

MAIN ROADS WESTERN AUSTRALIA

ROAD LIGHTING

PART B: APPLICATION & APPROVAL GUIDELINES

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1. PURPOSE OF GUIDELINE

The purpose of this Guideline is to detail how Main Roads will fulfil its policy for road lighting on State roads, specific facilities and Main Roads roadworks projects including the impact on Local roads.

2. BACKGROUND

Austrroads' Guide to Traffic Engineering Practice (2004) in Section 2.1 General: Road Safety Considerations states "At night a human's visual capabilities are impaired, and visibility is reduced. The major contributing factor to night-time crashes, regardless of the reduction in traffic flow later in the evenings is the problem of darkness and its influence on a driver's ability and behaviour."

AS/NZS 1158 Part 1.1 (2005) in the Preface states "Lighting that is applicable to roads on which the visual requirements of motorists are dominant, e.g. traffic routes (i.e. Category V lighting) is acknowledged to be an effective accident counter-measure. It has been demonstrated that Category V lighting can provide significant community benefits and that the costs involved in providing the lighting can be offset by the financial returns from the reduction in road accidents. Studies in Australia and New Zealand, and in other countries have led to the conclusion that Category V traffic route lighting is likely to reduce night time casualty accidents by about 30%, taken over the road network."

The reason for the reduction in accidents is because road lighting enables road users to see hazardous situations earlier and more clearly and this in turn enables road users to react sooner and more correctly to hazardous situations and thereby result in a reduction in the number of accidents.

In addition to reducing road crashes, lighting is universally accepted as a safety improvement for pedestrians and as a deterrent to unsociable and criminal activity in the road reserve and adjacent properties.

Thus provision of road lighting along State roads and at the sites of some Main Roads facilities on Local roads will contribute towards Main Roads' overall purpose of "to provide safe and efficient road access that will enhance community lifestyles and ensure economic prosperity".

The Commissioner of Main Roads Western Australia is empowered by Section 14 (1) of the Main Roads Act (1930) to provide State roads and by Section 6 "road construction" to provide street lights on State roads.

Originally road lighting was provided by LGAs to light footpaths and road verges for pedestrians and to deter unsociable and criminal behaviour in the roadside and adjacent properties. Main Roads therefore considered the LGA to be the lead authority for provision of road lighting on urban Highways and Main Roads that do not have declared control of access.

In summary Main Roads' responsibility for road lighting is:

- Full responsibility for installation and maintenance of road (vehicle) lighting on State roads other than roads without declared control of access in built-up areas (and excludes flag lighting on all roads as flag lighting is not road (vehicle) lighting.),

- For lighting on all roads of the following facilities, if the facility is owned by Main Roads – road bridges, road tunnels and cyclist and pedestrian paths, overpasses and underpasses,
- To provide a subsidy to LGAs towards the capital and operating costs of road lighting on State roads that do not have declared control of access, and
- For Main Roads facilities on Local roads that require road lighting, to ensure adequate road lighting is provided prior to installation of the facility.

The following Guidelines retain these responsibilities and provide greater detail.

3. POLICY APPLICATION

3.1 GENERAL

The guiding principle for policy application is that the lighting provided should be that which best contribute towards the provision of safe and efficient road access that will enhance community lifestyles and ensure economic prosperity.

A major benefit of road lighting to road users is a reduction in crash risk. The main crash risk factors that are addressed by road lighting are those involving interaction of road users, namely - access control (roads with / without declared Control of Access), vehicle volumes and land development (built-up area or other). Thus roads with a similar level of crash risk will warrant the same road lighting. From consideration of level of crash risk, State roads are grouped as follows

- Freeways
- Highways and Main Roads **with** declared control of access
- Highways and Main Roads **without** declared control of access

This Policy Application has a separate section for each of these State road groups plus a section for lighting of specific facilities and also a section for Local roads.

The extent, if any, and level of lighting for motor vehicle drivers, cyclists and pedestrians on State roads and for Main Roads facilities on Local roads, is dependent upon the typical benefits of lighting.

