

# Nelson Arterial Traffic Study

## Long List of Options



**Nelson City Council**  
te kaunihera o whakatū

# Long List of Options

- Four categories
  - Roading Infrastructure
  - Rail Infrastructure
  - Public Transport
  - Travel Demand Management

# Fatal Flaw Analysis

- Benefit Arterial Traffic
  - Primarily commuters and freight
  - Reduces travel time
- Cost of Option
  - Funding availability
  - Less than \$100M - \$200M

# Arterial Traffic Test

- Options not carried forward
  - Option B variants with exclusive links
  - Option C: Route via Marsden Valley
  - Option G: Princes Drive extn
  - Option J: Freight Rail
  - Option L: Public Transport
  - Option M: Travel Demand Mgmt



# Freight Rail

- Would not attract freight as:
  - Not long enough distance for efficiencies
  - Likely to involve double handling
  - Costs borne by operators who are already paying for road transport
- Even if it did attract some freight, would not result in benefits for commuters



# Public Transport

Year	AM Peak		Interpeak	
	Existing PT	Phase A	Existing PT	Phase A
2006	143	197	72	91
2016	136	230	78	151
2036	134	256	82	182

- Increase of 120 compares with >4,400 vehicles across screenline in 2036 AM peak
- Not capacity restrained
- No travel time benefits
- Increase in patronage would occur with TDM
- Provides minimal arterial traffic benefits but a range of other social and accessibility benefits so should be implemented with all options

# Travel Demand Management

- Includes:
  - School travel plans
  - Workplace travel plans
  - TravelSmart
  - Car-pooling
  - Tele-working infrastructure
  - Promotion of alternative forms of travel
  - Road Pricing
  - Parking pricing and availability
  - Resource Management Plan changes

# Funding / Cost Test

- Options not carried forward
  - Option B with Viaduct to Haven Road
  - Options D, E, F Tunnels
  - Option K: Light Rail



# Light (or Heavy) Rail

- Discarded because too expensive.
- Cost needs to take account of:
  - Property purchase
  - Rail lines on formed and unformed land
  - Railway stations / terminals
  - Grade separation of rail
  - Intersection treatments
  - Trains
  - Maintenance depot
  - Ongoing operations and maintenance



# Stage 3 Options

- Option A: Peak Hour Clearways
  - Option B: Southern Arterial
  - Option H: Rocks Road 4 laning
  - Option I: Waimea/Rutherford 4 laning
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- All options include Phase A public transport and TDM

