output, for use on this contract. The Superintendent reserves the right to inspect, or have inspected, the LED bins and the LED binning process at the manufacturer’s worksite for the purpose of conducting a spot check.

### **2.2.4 Smart Controls Option**

The Tenderer must insert prices in Part 2 – Schedule of Technical Data and prices – Volume 1 for the design, installation and commissioning for energy efficient LED lighting retrofit of the City’s public domain lighting both with smart controls (Tender A) and without smart controls (Tender B).

The Tenderer must provide details of its proposed smart controls system and what it can provide in the smart control of LED public domain lighting. These must include, where applicable, the following:-

- Light dimming, including light dimming by computer
- Time phased dimming control
- Temperature control
- Light control
- Movement detection
- Remote control, including remote and/or handheld, automatic control, on/off and half/full load
- Fault monitoring
- Network infrastructure monitoring

### **2.2.5 Luminaire Aesthetics**

Tenderers must provide photographs and other display materials for each of the proposed luminaires, including how the proposed luminaires will appear mounted on lighting columns, brackets and wall mountings, as required by clause 2.1 of Volume 2.

Aesthetics and the appearance of the luminaires forms part of the tender assessment criteria and will be determined at the absolute discretion of the City.

### **2.2.6 Durability, Life and Reliability**

Tenderers must provide evidence of durability, life and reliability of every proposed luminaire.

### **2.2.7 Maintenance and Operating Instructions, Record Drawings and Training**

Tenderers must provide maintenance and operating manuals, record drawings and on site training of nominated personnel.

### **2.2.8 Labels, Circuit Lists/Diagrams, Testing, Inspection and Commissioning**

Tenderers must provide labels, circuit lists/diagrams, testing, inspection and commissioning of the energy efficient LED lighting electrical installations and associated systems (including liaison with others and co-ordination of all services and commissioning provided by others, contained and/or connected with this Specification).

### **2.2.9 Removal of Redundant Existing Installation**

Tenderers must include in the tendered price the cost of complete removal and disposal of any redundant installation, including the recycling of any recyclable materials and disposal of any hazardous materials.

### **2.2.10 Retention of Existing Services**

The Contractor must disturb the existing services being retained as little as possible. Where it is necessary to disturb these services in order to progress the work in a professional manner, the Contractor must replace the services in a manner satisfactory to the Superintendent. Should any damage occur to these services as a result of disturbance, the Contractor bears the cost of rectifying any such damage.

Where the retained services form part of the electrical system they must be included within the overall testing and handover procedure.

### **2.2.11 General**

The work must be undertaken by the Contractor in a professional manner and due allowance must be made for this requirement when tendering. All luminaires provided must be suitable for use with existing mounting arrangements (wall/column, etc) and comply with existing limitations of weight and size. Where required by the Superintendent, luminaires must be designed to incorporate shields to eliminate intrusive light and light pollution.

### **2.2.12 Associated Works**

When submitting prices for this tender, tenderers must include costs related to associated works. Examples of such works include but is not limited to carrying out and providing tools, equipment, scaffolding, mobile erection equipment and labour for all necessary work (including, cutting away and making good) in connection with this Specification.

### **2.2.13 Liaison with the City's Project Management Personnel**

Contact will be restricted to the Superintendent in relation to any matters arising in relation to the Contract. The Superintendent will liaise with the relevant personnel regarding any matter.

The Contractor must allow for any necessary liaison work, etc., with the City's infrastructure and traffic operations manager, including any necessary out-of-hours working.

### **2.3 Period Specified for Completion of Works**

The Contract period is likely to be 3 years with an anticipated commencement date in June 2011.

### **2.4 Programme of Work**

At least 33% of each of the three sections (Smartpoles, Parks and Other Public Domain Lighting) must be completed in each of the first two years of the Contract.

The Contractor must submit a method statement and a fully completed time based programme of work in the form of a bar-chart to the Superintendent for discussion within two weeks of the commencement of the contract and before any work is started on site. The programme must indicate in detail the methods and resources to be used, setting out the period over which each section of the work is to be carried out. This programme must be based on the dates provided and agreed in conjunction with the Superintendent and show details of labour resources, design and drawing approval, contract action for major bought out items, manufacture, delivery, installation and testing of each section.

Any amendments to the programme of work required by the Superintendent must be incorporated by the Contractor, with a finalised programme to then be prepared and submitted in duplicate to the Superintendent.

Temporary disconnection of services must be kept to a minimum and the Superintendent must be kept fully informed of the action to be taken and advised when the work has been completed. Public lighting must be available at all times, if necessary using temporary connections/lighting, as agreed with the Superintendent.

Work must be completed in accordance with all approvals or any other requirement relevant to the performance of work on site. Any work not anticipated to be completed on time must be carried out during out-of-hours working and due allowance must be made for this by the tenderer in its tender, if applicable.

The Contractor must:-

- (i) supply revised programmes as may become necessary;
- (ii) report the progress of works in a manner that relates directly to the programme and in this respect will conform to the Superintendent's procedure;
- (iii) provide two copies of weekly labour reports for the Superintendent indicating the total number of operatives (showing status) employed on site. These reports shall include the labour involved within the contract on site and shall commence from occupation of the site to completion.

The Contractor's specific attention is drawn to all areas of work that are specified to be carried out during out-of-hours periods, including the disconnection/ reconnection of power supplies, and the prior arrangements for access during out-of-hours periods, as required by the Superintendent.

It is essential that the Contractor ensures adequate labour resources are provided on site during these periods in order to meet these commitments.