For new and upgrading of existing lighting, the level of lighting shall generally be that recommended by AS/NZS 1158 (2005). Where vision is impaired by factors such as glare from fixed background lighting, a higher level of lighting should be considered.

For State roads which the LGA is responsible for road lighting, Main Roads offers subsidies to the LGA and they are detailed in Section 3.2.

Airports - Lighting near airports should incorporate the requirements of the Civil Aviation Authority responsible for that airport.

Railway Level Crossings - Road lighting requirements for railway level crossing with both State and Local roads is given in Section 3.6 a) of Main Roads publication "Railway Crossing Protection in Western Australia - Policy and Guidelines".

Undergrounding of Electric Powerlines - No subsidy is offered for undergrounding of existing overhead power lines. However a project may require undergrounding of power lines in its scope and the cost of the undergrounding shall be borne by the project owner.

3.2 SUBSIDIES

Subsidies are only payable for road lighting that has been approved in accordance with Section 4.2.

3.2.1 APPLICABLE ROADS

Applicable roads are Highways and Main Roads for which the LGA is responsible for road lighting. For more detail see Section 3.5.1 Highways and Main Roads **without** declared Control of Access – Responsibility for Lighting.

3.2.2 APPLICABLE LIGHTING

Applicable lighting is lighting that meets Main Roads requirements, except Flag Lighting. (That is, subsidies are not available for Flag Lighting.)

3.2.3 SUBSIDY RATES

The subsidy rates available to LGAs for provision of applicable lighting on applicable roads are:

- 50 % of the Capital Cost; except for projects partially or fully funded by Main Roads where no subsidy is applicable, and
- 50 % of the Operating Cost.

The Capital Cost is the sum of the design, materials and installation costs.

The Operating Cost is the sum of the maintenance and electricity consumption costs.

3.2.4 DETERMINATION OF CAPITAL COST

Regardless of the types of poles or lamps used, the capital cost for determination of the subsidy amount is the capital cost for provision of applicable road lighting using the Electricity Network Provider's standard 12.5m high road lighting poles and 250 watt high pressure sodium lamps.

3.2.5 DETERMINATION OF OPERATING COST

Regardless of the types of poles or lamps used, the operating cost for determination of the subsidy amount is the operating cost for applicable road lighting using the Electricity

Network Provider's standard 12.5m high road lighting poles and 250 watt high pressure sodium lamps.

Existing operating cost subsidies not conforming with this Guideline shall continue to be paid at the Electricity Network Provider's gazetted tariff rate, until the lighting is modified.

3.2.6 SUBSIDY ARRANGEMENTS

For all lighting the subsidy arrangements shall be in accordance with this Guideline.

3.2.7 SUBSIDY PAYMENTS

Payment of the capital cost subsidy may be claimed after written confirmation by the LGA representative that:

- The road lighting has been installed as per the approved design, and
- The date the lighting was commissioned.

Annually Main Roads will advise the LGAs of the amount that can be claimed for subsidy of the operating cost of the road lighting. LGAs shall then submit a tax invoice to the relevant Regional Manager or Director Metropolitan Operations for this amount.

3.3 FREEWAYS

3.3.1 RESPONSIBILITY FOR LIGHTING

Main Roads is responsible for road lighting on freeways and freeway ramps.

Main Roads arranges the design, installation and maintenance of lighting on freeways and freeway ramps.

3.3.2 EXTENT OF LIGHTING

New freeway sections, which have a forecast AADT of 40,000 vpd or more within 10 years of the planned opening of the freeway to traffic, shall be lit as part of the freeway project, inclusive of ramps. If the 10 years after opening forecast volume is less than 40,000 vpd but the 20 year forecast is 40,000 vpd or more, then provision should be made in the design and construction for road lighting to be provided at a later date.

All interchanges shall be lit

Existing unlit freeway sections should be lit when the section's AADT reaches 40,000 vpd or more.

Short unlit sections of 2 km or less between lit sections, shall be lit.

3.3.3 LEVEL OF LIGHTING

The category of lighting on freeways and freeway ramps shall be that recommended for freeways in AS/NZS 1158 Part 1.1 (2005) - Table 2.1, namely V3.

