

Foxground and Berry bypass



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Welcome

Southern suggestion cost review

Question and answer session

19 March 2012

Q & A presentation 19 March 2012

Meeting agenda

- 6.30 Welcome, housekeeping and introductions (Lucy).
- 6.35 Clarifications following last Q & A (Fiona).
- 6.40 Northern alignment working groups – Update (Adam).
- 6.45 Southern suggestion – technical investigation group (Steve)
- 6.50 Presentations from technical investigation group specialists:
- Geotechnical investigations.
 - Flooding and Hydraulics.
 - Bridges.
 - Construction methodology.
 - Cost estimating.
- 7.30 Specialist focus discussions. LCE
- 8.15 Close.

Who is here from the project team?



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Facilitator, Lucy Cole-Edelstein, Straight Talk.

Fiona Court, General Manager, RMS Infrastructure Communication.

Steve Zhivanovich, Project director, Foxground and Berry bypass.

Ron De Rooy, Project manager, Foxground and Berry bypass.

Adam Berry, Project team, RMS.

Carla Brookes, Project communications, RMS.

Jon Williamson, Project manager, AECOM.

Angela Malpass, Project communications, AECOM.

Kerri Hale, Project communications, AECOM.

LCE

- The latest meeting notes of the technical investigation group are on the website.
- The issues that have been raised regarding cost input to the southern suggestion will be uploaded on the website shortly.
- Other images shown here will go onto the website.
- Geotech short summary - on the website
- Cost estimate typical breakdown – on the website
- More meeting notes on the website
- Meeting register

What is community consultation?



Consultation is about:

- Efficiency – getting a clear understanding and improved knowledge
- Equity – a range of values and issues included
- Accountability – transparency and decision making understood
- Effective participation – shared input throughout a study process
- Flexibility – responding to changing circumstances and needs
- Integrity and respect
- Diverse – the range of issues is more important. Consultation is not a vote.
- Cost effective
- Certainty and confidence re the process

Independent internal and external reviewers will ensure that these principles are followed.

These reviewers are:

- An internal RMS review team separate to the technical investigation group and its process.
- An external independent reviewer.

The brief for the reviewers is to test the robustness of the information in the report published by the technical investigation group.

They will come next session.

The reviewers will:

- Have access to any information sources the technical investigation group has used.
- Be able to request meetings with any of the technical investigation group to interrogate and challenge assumptions made.
- Produce their own report on the information contained in the technical investigation group report (for publication on the RMS website).
- To make best use of the time available, the reviewers will be able to attend technical investigation group meetings, community meetings and any other meetings they feel appropriate during the investigation process.

Next: provide information on the project website about who the independent reviewers are and their qualifications.

- Yourself and RMS have found it difficult to get through all the information.
- We are getting feedback that not everyone is able to get their questions addressed – lots of people lots of questions.
- There are many people seeking answers after each meeting, and we still don't get to everyone.
- To try to improve this we're offering specialist focus discussions.
- After the specialist presentations, each technical specialist will staff a station to talk more.
- The aim of this is to let people get the answers they want and they feel are most important to them.

Northern alignment working groups - update

- Berry bridge and northern interchange
 - » First meeting was 7 March, next meeting 2 April.
 - » RMS actions from first....
- North Street precinct
 - » First meeting was 29 February, next meeting 28 March.
 - » RMS actions from first....
- Kangaroo Valley Road interchange/Mark Radium Park/Victoria Street.
 - » First meeting was 8 March, next meeting 29 March.
 - » RMS actions from first....
- Austral Park Road heavy vehicle rest area
 - » First meeting on 27 February, next meeting 16 April
 - » RMS actions from first....

Southern suggestion cost review

Technical Investigation Group

Reviewers – External SMEC; Internal RMS Project Management Office

Road design Flood modelling
AECOM AECOM
RMS

TECHNICAL INVESTIGATION GROUP

Geotechnical studies Structures
AECOM AJURECON

Constructability
PETER STEWART CONSULTING
EVANS & PECK

Indicative route for the southern suggestion:

Road alignment
Structures
Construction Method
Earthworks
Construction Program

**Route
feasibility
strategic
estimate**

Technical specialists from the costing review



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- Henk Buys, Geotechnical Engineer, AECOM.
- David Kennewell, Principal Hydraulic Engineer, AECOM.
- Ken O'Neill, Bridge Design Engineer, Aurecon.
- Peter Stewart, Peter Stewart Consulting, construction engineering.
- Phil Jorgensen, Engineering Estimator, Evans & Peck.

- Geotechnical structures
- Geotechnical investigations
- Bypass options

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Cut Slope and Fill Slopes



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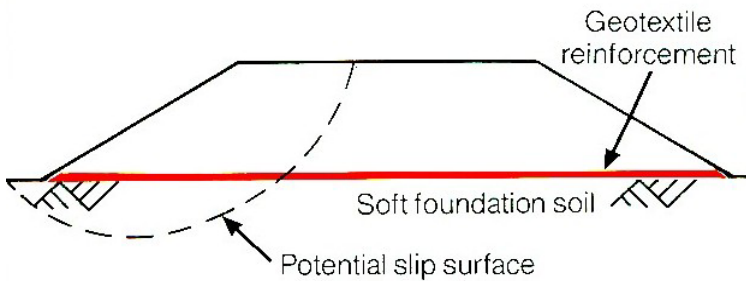


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Fill Embankment



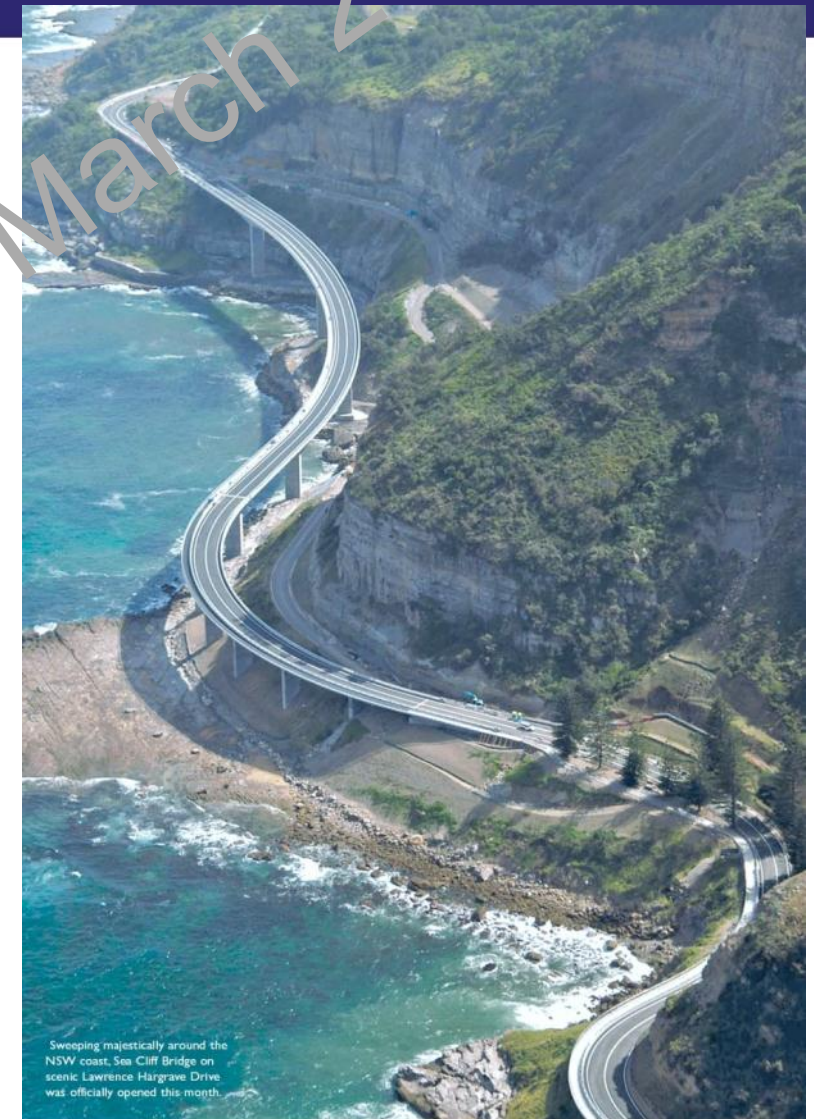
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Bridge / Viaduct