## **2.5 Description of Lighting Installations and Visits to Sites**

Certain areas of the streets, parks and other public domain areas will be affected by this contract due to the works involved in the delivery, off-loading and transportation of materials to the places of installation.

No guarantee can be given as to the accuracy of any drawing, plan or other record supplied by the City and are provided for information only. The Contractor must rely on its own surveys, measurements, etc, in determining its tender prices and no claim for inaccurate drawings, plans or other records will be entertained by the City.

In submitting its tender the Contractor confirms that it has visited the site and made allowance for all weight/size limitations, mounting arrangements, obstructions or complications arising from other services or structural details when tendering.

## **2.6 Existing Specifications**

Existing standard spigot sizes are:

- Smartpoles: 40 -46mm O.D. x 100mm for Smartpoles;
- pole-top luminaires: 60/80/100mm O.D. ; and
- side entry column brackets: 27-34 O.D.

Tenderers must allow rates for designing, manufacturing, supplying and fitting non standard spigot adaptors where required.

## **2.7 Health and Safety**

The Contractor must include in the tender sum for the provision of all access equipment and all temporary barriers, butterfly tapes or partial boarding of towers, as appropriate, that are necessary for the safe execution of this contract.

Mobile towers of quick erection type scaffolding must be used in accordance with the manufacturer's instructions as to securing and movement.

All erection, moving or dismantling of cranes, mobile towers/scaffolding may only be carried out when the particular areas are signed and guarded. The Contractor must take all reasonable steps to avoid the creation of hazardous situations. Where cranes/access equipment has to be employed in external areas the Contractor must manage traffic and pedestrians in accordance with AS 1742.3 and RTA Traffic Control at Work Sites.

The Superintendent will take action in removing employees or sub-contractors should any employee or sub-contractor of the Contractor contravene this Clause or any other health and safety legislation or safe working practice.

## **2.8 Luminaire Additions, Disposals and Changes in Operational Requirements**

The City reserves the right to acquire, dispose or change the operational requirements of its public domain lighting during the course of this contract. The Contractor will be consulted on any proposed disposal or changes in the Energy Efficient LED Lighting Retrofit contract and due allowance taken into account on any technical or financial impact on the Contractor's performance, specification criteria and energy performance guarantees, as appropriate.

Additional public domain lighting the City wishes to acquire due to the operation of this clause may be added to the contract by variation order(s). The price payable by the City for any public domain lighting acquired by operation of this clause will be the price for public domain lighting tendered by the Contractor.

## **2.9 Output Performance Specification Criteria**

Works undertaken by the Contractor must meet the output performance specification criteria of achieving a minimum 40% reduction of the electricity consumption and green house gas emission levels listed at Annexure 1 to this document. Clause 2.1 of Volume 2 provides details of the total reduction targets to be achieved by the Contractor.

Measurement of achievement of the minimum output performance specification criteria will be undertaken on an individual public domain lighting basis. The Contractor must on a monthly basis measure the energy consumption of each individual completed public domain light in the presence of the Superintendent. If:

- the measurement fails to meet the output performance specification criteria, the Contractor must rectify the failure at its cost. Once the Contractor considers rectification is complete the lighting retrofit will be re-measured on a monthly basis. This process will continue until the output performance specification criteria is met;
- the Superintendent reasonably considers that the measurement shows there are significant ongoing failures to meet the output performance specification criteria, the Superintendent may direct the Contractor to cease the rollout of the retrofit and re-commence the retrofit with a different product that will meet the output performance specification criteria. This re-commencement of the retrofit will be at the sole cost of the Contractor

The performance of the Contractor will be assessed by the City using the KPI's set out in Part 21 of the request for tender. The Contractor is required to comply with these KPI's during the term of the Contract. A failure to comply with the KPI's may result in the City enforcing its rights under the Contract.

## **2.10 LED Lighting Life Expectancies and Warranties**

LED lamps must have a minimum functional life expectancy or lifespan of at least 30,000 hours at 30% lumen depreciation as specified in IES LM-79 and LM-80, as those standards are amended from time to time. The extent of the functional life expectancy or life span forms part of the tender evaluation criteria. The tenderer must submit evidence satisfactory to the Superintendent that establishes the claimed life expectancies.

LED lamps and luminaires must have a product warranty of at least 5 years.

If during the warranty period a LED lamp or luminaires is not working, the Contractor must rectify the fault within 5 days of the fault being reported. If during the warranty period contiguous LED lamp or luminaires are not working, the Contractor must rectify the fault within 2 hours of the fault being reported.

## **2.11 Maintenance of Existing Environmental Conditions**

Any design and installation works to be carried out in conjunction with this Contract must comply with the higher of the appropriate Australian or International standard or code of practice and otherwise in accordance with the instructions of the Superintendent.

## **2.12 Energy Savings Scheme and Climate Change Fund**

Any energy efficient LED lighting works carried out or could be carried out under this contract that are eligible for Energy Saving Certificates or the Climate Change Fund and related financial payments from electricity retailers or Scheme Participants under the New South Wales Government's Energy Savings Scheme shall be vested in and paid to, either directly or indirectly, the City. The Contractor or their sub-contractors shall be or become Accredited Certificate Providers to enable Energy Savings Certificates to be claimed by the Contractor on behalf of the City.

## **2.13 Utility Supply Details**

### **2.13.1 General**

The Contractor shall liaise and give all required notices to electricity statutory authorities, where necessary.

