The technical investigation group (TIG) has produced this fact sheet to provide further clarification to the community regarding:

- the process undertaken to develop a southern route design;
- the required investigations for the southern and northern routes; and
- the production of the route feasibility cost estimates for the northern and southern routes.

This process is described in four stages in the flowchart opposite.

**Stage 1** involved receiving the original submission for a southern route and establishing an investigation corridor. This investigation corridor describes the region through which possible routes could achieve the intent and objectives of the submitted proposal.

**Stage 2** involved developing the base case, preliminary southern route through this area. Various route alignments in the investigation corridor were developed. These were assessed by the TIG based on major constraints and likely cost impacts.

**Stage 3** consisted of conducting extensive technical and construction investigations to refine the preliminary southern route and develop the technical and construction information necessary to produce a route feasibility cost estimate. Considerable investigations and design development had previously been completed for the northern route. In general this stage focused on bringing the information for the southern route up to as equivalent a level as available for the northern route to allow for cost estimate preparation. This stage was an iterative process, where the investigations identified various problems with the designs as well as areas for improvement and opportunities to reduce cost. As these were identified, further investigations were needed to assess the best solutions. Further design development was required to incorporate these solutions into the design.

In some cases, for example, the investigations for the southern route led to additional investigations being undertaken on the northern route.

**Stage 3** also involved the identification of provisional items to be investigated but not included in the base case estimate. High level cost estimates were prepared for these provisional items. A separate fact sheet provides more detail on how provisional items were addressed and is available at www.

**Stage 4** for this exercise was the preparation of route feasibility cost estimates for the northern and southern routes. In line with its brief, the TIG has produced estimates for both routes on a “like for like” basis. The same methodology has been applied to both and the same information has been made available for both options in the areas with the greatest cost impact.

For further enquiries: **Foxground and Berry bypass project team**

Visit the project office on Fridays between 10am – 5pm (Broughton Court) shop 3/113 Queen Street, Berry.

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## Route development and costing processes

### INPUTS
- RMS road design principles and criteria
- High-level assessment of alignment by experts to identify major constraints
- Preliminary investigations into project design criteria, technical issues, construction issues and stakeholder interfaces
- Multi-criteria analysis
- Input from external stakeholders RailCorp, Shoalhaven City Council etc.
- Alternative design options
  - Internal submissions
  - External submissions

### PROCESS

#### STAGE 1
Develop investigation corridor for southern route
1. Receive initial submission for southern bypass of Berry
2. Produce a preliminary geometrically compliant route
3. Establish investigation corridor

#### STAGE 2
Develop base case southern route
4. Develop feasible alignments around existing constraints
5. Perform preliminary technical and construction investigations
6. Assessment of identified southern route variations

#### STAGE 3
Conduct investigations and refine base case southern route and northern preferred route
7. Detailed investigations into the southern base case route and additional investigations as required for the northern route:
   - Design investigations: geometry and compliance
   - Technical: flooding, geotechnical and utility interfaces
   - Construction: property adjustments, construction method, program structure, mass haul analysis
8. Iterative Stage
   - Identify problems with design and areas for design optimisation
   - Evaluate and review design
   - Input investigation results into design
   - Analyse and identify possible solutions
   - Perform additional specific investigations
   - Assess further information required (gap analysis)

#### STAGE 4
Produce cost estimates using the refined base case route design and refined provisional items
9. Produce cost estimate using the refined base case route design and refined provisional items

### OUTPUTS
- Basic alignment
- Horizontal and vertical alignment variations identified
- Information to determine fieldwork modelling; research and investigation studies required
- Base case route including design quantities for estimating purposes
- Preliminary quantities for estimating purposes
- Refined base case route
- Provisional items
- Base case estimate
- Provisional items estimate