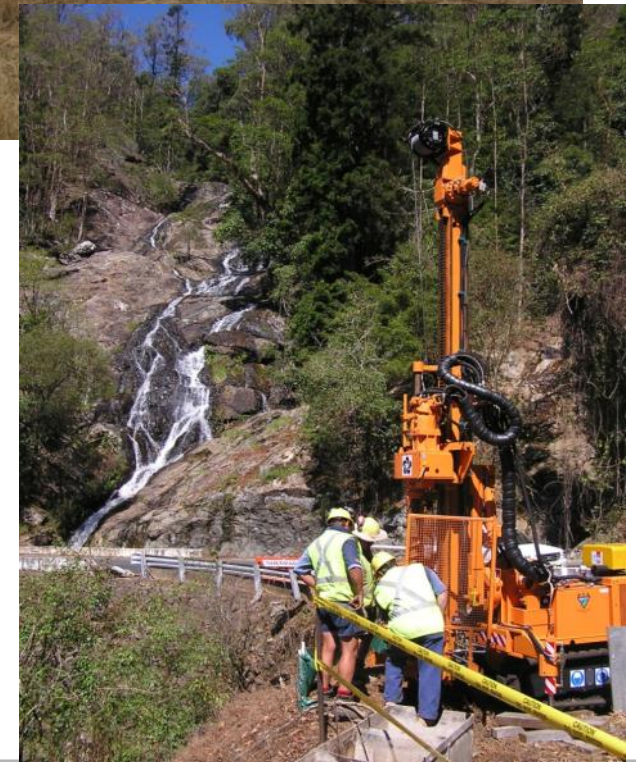
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Field investigations



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Geotechnical Issues

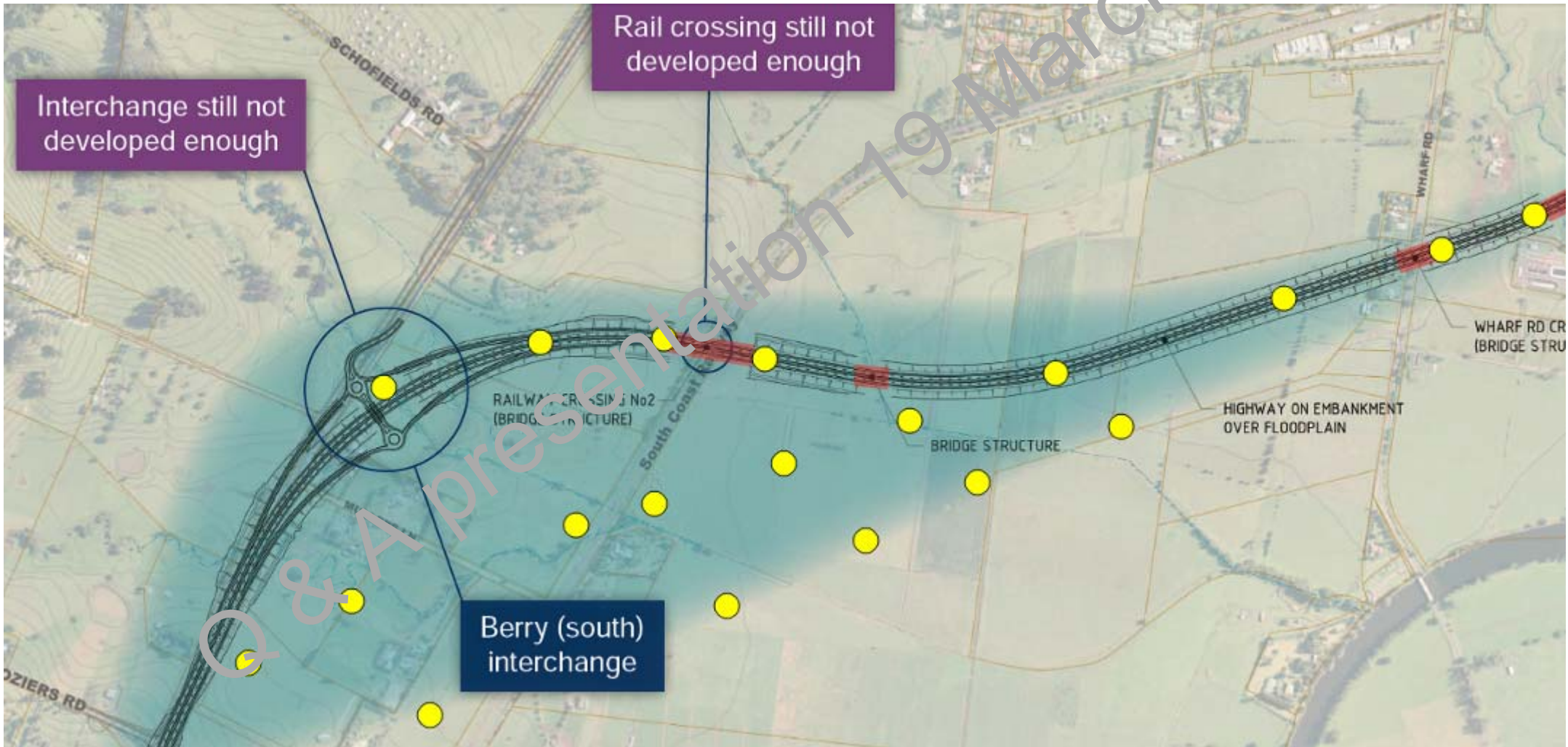


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- Piling through gravel and cobbles
- Construction access over soft ground
- Embankment stability and settlement
- Embankment erosion, scour
- Potential presence of paleogullies along viaduct alignment
- Wedge instability in cut slopes
- Fretting of weathered rock in cuts
- Unsuitable materials below embankments
- Down drag loads on bridge piles
- Lateral loading on piles due to embankment
- Acid sulphate soils