The Contractor may not apply for and/or obtain any grant payments from statutory authorities for reduced electricity demand and any rebates or reductions in electricity maximum demand or available capacity charges.

The Contractor shall give a minimum of two weeks notice to the Superintendent of any service required to be disconnected. No service shall be disconnected from the supply without the prior consent of the Superintendent or without the Superintendent or the Superintendent's representative being present.

The Contractor must allow in the tender for all 'out of normal hours' working associated with this element of the work.

The Contractor must liaise with all relevant statutory authorities and give all necessary notices to such authorities relating to the Contract works, including for any disconnections or connections of electricity.

### **2.13.2 Electricity Supply**

The Contractor shall be responsible for procuring and paying for any electricity disconnection and reconnection charges for the LED lighting works.

Further information and assistance on electricity infrastructure, disconnection and reconnection necessary to retrofit the existing lighting with LED lighting can be obtained from:-

Trevor Armstrong  
Executive General Manager, System Planning and Regulation  
Ausgrid  
570 George Street  
Sydney  
NSW 2000

Telephone: (02) 9269 2611  
Email: tarmstrong@energy.com.au

#### **2.14 Operation and Maintenance, Guarantees and Servicing/ Commissioning (After Completion)**

The City has an existing Trades Services team who maintain public domain lighting. The Contractor must submit guarantees, warranties, commissioning certificates and details of the operation and maintenance requirements of the energy efficient LED lighting retrofits installed by the Contractor to the Superintendent for submission to the Trades Services team. See also Clause – Verification, Commissioning Data and Tests of Installation – Volume 2.

Maintenance responsibility for the energy efficient LED lighting retrofits installed shall be transferred to the existing Trades Services team for public domain lighting maintenance following expiry of the stated warranty period of the energy efficient LED lighting retrofit. In addition, the Contractor will still be responsible for remedying defects and omissions under the contract.

The Contractor shall be responsible for restoring electricity supplies where breaks are caused due to a fault within any of the energy efficient LED lighting retrofit installed. The repair of all other faults is excluded from the Contract.

On completion of the works, the Contractor shall provide four copies each of the record drawings, log-book and maintenance and operating manuals. The manuals shall be comprehensive and specific to the systems actually installed.

The Contractor shall submit to the Superintendent for approval two draft copies each of the record drawings, log-book and maintenance and operating manuals before the final copies are provided.

Also, on installation and completion of the works immediately following the testing and commissioning of the system the Contractor shall arrange and present a teach-in/seminar for nominated staff of the systems in operation. The teach-in/seminar shall comprise two sessions, as appropriate (any manufacturer's training course and on-site training) which shall include a full demonstration of the system installed and the provision of a suitable number of documented notes for the teach-in/seminar. Any faults/alarm conditions shall also be simulated using special equipment, if necessary, to encompass the full range of readouts that are likely to be encountered.

The Contractor shall submit to the Superintendent for approval two copies each of the prospectus and the documented notes together with the detailed arrangements/proposals two weeks before the teach-in/seminar is carried out.

## **2.15 Approvals**

The Contractor must obtain all required Statutory undertakings, RTA consents, approvals, licences, waivers and the like at the earliest possible date and provide the City with copies of such consents.

The Contractor must lodge with its tender submission details of the design life for each primary element of its design.

No recognised deleterious materials may be used on this contract. Materials are to comply with Australian Standards for approval of their use in the relevant content. All materials and finishes specifically described in this document are to be presented to the City in sample forms for approval prior to ordering for the works. All proprietary products and materials are to be laid or fixed strictly in accordance with the manufacturer's recommendations.

The Contractor shall seek advice from and allow for any necessary liaison work with City staff required by the Superintendent, including any necessary out-of-hours working.

## **2.16 Energy Efficiency and Environmental Requirements**

The City is committed to reduce energy consumption and pollution in all its forms and the Contractor must comply with the City's energy efficiency policies.

The Contractor must design this project in such a way as to minimise the consumption of energy with the least detrimental effect on the environment whilst at the same time maximising the reduction of greenhouse gas emissions.

The City reserves the right to implement LED lighting on any new public domain lighting in its public domain lighting portfolio. The Contractor will be consulted on any proposed new LED lighting and due allowance taken into account on any technical or financial impact on the Contractor's output performance specification criteria, as appropriate.

## **2.17 CFC Phase Out**

Under the Montreal Protocol and the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 the production of CFC's and Halons ceased on 1 January 1996 and HCFC's are due to cease by 2016.

Whenever plant is being commissioned, serviced or replaced, it is essential that the Contractor recovers the refrigerant or halons. The Contractor shall not vent or allow the escape of CFC's/HCFC's into the atmosphere for any reason. Failure to comply with this requirement will result in a prosecution under the Act. It is a legal requirement to recover all CFC/HCFC refrigerants and Halons for direct re-use, recycling or reclaiming.

All redundant equipment containing CFC's/HCFC's and Halons must be disposed of at an approved site.

## **2.18 Quality Assurance**

The Contractor or their Sub-Contractors are not required to be or become a Quality Assured company for this contract but any quality assurance shall comply with the Australian Quality Assurance Standard.

## **2.19 Noise, Nuisance, Pollution and Interference**

The noise level of equipment must be less than the noise level specified by the Superintendent as requirements of the City's environmental health officer at specified locations. The Contractor must generally control noise, nuisance, pollution or interference during the execution of the works in accordance with the laws, relevant standards and directions of the Superintendent.

