The Strategic Local Government Asset Assessment Project

Webinar 5
Interpreting Engineering Reports for Access Decision Making

Webinar Topics

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1	About the Strategic Local Government Asset Assessment Project
2	Basic Vehicle/ Bridge Interactions
3	Bridge Assessment Framework
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5	Interpreting Engineering Reports for Access Decision Making
6	Vehicles and Route Assessment
7	Applying Conditions for Heavy Vehicle Access
8	NHVR Portal – Digital Asset Management
9	Pre-approvals for key routes

Webinar Presenters

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11:00 - 11:05	Welcome	Todd Wellard
11:05 - 11:45	Interpreting Engineering Reports for Access Decision Making	Dr Neal Lake
11:50 - 12:00	QNA	All

Session format

- QnA (end and in chat)
- Please mute microphones
- Session recorded and will be emailed with slides
- Please watch in order as designed to build on knowledge

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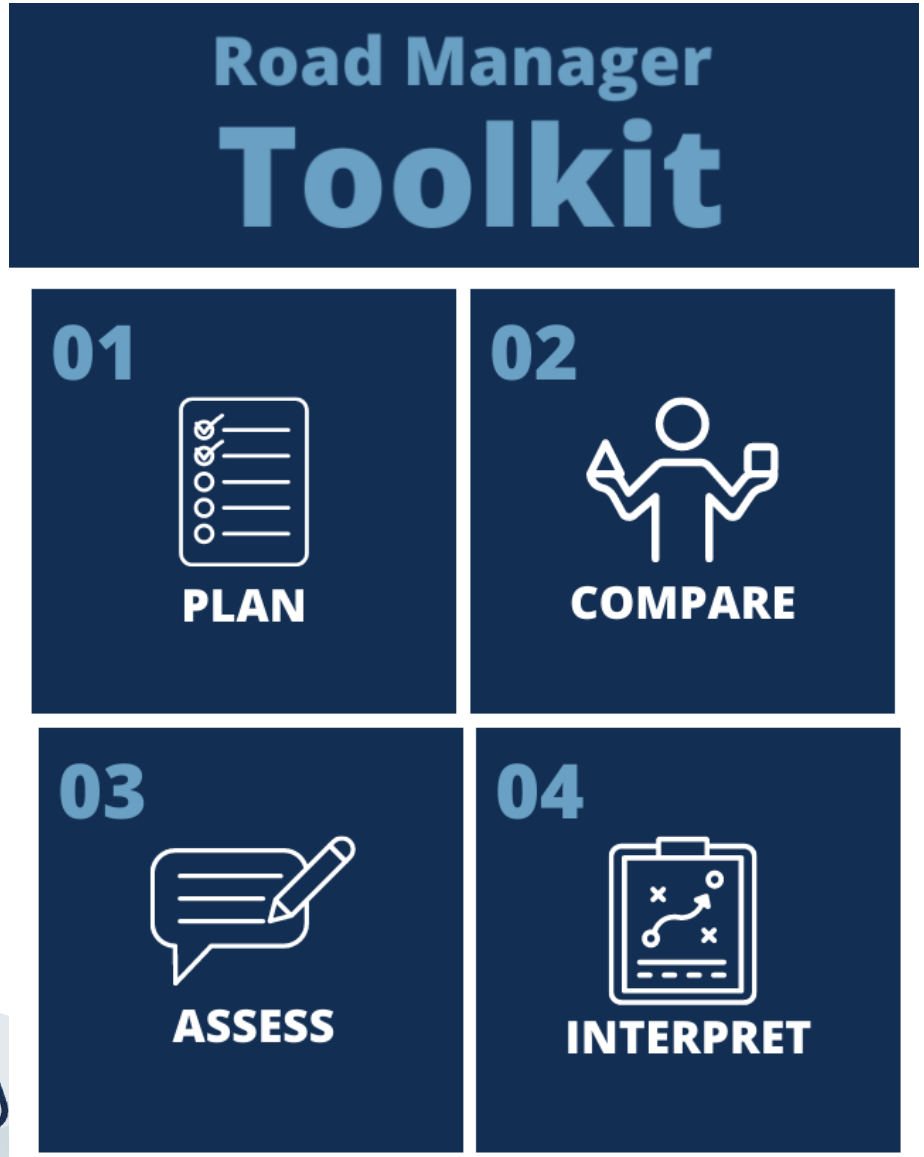
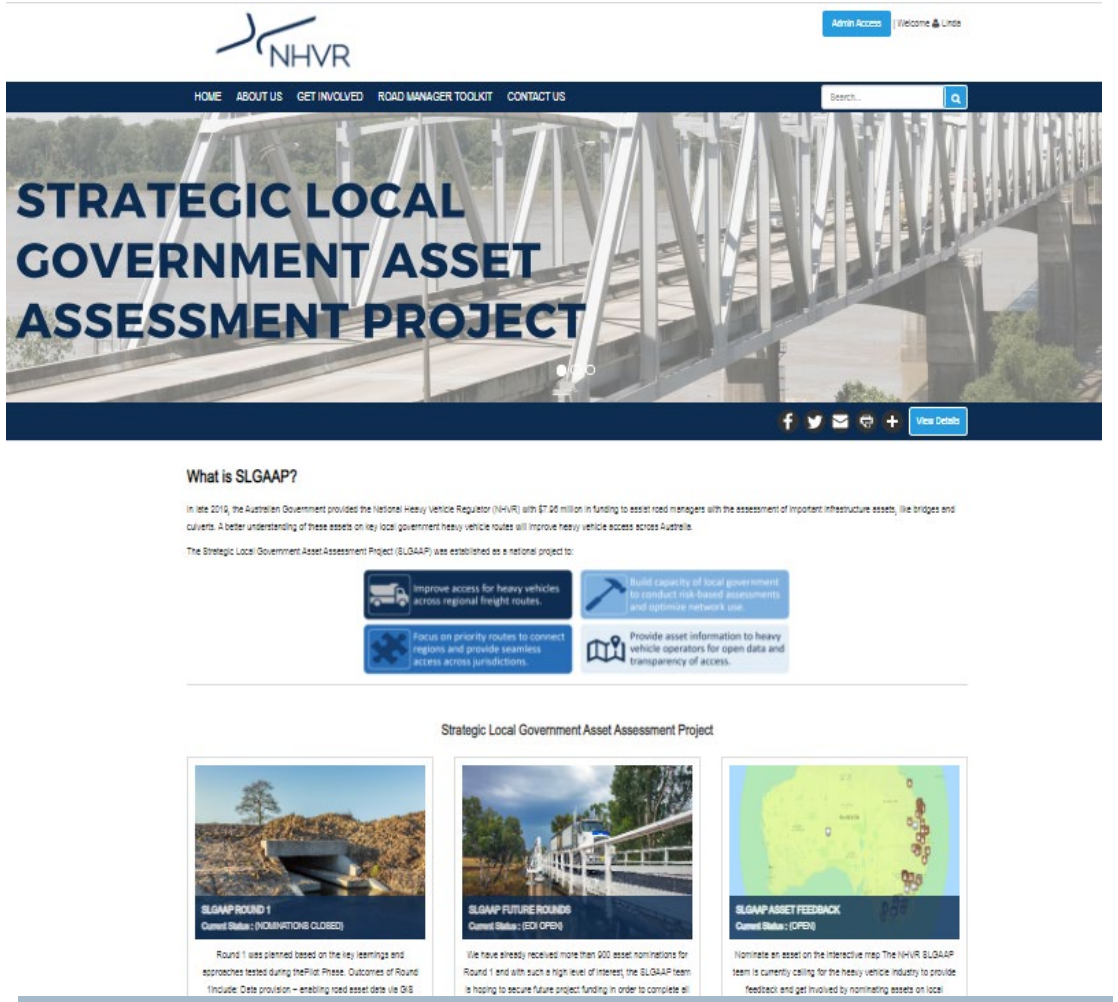
SLGAAP - Stay connected