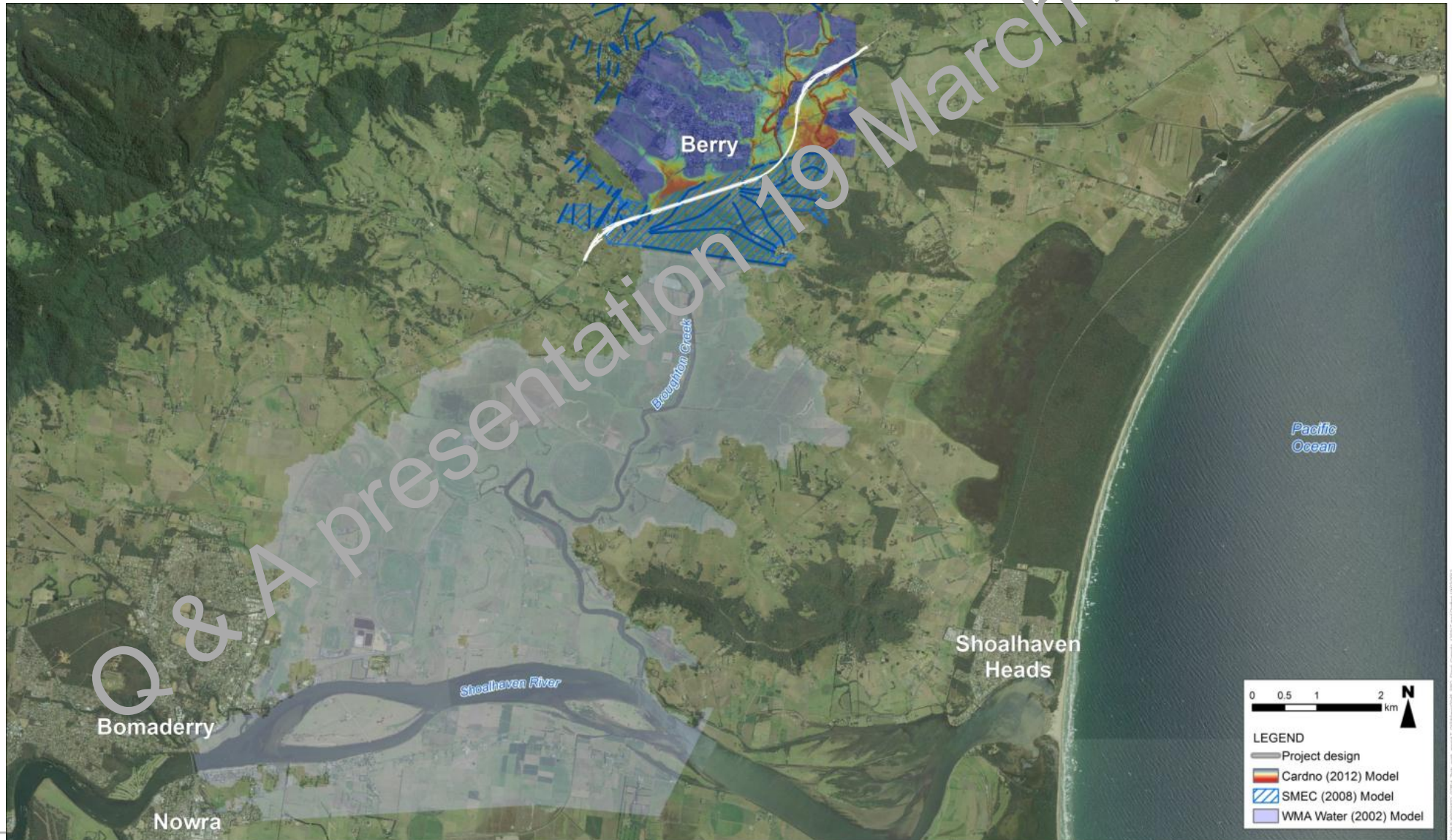
Southern suggestion - detail



Flood investigations



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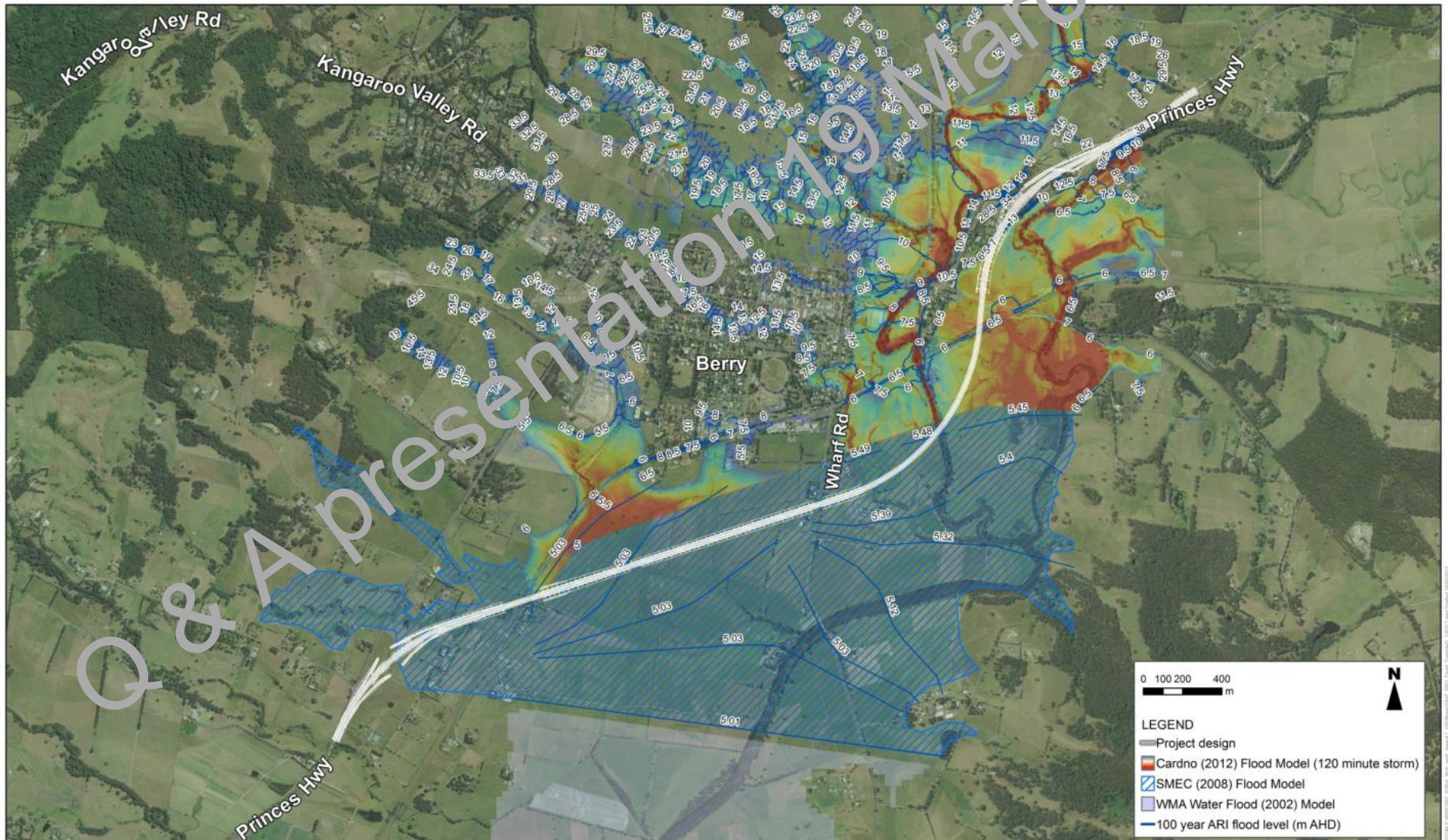
- To maintain the trafficable carriageway above the 1 in 100 year flood. We use the term ARI (average recurrence Interval) to describe flood levels
- To create no significant upstream or downstream flood-related impacts