The Contractor must also examine any hazardous substances on site at suitable intervals and must keep a record of the examinations for a minimum period of 5 years in accordance with the National Model Regulations for the Control of Workplace Hazardous Substances Regulations 1994.

Any equipment or apparatus specified by the Contractor must not interfere with the reception of radio waves and the Contractor must ensure that interference is adequately suppressed to prevent the equipment/apparatus causing interference beyond the limits specified in British Standard 800 (Specification for limits and methods of measurement of radio interference characteristics of household electrical appliances, portable tools and similar electrical apparatus) or a standard that supersedes that standard, and in accordance with the recommendations of the International Special Committee of Radio Interference (CISPR).

Any equipment or apparatus specified by the Contractor must comply with the Australian EMC Compliance Arrangements on Electromagnetic Compatibility (EMC).

The City specifically discloses the existence of microcell telecommunication devices on a number of the City's Smartpoles. In undertaking any form of inspection or works on these Smartpoles the Contractor must ensure that it complies with the procedures of the relevant telecommunication regulations governing these devices. The Contractor assumes all responsibility and liability for ensuring safety when inspecting or working on the relevant Smartpoles.

## **2.20 Spares**

Prior to the practical completion the Contractor must provide the following spares of each component. It is a pre-condition to practical completion that the Superintendent's representative provide a signed receipt for each of the listed spares:

- Three fuses of each rating and type
- the greater of 1% or 3 luminaires for each luminaire (including lamps) installed
- Six keys or other locking devices for each type of lock. A common key system must be used. Each key or locking device must have an indelible and durable name tag describing the function of the key.

## **2.21 Access to Site**

All employees and sub-contractors of the Contractor must carry identification.

The parking of vehicles by the Contractor and its employees or sub-contractors is not permitted in the parks or other public domain areas other than in designated car park spaces. Materials and plant can be off-loaded from the hard surface paths and driveways, but the Contractor's vehicles must be moved immediately following the

offloading of materials/plant. Prior arrangement for off-loading must be made with the Superintendent.

## **2.22 Site Occupancy**

Before any site work commences, the Contractor must make an application to the Manager – Construction Regulation, telephone no. (02) 9265 9377, for conditional approval regarding site occupancy, giving a minimum of one weeks notice. Depending on the nature of the works this application may require a Traffic Control Plan.

Imposed conditions of approval may be audited by staff of the Construction Regulation Unit or the City's Rangers and non compliance may result in the issuing of Infringement Notices or closure of the relevant site.

The installation of toilet or lunch facilities or material storage areas on City street or parks will not be approved.

Where a road closure is required or a State Road is affected the applicant will also be referred to the City's Traffic Operations Team or the Roads and Traffic Authority for approval (respectively).

When an application is made to the Traffic Operations Team the matter will be investigated and a report prepared for consideration by the Local Pedestrian Cycling and Traffic Calming Committee.

Any resulting approval will be based on the recommendations of the Local Pedestrian Cycling and Traffic Calming Committee. Four weeks notice is required for an application to the Local Pedestrian Cycling and Traffic Calming Committee.

Rates tendered in the Schedule of Technical Data and Prices shall cover all costs associated with arranging site occupancy approvals.

## **2.23 Noise, Standard Hours and Conduct**

The Contractor's attention is drawn to the fact that the works will be carried out in parks, roads and plazas used by the general public and close to residents in adjacent properties.

Standard Hours of work for construction works are:

- City Centre – 7.00am to 7.00pm Mondays to Fridays; and 7am - 5pm Saturdays (no work on Sundays or Public Holidays); and
- All other areas - 7.30am - 5.30pm Mondays to Fridays; and 7.30am - 3.30pm Saturdays (no work on Sundays or public holidays), with the exception of areas formerly within the Leichardt Council area, which shall have a finishing time of 1.30pm on Saturdays.

Work outside these hours shall not be permitted without the approval of the Superintendent.

The Contractor will be required to comply with special time constraints that may be applicable to certain special areas such as Martin Place and Pitt Street Mall in order to not disturb trading activities and to cater for any special events. Work will generally be carried out without disturbing trading activities and through flow of traffic. In this respect, use of jackhammers, air compressors etc during lunch hour (which may vary from 12.00

noon to 2.00 pm) will not be allowed. In certain busy areas of the City such as Pitt Street Mall and Barrack Street etc, mufflers will have to be used on jackhammers etc to minimise noise in addition to any Work Cover requirements. Refer to the Council's Code of Practice for Construction Hours/Noise within the Central Business District.

Certain annual events such as "Anzac Day", "City to Surf", "Chinese New Year" etc may restrict or deny access and working hours in certain areas of the City during these events. The Contractor must make itself aware of the timing and extent of such events and program all works to prevent any disruptions to such events.

Smoking in non smoking areas and the use of transistor radios, etc, is not permitted.

Access to and enjoyment of the facilities and services of the parks, roads and plazas for the general public and staff must be maintained at all times, except for areas where the Superintendent has specifically approved work. Other than as expressly permitted by this Contract, if an employee, agent or sub-contractor of the Contractor causes any facility or service in the parks to be unexpectedly and/or unnecessarily shut down, the Contractor will be liable for the cost incurred to the City due to loss of income, reimbursements, inconvenience, etc.

The Contractor must carefully select employees for use on this Contract. The Superintendent reserves the right to take action in removing any employee from site should any employee in the opinion of the Superintendent misconduct themselves.