The values for light technical parameters (i.e. level of lighting) shall be those given in AS/NZS 1158 Part 1.1 (2005) - Table 2.2 for the V3 lighting sub-category.

3.3.4 CROSS-ROADS

The responsibility for, the extent of, and the level of road lighting for cross-roads at interchanges are given under the cross-road's relevant road classification in this Guideline and for lighting of cross-road bridge decks are given in Section 3.8.8

3.4 HIGHWAYS AND MAIN ROADS *WITH* DECLARED CONTROL OF ACCESS

3.4.1 RESPONSIBILITY FOR LIGHTING

Main Roads is responsible for lighting along Highways and Main Roads **with** declared Control of Access.

Therefore Main Roads will arrange the design, installation and maintenance of lighting along Highways and Main Roads **with** declared Control of Access.

The responsibility for, the extent of, and the level of road lighting for cross-roads at interchanges and intersections are given under the cross-road's relevant road classification in this Guideline and for lighting of cross-road bridge decks are given in Section 3.8.8.

Main Roads will impose as a condition for approval for connection of a Local road to a State road that the LGA arranges for the connections to be lit to the relevant requirements of this Guideline.

3.4.2 EXTENT OF LIGHTING

3.4.2.1 ROAD SECTIONS

New road projects which have a forecast AADT of 40,000 vpd or more within 10 years of the planned opening of the road to traffic, shall be lit as part of the road project. The extent of road lighting at intersections shall be to the requirements of AS/NZS 1158 Part 1.1 (2005).

Existing unlit sections of road should be lit if the AADT is 40,000 vpd or greater.

If the distance (light pole to light pole) between lit road sections or intersections is less than 500m then these road sections shall be lit.

The extent of lighting for specific facilities is given in Section 3.8.

3.4.2.2 INTERSECTIONS

Intersections with specific facilities that are recommended by AS/NZS 1158 to be lit, shall be lit to the extent and level recommended by AS/NZS 1158.

3.4.2.3 SPECIAL CASES

Regardless of the above, road lighting including Flag Lighting, may be appropriate along a road section or at an isolated intersection due to:

- Crash history,
- Entry / exit by slow moving vehicles or vehicles longer than 19 m.,
- Road alignment, or
- Pedestrian activity.

3.4.3 LEVEL OF LIGHTING

3.4.3.1 ROAD SECTIONS

The lighting category for these roads shall be V3 (AS/NZS 1158 Part 1.1 (2005) – Table 2.1), unless otherwise approved by the Manager Traffic & Safety.

The values for light technical parameters (i.e. level of lighting) shall be those given in AS/NZS 1158 Part 1.1 (2005) - Table 2.2 for the V3 lighting sub-category.

The level of lighting for specific facilities is given in Section 3.8.

3.5 HIGHWAYS AND MAIN ROADS *WITHOUT* DECLARED CONTROL OF ACCESS

3.5.1 RESPONSIBILITY FOR LIGHTING

3.5.1.1 WITHIN BUILT-UP AREAS

For definition of “built-up area” see Section 5.

Road lighting is the responsibility of the LGA.

Nonetheless, Main Roads is responsible for the overall management of these roads, and to ensure reasonable safety to road users from the road lighting provided by the LGA, Main Roads requires written documentation that the road lighting design, specification and installation are to the requirements of the Electricity Network Provider.

To find out if a road is a highway or main road *without* declared control of access, click on:

- [State Road Network Maps \(Link to website\)](#)

3.5.1.2 OUTSIDE OF BUILT-UP AREAS

Road lighting, except for flag lighting, is the responsibility of Main Roads. Flag lighting is the responsibility of the LGA.

For roads **outside** of built-up areas, the road lighting design, specification and installation shall be to Main Roads' requirements, except for flag lighting.

3.5.2 EXTENT OF LIGHTING

3.5.2.1 WITHIN BUILT-UP AREAS

The extent of lighting for road sections and special cases is at the discretion of the LGA within which the road lies.