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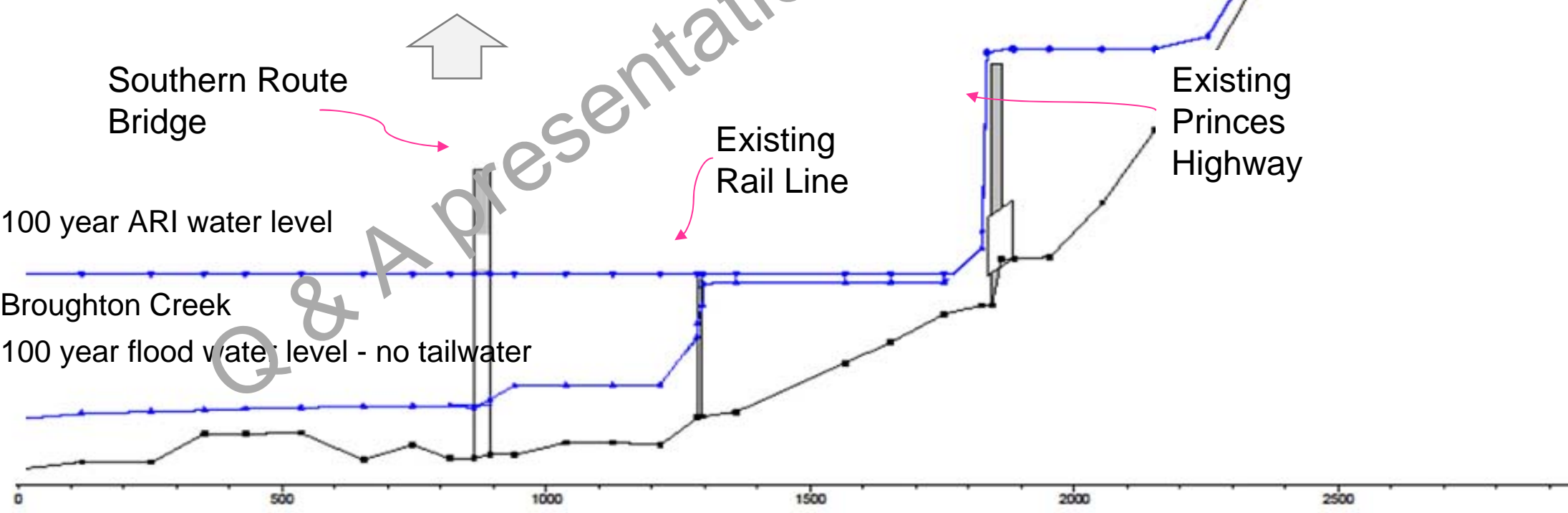
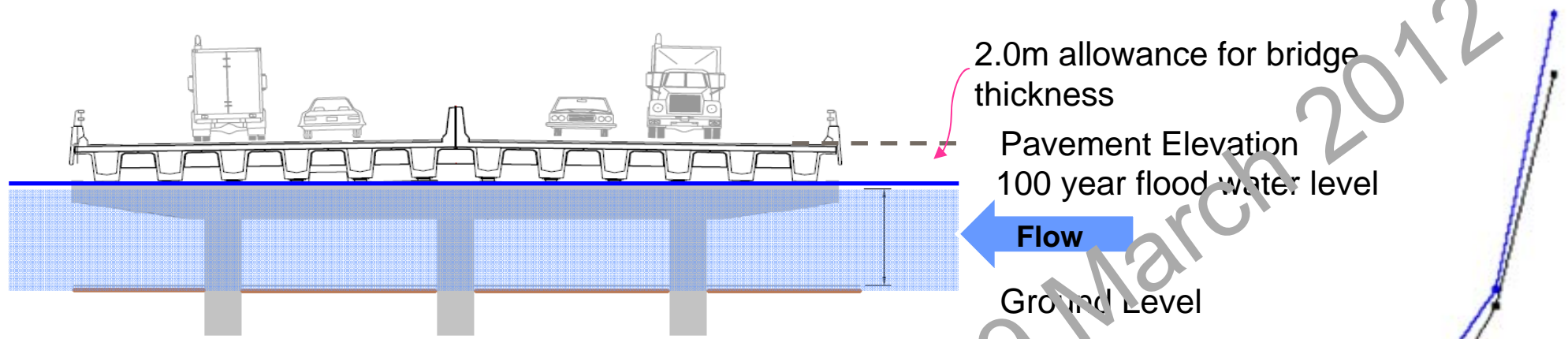
Flood investigations



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Setting of Pavement Elevation - Hitchcocks Lane Creek



Northern preferred route bridges

- Berry Bridge - Approximately 600m long based on flood study
- Kangaroo Valley Road Interchange Bridge

