Considering whole of life costs
Reduce crash risk

Risk mitigation

- Sight distance
- Curve quality
- Lane width
- Sealed shoulder width
- Wide centre lines
- Well drained wearing course
Question

Is a designer required to follow the Austroads Design Guidelines or your States Design Guidelines to the tee?

Curve quality
Same but different?

Extended design domain ++
Think outside the guidelines

or

SSD

Some examples

Cross section
Some examples

Cross section
Clear zone, roadside hazards, lane and shoulder width

Check vehicle or design vehicle?
Cross section

What are the design attributes contributing to risk?

- Culvert
- Leads into culvert drop-off
- Narrow shoulder
- No Verge
- Non recoverable slope

- Narrow shoulder
- Large drop
Safety risk

Based on the existing design elements the star rating score is 34.1

Group Exercise

Using the iRAP demonstrator create an alternate design for the floodway treatment (approaches to culvert)

Non negotiables are as follows;
- AADT – 4,000
- No. of lanes – 1 (each direction)
- Upgrade cost – medium
- Intersection type – none
- Speed – 110 km/h (posted and operating)
- Roadside on driver side (forward facing in photo) is None 5-10m

Note: a traversable batter slope is classified as None in the demonstrator
Alternate design

Suitable design?
Option 1 – Wide shoulders and gentle slope?
Option 2 – Wide shoulders and guard rail?

A design solution (option 1)
Group Exercise 7
(Refer to handout and following slides)

Exercise 7 – Reduce the SRS

Reduce the Star Rating Score (SRS) of the following alignment and cross section

Consider alternate cross section designs for Sections 3 and 4

Select a design that will reduce the SRS
Alignment and cross section

Existing horizontal curve alignment and cross section

Section 3 (Radius 240 m)

Existing SRS – Section 3

Section 3 (Radius 240 m)

SRS 54.5

SRS 58.9
Existing SRS – Section 4

Section 4 (Radius 440m)

Alternative options

Login to ViDA Demonstrator enter the alignment and cross section details outlined on your worksheet.

Develop at least one alternate design for Section 3 and Section 4
Group Exercise 7

Using the iRAP demonstrator create an alternate design

Non negotiables are as follows;
• AADT – 4,000 (motorcycle 7%)
• No. of lanes – 1 (each direction)
• Upgrade cost – medium
• Intersection type – none
• Speed – 100 km/h (posted and operating)

Note: a traversable batter slope is classified as None in the demonstrator

Alternate options

<table>
<thead>
<tr>
<th>Option</th>
<th>Cross section</th>
<th>SRS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Roadside</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shoulder (m)</td>
<td>Lane (m)</td>
</tr>
<tr>
<td>Existing</td>
<td>Aggressive rock face, non-traversable slope</td>
<td>2.5</td>
</tr>
<tr>
<td>1</td>
<td>Aggressive rock face, non-traversable slope</td>
<td>1 – 2.4</td>
</tr>
<tr>
<td>2</td>
<td>MC friendly barrier</td>
<td>1 – 2.4</td>
</tr>
<tr>
<td>3</td>
<td>MC friendly barrier</td>
<td>&gt; 2.4</td>
</tr>
<tr>
<td>4</td>
<td>MC friendly barrier</td>
<td>&gt; 2.4</td>
</tr>
<tr>
<td>5</td>
<td>MC friendly barrier</td>
<td>&gt; 2.4</td>
</tr>
</tbody>
</table>

Notes:
• Option 1 has no change to roadside hazards
• All options include shoulder rumble strips
# Alternate options

## Section 4

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Notes:
- Option 1 has no change to roadside hazards
- All options include shoulder rumble strips

QUESTIONS?
SHAPING OUR TRANSPORT FUTURE