# Option A: Peak Hour Clearways

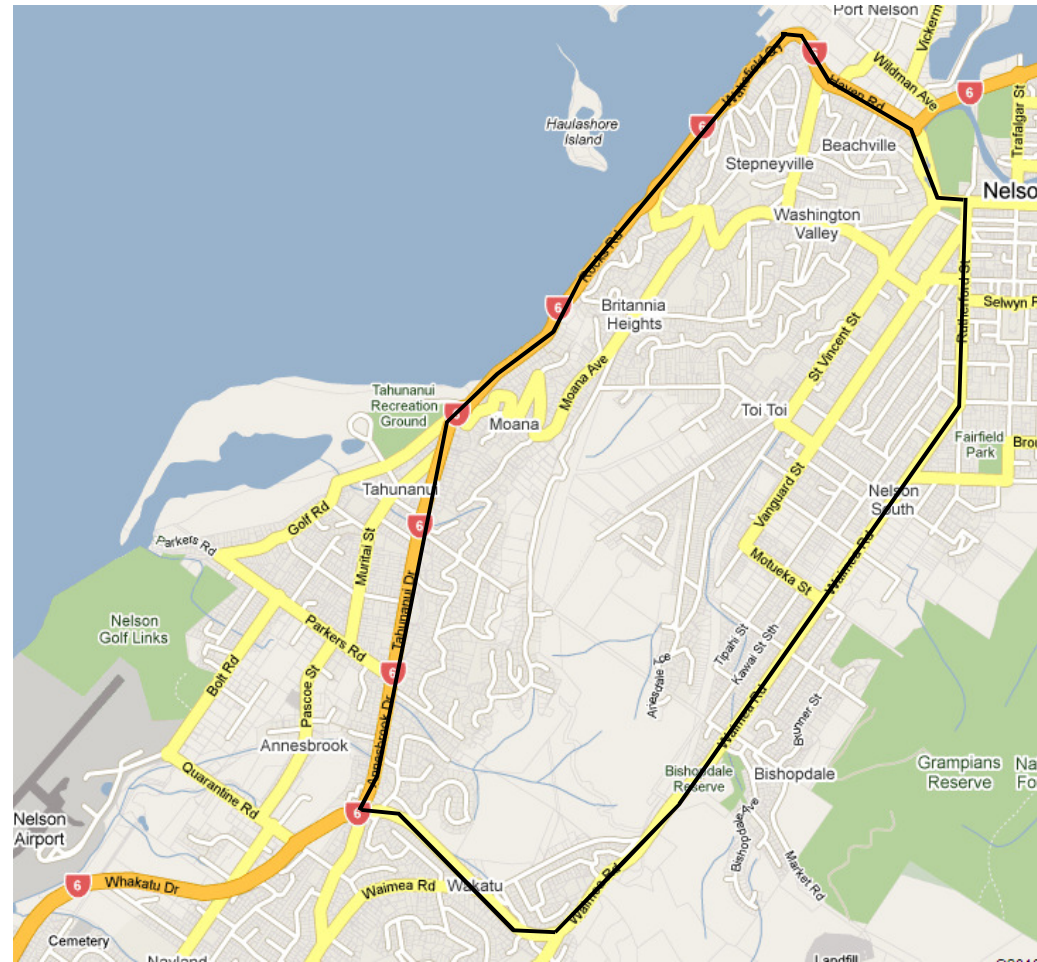
Install peak hour clearways on Rocks Road and Waimea Road. Northbound Rocks Road AM peak. Southbound Waimea Road PM peak

## Pros

- Relatively inexpensive
- Decreases travel times

## Cons

- Benefits only in peak period
- Property access difficulties
- Removal of features in road
- Impacts on the historic fence
- Sea level rise
- Some community opposition
- Parking enforcement



