Terrain
Tourist Destination - Summer
Tourist Destination - Winter
Traffic

Traffic counts at Homer Tunnel

Vehicles

Jan  Feb

Oct  Nov  Dec
Primary Environmental Risks

- Crashes
- Avalanches
- Rats
- Flooding
- Kea
- Bus fires
- Treefalls & Rockfalls
Tunnel to Murrells Bridge
Road Gradient

3.2km at 10% grade
Homer Tunnel

- Built between 1934-1953; Drill and Blast
- Unlined, natural ventilation only.
- Gradient through the tunnel is 10%.
Difficulties to overcome

- No Power Supply
- No Water Supply
- High rainfall (7m)
- Project is in Fiordland National Park
- 40mins minimum for emergency response
- No Cellphone or general radio contact

- Homer Tunnel Project estimated $200M
- Minimum upgrade to meet tunnel standards – external monitoring and response.
- Increased customer care by improving overall experience
Communication with Road Users
Technology on the Milford Road
Weather Station Network

Alpine Sites
- 1600m
- Avalanches

Freezing level?

Road issues

863m

Road Level Sites
Remote Weather Stations

Milford Sound

Te Anau (~100Km)

Real Time Data
Communications – Voice/Data
Cellular Coverage
Alpine Repeater Sites
Emergency and Breakdown Satellite Phones

- Multiple phone locations linked via radio/fibre.
- Battery powered.
Weather and Traffic Cameras

Road level cameras
Weather and Traffic Cameras
Alpine Cameras
Remote High Resolution Cameras
Variable Message Signs

On-site ‘walk-up’ control

Remote backup control

Te Anau Kiosk
Knobs Flat
Milford Sound
Traffic Signals

Radar vehicle detection
Homer Tunnel East portal car park
Homer Tunnel Countdown Display
Infra-Red Traffic Cameras
Thermal Cameras

- Up to 3.9Km detection range.
- Automatic ‘hot-spot’ detection.
- Display heat irregularities with poor visibility (thick smoke) or absolute darkness.
Intelligent Video Analytics
Automatic Number Plate Recognition (ANPR)

Logging of all traffic IN and OUT the tunnel. Automatic alert should a vehicle not exit within specified time.
Camera + fibre optic methodology

1270 m at approximately a 1:10 gradient down to the western portal

Te Anau  →  West portal

East portal
Generator Shed

Milford  →  Equipment enclosure

1270 m at approximately a 1:10 gradient down to the western portal
High Bandwidth Radio Link
Homer Tunnel CCTV Monitoring
Thank you
Questions?