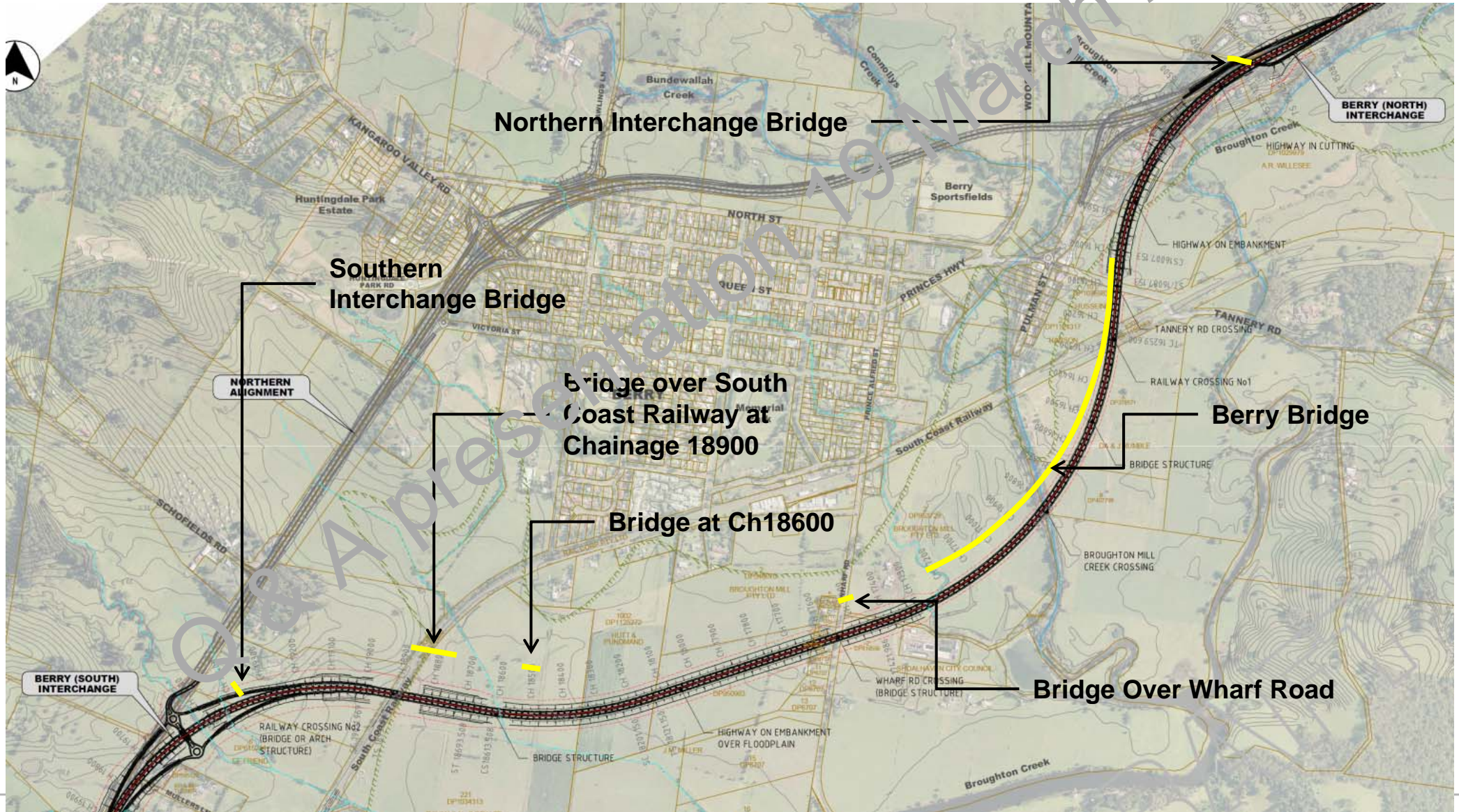
Southern suggestion bridges

- Northern interchange bridge
- Berry Bridge – Approx. 1200 m long based on flood study
- Bridge over Wharf Road at Chainage 17550
- Bridge at Chainage 18600 for waterway channel
- Bridge over South Coast Railway at Chainage 18900
- Southern interchange bridge

Bridges



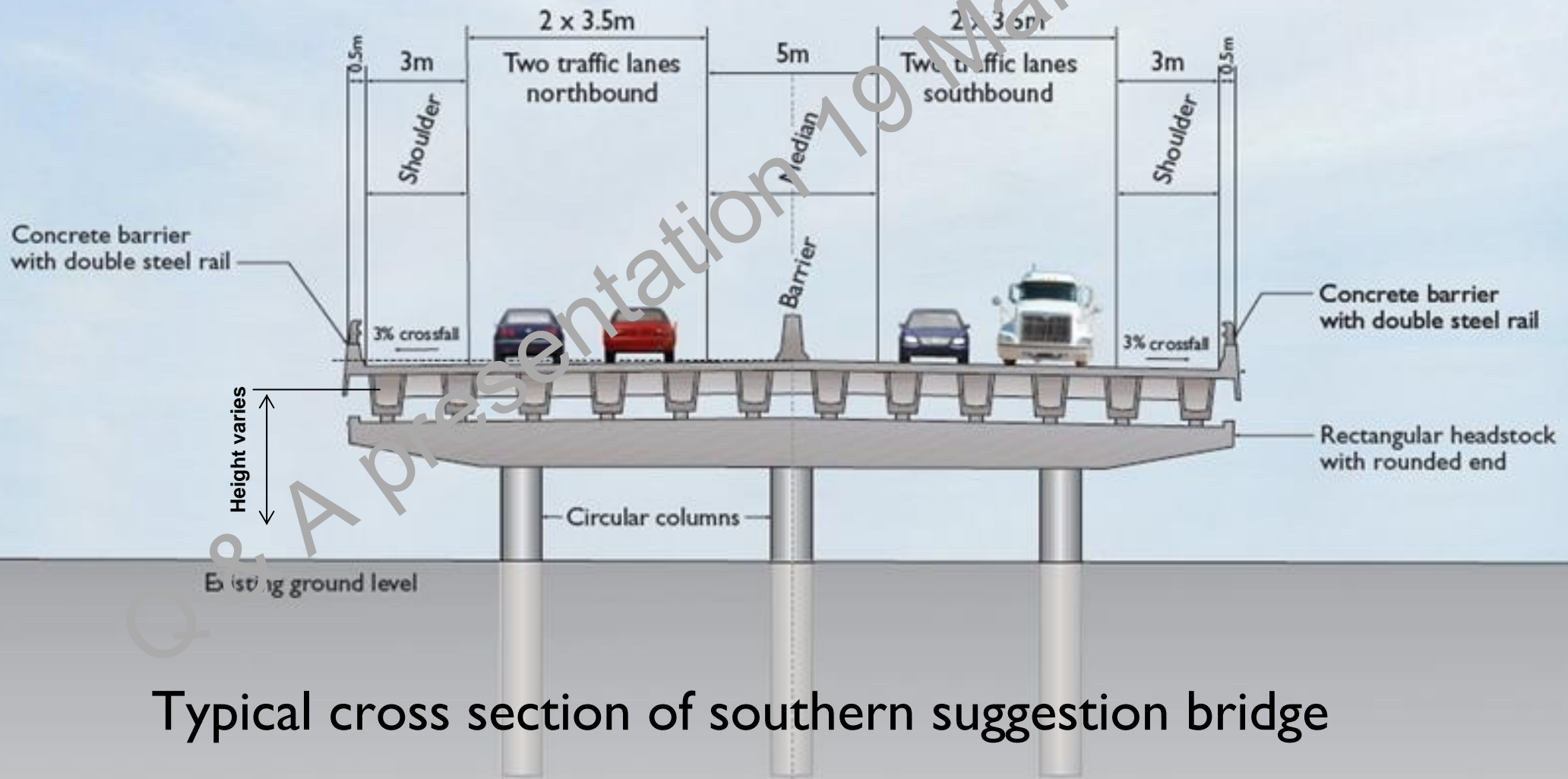
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Bridges



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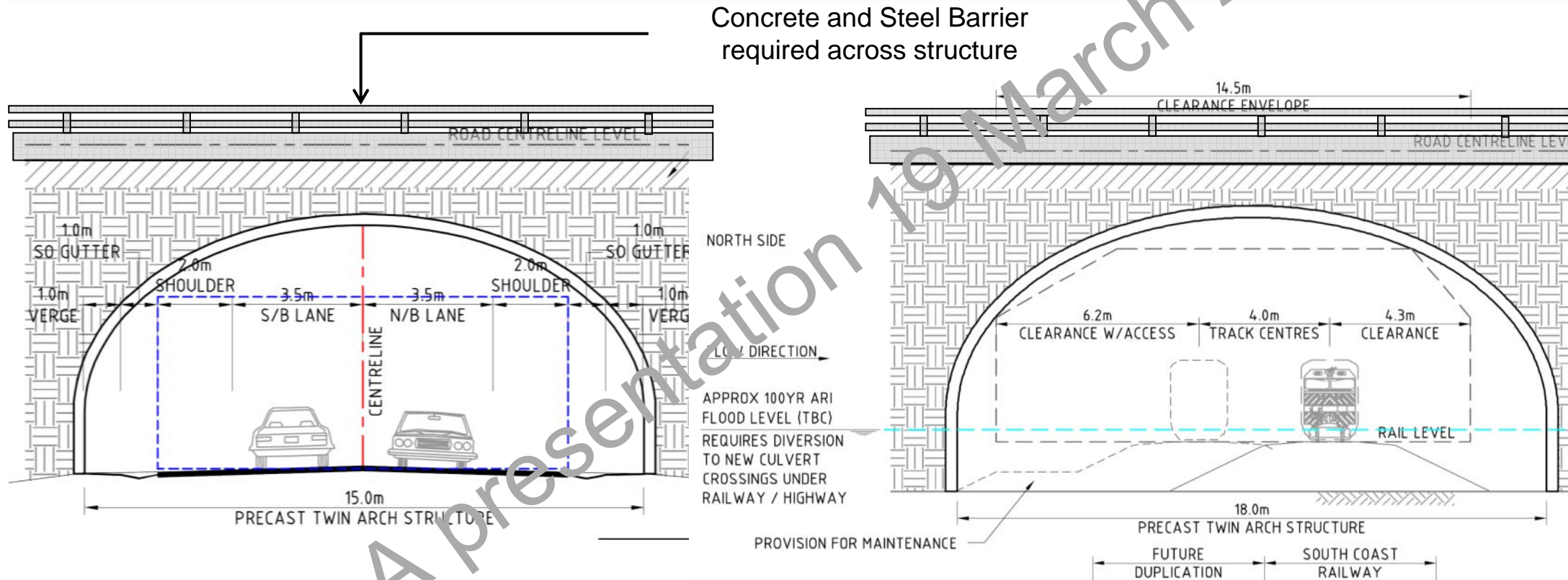


