**Handover of Electrical and ITS Assets**

Procedure

ELECTRICAL ASSET MANAGEMENT BRANCH

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# objective

The objective of this procedure is to provide specific definition and guidance in respect of achieving the outcomes identified by the Handover of Electrical and ITS Assets Policy.

# SCOPE

This procedure applies to the handover and acceptance of all electrical and ITS assets by Main Roads Western Australia Electrical Asset Management (EAM) as outlined in the Handover of Electrical and ITS Assets Policy.

This procedure outlines the tasks and responsibilities for all new and modified electrical assets including:

* Traffic Signals;
* Variable Message Signs (VMS);
* Vehicle Detection System (VDS);
* Warning Systems (Railway Warning Signals signs, Wig Wags, Flood Warning, Height Detection, Steep Decent);
* Lighting;
* Closed Circuit Television (CCTV);
* Fibre Optic Assets (Including Node Cabinets);
* Electronic Speed Limit Signs (ESLS);
* Pumps; and
* Help Phones.

The process for handing over new asset classes not covered by this process must be agreed with the Manager Electrical Asset Manager and should address issues such as the need to provide training to Main Road Western Australia’s maintenance staff.

# Roles & Responsibilites

| **Role** | **Responsibility** |
| --- | --- |
| **MEAM** | Owner |
| **PESE** | Authorised to Approve |
|  |  |

# Definitions

| **Term** | **Definition** |
| --- | --- |
| **MEAM** | Manager Electrical Asset Management |
| **PESE** | Principal Electrical Standards Engineer |
| **TQ** | Technical Query |
| **RFI** | Request for Information |
| **ITS** | Intelligent Transport Systems |
| **Main Roads** | Main Roads Western Australia |
| **EAM** | Electrical Asset Management |
| **ADRL** | Asset Data Requirements List |

# Handover procedure

The process for conveyance and handover of electrical and ITS assets to Main Roads is identified in detail below.

## Project Commencement

As early as possible, the project manager will need to make contact with Main Roads in order to obtain allocated asset numbers for the proposed new works. This is usually completed during the design phase by the responsible electrical engineer, as asset numbers are required in order to complete the design drawings.

The project manager will also need to make contact within Main Roads in order to obtain design drawing numbers, again this is usually completed during the design phase by the responsible electrical engineer.

Drawing numbers at Main Roads consist of three variables as per the Electronic Data Standards guideline referenced at the end of this procedure. These variables are:

1. The calendar year in which the drawing numbers were provided, for example 2018;
2. The Main Roads Region, Branch or Directorate number. This number represents the custodian or owner of the final drawings. For electrical drawings this number is always 48 for Metropolitan Region as EAM is part of this region and is the owner for all Electrical and ITS assets at Main Roads; and
3. A sequential number typically allocated in blocks by Main Roads, for example 0068.

So an example of a typical drawing number based on the above is 201848-0068.

A sequential block of numbers issued for each project can be obtained through the Main Roads asset owner, which in the case of Electrical and ITS assets is EAM. Note that EAM will typically obtain the numbers in turn from Gavin Jackson – Senior Spatial Analyst (Engineering) or Kristoffer McPhie – Engineering Associate within Main Roads. Large projects may need to obtain drawing numbers separate to this process.

Both asset number and drawing number requests can be made to the [ElectricalAssetRequest@mainroads.wa.gov.au](mailto:ElectricalAssetRequest@mainroads.wa.gov.au) e-mail inbox as per the Electrical and ITS Asset Number Request process.

Note that current drawings for existing assets can be requested via the [ElectricalPlanRequest@mainroads.wa.gov.au](mailto:ElectricalPlanRequest@mainroads.wa.gov.au) e-mail inbox.

## Design Review by Main Roads

As the asset owner, EAM requires to undertake design review of all proposed changes to the asset base. Where problems are identified EAM will intervene as appropriate in order to ensure the integrity of the electrical and ITS asset base. The time and effort spent on design review though will depend on the risk profile of the works - large and complex infrastructure development projects typically requiring a greater level of service. This greater level of service typically being funded by the project directly.

As a minimum, EAM will perform a check for completeness of the design; whether funded or not. Such a completeness check will not verify the technical accuracy or function of the design, but will check that the major design components have been undertaken and broadly meet requirements. EAM will also require a project schedule in order to inform future compliance/surveillance of the works.

As part of the project design, an inspection plan for an electrical inspector to check design and installation compliance with requirements in respect of operation and maintenance access must be provided. The guiding criteria in respect of compliance is to be the AS/NZS 3000:2018 fundamental principle outlined in clause 1.7.2 c). This fundamental principle requires *‘adequate and safe access or working space [to be] to be provided to equipment requiring operation or maintenance.’* This inspection plan must be submitted as part of the request for handover and a Main Roads electrical inspector will check compliance against this plan.

Request for design review are to be submitted to [Elec&ITSReviews@mainroads.wa.gov.au](mailto:Elec&ITSReviews@mainroads.wa.gov.au)

In the event that a project seeks commissioning approval, generally such approval will be withheld should a design review not have been undertaken.

## Allocation of Inspector

At the time of submission of a design for review, the Electrical Compliance Manager shall review the respective project schedule and allocate an Inspector as necessary.

The Inspector shall make contact with the Project Manager for the works at this time and prepare proposed audit criteria for the agreement of the Project Manager. Note that for large projects the Inspector may need to obtain further information from the project in order to develop the criteria and multiple inspections may be required.

## Commissioning of Assets

Prior to commissioning any asset the party responsible for the works or its nominee, shall arrange for Main Roads to approve the commissioning.

The request to commission the asset must be made using the Request to Commission form referenced at the end of this procedure. A separate form is required for each asset that has been modified or constructed unless agreed with the Manager Electrical Asset Management.

