

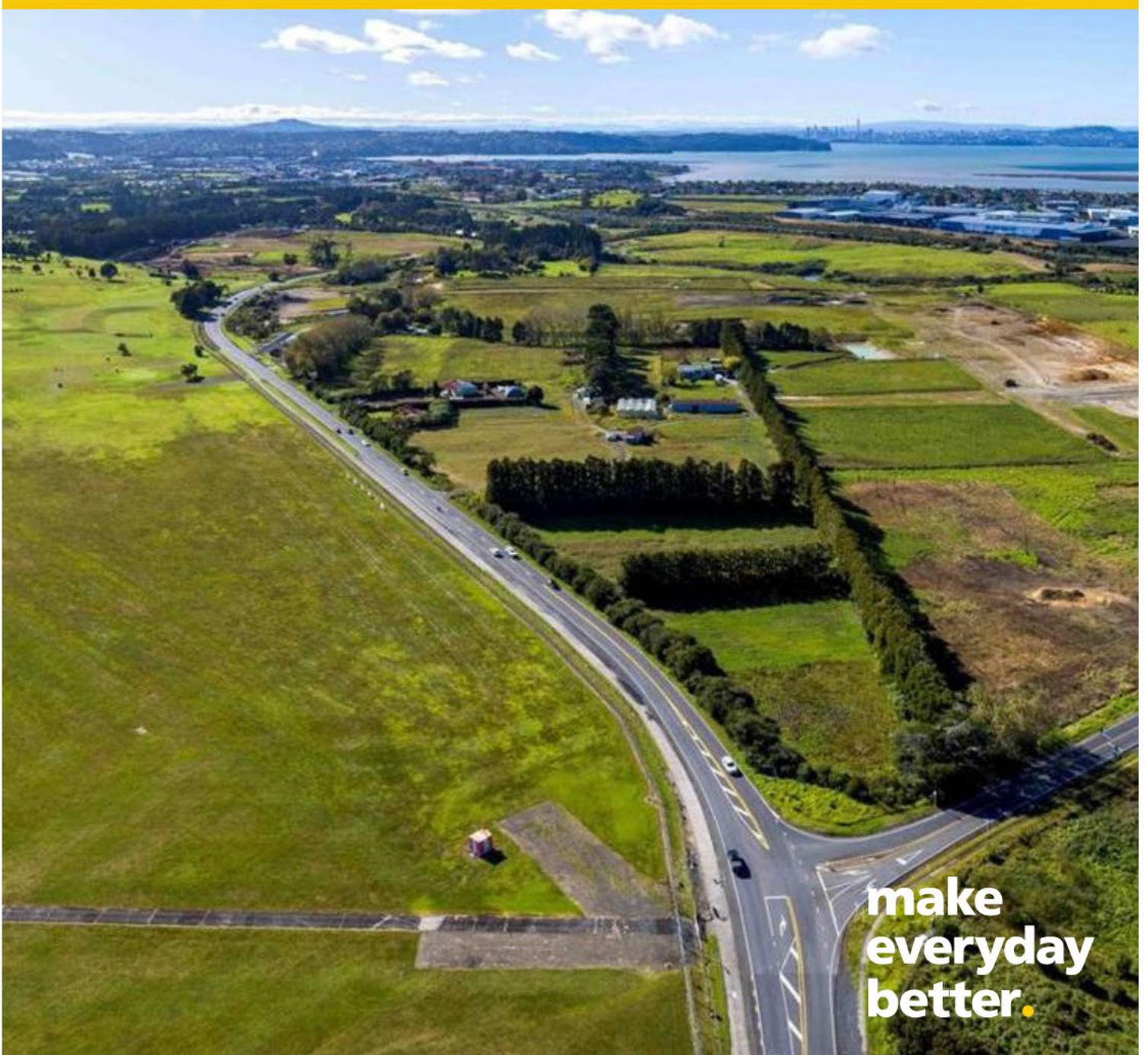


Active Mode Corridor (Drury Central Station to Drury Station West)

Technical Assumptions

Prepared for Auckland Council
Prepared by Beca Limited

20 December 2024



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Revision History

Revision N°	Prepared By	Description	Date
1.0	Varshen Pillay	For Council Review	20/12/24

Document Acceptance

Action	Name		Date
Prepared by	Varshen Pillay		18/12/24
Reviewed by	Rob Mason		18/12/24
Approved by	Rob Mason		18/12/24
on behalf of	Beca Limited		

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Introduction

This technical note provides a summary of the assumptions used to develop the physical works cost estimate and to identify land acquisition for the development of Auckland Transport's Active Mode Corridor (AMC) within Drury Central.

The project was initially developed by Te Tupu Ngātahi Supporting Growth Alliance (SGA), for its long-term route protection to support growth within Drury and Pukekohe. This work was documented by the Alliance within a cost allowances report in September 2022, titled **Drury Infrastructure Funding and Financing – Cost Allowances**. This report identified the associated cost allowances for transport projects required to support the Drury Infrastructure Funding and Financing (DIFF) programme. This subsequently formed the basis for the transport inputs into Auckland Council's Development Contribution (DC) Policy for Drury Phase 1 (adopted in 2023).