Visit the SLGAAP Website to keep updated with all of the project news and progress.
https://nhvr.engagementhub.com.au
E: roadassetproject@nhvr.gov.au

Interpreting Engineering Reports for Access Decision Making

Dr Neal Lake

Interpreting Engineering Reports for Access Decision Making

Key outcomes from today

- What to look for in Tier 1, 2 and 3 assessments
- Determining what reference vehicles can be used for future Tier 1 assessments
- Superseding of assessments
- Critically evaluating methodologies /assumptions / results
- What to be specifying in supply contracts for bridge assessment (Tier 2/3)

Where to start

- Review the information
  - What Tier of assessment has been conducted?
  - Was a Level 2 inspection considered as part of the assessment?
  - Extent of reporting
- Determine objectives
  - What are you trying to achieve from reviewing the Assessment report
- Critically review information
  - Review methodology
  - Determine if there is sufficient information for what you are trying to achieve

Where to start

- A key objective should always be determining if there is enough information to determine suitable reference vehicles for Tier 1 assessment
- All Local road authorities should be working towards being able to undertake Tier 1 assessment to inform heavy vehicle access decision making.

Tier 1 Assessment

- What reference vehicle was used?
- Were LLF and DLAs applied in any comparison undertaken
- A Tier 1 assessment of a range of vehicles does not improve the reference vehicle (just a Tier 1 comparison)
  - New applications: Find reference vehicles previously used and conduct Tier 1 assessment
    - Should not look to use the report solely to make new access decisions.

