Road & Traffic Engineering Branch
Survey & Mapping Section
Project Zones
Presentation Overview

• PROJECT ZONES
  – National Project zones.
  – Why use project zones?
  – What are they?
  – Where are they located?
  – How are they created?
  – Examples
  – Summary
National Project Zones

• Before 1st Jan 2000
  AMG 84 - Easting, Northing
  AGD 84 – Lat, Longs

• Currently
  MGA 94 – Easting, Northing
  GDA 94 – Lat, Longs
Why do we need Project Zones?

• The earth is a curved surface and all survey data is collected or set out on the earth.
• All calculations for design and construction set out assume a plane (flat) surface.
• Project Zones are introduced to provide a mathematical relationship between the plane surface and the curved earth.
Project Zones Explained

Project Zone

Spheroid

AMG 84/GDA 94

Ground Surface
Benefits of Local Project Zones

- Provides a flat surface to design on
- Saves on construction set out costs. No additional angle and distance corrections need to be made.
- Simplifies mathematical calculations for design.
- Compatible with other data sets.
Project Zones on the AGD 84 & GDA 94

• There is a DIFFERENCE between local project zones which have been defined from different spheroids.
• Project Zones in GDA 94 are noted with a ‘94’ after the name.
  – ie PCG v PCG94
• Co-ordinates may look similar – BEWARE!!
• All NEW projects are to be completed using Local GDA 94 Project Zones
Where are the AMG 84 Local Project Zones?
Where are the GDA 94 Local Project Zones?
Project Zone: HUG (AGD)

Project Zone: HUG94 (GDA)

Location

<table>
<thead>
<tr>
<th>Zone Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUG</td>
<td>DARLING RANGE GRID, ABOUT EASTERN EDGE OF RIVER TO LAKES TOFF</td>
</tr>
</tbody>
</table>

Officer Name: G. Thursby

Date of creation: 17/6/99
Central scale factor: 1.0000000000
Central Meridian: 110°10'0"
False Easting: 800000
False Northing: 4000000
Spheroidal Height: 588
Minimum latitude: -32°59'56"
Maximum latitude: -10°1'24"
Minimum longitude: 113°36'33"
Maximum longitude: 106°29'35"
Height Left Min: 150.8
Height Right Min: 200.8
Max: 1492

Location

<table>
<thead>
<tr>
<th>Zone Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUG94</td>
<td>East of Darling Range</td>
</tr>
</tbody>
</table>

Officer Name: G. Thursby

Date of creation: 30/6/101
Central scale factor: 1.0000000000
Central Meridian: 110°14'
False Easting: 500000
False Northing: 4000000
Spheroidal Height: 588
Minimum latitude: -35°49'33"
Maximum latitude: -10°1'24"
Minimum longitude: 113°36'33"
Maximum longitude: 106°29'35"
Height Left Min: 202.8
Height Right Min: 311.0
Max: 283.9
How are Local Project Zones Created?

- On request to Survey & Mapping Section.
- Created based on the height at the centre of the zones.
- Zone width and length is determined by the height change from the zone centre.
- Typically the height difference between the CM and limits of Project Zone is 60 m.
Metadata Requirements

- All survey models/information must include Project Zone name. Refer Data Management Guidelines on Metadata and Naming Conventions. (RTEM)
- Design models and drawings are to include Project Zone name. Guidelines for Design Model and String Naming will be amended to reflect this. (RTEM)
FAQ’s?

- What co-ordinate system is my GPS in?
- How do I transform co-ordinates from the curved surface to the plane surface?
- What happens when my project crosses more than 1 project zone?
Project Zones Summary

- All MR road design and construction set out must be completed on a Local Project Zone.
- Contact the Survey and Mapping Section for the details of the Local Project Zone relevant to your project.
- All Local Project Zone parameters are available via RTEM.
Questions?