Subsequent to this, the design and designation for the AMC was reassessed for route protection, along with KiwiRail's four-tracking project. Accordingly, a new cost estimate has been prepared to inform the DC Policy based on the updated AMC design and designation. This technical note is provided as an addendum to support the revised costing information for the AMC project (referenced as Project 67 and 68) within the current DC policy.

The background for the overall DC policy transport costing and assumptions can be found in the below documents:

- Drury Infrastructure Funding and Financing – Cost Allowances, Te Tupu Ngātahi, August 2022
- Greenfields Generic Cost Allowances and Rates – Beca, June 2024

1 Project Details

The current Drury Phase 1 DC Policy includes Drury Central and Drury West only, so therefore the **extent of the AMC included in the policy starts at the Drury Central Rail Station and ends at the Drury West Rail Station**. This is illustrated in the image below.

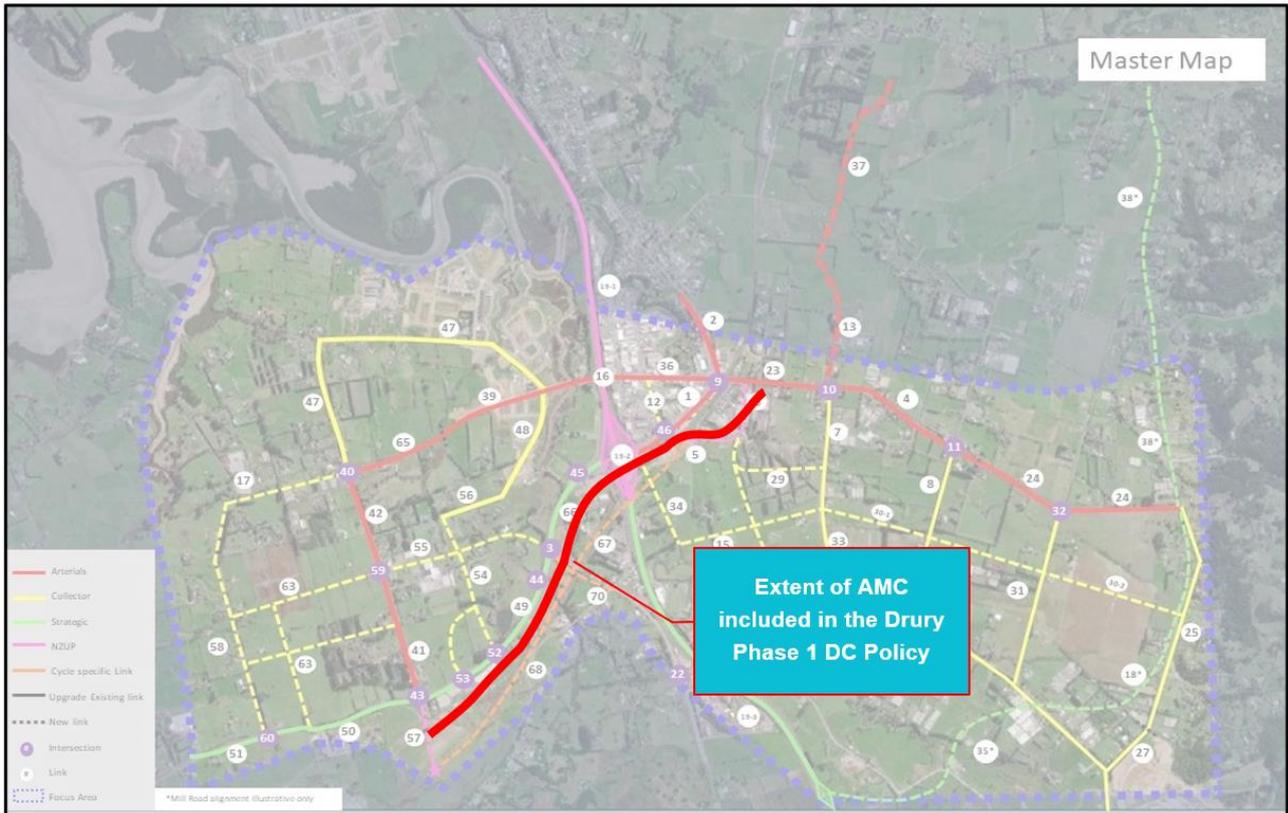


Figure 1: Extent of AMC included in the Drury Phase 1 DC Policy

The total physical works estimates developed by SGA and used within the Drury Phase 1 DC Policy is summarised in **Table 1** below.

Table 1: SGA and Drury Phase 1 DC policy AMC physical works cost estimates

SGA (Total Base Physical Works Estimate) - 2021	Drury Phase 1 DC Policy (Total Base Physical Works Estimate) – 2022
Drury Central Station to East St (Pukekohe) - \$82m	Project 67 (Drury Central Station to Great South Road) – \$16m Project 68 (Great South Road to Drury West Rail Station) - \$10m Total - \$26m

2 AMC Physical Works Cost Estimate Assumptions

In July 2024, as part of the recent route protection project, the design for the AMC was updated from the previous SGA design.

