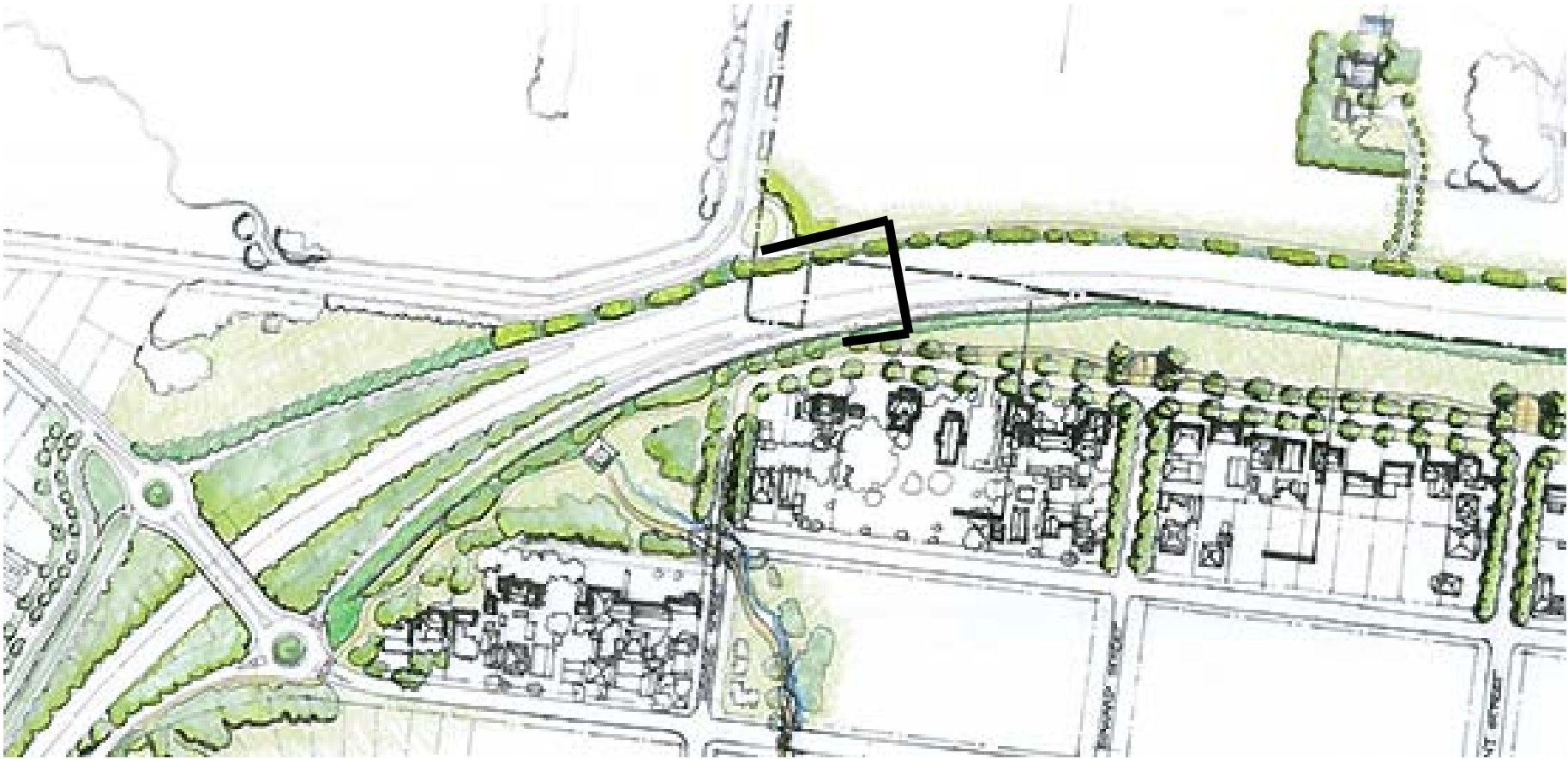


Connection to footpath system on North Street with ramps on both sides. This is the shortest crossing and is where the off-load ramps are at a similar grade to the main carriageway, thus minimising the height of the bridge. The ramp does interface with the new driveway for the property owner on the North.



