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OpenRoads Design Standards

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Amendments

Revision Number	Revision Date	Description of Key Changes	Section / Page No.
1D	15-Dec-2020	Updated Corridor Template document	All
1E	11-Feb-2021	Added "MRWA How to Documents" zip file	All
1F	20-May-2021	Added MRWA Barrier Marking and MRWA Curve Widening documents	All
1G	10-Sep-2021	Updated Corridor Template document	All
1H	08-Feb-2022	Genio replaced with LandXML.	All
1I	05-Jan-2023	Updated MRWA_Design.itl, MRWA Feature Definitions, MRWA How to Documents	All
1J	08-Feb-2024	Updated MRWA_Design.itl, MRWA Feature Definitions, MRWA How to Documents, MRWA Feature Geocoordinate Data, MRWA Sheet Borders, MRWA Sheet Seeds and MRWA Drainage and Utilities Feature Definitions.dgnlib	All
1K	05-Sep-2024	Updated Corridor Template and MRWA Feature Definitions.	All
1L	10-Sep-2024	New PDF format incorporated.	All

1 INTRODUCTION

This guideline defines Main Roads WA preferred practice along with naming conventions for all survey, mapping and design data used or developed for OpenRoads projects undertaken for Main Roads WA.

2 HELP

The OpenRoads **Help** includes an extensive library of learning modules and videos.

In addition, How to Documents are available below under the heading Downloads.

3 FILE FORMATS

Microstation DGN is the general format used for the supply and transfer of OpenRoads data.

OpenRoads compatible LandXML is the preferred format for exporting geometry from OpenRoads for construction set-out or to other design software packages.

4 FILE NAMING CONVENTION

Logical file names in conjunction with a suitable metadata statement should be used to provide sufficient information to clearly identify the data.

5 DESIGN MODEL (DGN) NAMING

Naming conventions for typical design models should include Type, Name and Grid used ie:

Terrain Rowley PCG94, Alignment Rowley PCG94, Corridor Rowley PCG94.

6 CORRIDOR TEMPLATES

Corridor templates should be given a meaningful name according to the template purpose ie: Dual Carriageway Kerbed.

Template component names should reflect the component material ie: Basecourse.

Template point names used shall be as per the supplied **ANZ** or **MRWA point name list**.

7 WORKSPACE

The **MRWA Design** Workspace is provided as part of the installed ANZ Dataset and should be used when doing work for Main Roads WA.

Where required updated versions of workspace files are available for download on this page.

8 WORKSET

This is a project level workspace where project dgn's and project specific standards are located.

Included in the supplied Workset is _MRWA Project Template.

It is suggested that this template be used when setting up a specific project.

9 PROJECT PRACTICES

9.1 Project Directory Structure

It is recommended that separate design files (dgn's) be used for each design component, for example Survey, Alignment, Corridor, Drainage etc. Referencing is used extensively.

The supplied _MRWA Project Template contains a suggested directory structure.

9.2 Coordinate System

The correct project coordinate system should be assigned to dgn's created, this will enable transformations on the fly when referencing in data in another coordinate system.

9.3 Feature Definitions

The supplied **ANZ and MRWA feature definitions** shall be used exclusively for Main Roads WA projects.

9.4 Design Element Naming

Design elements such as alignments, corridors and other components should be given meaningful names such as MC01 and MC01_Corridor etc.

Naming of design elements allows them to be easily identified in OpenRoads explorer.

9.5 Design Intent and Control Description

It is recommended that corridor controls be in a separate dgn and referenced to the corridor. Descriptive text on a construction layer can be used to describe the design intent between chainages such as "point control widening 3% crossfall".

Including descriptive text on a non-plot level enables reviewers and other designers to determine what design controls have been applied.

10 DRAWINGS AND PRESENTATION

Plans, profiles, and cross section drawings are referenced to the design model to enable design changes to update the drawings automatically therefore this link must be maintained.

Drawing presentation is based on the MRWA sheet seeds and annotations provided in the ANZ and MRWA workspaces provided.

For general drawing presentation refer to Main Roads WA on-line [Presentation drawings](#).

Note: MRWA accepts the use of Arial Narrow fonts as used in the ANZ workspace annotation.

11 OPENROADS PROJECT DELIVERABLES

Typical project deliverables should include:

- All DGN design files such as corridors, terrain, alignments, and other design dependencies.
- All DGN drawing files such as plan profiles and cross sections.
- Exported LandXML file containing all design geometry features.
- All Open Roads generated reports such as set-out, quantities and volumes.

12 ALTERNATIVE SOFTWARE 3D DESIGN DELIVERABLES (12D, CIVIL 3D)

- Exported LandXML file containing all design geometry compatible with OpenRoads.
- Reports in word or excel format.
- Native 12D - project files and design dependencies.
- Native Civil 3D - DWG design files and design dependencies.

13 DOWNLOADS

Below are links to downloadable MRWA standard files:

The files below are updated or additional to the MRWA workspace provided with the latest version of OpenRoads.

- [Corridor Template](#)
- [Export Genio](#)
- [MRWA Barrier Marking](#)
- [MRWA Curve Widening](#)
- [MRWA Feature Definitions](#)
- [MRWA Design Standards](#)
- [MRWA GeoCoordinate Data](#)
- [MRWA How to Documents](#)
- [MRWA Pen Tables](#)
- [MRWA Sheet Borders](#)
- [MRWA Sheet Seeds](#)
- [MRWA Subsurface Utilities](#)
- [MRWA Superelevation](#)
- [Sample OpenRoads Drawings](#)
- [Survey Import](#)