The extent of lighting for specific facilities is given in Section 3.8.

Nonetheless if the distance, light pole to light pole, between lit sections or intersections is less than 500m then these road sections should be lit.

3.5.2.2 OUTSIDE OF BUILT-UP AREAS

The extent of lighting for road sections and special cases shall be the same as that for Highways and Main Roads **with** declared Control of Access, see Section 3.4.2.

The extent of lighting for specific facilities is given in Section 3.8.

3.5.3 LEVEL OF LIGHTING

3.5.3.1 WITHIN BUILT-UP AREAS

The level of lighting for road sections and special cases is at the discretion of the LGA within which the road lies. However to qualify for subsidy from Main roads the lighting is required to meet the requirements of AS/NZS 1158 Part 1.1 (2005) and have a road lighting category of at least V3.

The level of lighting for specific facilities is given in Section 3.8.

3.5.3.2 OUTSIDE OF BUILT-UP AREAS

The level of lighting for roads sections and special cases shall be the same as that for Highways and Main Roads **with** Declared Control of Access, see Section 3.4.3.

The level of lighting for specific facilities is given in Section 3.8 Specific Facilities.

3.6 LOCAL ROADS

3.6.1 RESPONSIBILITY FOR LIGHTING

Road lighting of Local roads is the responsibility of the LGA.

3.6.2 EXTENT OF LIGHTING

LGAs determine the extent of lighting on Local roads.

Under the Road Traffic Code 2000, Main Roads is responsible for regulation of the use of traffic control signals, road signs and road markings on both State and Local roads.

Main Roads will not approve traffic control signals, road signs or road markings for:

- Intersection traffic-control signals,
- Pelican, puffin or zebra pedestrian crossings, or
- Roundabouts;

unless lighting is provided to the requirements given in Section 3.8.10, 3.8.4 and 3.8.9 respectively.

3.6.3 LEVEL OF LIGHTING

LGAs determine the level of lighting on Local roads.

However Main Roads requires Local roads to be lit to the relevant level given in Section 3.8 Specific Facilities for the road facilities listed in Section 3.6.2 above.

3.6.4 LIGHTING SUBSIDIES

Subsidies are not available for lighting on Local roads

3.7 PRIVATE ROADS

Connections of private roads to a Main Roads' road should have a written agreement.

The agreement may include lighting and the requirements for road lighting should be consistent with the conditions in this Guideline applying to roads for which LGAs are responsible for lighting.

3.8 LIGHTING FOR SPECIFIC FACILITIES

3.8.1 CYCLIST ON-ROAD FACILITIES

The authority responsible for lighting of cyclist on-road facilities is the authority responsible for lighting of the road.

Lighting of the road should include on-road cyclist facilities as part of the roadway.

3.8.2 CYCLISTS AND PEDESTRIAN OVERPASSES AND UNDERPASSES

3.8.2.1 RESPONSIBILITY FOR LIGHTING

The authority responsible for lighting of a cyclist and or pedestrian overpass or a cyclist and or pedestrian underpass is the authority responsible for the connecting paths to the overpass or underpass; except where they cross a freeway, in which case lighting is the responsibility of Main Roads.

3.8.2.2 EXTENT OF LIGHTING

All overpasses and underpasses, that are the responsibility of Main Roads, shall be lit.

3.8.2.3 LEVEL OF LIGHTING

The level of lighting on cyclist and pedestrian overpasses and underpasses, that are the responsibility of Main Roads, shall be in accordance with AS/NZS 1158 (2005) "P" category.

3.8.2.4 LIGHTING SUBSIDIES

Subsidies for power consumption only are available for lighting of cyclist or pedestrian overpasses or underpasses across State roads other than freeways.

Subsidies will be calculated on the basis of 50% of Western Power gazetted tariff W2-Z18.

3.8.3 CYCLIST AND PEDESTRIAN PATHS

3.8.3.1 RESPONSIBILITY FOR LIGHTING

The authority responsible for lighting of a cyclist and or pedestrian path is the authority responsible for the path.