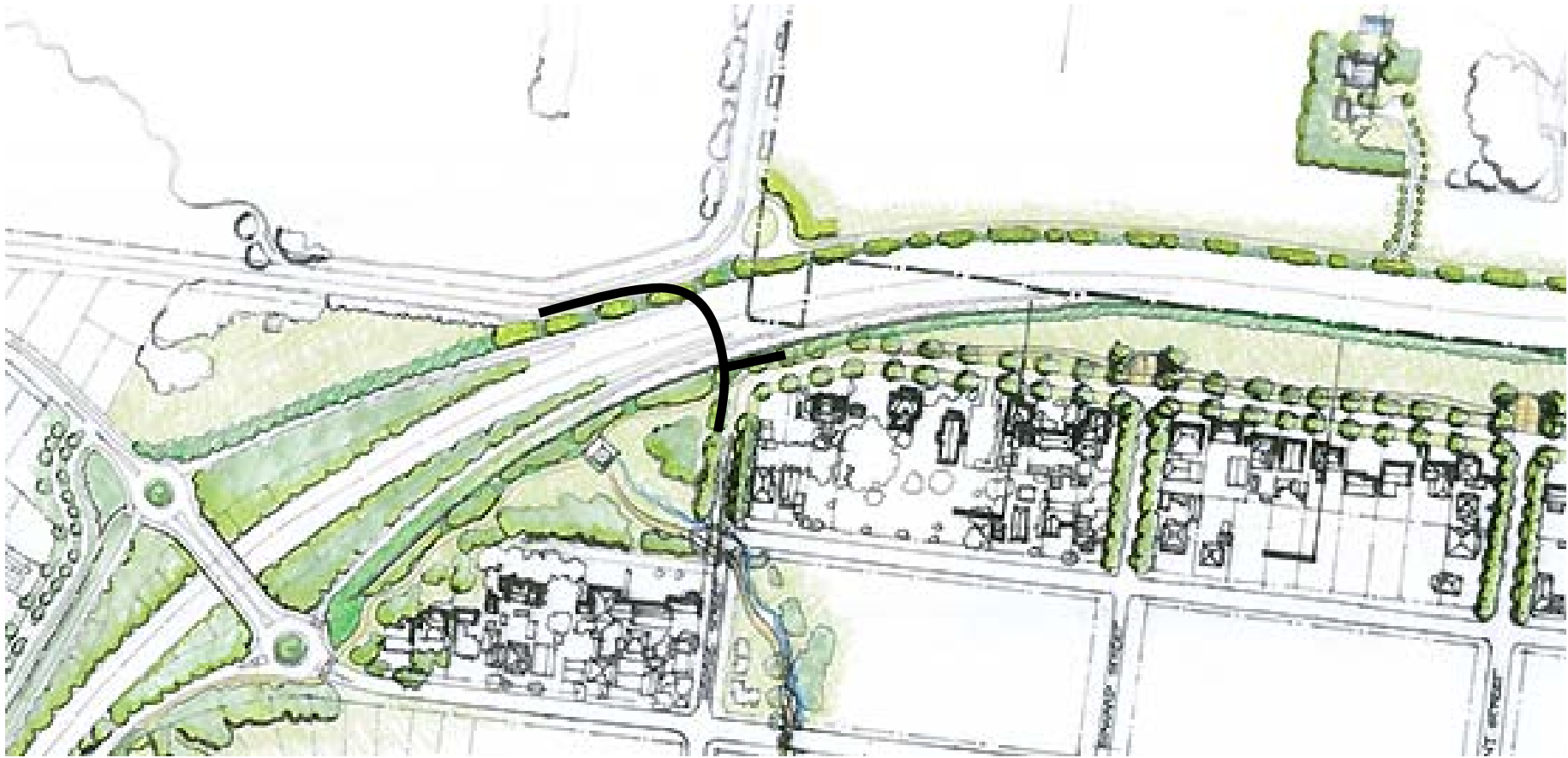
Option 1

Connection to footpath system on North Street via a ramp and a stair or ramp access to George Street. The crossing is marginally wider than Option 1 however this offers good connectivity with George Street and North Street. The bridge would be slightly higher than Option 1 due to the off-load ramp rising up to Kangaroo Valley Road interchange.



Option 2

Connection to footpath system on North Street via a stair or ramp and ramp access to George Street. The bridge is on a curve which would enhance the experience of the user and would be a more aesthetically pleasing bridge when viewed by the road users. The curvature adds some complexity and cost with regard to fabrication. There are examples of curved pedestrian bridges around Sydney (Falcon Street Bridge & Beatrice Bush Bridge).



Option 3

This is the closest to the current walking route along North Street. It is recommended that a ramp or stair link be placed to George Street.