# Option A: Peak Hour Clearways

## Philosophy

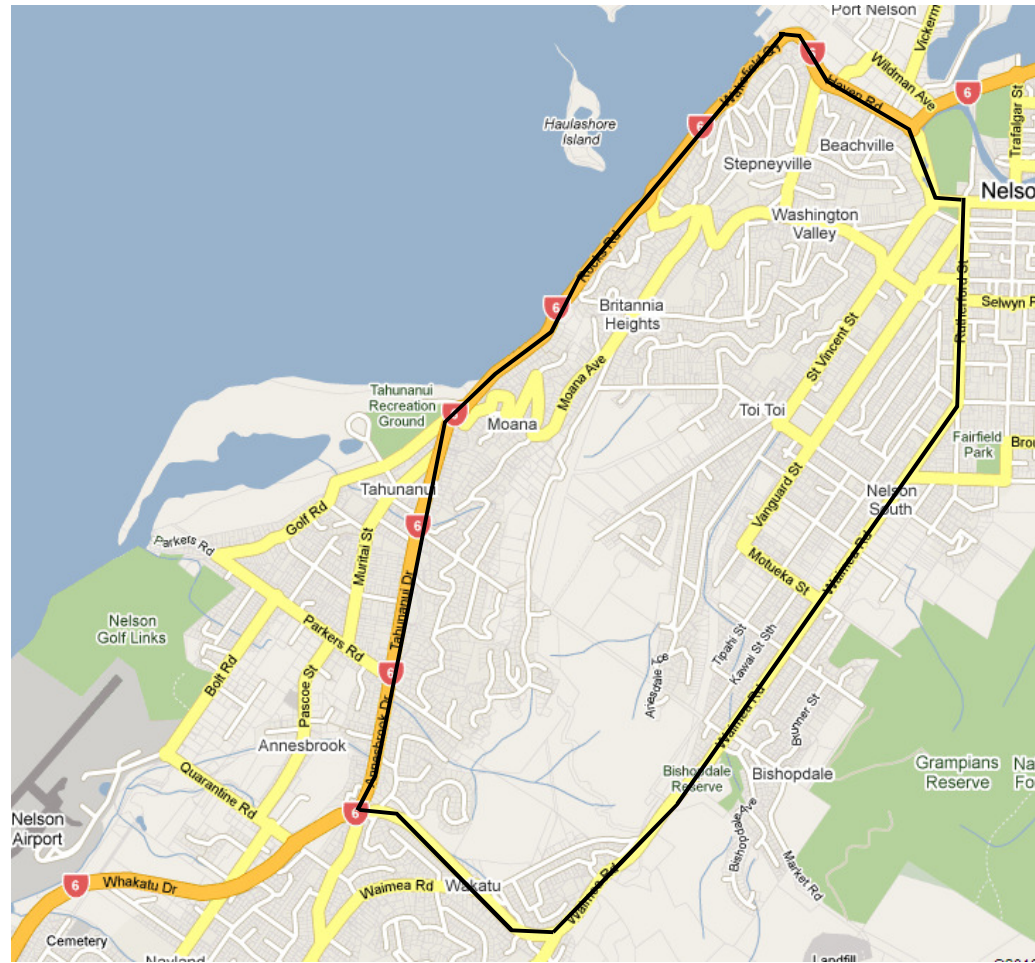
Use existing space along current routes. Clearway in peak hour and peak direction only

## Intersections

No major intersection changes.  
Some minor modifications

## Property

Aim is for none





# Option B: Southern Arterial

## Philosophy

Create new road on new corridor with at-grade intersections.

