Roma Taroom Road
Advancing design and construction practice for low volume roads
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Australia
Queensland
South West Region Map
Portugal
Ulcer

- Oesophagus
- Lower oesophageal sphincter
- Duodenal ulcer
- Duodenum
- Stomach
- Gastric (or stomach) ulcer
Australian research
1985 - 1987

• Professor Robin Warren and Barry Marshall
• Studied the use of antibiotics as treatment for peptic ulcer.
• Eradicated helicobacter pylori bacteria
• Awarded Nobel Prize
• Evidence based approach
Application

- Engineers can follow an “evidence based approach” - which is now accepted practice in medicine.
- However this may challenge our paradigms
An evidence based approach

- We need an evidence approach for road design.
- Otherwise we risk over-investment in some design elements, at the expense of others.
- This approach can optimize value for road users.
Changing Crest standards over time
Crest Design Standards Have Increased Over Time.

Current stopping sight methodology assumes that ALL of the following conditions apply:

- In a sports car with half worn tyres
- Travelling at the 85th percentile speed (approx 10km over speed limit)
- A driver of small-average height
- Having to stop for a small object that is difficult to distinguish anyway
- On a wet road with a degree of Surface polishing
- With slightly below average braking control capability
- Limit awareness of speed, consequences of speed And/or poor perception reaction time
Object Hazard

- Accidents involving small objects are extremely rare events and almost never results in injuries to vehicle occupants. (Fambro et al 1997 p 75)
- However designers must mitigate for unexpected hazards over crests.
Figure 1 Map of Roma - Taroom Road Displaying Traffic Volumes and Sealed and Unsealed Sections

Bungil Shire
Unsealed 4.55km
Sealed 40.25km

Taroom Shire
Unsealed 51.83km
Sealed 32.89km

Note: Historical data only available for sites 43030 & 45050 so the other sites were assessed in 2005. ADT values shown on map are derived from data collected in 2005.
Coal Seam Gas

Major Queensland coal basins with CSG potential
Background to new work

- Region allocated $30M to provide access to proposed new power station.
- Value management workshop on how to spend money
- Scope changed to focus on sealing the link
- Strong desire to maximise sealed length
- Access for school children and to markets
How to get the best outcome for $30M?

- Focus on 8m seal to cater for double road-trains
- Adopt existing minimal drainage
- Adopt minimum standard for crests – subject to use of cut material as pavement
Result
How did Roma - Taroom Advance Design & Construction?

- Helped advance / refine use of EDD –
  - Link like Roma – Taroom vs local road
  - Better appreciation of trade-off between depth of cut and formation / seal width for optimum combination of stopping & manoeuvring capability . .
  - Especially in sodic soil areas
- EDD now recognised nationally as appropriate standard for initial seal projects
- New national “greenfield” SD criteria
How did Roma - Taroom Advance Design & Construction?

- Reinforced what known in earlier era but largely lost –
  - Use of local materials e.g. pavement . . In turn gave better vertical alignment
  - Making optimum use of materials . . e.g. some crests cut down or widened more at minimal extra cost
Conclusion

- Low volume roads have to be low cost roads
- Roma – Taroom shows low cost does not have to mean less safe
- The EDD sections will stand the test of time...
  - Lower standard but **Not** low standard
- Great learning experience for all parties
- Parties prepared to challenge each other and established thinking... Still doing so!