Of all the options, this is the longest and highest bridge due to the high skew to the road and the need to cross the on-load and off-load ramps providing a 5.3 m clearance.

Efficiency in the structural depth could be achieved by providing a bridge that is continuous over 3 spans, however for a 100+m central span, the bridge superstructure depth is likely to be approximately 2.2 m concrete



Option 4

Concepts developed

- Developing a concept for each has a time and cost implication.
- To limit the time and cost, we focused on concepts for two.
- Options 1, 2 and 3 are similar in that they are variations of a right angle crossing and are likely to be most cost-effective. **Aurecon developed a concept for 2 as representative of all three.**
- Option 4 is directly along the existing North Street alignment. **Aurecon developed a concept for option 4** as representative of our understanding of the alignment sought by community members in favour of the pedestrian bridge on North Street.

Shorter bridge perpendicular to new Bypass

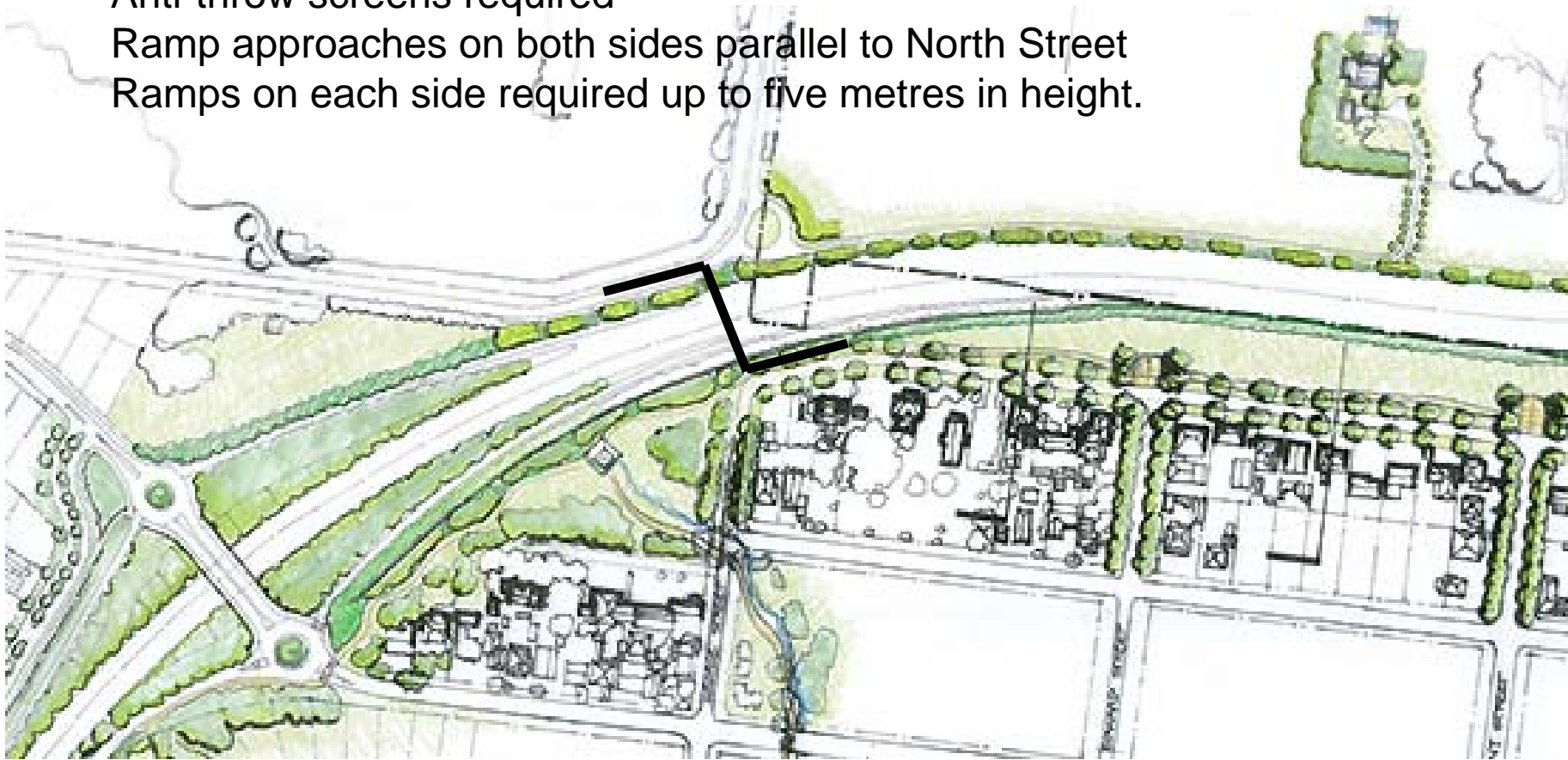
46 m long bridge constructed from steel

No central pier required

Anti-throw screens required

Ramp approaches on both sides parallel to North Street

Ramps on each side required up to five metres in height.