## **2.24 Payment For Work Executed**

Payment of works done will be in accordance with the following

- (a) Energy efficient LED lighting installations:

Supply and Delivery to Site	20%
Erection/Installation	30%
Connection	30%
Testing and Commissioning	20%

Interim valuation for unfixed materials on site or major items of plant stored at the manufacturer's works may be paid up to a maximum of 80% of the estimated value of such materials/plant subject to the absolute discretion of the Superintendent.

Valuations for any installation will not qualify for greater than 95% unless the relative test, completion and inspection certificates, circuit lists, maintenance manuals and record drawings, as applicable, have been submitted to and accepted by the Superintendent.

## **2.25 Verification, Commissioning Data and Tests of Installation**

For the purposes of this Specification the verifier of performance measures set out under clause 2.9 of Volume 2 is the Contractor or its duly authorised representative.

The Contractor is responsible for all commissioning and verifying that the design and installation has been carried out in accordance with this Contract. Should the Contractor at any time have any reason to believe that any part of the design or installation does not meet those requirements it must notify the Superintendent immediately.

The Superintendent may inspect equipment and witness tests at the manufacturer's works and to receive manufacturer's test certificates/reports on all equipment prior to

despatch to site but this does not relieve the Contractor of responsibility for ensuring that the equipment complies with the requirements of the Specification.

Prior to and again on completion of the works, the installation must be inspected and tested by the Contractor, accompanied by the Superintendent. As a pre-condition to practical completion, the Contractor must provide electricity consumption and commissioning data of design conditions measured in the presence of the Superintendent, and submit to the Superintendent the data, together with the test, completion and inspection certificates for the electrical installation called for in the AS/NZS 3000 Wiring Rules 2007. A minimum of 10% of all installations must be measured for compliance with light level requirements and energy reduction guarantees per month, with exact locations identified by the Superintendent. The data and certificates must be signed by the Contractor or its authorised representative. Reductions in electricity consumption and commissioning data shall be countersigned by the Superintendent or the Superintendent's representative. The City may require that any luminaires failing to meet required energy reduction target be removed from use or rectified.

The Contractor must provide all instruments and labour for the commissioning and tests and make due allowance for all out-of-hours working required for the commissioning and tests.

Schematic diagrams, graphics, pictorials, etc., must be carried out by the Contractor to the requirements of this Specification and to the satisfaction of the Superintendent who will approve all graphics, pictorials, legends, etc.

All test instruments used in the commissioning and testing of the installation shall have been calibrated by the manufacturer, or a recognised testing specialist, within a period of twelve months prior to the commissioning/testing carried out. The manufacturer, type and serial number or Contractor's identification number of each instrument shall be recorded in the data/certificate.

## **2.26 Regulations, Australian Standards and Codes of Practice**

Full compliance is required with the following, and any other regulations, standards or codes of practice that apply from time to time:-

- (i) Current Australian or International Standards and Codes of Practice
- (ii) AS/NZS 3000 Wiring Rules 2007
- (iii) AS/NZ 1158
- (iv) NSW Occupation Health and Safety Act 2000
- (v) Electrical Safety (Equipment) Regulations 2009
- (vi) Fire Precautions Act 1971
- (vii) National Model Regulations for the Control of Workplace Hazardous Substances Regulations 1994
- (viii) Occupational Health, Safety and Welfare Regulations 1995
- (ix) CIBSE Guide 2007

- (x) AS 1742.3
- (xi) Roads and Traffic Authority's Traffic Control at Work Sites
- (xii) AS 6059 Degrees of Protection provided by enclosures for electrical equipment
- (xiii) IEC 62612 Self-ballasted LED lamps for general lighting services – Performance Requirements
- (xiv) IEEE C62.41.2 Recommended Practise on Characterization of Surges in Low Voltage AC Power Circuits
- (xv) IES LM-79 Electrical and Photometric Measurements of Solid State Lighting Products
- (xvi) IES LM-80 Measuring Lumen Maintenance of LED Light Sources
- (xvii) RoHS Compliance with Restriction of Hazardous Substances

## **2.27 List of Drawings**

The Contractor shall submit design drawings with their tender.

## **2.28 Appendices**

- Annexure 1 Historical Electricity Consumption
- Annexure 2 Maps of City of Sydney Public Domain Lighting
- Annexure 3 Details of Existing Public Lighting

## **2.29 Computer Aided Design Installation Diagrams and Record Drawings**

All drawings, installation diagrams, schematic wiring diagrams, manufacturer's drawings and record drawings shall be completed in Computer Aided Design (CAD) format for loading onto the City's AUTOCAD System by the Contractor. Lighting calculations will be shown with isolux levels in AGI32 format.

All record drawings are to be A1 format (folded), colours to be advised.

The CAD method of production of drawings is subject to the approval of the Superintendent for suitability for loading onto the City's system.