Typical cross section of southern suggestion bridge

Bridges



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Possible arch bridge examples at Wharf Road and South Coast Railway (chainage 18900)

Constructability:
Why is it
important:

- Safety of workers and public
- Cost of construction
- Construction has a high risk profile
- Use of proven construction methods
- Logical efficient sequencing of major activities
- Duration of project
- Impacts on community/businesses/others
- Environmental impacts

- Construction focus is on the approach to activities which contribute substantially to the estimate:

- Earthworks
- Material haulage
- Traffic management
- Structures



The Kempsey Bypass will be a 14.5km dual carriageway highway east of Kempsey.

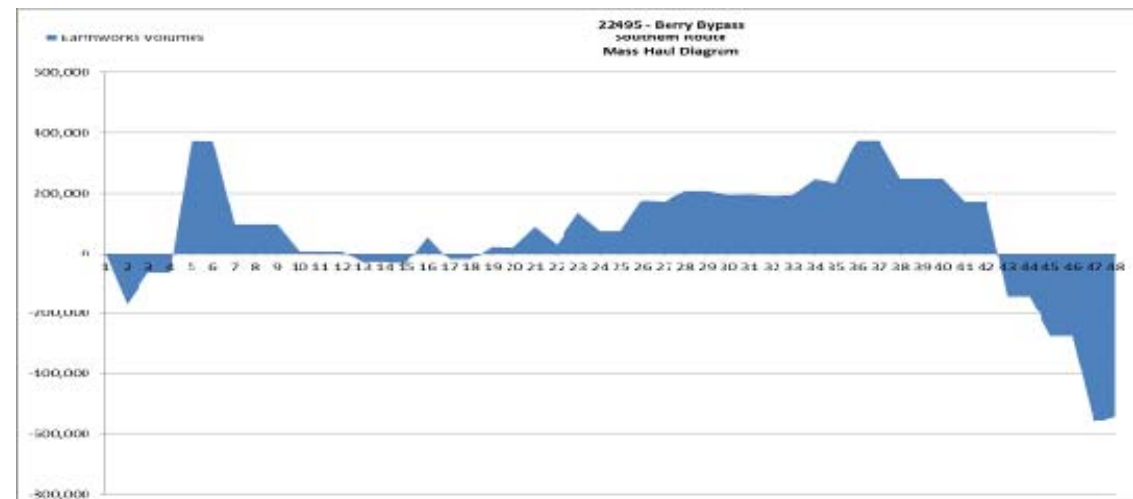
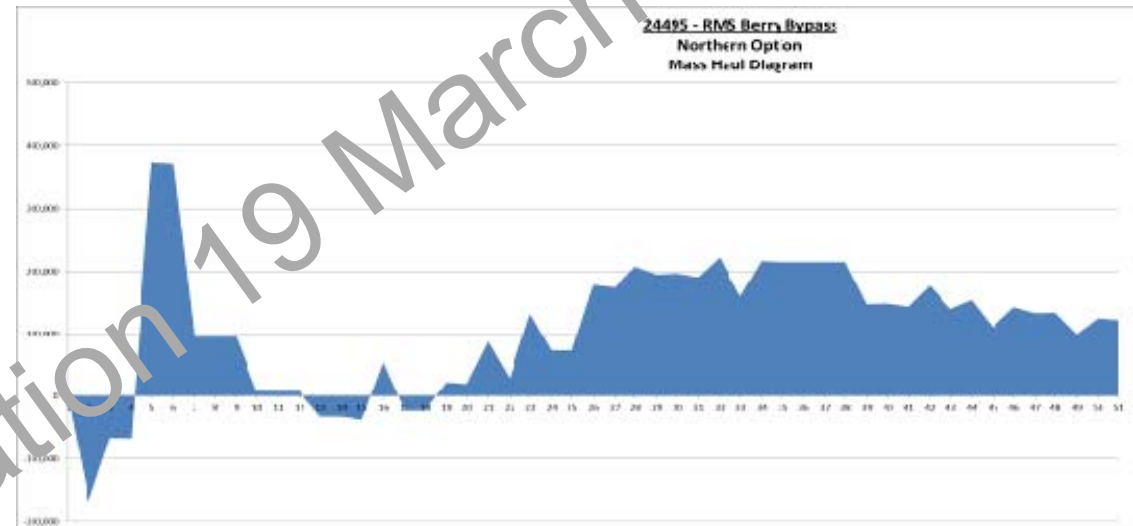
Construction: Earthworks



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The transport of soil is expensive and key earthworks considerations are that:

- We aim for a balanced plan of earthworks
- We want to minimise the distance soil is moved
- We need to plan and sequence the works so reduce the need to move soil
- We consider the staging of construction:
 - Geotechnical – material characteristics and use
 - Physical factors – rivers, bridges and roads