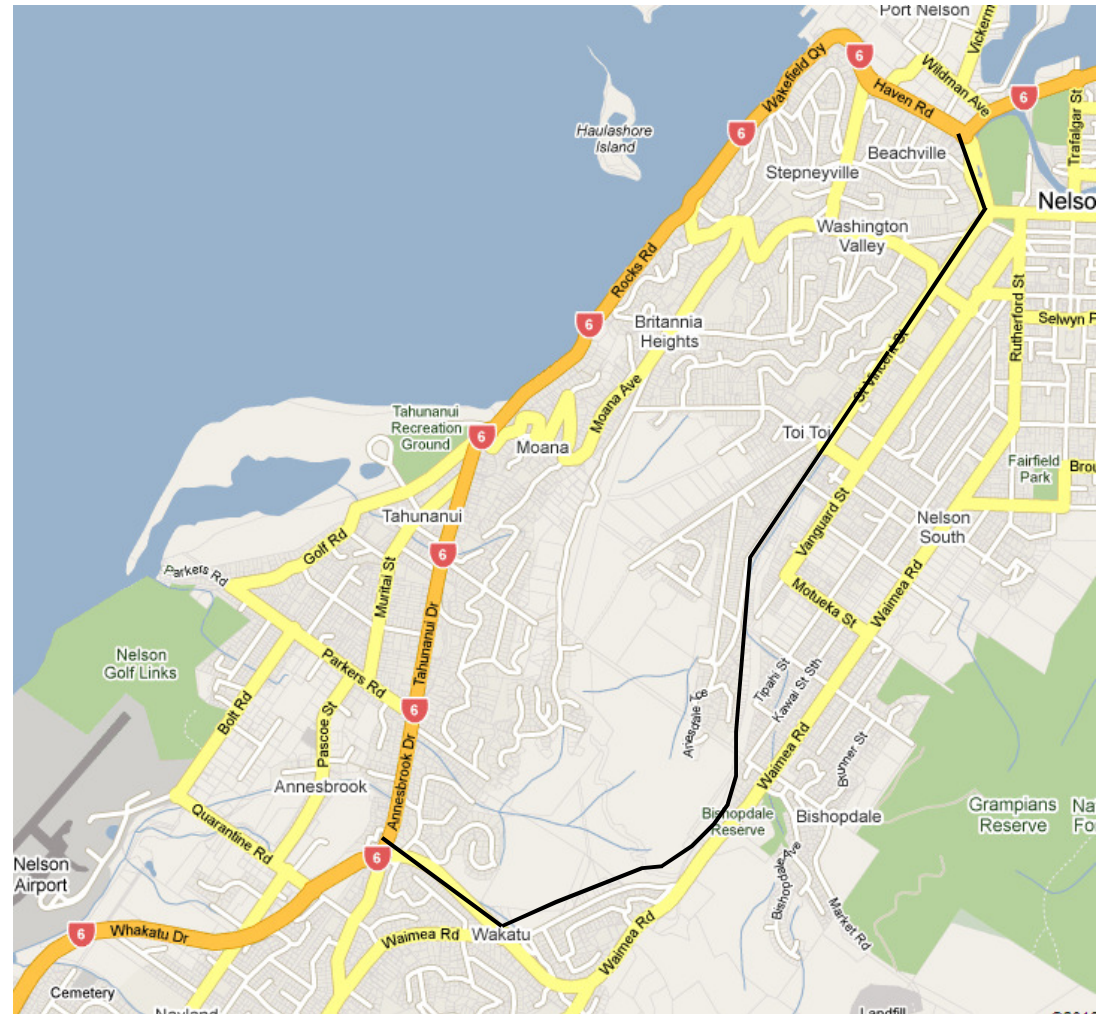
## Intersections

New roundabout at southern end of the route.

New traffic signals at Toi Toi and Washington/ Gloucester.

## Property

Vast majority of land already in public hands. Some minor pieces may be required at intersections.