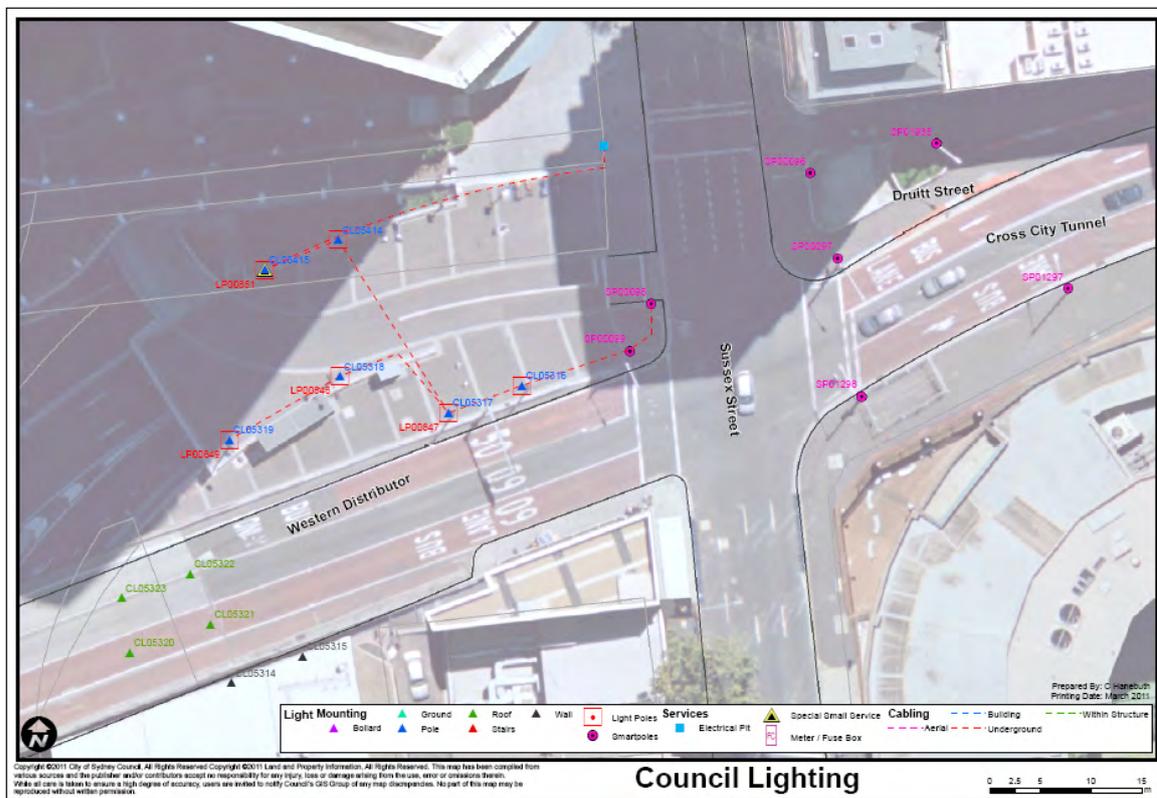
The Service Provider will be required to provide a Record in a format compatible to ESRI Geographic Information Systems (GIS) (primarily data export facilities to a SQL compatible for upload in the City's Corporate Asset Management System). Each record will include individual luminaire data and spatial location (Easting and Northing) on the GDA94 datum.

This Record must include the following attributes:

- Location in text (street, side, nearby property).
- Asset Number
- Wattage
- Make (manufacturer)
- Installation Date
- Mounting
- Number of Luminaries (This is required if two or more luminaries are exactly the same and mounted in the same location)

Asset Number – A new asset number will be provided by Service Provider, it will be in the format of CLXXXXX' XXXXX being a number starting at 10000 and incrementing by 1 - this number must be unique.

The City will also provide a map of all location of the City's lights to the Service Provider. This may include pole asset number and mounting type in ESRI GIS format, an example of the data is listed below:



### 2.30 Accreditation

All staff undertaking electrical works for the City of Sydney must be fully qualified and accredited to under take their respective tasks. The level of accreditation is to be in accordance with the Accreditation Scheme managed by Office of Fair Trading.

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GENERAL CONDITIONS OF CONTRACT**