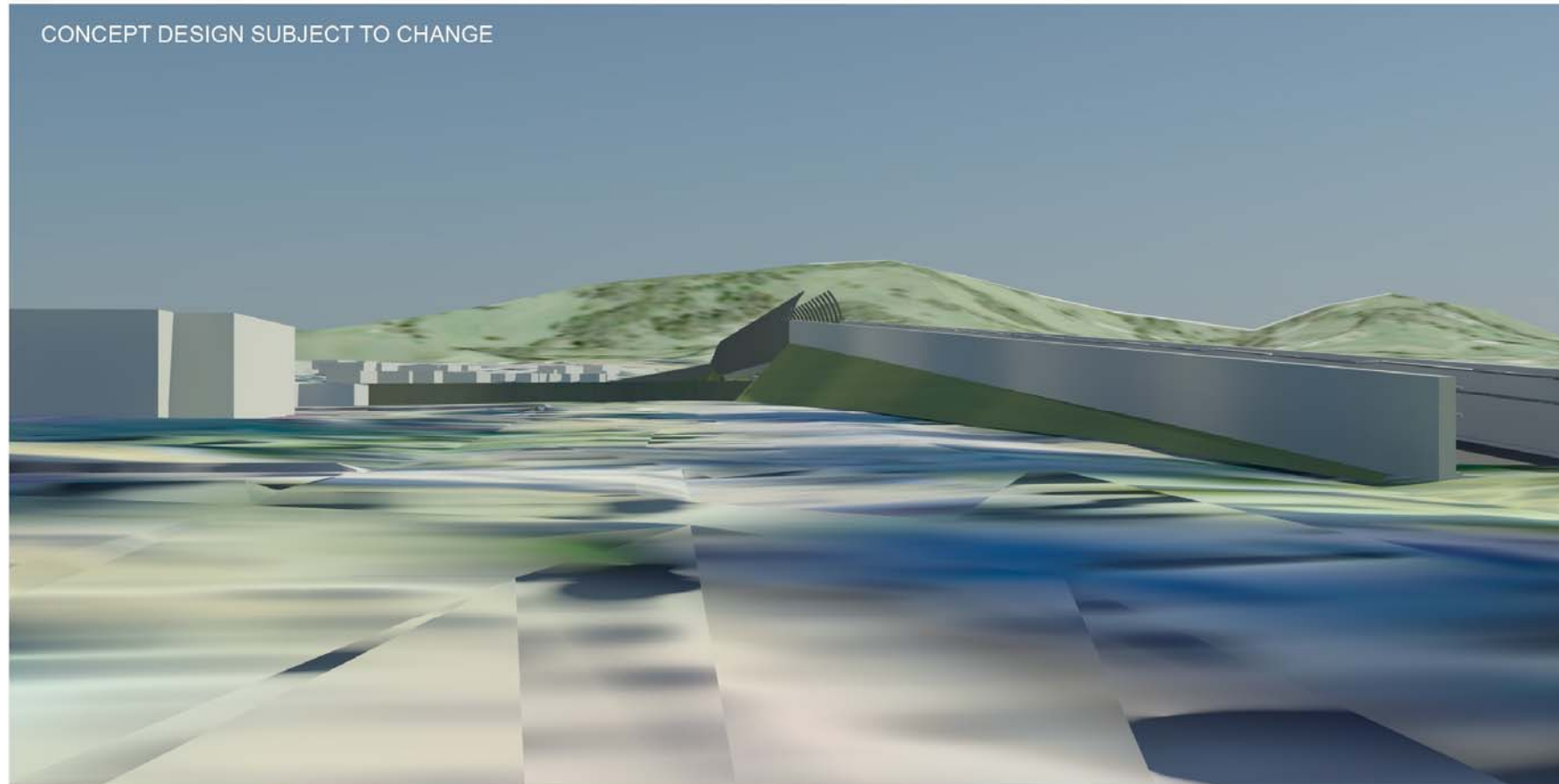
Option 2

Option 2 – aerial view



Northern Route Pedestrian Bridge

Option 2 – North Street view



Northern Route Pedestrian Bridge

Option 2

Berry Bypass - Northern Route

Cost estimate for pedestrian bridge - 46 m bridge concept

Item	Description	Quantity	Unit	Rate	Cost	Assumption
1	Pre-construction					
1.1	Project development including administration of the design contract, consultancy fees and preparation of tender documentation	1	Item	-	\$ 750,000.00	Assumption and should be checked by RMS
2	Construction					
2.1	Site establishment				\$ 250,000.00	Assumption and should be checked by RMS
2.2	Construction management, overheads, profit, RMS administration of the contract.	1	Item	-	\$ 1,000,000.00	Assumption and should be checked by RMS
2.3	Installation of 600 mm diameter piles including concrete supply and reinforcement - assume piles are 8 m long	8	No.	\$ 8,000.00	\$ 64,000.00	Assume CFA piles are suitable. Geotech not known at this stage.
2.4	Installation of 2 no. pilecaps (1.2 m deep by 2.5 m sq) including concrete supply and reinforcement.	15	m ³	\$ 2,500.00	\$ 37,500.00	Premium paid for pilecap given the low quantity