In general, Main Roads responsibility is limited to:

- Principal Shared Paths, and
- Paths paralleling a section of State road where on-road cycling is banned or considered undesirable by Main Roads.

3.8.3.2 EXTENT OF LIGHTING

Principal Shared Paths shall be lit.

Other paths, that are the responsibility of Main roads, shall be lit on a case by case basis.

3.8.3.3 LEVEL OF LIGHTING

The level of lighting on cyclist and pedestrian paths, that are the responsibility of Main Roads, shall be in accordance with AS/NZS 1158 (2005) "P" category.

3.8.3.4 LIGHTING SUBSIDIES

Subsidies are not available for lighting of cyclist or pedestrian paths.

3.8.4 CYCLIST AND PEDESTRIAN ROAD CROSSING FACILITIES

3.8.4.1 RESPONSIBILITY FOR LIGHTING

The authority responsibility for lighting of cyclist and pedestrian road crossing facilities (pelican, puffins, zebra crossings and crossings with kerb ramps) is the authority responsible for lighting of the road.

3.8.4.2 EXTENT OF LIGHTING

All road sites (State or Local) containing a pelican, puffin or zebra road crossing facilities shall be lit to the extent recommended by AS/NZS 1158 Part 1.1 (2005).

For other road sites containing a cyclist and or pedestrian crossing facilities:

- That cross a State road shall be lit on a case by case basis, and
- That cross a Local road, shall be lit to the extent determined by the LGA.

3.8.4.3 LEVEL OF LIGHTING

The level of lighting for pelican and puffin road crossing facilities shall be in accordance with AS/NZS 1158 Part 1.1 (2005).

The lighting level for Zebra Pedestrian Crossings shall be to the requirements of AS 1158 Part 4 (1987) "Supplementary Lighting at Pedestrian Crossings"; except on slip lanes, which only need to have an over-head street light within the vicinity of the zebra crossing.

The level of lighting for all other cyclist and pedestrian road crossing facilities should be to the level recommended by AS/NZS 1158 Part 1.1 (2005).

3.8.4.4 LIGHTING SUBSIDIES

Subsidies are not available for lighting of cyclist or pedestrian on-road facilities.

3.8.5 ISOLATED INTERSECTIONS

An isolated intersection is an intersection that is not contained within a lit road section.

Isolated intersections generally do not require road lighting unless the intersection:

- Is a Roundabout. For lighting details see Section 3.8.9,
- Is controlled by Traffic Signals. For lighting details see Section 3.8.10,
- Has a median island in the through road. For lighting details see Section 3.8.6 and for definition of through road see Section 5 , or
- Qualifies for lighting as a Special Case as detailed in Section 3.4.2.3 Highways and Main Roads **with** Declared Control of Access – Extent of Lighting – Special Cases.

3.8.6 KERBED MEDIAN ISLANDS

3.8.6.1 RESPONSIBILITY FOR LIGHTING

The authority responsible for lighting of kerbed median islands is the authority responsible for lighting of the road in which the kerbed median island lies.

Under the Road Traffic Code 2000, Main Roads is responsible for regulation of the use of road signs and road markings on both State and Local roads.

Main Roads will not approve road signs or road markings for kerbed median islands unless these facilities are lit in accordance with Section 3.8.6.2 and Section 3.8.6.3

below.

3.8.6.2 EXTENT OF LIGHTING

Kerbed median islands located mid-block along a State or Local road, or in a State or Local through road at an intersection, shall be lit. For definition of “through road” see Section 5.

For State roads the extent of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 “Intersections and Other Specific Locations”, and if the island is at an intersection, then at least an additional two spans of road section lighting shall be provided on each approach.

For Local roads the extent of lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 “Intersections and Other Specific Locations”.

3.8.6.3 LEVEL OF LIGHTING

For State and Local roads the level of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 “Intersections and Other Specific Locations” for the AS/NZS 1158 (2005) “V” subcategory appropriate for the approach.

3.8.6.4 LIGHTING SUBSIDIES

Subsidies are available to LGAs for provision of applicable lighting on applicable roads.