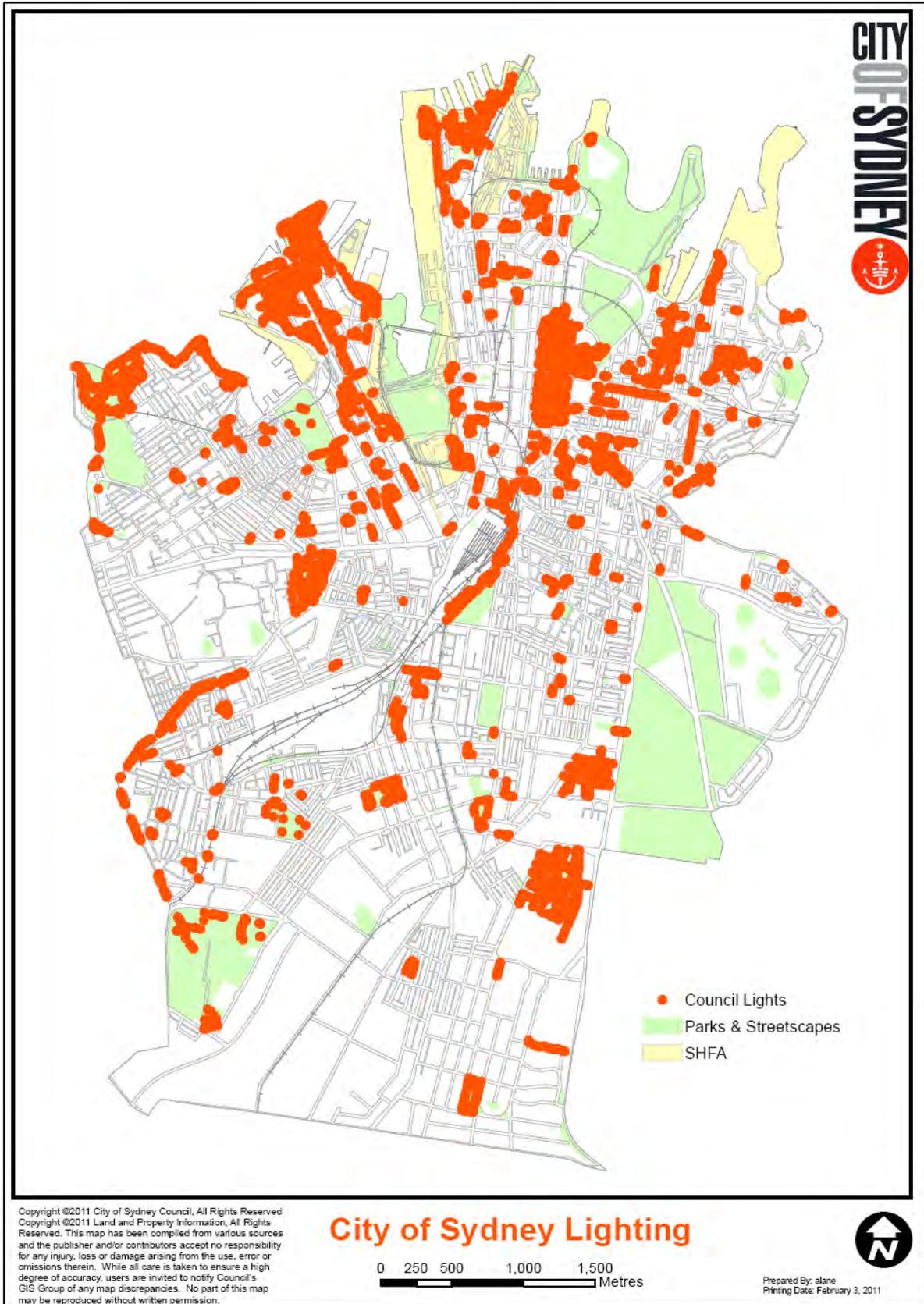
**VOLUME 4  
APPENDICES**

## Annexure 1 - Historical Electricity Consumption

Description	Lamp (W)	Existing System Wattage (W)	Quantity Smart poles	Total System Wattage Smart poles	Quantity Park Lighting	Total System Wattage Parks	Quantity Other PD Lighting	Total System Wattage Other PD Lighting	Totals
Tungsten Halogen	300	330	0	0	2	660	0	0	660
Tungsten Halogen	500	547	0	0	1	547	0	0	547
Sylvania Bourke Hill R Series	24	27	0	0	4	108	0	0	108
Rexel Parkway	18	21	0	0	1	21	0	0	21
Metal Halide	26	29	0	0	5	145	0	0	145
Metal Halide	35	39	0	0	125	4875	166	6474	11349
Metal Halide	40	44	0	0	4	176	0	0	176
Metal Halide	70	77	130	10010	802	61754	849	65373	137137
Metal Halide	75	81	0	0	16	1296	0	0	1296
Metal Halide	80	87	0	0	1	87	4	348	435
Metal Halide	100	110	0	0	65	7150	30	3300	10450
Metal Halide	125	137	0	0	1	137	8	1096	1233
Metal Halide	150	168	192	32256	811	136248	413	69384	237888
Metal Halide	175	191	0	0	0	0	12	2292	2292
Metal Halide	250	275	629	172975	18	4950	89	24475	202400
Metal Halide	300	330	0	0	1	330	0	0	330
Metal Halide	400	438	1133	496254	103	45114	24	10512	551880
Metal Halide	500	547	0	0	3	1641	0	0	1641
Metal Halide	1000	1100	24	26400	46	50600	0	0	77000
Metal Halide	2000	2200	0	0	95	209000	3	6600	215600
Mercury Vapour	30	33	0	0	4	132	0	0	132
Mercury Vapour	50	59	0	0	5	295	31	1829	2124
Mercury Vapour	80	91	0	0	137	12467	127	11557	24024
Mercury Vapour	100	109	0	0	7	763	0	0	763
Mercury Vapour	125	137	0	0	196	26852	385	52745	79597
Mercury Vapour	150	174	0	0	1	174	19	3306	3480
Mercury Vapour	250	270	0	0	19	5130	1	270	5400
Kim Wall Director	70	77	0	0	0	0	1	77	77
INGAL EPS Sorrento	18	21	0	0	14	294	1	21	315
Incandescent	1	1	0	0	0	0	0	0	0
Incandescent	25	28	0	0	4	112	0	0	112
High Pressure Sodium	70	82	0	0	34	2788	6	492	3280
High Pressure Sodium	80	88	0	0	1	88	0	0	88
High Pressure Sodium	100	114	0	0	0	0	2	228	228
High Pressure Sodium	150	170	0	0	0	0	28	4760	4760
High Pressure Sodium	250	284	0	0	0	0	2	568	568
High Pressure Sodium	360	390	0	0	2	780	0	0	780
High Pressure Sodium	400	434	0	0	1	434	4	1736	2170
Fluorescent	11	13	0	0	52	676	0	0	676
Fluorescent	14	23	0	0	0	0	6	138	138