2.5	Installation of 2 no. piers with architectural finishes including concrete supply and reinforcement.	2	No.	\$35,000.00	\$ 70,000.00	
2.6	Fabrication, supply and delivery of a 60 t steel girder. Girder will be approximately 46 m long and painted to RMS Specifications.	60	t	\$ 8,000.00	\$ 480,000.00	Assume a box girder 1.5 m deep with concrete deck slab
2.7	Anti-throw screens and handrails on main bridge - architectural finishes and stainless steel handrails.	92	m	\$ 1,000.00	\$ 92,000.00	Bridge barriers are approximately \$700 / m - allow extra for anti-throw screens.
2.8	2 no. abutment structures including 2 no. 600 mm diameter piles	2	No.	\$40,000.00	\$ 80,000.00	
2.9	2 no. suspended ramps spans on bridge approaches	2	No.	\$40,000.00	\$ 80,000.00	
2.10	Finishes including earthworks on ramp approaches, footpaths, handrails, lighting and landscaping	1	Item	-	\$ 100,000.00	Assumption on finishing works
Total					\$ 3,003,500.00	
Contingency of 50%					\$ 1,501,750.00	
					\$ 4,505,250.00	

110 m long bridge constructed from steel.

Requires a central pier.

Clear span cable stay bridge not cost effective and would be more visually obtrusive.

Anti-throw screens required.

Ramps on each side required up to 5 m in height.