3.8.7 KERBED LEFT TURN ISLANDS

3.8.7.1 RESPONSIBILITY FOR LIGHTING

The authority responsibility for lighting of kerbed left turn islands is the authority responsible for lighting of the road from which the left turn is made.

Under the Road Traffic Code 2000, Main Roads is responsible for regulation of the use of road signs and road markings on both State and Local roads.

Main Roads will not approve a road signs or road markings for kerbed left turn islands unless these facilities meet the requirements given in Section 3.8.7.2 and Section 3.8.7.3.

3.8.7.2 EXTENT OF LIGHTING

Kerbed left turn islands should be designed such that they do not cause any narrowing of, or obstruction to the alignment of the approach shoulder or adjacent lane. Kerbed left turn island so designed do not, on their own, generate a requirement to be lit.

If a kerbed left turn island causes any narrowing of, or obstruction to the alignment of the

approach shoulder or adjacent lane, then the island shall be lit as follows:

- For State roads the extent of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 “Intersections and Other Specific Locations”, plus at least an additional two spans of road section lighting on the approach, and
- For Local roads the extent of lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 “Intersections and Other Specific Locations”.

3.8.7.3 LEVEL OF LIGHTING

For State and Local roads the level of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 “Intersections and Other Specific Locations” for the AS/NZS 1158 (2005) “V” subcategory appropriate for the approach.

3.8.7.4 LIGHTING SUBSIDIES

Subsidies are available to LGAs for provision of applicable lighting on applicable roads.

3.8.8 ROAD BRIDGES AND TUNNELS

3.8.8.1 RESPONSIBILITY FOR LIGHTING

The authority responsible for lighting on and under a road bridge or in a tunnel is the authority which has structural responsibility of the bridge or tunnel.

3.8.8.2 EXTENT OF LIGHTING

If the road is lit on one side of the bridge (excluding flag lighting) and the lighting of the road surface extends up to the bridge abutment, then the lighting is to extend over the whole length of the bridge.

Where practical, lighting of bridge decks is to be from poles not attached to the bridge structure including bridges on roads for which road lighting is the responsibility of a LGA.

Bridges over navigable waterways shall have navigation lighting as required by the Department of Planning and Infrastructure.

3.8.8.3 LEVEL OF LIGHTING

The lighting category for bridge decks and road carriageways directly underneath a bridge shall be the AS/NZS 1158 (2005) category applicable to the road sections 500m each side of the bridge. If the category for one side is different from than the other, then the lower numerical category (higher illuminance) shall apply.

The lighting level for tunnels shall be determined on an individual project basis.

3.8.8.4 LIGHTING SUBSIDIES

Subsidies are not available for lighting of road bridges or road tunnels.

3.8.9 ROUNDABOUTS

3.8.9.1 RESPONSIBILITY FOR LIGHTING

The authority responsible for lighting of roundabouts is the authority responsible for lighting the approach roads. If road lighting of one of the approaches is the responsibility of Main roads, then Main Roads also accepts responsibility for lighting of the circulating road and the central island.

Under the Road Traffic Code 2000, Main Roads is responsible for regulation of the use of road signs and road markings on both State and Local roads.

Main Roads will not approve a road signs or road markings for roundabouts unless these facilities meet the requirements given in Section 3.8.9.2 and Section 3.8.9.3.

3.8.9.2 EXTENT OF LIGHTING

All roundabouts on all State and Local roads shall be lit.

For approaches that are State roads, the extent of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 "Intersections and Other Specific Locations" plus at least an additional two spans of road section lighting.

For approaches that are Local roads, the extent of lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 "Intersections and Other Specific Locations".

3.8.9.3 LEVEL OF LIGHTING

For State and Local roads the level of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 "Intersections and Other Specific Locations" for the AS/NZS 1158 (2005) "V" subcategory appropriate for the approach.

3.8.9.4 LIGHTING SUBSIDIES

Subsidies are available to LGAs for provision of applicable lighting on applicable roads.