# Option H: Rocks Road Four Laning

## Philosophy

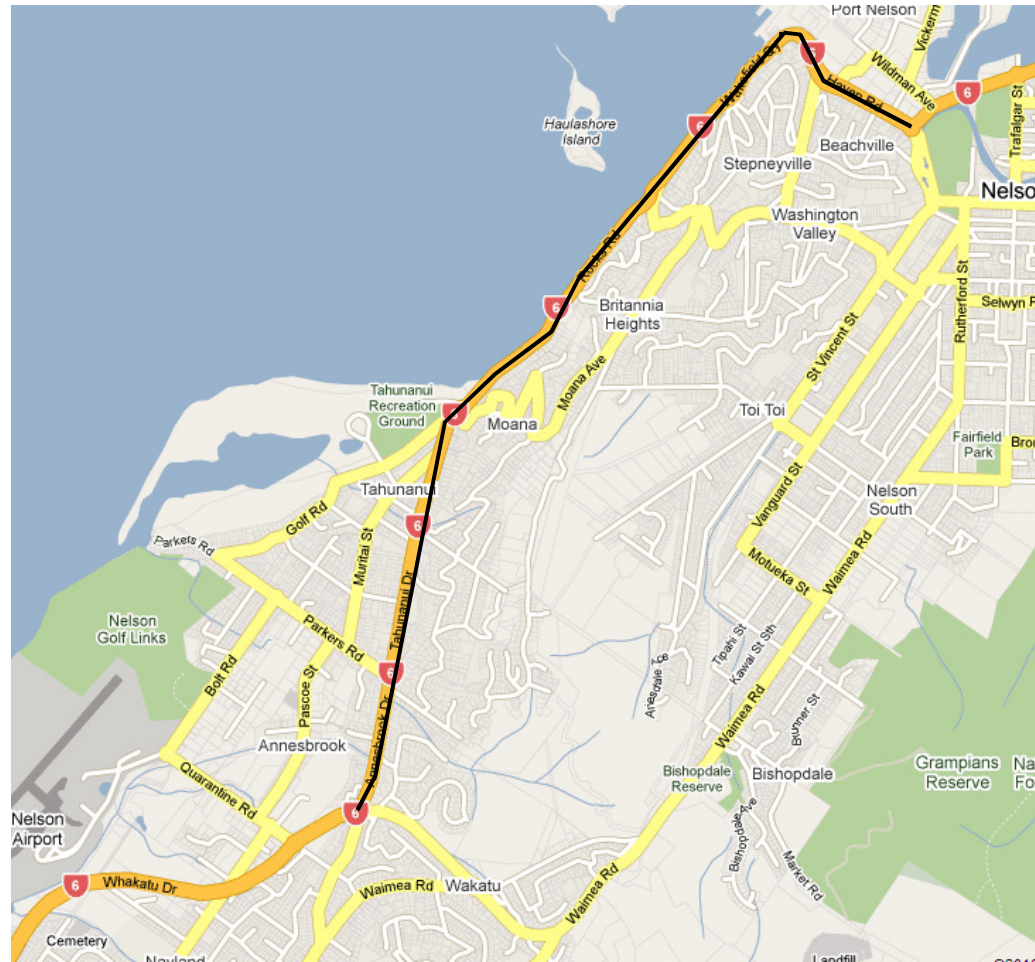
Create new four lane median road on existing alignment. Widen on one side of road only; western side except between Tahunanui intersection and Rawhiti Street.

## Intersections

Right turns rationalised to reduce turns over two lanes. New traffic signals at Richardson, Muratai, Parkers/Maire.

## Property

Upwards of 80 properties affected to varying degrees.



# Option I: Waimea / Rutherford 4Laning

## Philosophy

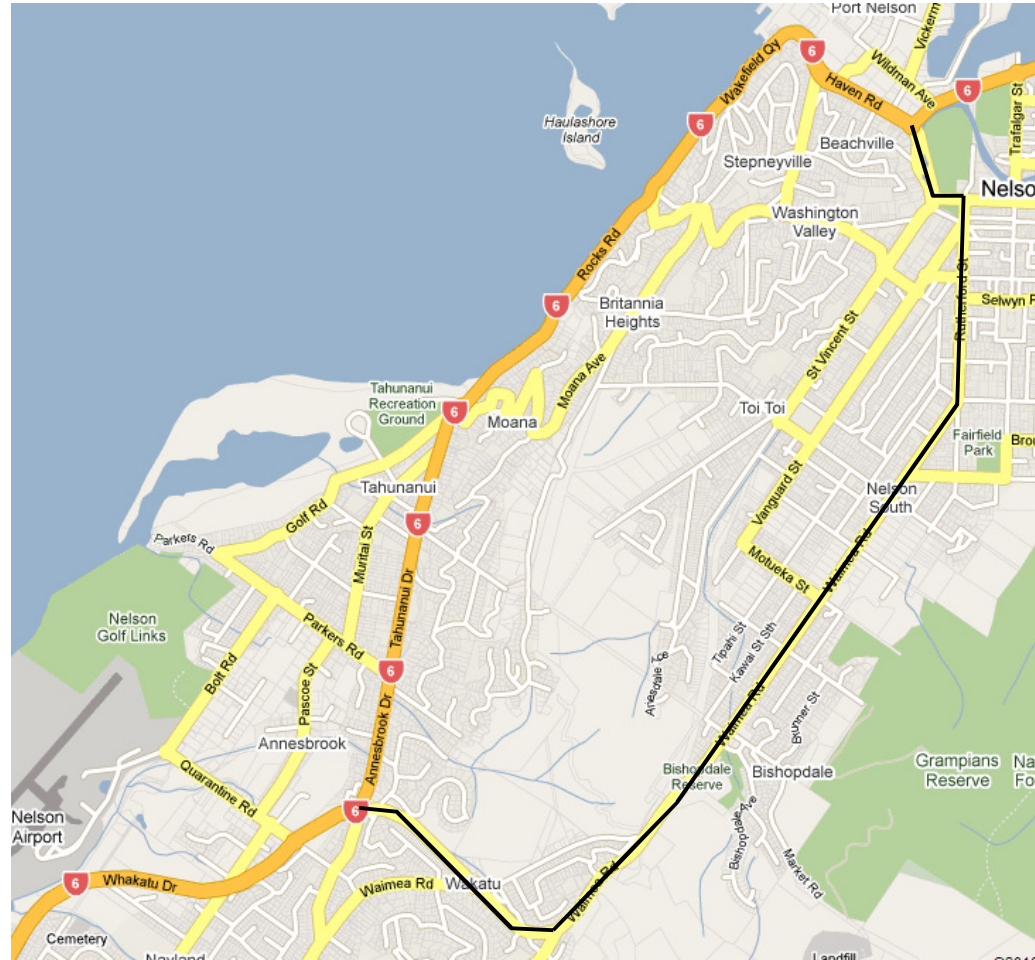
Create new four lane median divided road on existing alignment. Widen on western side except between Selwyn and Bronte Street (both sides) and from Hampden to Motueka (eastern side).