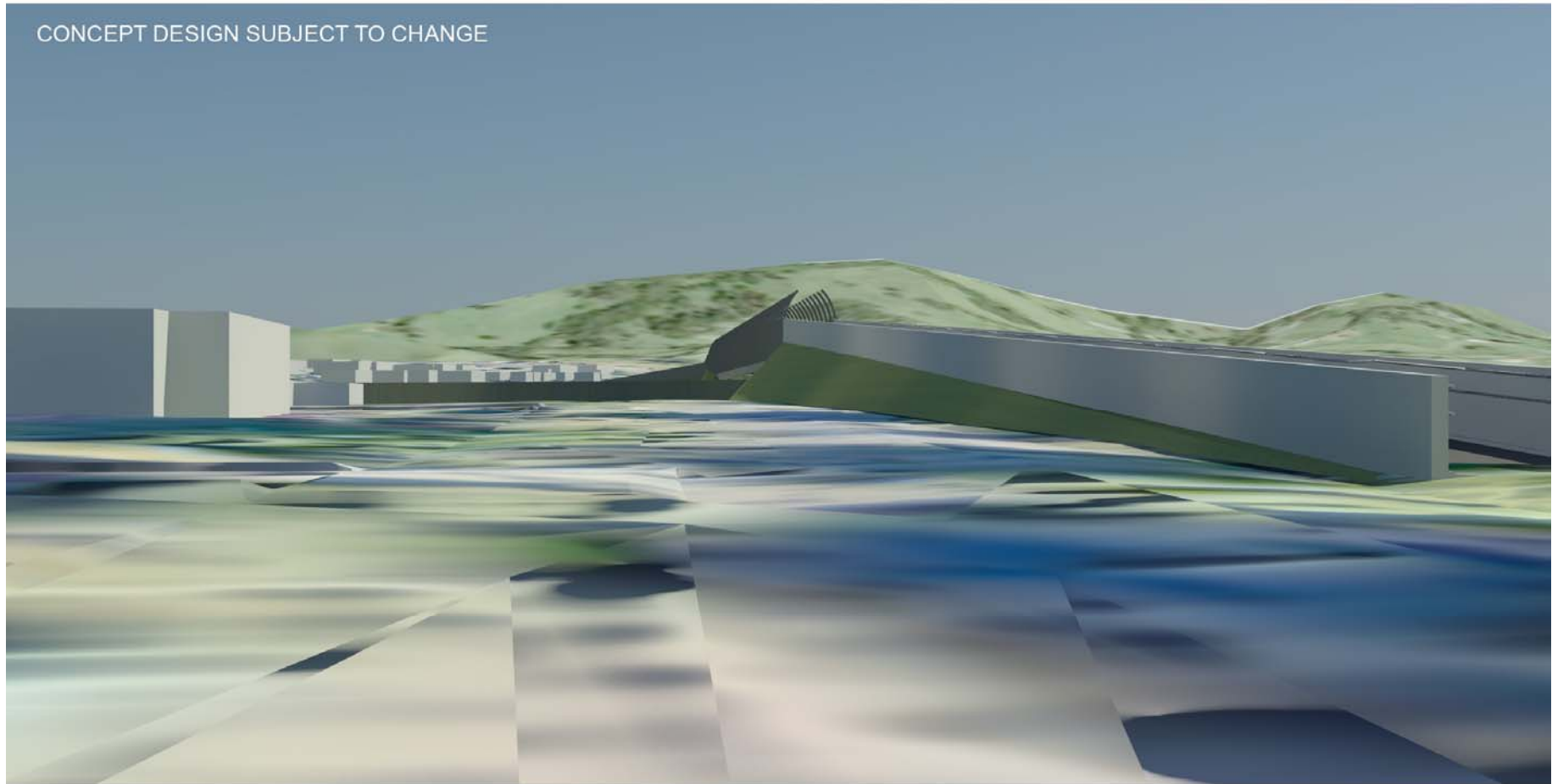
Option 4

Option 4 – aerial view



Northern Route Pedestrian Bridge

Option 4 – North Street view



Northern Route Pedestrian Bridge

Option 4

Berry Bypass - Northern Route

Cost estimate for pedestrian bridge - 110 m bridge concept

Item	Description	Quantity	Unit	Rate	Cost	Assumption
1	Pre-construction					
1.1	Project development including administration of the design contract, consultancy fees and preparation of tender documentation	1	Item	-	\$ 750,000.00	Assumption and should be checked by RMS
2	Construction					
2.1	Site establishment				\$ 350,000.00	Assumption and should be checked by RMS
2.2	Construction management, overheads, profit, RMS administration of the contract.	1	Item	-	\$ 1,000,000.00	Assumption and should be checked by RMS
2.3	Installation of 600 mm diameter piles including concrete supply and reinforcement - assume piles are 8 m long	12	No.	\$ 8,000.00	\$ 96,000.00	Assume CFA piles are suitable. Geotech not known at this stage.
2.4	Installation of 1 no. pilecaps (1.2 m deep by 2.5 m sq) including concrete supply and reinforcement.	8	m3	\$ 3,000.00	\$ 24,000.00	Premium paid given the low concrete quantity
2.5	Installation of 2 no. abutment structures including concrete supply and reinforcement	30	m3	\$ 3,000.00	\$ 90,000.00	Premium paid given the low concrete quantity
2.6	Installation of 2 no. piers with architectural finishes including concrete supply and reinforcement.	2	No.	\$35,000.00	\$ 70,000.00	
2.7	Fabrication, supply and delivery of 3 no. segments for the construction of the bridge. Bridge girder will be approximately 110 m long and painted to RMS Specifications.	144	t	\$ 8,000.00	\$ 1,152,000.00	Assume a box girder 1.5 m deep with concrete deck slab
2.8	Anti-throw screens and handrails on main bridge - architectural finishes and stainless steel handrails.	220	m	\$ 1,000.00	\$ 220,000.00	Bridge barriers are approximately \$700 / m - allow extra for anti-throw screens.
2.9	Finishes including earthworks on ramp approaches, footpaths, handrails, lighting and landscaping	2	No.	\$60,000.00	\$ 120,000.00	
Total					\$ 3,872,000.00	
Contingency of 50%					\$ 1,936,000.00	
					\$ 5,808,000.00	

Cable Stay Pedestrian Bridge



Cable Stay Pedestrian Bridge