 The following information is required as part of the request:

1. “Red Line” construction drawings;
2. Test results as required by AS/NZS 3000;
3. Detail of specifications used during the construction, including revision dates; and
4. Any other documents and/or tests required by Main Roads specification(s) relevant to the commissioning.

A completed Request to Commission form and the above listed supporting information must be delivered at least five working days prior to the time commissioning is required to occur. It must be emailed to [ElectHandover@mainroads.wa.gov.au](mailto:ElectHandover@mainroads.wa.gov.au?subject=https%3A%2F%2Fwww.mainroads.wa.gov.au%2FBuildingRoads%2FStandardsTechnical%2FRoadandTrafficEngineering%2FTypicalProjectProcesses%2FPages%2FCommissioning-Handover-Electrical-Assets.aspx)

Assets shall not be commissioned until written approval has been received from the Manager Electrical Asset Management or delegate.

Approval to Commission being given will not alter the duties and responsibilities of the contractor undertaking the works.

## Decommissioning of Assets

Decommissioning can be notified using the Asset Removal Request form referenced at the end of this procedure.

## Preparing for Handover

Technology vendors may be required to provide documentation in a staged manner according to the Electrical and ITS Asset Drawing and Data Requirements Policy and Procedure, referenced at the end of this procedure.

The construction and design phases of the project also need to provide documentation. In the event that this is not undertaken in a staged manner under the Electrical and ITS Asset Drawing and Data Requirements Policy and Procedure, a very general all-inclusive list is as follows:

* Completed form Request to Handover Electrical Assets;
* Final “As constructed” drawings and/or redline markup drawings;
* Test results as required by AS/NZS 3000;
* AS/NZS 3000 Section 1 Design Details and calculations;
* Detail of specifications used during the construction, including revision dates;
* Installation, Operation and Maintenance Manuals;
* Details of any Settings such as timers, circuit breaker settings, etc;
* Access keys;
* Software;
* Access restrictions;
* Memorandum of Understandings between stakeholders;
* Warranty documentation; and
* Any other documents and/or tests required by Main Roads specification(s) (<https://www.mainroads.wa.gov.au/BuildingRoads/TenderPrep/Specifications/Pages/specifications.aspx>) or as required by Main Roads Asset Manager.

## Submitting Handover Documentation

Electronic copies of handover documentation shall be provided to the mailbox [ElectHandover@mainroads.wa.gov.au](mailto:ElectHandover@mainroads.wa.gov.au)

Documentation provided prior to formal request for handover shall have a documentation cover sheet – refer Appendix 4 of the Electrical and ITS Asset Drawing and Data Requirements Procedure referenced at the end of this procedure.

Final technology vendor Installation, Operation and Maintenance manual and Manufacturers Data Report hard copies can be posted to the Main Roads Head Office attention of the Principal Electrical Standards Engineer.

The appointed Inspector shall contact the Electrical Asset Management Systems Management team to obtain a TRIM location for the documentation. This TRIM location having been created at the time of the initial asset number request.

## Review of Handover Documentation

EAM staff, including engineers, inspectors or external experts as necessary, will undertake review. For simple installations, the appointed Inspector only may review as part of field inspection activities.

If errors or omissions are identified the Project Manager will develop an action plan for the rectification of these issues which will be agreed with the Inspector prior to implementation.

## Field Inspection

Once the Project Manager has agreed to the field inspection criteria, field inspection against these criteria will be undertaken. The findings of the inspection will be agreed with the Project Manager and non-conformances noted. The Project Manager is responsible to prepare an action plan for the rectification of these issues which will be agreed with the Inspector prior to implementation. The Project Manager may choose to delegate this responsibility to a senior electrical project representative.

## Submission of Request for Handover

Formal request for handover shall be made on the Request to Handover form referenced at the end of this procedure. A separate Request to Handover form is required for each asset.

A separate document cover sheet is not required when submitting documents with the Handover form.

## Submission of Handover Recommendation

The allocated Inspector will need to make a decision as to whether the asset should:

1. be unconditionally accepted;
2. be unconditionally accepted, subject to registering legacy safety issues;
3. be conditionally accepted, subject to the use of retention monies for rectification; or
4. not be accepted.

In order to give effect to a handover the Electrical Asset Handover Recommendation form referenced at the end of this procedure needs to be completed.

The form is submitted via recommendation of the Electrical Compliance Manager to the Principal Electrical Standards Engineer for approval.

## Acceptance of Asset

Once the Inspector receives the completed form back, written advice of acceptance is provided by the Inspector to the Project Manager.

A copy of the form and final handover documentation is also provided by the Inspector for the updating of SPARKS. This documentation is submitted to the e-mail address [ElectAssetUpdates@mainroads.wa.gov.au](mailto:ElectAssetUpdates@mainroads.wa.gov.au)

# References and related Documents

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| --- | --- |
| **Document Number** | **Description** |
| D17#748571 | Handover of Electrical and ITS Assets Procedure |
| D17#584546 | EAM Technical Query/Request for Information Form |
| D17#731818 | EAM Technical Query/Request for Information Procedure |
| D17#786208 | Electrical and ITS Asset Drawing and Data Requirements Policy |
| D17#877844 | Electrical and ITS Asset Drawing and Data Requirements Procedure |
| 67-08-1 | As Constructed Drawings Guidelines Document |
| D17#641495 | Request to Commission Electrical Asset |
| D17#641494 | Asset Removal Request |
| D17#281588 | Request to Handover Electrical Asset |
| D16#358075 | Electrical Asset Number Request |
| D17#708814 | Asset Data Requirements List |
| D12#66462 | Main Roads Electronic Data Standards |
| D18#960590 | Electrical Asset Handover Recommendation |