3.8.10 TRAFFIC CONTROL SIGNALS

3.8.10.1 RESPONSIBILITY FOR LIGHTING

The authorities responsible for lighting of roads sites controlled by traffic control signals, are the authorities responsible for lighting of the roads.

Under the Road Traffic Code 2000, Main Roads is responsible for regulation of the use of traffic control signals, road signs and road markings on both State and Local roads.

Main Roads will not approve traffic control signals, road signs or road markings for sites controlled by traffic control signals unless these facilities meet the requirements given in Section 3.8.10.2 and Section 3.8.10.3.

3.8.10.2 EXTENT OF LIGHTING

All traffic signal control sites on both State and Local road shall be lit.

For State and Local roads the extent of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 "Intersections and Other Specific Locations", plus at least an additional two spans of road section lighting on each approach.

3.8.10.3 LEVEL OF LIGHTING

For State and Local roads the level of the lighting shall be as recommended in AS/NZS 1158 Part 1.1 (2005) Section 3.4 "Intersections and Other Specific Locations" for the AS/NZS 1158 (2005) "V" subcategory appropriate for the approach.

3.8.10.4 LIGHTING SUBSIDIES

Subsidies are available to LGAs for provision of applicable lighting on applicable roads.

3.9 MAIN ROADS' ROADWORK PROJECTS

3.9.1 ROADS OR SPECIFIC FACILITIES FOR WHICH MAIN ROADS IS RESPONSIBLE FOR ROAD LIGHTING

Main Roads Roadworks Projects are roadwork projects proposed, funded and managed by Main Roads.

The project manager shall ensure road lighting is provided in accordance with this Guideline.

3.9.2 ROADS FOR WHICH THE LGA IS RESPONSIBLE FOR ROAD LIGHTING

The project manager shall consult with the LGA during the project development stage

and obtain joint agreement on the extent of LGA road lighting that is to be included in the project.

For projects that include a pedestrian or shared path bridge for which road lighting is the responsibility of the LGA, the project shall include the provision of lighting.

If lighting is to be provided or modified, then prior to commencement of roadwork, the project manager shall have a written agreement with the LGA detailing:

- The extent of lighting,
- The level of lighting,
- The lighting design is to be arranged by Main Roads through the Electricity Network Provider and approved by the LGA,
- The lighting installation is to be arranged by Main Roads through the Electricity Network Provider,
- The LGA shall pay the on-going operating costs,
- If applicable, Main Roads shall subsidise the on-going operating costs in accordance with this Guideline, and
- Funding arrangements for the road lighting capital cost: Typically Main Roads fully funds the capital cost (as defined in Section 3.2.4) of new or upgrading of LGA lighting if it complies with the relevant requirements of this Guideline.

3.10 POWER CONSUMPTION METERING

New road lighting, inclusive of any associated existing road lighting, that draws less than 1.5 kilowatts (e.g. less than 6 high pressure sodium lamps) shall be un-metered.

New road lighting, inclusive of any associated existing road lighting, that draws 1.5 kilowatts or more (e.g. 6 or more high pressure sodium lamps) shall have a R1 meter and it shall have a remote reading facility if possible.

4. APPROVALS

4.1 FREEWAYS, HIGHWAYS & MAIN ROADS WITH DECLARED CONTROL OF ACCESS, HIGHWAYS & MAIN ROADS WITHOUT DECLARED CONTROL OF ACCESS OUTSIDE OF BUILT-UP AREAS, AND, SPECIFIC FACILITIES ON STATE ROADS.

NOTE – THIS APPROVAL PROCESS IS DIFFERENT FROM THE DELEGATION OF AUTHORITY AND IS THEREFORE SUBJECT TO COMPLEMENTARY CHANGE IN DELEGATION OF AUTHORITY.

4.1.1 IN-PRINCIPLE APPROVAL FOR THE ROAD LIGHTING

- Recommend – Project Manager (including a statement of compliance with these Application & Approval Guidelines)
- Approve – Regional Manager or Director Metropolitan Operations

All other approval endorsements are part of the Project Management System and this system includes the design process and review by the Manager Traffic Control Infrastructure Contract (TCIC).