Description	Lamp (W)	Existing System Wattage (W)	Quantity Smart poles	Total System Wattage Smart poles	Quantity Park Lighting	Total System Wattage Parks	Quantity Other PD Lighting	Total System Wattage Other PD Lighting	Totals
Fluorescent	18	23	0	0	262	6026	77	1771	7797
Fluorescent	20	24	0	0	2	48	0	0	48
Fluorescent	24	25	0	0	14	350	0	0	350
Fluorescent	30	33	0	0	9	297	0	0	297
Fluorescent	36	42	0	0	40	1680	36	1512	3192
Fluorescent	38	41	0	0	3	123	0	0	123
Fluorescent	54	67	0	0	0	0	4	268	268
Fluorescent	72	79	0	0	10	790	16	1264	2054
Compact Fluorescent	9	10	0	0	68	680	11	110	790
Compact Fluorescent	10	11	0	0	10	110	11	121	231
Compact Fluorescent	11	12	0	0	15	180	2	24	204
Compact Fluorescent	13	14	0	0	3	42	0	0	42
Compact Fluorescent	15	17	0	0	0	0	5	85	85
Compact Fluorescent	18	21	0	0	267	5607	120	2520	8127
Compact Fluorescent	20	23	0	0	0	0	380	8740	8740
Compact Fluorescent	24	27	0	0	10	270	5	135	405
Compact Fluorescent	25	28	0	0	8	224	0	0	224
Compact Fluorescent	26	29	0	0	57	1653	121	3509	5162
Compact Fluorescent	32	35	0	0	0	0	4	140	140
Compact Fluorescent	42	47	0	0	1	47	21	987	1034
Compact Fluorescent	52	57	0	0	0	0	24	1368	1368
Compact Fluorescent	70	77	0	0	0	0	8	616	616
Compact Fluorescent	75	82	0	0	9	738	0	0	738
AAL Wedge	70	77	0	0	10	770	0	0	770
AAL Largent	70	77	0	0	16	1232	0	0	1232
Total Quantities			2108		3395		3056		
Total Watts									1625337
Total kWh@ 4100 hours pa									6663881.7
Greenhouse gas emissions TCO <sub>2</sub> @ 1.07kg/kWh									7130

## Annexure 2 - Maps of City of Sydney Public Domain Lighting



### Annexure 3 – Details of Existing Public Domain Lighting

Description	Lamp (W)	Existing System Wattage (W)	Quantity Smart poles	Quantity Park Lighting	Quantity Other PD Lighting	Totals
Tungsten Halogen	300	330	0	2	0	2
Tungsten Halogen	500	547	0	1	0	1
Sylvania Bourke Hill R Series	24	27	0	4	0	4
Rexel Parkway	18	21	0	1	0	1
Metal Halide	26	29	0	5	0	5
Metal Halide	35	39	0	125	166	291
Metal Halide	40	44	0	4	0	4
Metal Halide	70	77	130	802	849	1781
Metal Halide	75	81	0	16	0	16
Metal Halide	80	87	0	1	4	5
Metal Halide	100	110	0	65	30	95
Metal Halide	125	137	0	1	8	9
Metal Halide	150	168	192	811	413	1416
Metal Halide	175	191	0	0	12	12
Metal Halide	250	275	629	18	89	736
Metal Halide	300	330	0	1	0	1
Metal Halide	400	438	1133	103	24	1260
Metal Halide	500	547	0	3	0	3
Metal Halide	1000	1100	24	46	0	70
Metal Halide	2000	2200	0	95	3	98
Mercury Vapour	30	33	0	4	0	4
Mercury Vapour	50	59	0	5	31	36
Mercury Vapour	80	91	0	137	127	264
Mercury Vapour	100	109	0	7	0	7
Mercury Vapour	125	137	0	196	385	581
Mercury Vapour	150	174	0	1	19	20
Mercury Vapour	250	270	0	19	1	20
Kim Wall Director	70	77	0	0	1	1
INGAL EPS Sorrento	18	21	0	14	1	15
Incandescent	1	1	0	0	0	0
Incandescent	25	28	0	4	0	4
High Pressure Sodium	70	82	0	34	6	40
High Pressure Sodium	80	88	0	1	0	1
High Pressure Sodium	100	114	0	0	2	2
High Pressure Sodium	150	170	0	0	28	28
High Pressure Sodium	250	284	0	0	2	2
High Pressure Sodium	360	390	0	2	0	2
High Pressure Sodium	400	434	0	1	4	5
Fluorescent	11	13	0	52	0	52
Fluorescent	14	23	0	0	6	6
Fluorescent	18	23	0	262	77	339
Fluorescent	20	24	0	2	0	2
Fluorescent	24	25	0	14	0	14

Description	Lamp (W)	Existing System Wattage (W)	Quantity Smart poles	Quantity Park Lighting	Quantity Other PD Lighting	Totals
Fluorescent	30	33	0	9	0	9
Fluorescent	36	42	0	40	36	76
Fluorescent	38	41	0	3	0	3
Fluorescent	54	67	0	0	4	4
Fluorescent	72	79	0	10	16	26
Compact Fluorescent	9	10	0	68	11	79
Compact Fluorescent	10	11	0	10	11	21
Compact Fluorescent	11	12	0	15	2	17
Compact Fluorescent	13	14	0	3	0	3
Compact Fluorescent	15	17	0	0	5	5
Compact Fluorescent	18	21	0	267	120	387
Compact Fluorescent	20	23	0	0	380	380
Compact Fluorescent	24	27	0	10	5	15
Compact Fluorescent	25	28	0	8	0	8
Compact Fluorescent	26	29	0	57	121	178
Compact Fluorescent	32	35	0	0	4	4
Compact Fluorescent	42	47	0	1	21	22
Compact Fluorescent	52	57	0	0	24	24
Compact Fluorescent	70	77	0	0	8	8
Compact Fluorescent	75	82	0	9	0	9
AAL Wedge	70	77	0	10	0	10
AAL Largent	70	77		16	0	16
Total Quantities			2108	3395	3056	8559