Tier 1 Assessment

Critical Thinking: Key Points

- Has % reference vehicle been specified (was multiple presence considered in it's development)
- In lane, straddling lane
- Are LLF and DLA specified for reference vehicle
- Are Factors relevant for application vehicle
- If no factors were used then is the comparison appropriate?
- If the result is substandard, is there limitation that may affect the accuracy, are there any control measure that could be used. Is the reference vehicle/s suitable for these control measures?

Tier 2 Assessment

- Tier 2 assessments should be focused on assessing vehicles that can become future reference vehicles for Tier 1 assessment
- Critical Thinking: Key Points
  - To AS 5100
  - Marked Lanes
  - Must consider associated lanes
  - Same vehicle in all lanes (some exceptions when considering OSOM straddling lane vehicles)
  - Is the RF (Rating Factor) determined as an outcome of the investigation
  - Assumptions and factors must be presented

All factors and assumptions to AS 5100 is NOT! Reporting assumptions and often renders the investigation useless!!

Tier 3 Assessment

- Tier 3 is used to improve Tier 2 assessment or confirm the suitability of previously identified reference vehicles. => better reference vehicle => supersedes previous Tier 1 assessment

Critical Thinking: Key Points

- Has the Tier 3 been used as a basis to improve Tier 2 assessment
- What additional information does the Tier 3 provide
- Have assumptions and the basis of assessment been reported

Determining what reference vehicles can be used for future Tier 1 assessments

- What tier of assessment was the focus of the engineering investigation?
- If Tier 2 then what is the rating factor (RF) => % reference vehicle => Tier 1 assessment
- If Tier 3 what was the focus of the investigation
  - Did it contribute to improving Tier 2 capacity assessment => % reference vehicle => Tier 1 assessment
  - Or does it just say structure is ok for XYZ vehicle? What was the basis?
- If Tier 1 what was the reference vehicle used
  - Critical thinking: Was the reference vehicle suitable (was it the best available)
    - Vehicle Length compared to span
    - Ground contact width
    - Lateral Position
      - Straddling
      - In lane

Determining what reference vehicles can be used for future Tier 1 assessments

- Are the critical assumptions reported to allow Tier 1 assessment to be conducted
  - Vehicle axle masses and spacings
  - Load Factors
  - DLA
  - Lane positioning, multiple presence of vehicles and factors
  - Modelling assumptions

Superseding of assessments

- Tier 2 assessments should be focused on assessing future reference vehicles for Tier 1 assessment
- This typically supersedes reference vehicle used for previous Tier 1 results so by default then superseded preceding Tier 1 assessment.

- A Tier 1 assessment of a range of vehicle does not improve the reference vehicle (just a Tier 1 comparison)
  - New applications: Find reference vehicles previously used and conduct Tier 1 assessment

Critically evaluating methodologies/assumptions/results

- Need to develop your understanding
- Get an experience second opinion
- Make sure the process , parameters and assumptions are accurately recorded
  - NHVR SLGAAP templates are a good start.

- It is important to try to understand the context of the decision making process
  - limitations in the analysis
  - limitations in the original design
  - Using reference vehicles considering their limitations e.g. MS18 with blade piers
  - limitation of drawings
  - Probabilistic nature of loads (we are dealing with safety margins not failure points)
  - Certainty around loading compliance

Critically evaluating methodologies/assumptions/results

- What does a sub standard result mean
  - It is just one component of the decision making process
  - Need to review results in light of condition current performance and historical access decisions

- Consider ways of mitigating risk
  - Limiting loading
    - DLA?
    - Live Load?
    - Lateral position of vehicles

What to be specifying in supply contracts for bridge assessment (Tier 2/3)

- To AS 5100.7
  - Marked Lanes
  - Must consider associated lanes (Multiple vehicles)
  - Same vehicle in all lanes
- Vehicle to be assessed
  - Will become future reference vehicles
  - In lane
  - Straddling lane (if relevant for the route)
  - Appropriate length vehicle compared to the span (or specify trailing vehicles)
- Outputs and Formatting
  - Reporting of all factors/modelling assumptions/capacities/load action effects
  - Supply of models
  - Template for reporting results (SLGAAP templates)

Recapping the main points

- What are you trying to achieve with information in the report
- what is the rating factor (RF) => % reference vehicle => Tier 1 assessment
  - Factors
  - Assumptions
- Tier 2 supersedes previous Tier 1 assessment
- Build knowledge, understanding and critical thinking skill
- Understand what needs to be specified for different Tiers of assessment
- Remember always need current Level 2 Inspections to guide access decision making

Further Training

- Overview of heavy vehicle access landscape in Australia
- Understanding the tiers of bridge assessment
- The decision making process for bridge access
- Defining bridge capability
- Critical variables that affect assessment
- Resourcing assessments and getting the most from consultants

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Questions?

Next Webinar
Thursday 22 July

Vehicles and Route Assessment

Register for the rest of the Webinar series here:
https://www.eventbrite.com.au/o/national-heavy-vehicle-regulator-11836541834

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