4.2 HIGHWAYS & MAIN ROADS *WITHOUT* DECLARED CONTROL OF ACCESS – *WITHIN* BUILT-UP AREAS

All submissions shall be by the LGA within which the road lies and forwarded to the relevant Regional Manager or Director Metropolitan Operations; except for proposals associated with a Main Roads project, in which case the submission shall be prepared by the project manager.

Submissions for road lighting proposals shall include:

- A locality plan showing the extent of road lighting,
- A copy of documentation demonstrating compliance of the design with AS/NZS 1158 prepared in accordance with the recommendations in AS/NZS 1158 Part 1.1 Appendix D, plus a statement signed by the Electricity Network Provider that the lighting design complies with their requirements.
- A statement that switching on and off of the lighting is by an automatic dusk to dawn light sensor switch.
- Estimated price for the capital cost and annual operating cost; and also the subsidy capital cost and subsidy operating cost as determined by Sections 3.2.4 and 3.2.5 respectively,
- Proposed commissioning date of the lighting,
- For LGA submissions a statement by the LGA that:
 - It will pay the Electricity Network Provider the full capital cost of the works, and
 - It will pay the Electricity Network Power Provider the full on-going operating cost, and
- For Main Roads project managers submissions, the submission shall include a copy of the “written agreement with the LGA” as required in Section 3.9.2.

Main Roads and the LGA may enter into a written agreement for the full capital cost to be paid by either Main Roads or the LGA, on the understanding that the appropriate reimbursement will occur in the following financial year or earlier if funds can be secured.

The approval process for submissions is the same as that given in Section 4.1.

The Regional Manager or Director Metropolitan Operations shall advise the LGA in writing of the approval decision and subsidy details.

4.3 SIGNALS, SIGNS & ROAD MARKINGS FOR LGA SPECIFIC FACILITIES PROJECTS THAT ARE REQUIRED TO HAVE ROAD LIGHTING

Approval of the provision of signals, signs or road markings for the following specific facilities shall include an agreement, signed by the LGA, that it will provide road lighting to the requirements of this Guideline at the time of construction of the specific facilities:

- Kerbed median islands,
- Kerbed left turn islands that significantly encroach into a through road (See Section 3.7.7.2 for significant encroachment),
- Roundabouts,
- Intersection Traffic-control Signals, and
- Pelican, Puffin and Zebra Crossings.

5. DEFINITIONS

Definitions here are those not covered by, or are different from those given in Main Roads Glossary of Terms.

AS/NZS	An abbreviation for Australian Standard/ New Zealand Standard.
Built-up Area	Any road and the territory contiguous to the road; provided the territory contiguous with the road is developed with structures devoted to business, industry or dwelling houses and these developments have driveway connections to the road at intervals of less than 100m over a distance of 500m or more.
Declared Control of Access	Control of access declared under the Main Roads Act 1930.
Flag Lighting	Is as defined in AS/NZS 1158.1.1 (2005) Section 3.5 Isolated intersections.
Freeway	A road signed as such in accordance with the Road Traffic Code 2000.

Highway	A road declared as such under the Main Roads Act 1930 that is not signed as a freeway.
LGA	Is an abbreviation for local government authority.
Local Road	A road under the care, control and management of a LGA.
Main Road	A road declared as such under the Main Roads Act 1930.
Main Roads Facilities on Local Roads	Are traffic control signals, regulatory road signs and regulatory road marking outside of the Perth Metropolitan Area, and all traffic control signals, road signs and road marking within the Perth Metropolitan Area (except delegated community signs and parking signs and pavement markings.)
Principal Shared Path	The primary parallel path provided along freeways within an urban area and along passenger rail routes within the Perth Metropolitan Area. <i>(An urban area being an area that has the characteristics of a city or town.)</i>
Road Lighting	Lighting within a road reservation that lights the road carriageway and or the paths for cyclists and pedestrians, excluding Flag lighting.
State Road	A road declared under the Main Roads Act 1930 to be a highway or a main road.
Through Road	A continuing road at an intersection that does not have stop or give-way sign control.