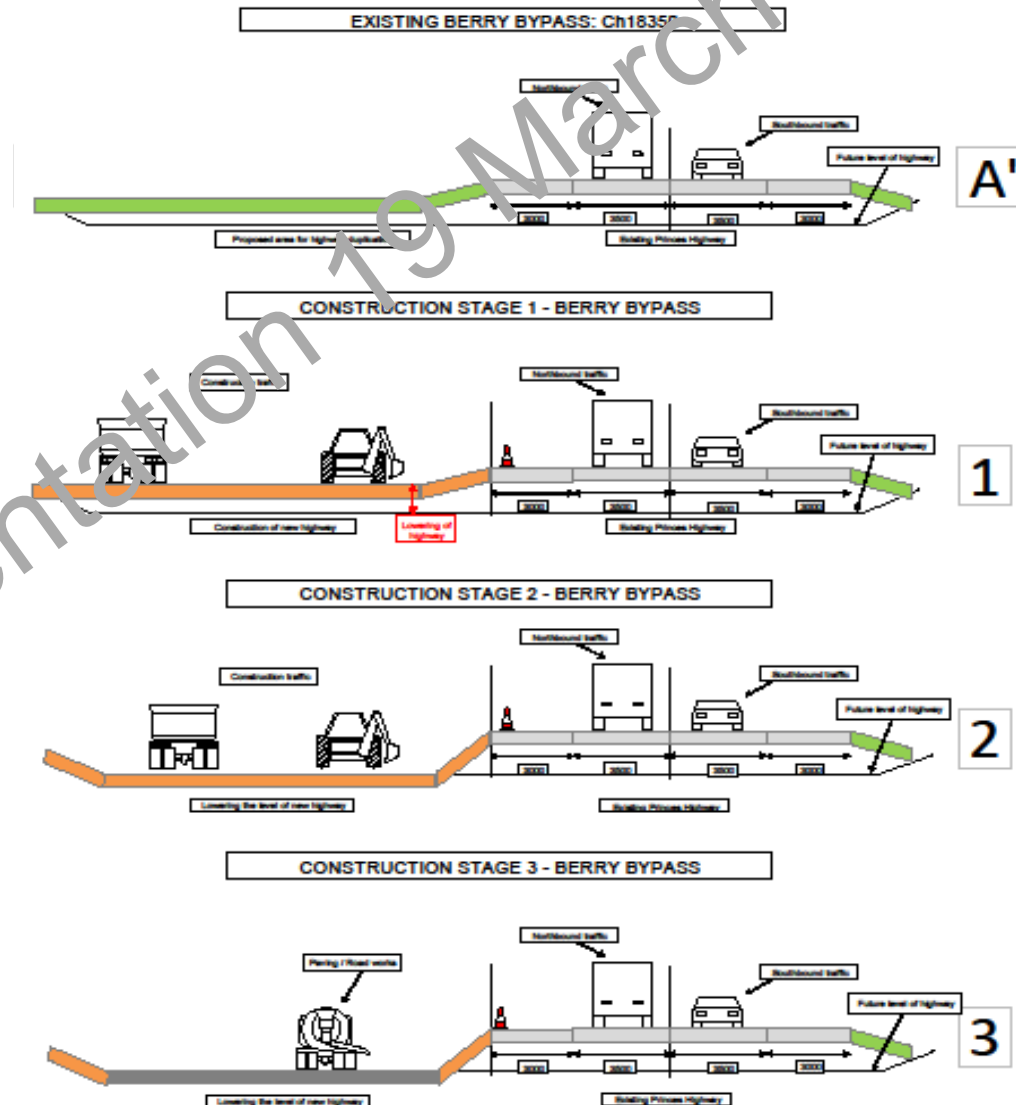
Construction: traffic management



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Key considerations are:

- Safety
- Traffic Flow
- Maximising the available construction site
- Minimising the number of traffic switches



Construction: Structures



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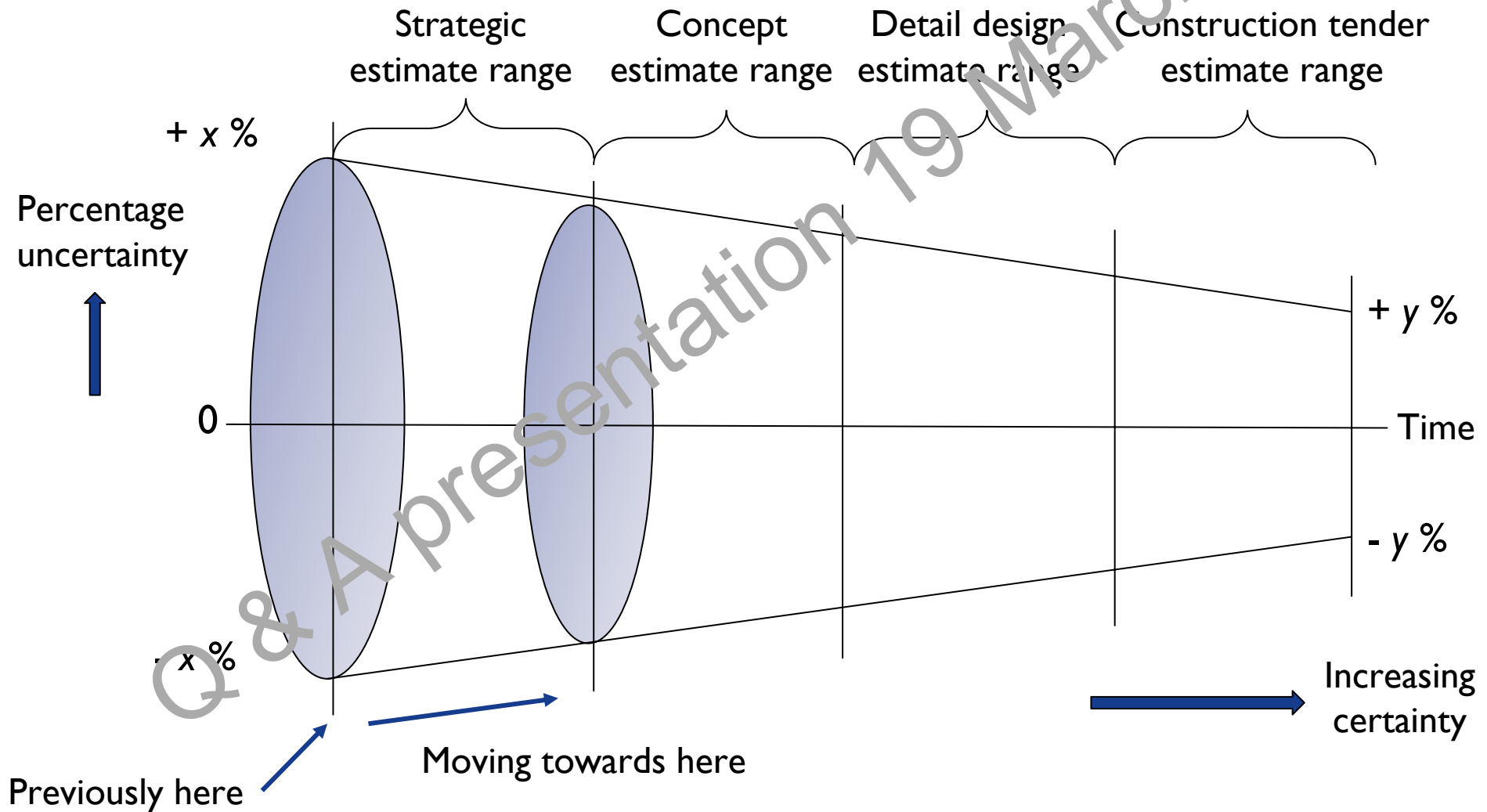
Key considerations for the bridges are:

- How to get access to the site
- How to minimise any temporary works
- Repetitive operations
- Systematic approach
- Minimising impact on other operations