## Intersections

Right turns rationalised to reduce turns over two lanes. New traffic signals at Van Diemen, Motueka, Market.

## Property

Upwards of 150 properties affected to varying degrees.



# Cost of Options

- Option A: \$25-\$30M
- Option B: \$30-\$35M
- Option H: \$80-\$120M
- Option I: \$50-\$70M





# Modelling Results

<b>AM peak</b>	<b>Do Min</b>	<b>Opt A</b>	<b>Opt B</b>	<b>Opt H</b>	<b>Opt I</b>
Number of Trips	46,000	46,000	46,000	46,000	46,000
Kilometres travelled	144,300	144,700	144,000	144,400	144,600
Total travel time	195,100	196,700	191,700	196,200	192,800

# Modelling Results

- Option A
  - Negligible change in traffic volumes on arterial routes
- Option B
  - 20-35% reduction in trips on SH6
  - 30-40% reduction in trips on Waimea/Rutherford
- Option H
  - Negligible change in traffic volumes
  - Travel time not decreasing as little current congestion and additional signalised intersections
- Option I
  - Slight move onto Waimea/Rutherford in peak times



# Benefit Cost Ratio

- Option A: Less than 0.1
- Option B: Less than 1.0
- Option H: Less than 0.1
- Option I: Less than 0.1



# Funding Profile

- NZTA funding based on:
  - Strategic Fit
  - Effectiveness
  - Benefit Cost Ratio
- High, Medium or Low in each category

# Funding Profile

- Strategic Fit
  - High if RONS or “Major Contribution to National Economic Growth”
  - Medium if “Significant Improvements in...”
    - Safety
    - Journey Time Reliability
    - Congestion in “Main Urban Areas”
    - Capacity Constraints
    - Network security and resilience (no alternative route and route demonstratively susceptible)
- Likely to be **Low**

# Funding Profile

- Effectiveness
  - Measure of the contribution towards the potential identified in the Strategic Fit assessment
  - Difficult to measure for “Low” Strategic Fit Road projects
- At this level of development, projects often rated **Medium**



# Funding Profile

- Economic Efficiency
  - $\text{BCR} \geq 4$  is High
  - $\text{BCR} \geq 2$  and  $< 4$  is Medium
  - $\text{BCR} \geq 1$  and  $< 2$  is Low
- Likely to be **Low** at best