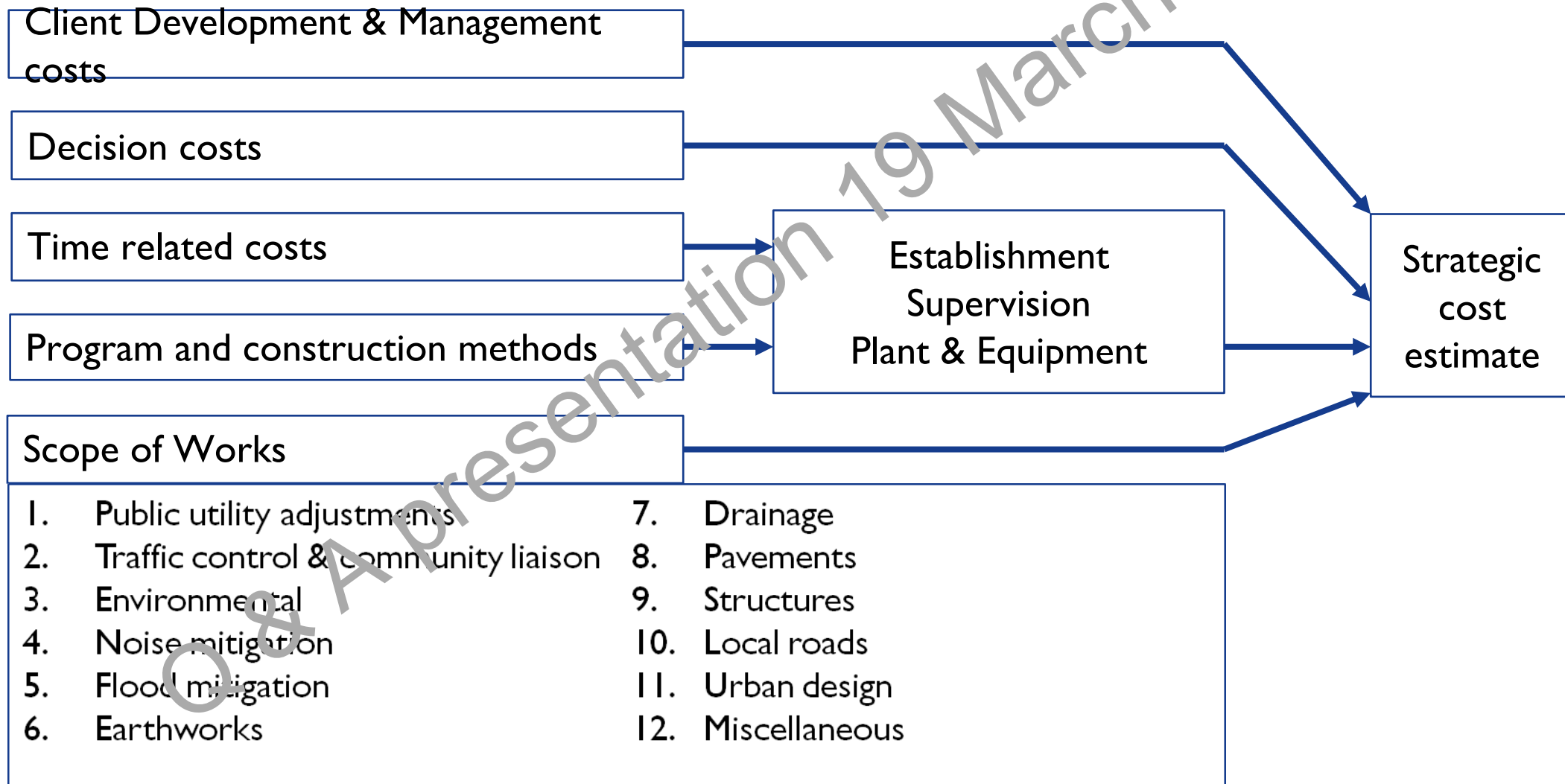
Estimating costs

How to manage our risks and items we are uncertain about



Estimating

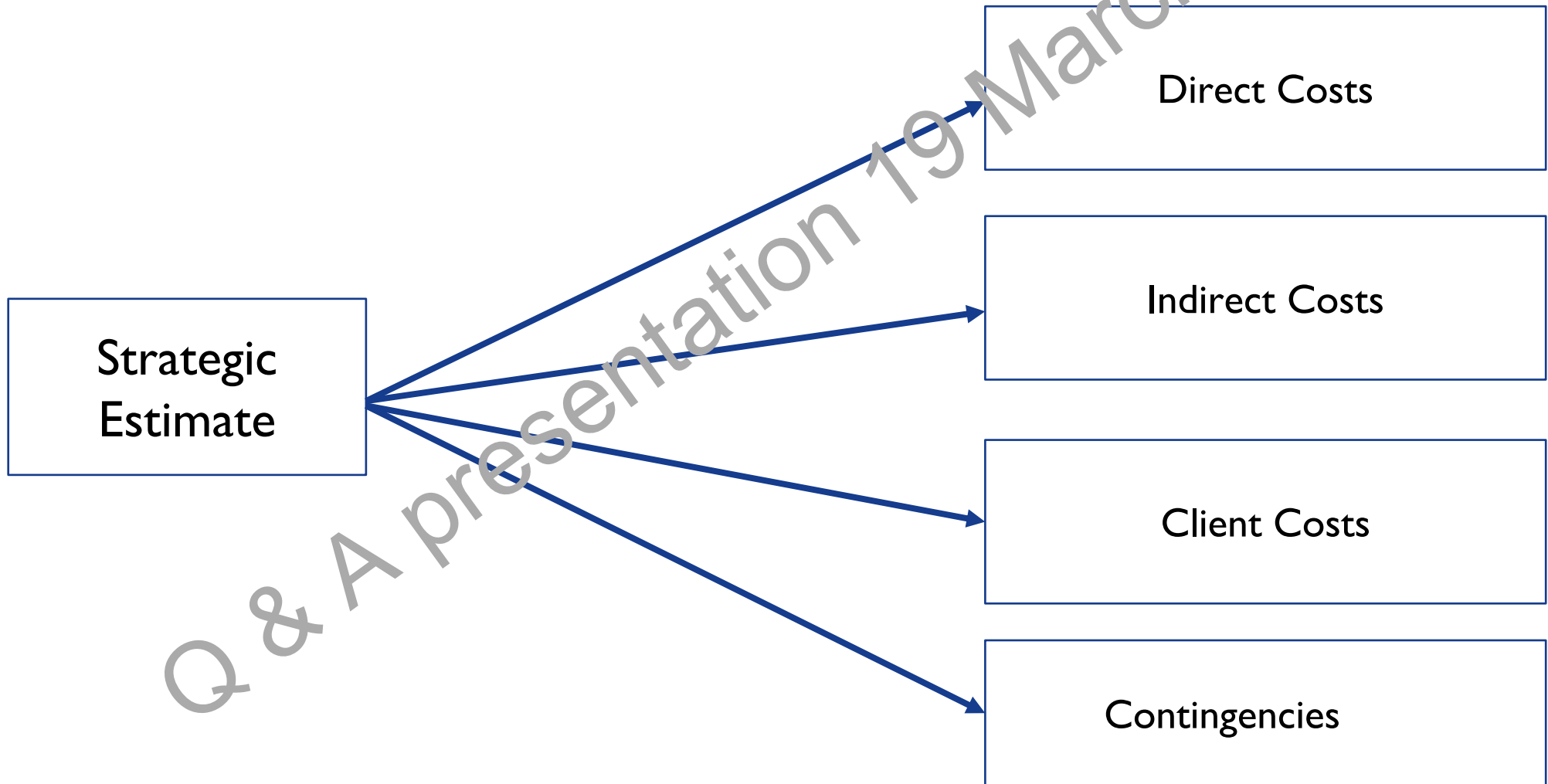
What are the major cost components?



Estimating Outputs – Major Estimate Components



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1. Software used for estimating process: 'Expert' by Pronamics
2. Contingency/uncertainty ranges used by other State Government Departments:
 - RMS (NSW): 40 to 70 %
 - QDMR (QLD): 40 to 70 %
 - SA DTEI, Level I Strategic Estimate: 40 to 70 %
 - VICROADS (VIC): 40 to 70 %

Thank you



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