To develop the updated physical works estimate, the following key assumptions have been made:

- 7m (active mode cross section) this includes a 3m bi-directional cycleway, 2m footpath and 1m berm on each side.
- The AMC and associated bridge works will increase the total impervious surface. Therefore, stormwater management is included to provide for detention and attenuation. Kerb and channel have been proposed along one side of the active mode corridor to collect stormwater runoff and direct it to the treatment wetlands. It is assumed that treatment of stormwater runoff from the AMC is not required as the surface is not considered high contaminate generating.
- The works associated with the Burt Road Realignment are assumed to be necessary to facilitate the four-tracking of the railway line and have been excluded from the AMC cost estimate.
- There are two key bridges and one underpass along the AMC alignment, these include Hingaia Stream Bridge, Ngākōroa Stream bridge and Great South Road underpass respectively. The bridge widths are assumed to be 7m wide including structural elements and barriers.
- The AMC extent ends at the designation boundary proposed for the Drury West Station. The extents for the cost estimate are illustrated below.

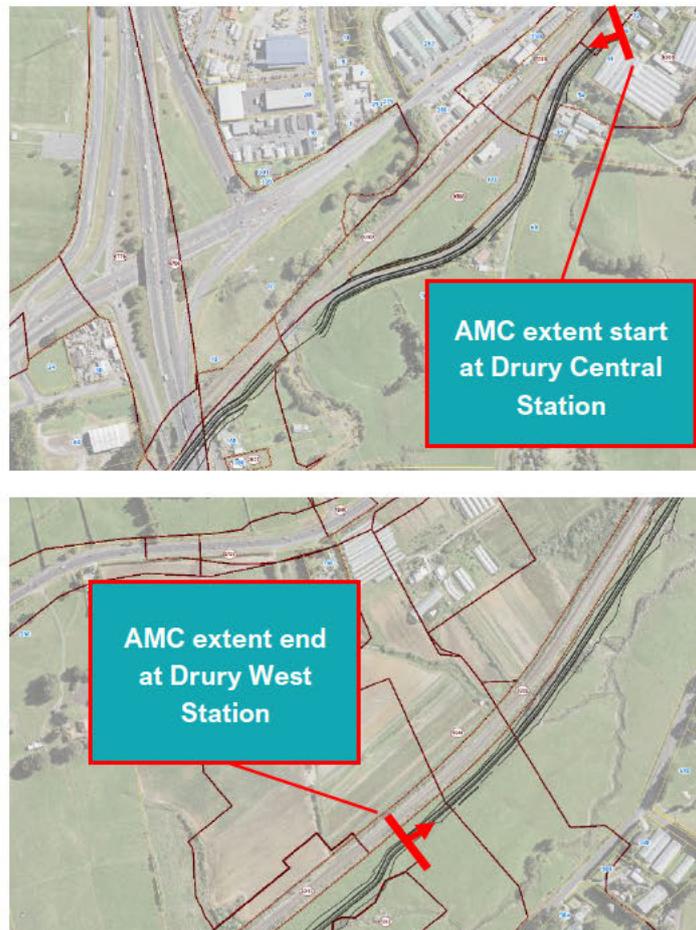


Figure 2: AMC extents considered from July 2024 design

Contingencies and Allowances

It is understood that the addition of contingencies and allowances is to follow the recommendations outlined within the Greenfields Generic Cost Allowances and Rates report¹. This report includes percentages for Physical Works Allowances, Client Managed Costs, Contingency and Risk Allowances.

For the traffic management allowance, as the AMC corridor primarily sits within a Greenfields context we recommend applying the generic greenfield traffic management allowance of 2%. This allowance has been developed cognisant of a wider programme of works proposed for the Drury growth area over a 30-year timeframe.

It should be noted that for inclusion within the current Drury Phase 1 DC Policy only the total base physical works estimate has been provided. Any further contingencies, allowances and escalation will be added by Auckland Council as part of their internal financial modelling.

Drury Phase 1 DC Policy (Total Base Physical Works Estimate) - Updated 2024 Summary

- Total – \$10.8m

A more detailed breakdown of the physical works estimate can be found in **Appendix A**.

3 Land Acquisition Assumptions

In addition, to the physical works cost estimate, the potential impacts on land also need to be reviewed to align with the updated design and designation boundaries from July 2024. The land impacts were completed within a GIS tool and documented in **Appendix B** with a summary of the land acquisition values and associated parcels/property addresses. In addition, images from the GIS tool showing the relevant land impacts are illustrated within **Appendix B**.

The land impacts were identified taking into consideration adjacent strategic projects within the area including:

- Drury Central Rail Station
- Drury West Rail Station
- Drury SH1 Interchange Upgrade

Accordingly, the following key assumptions were made:

- The impacted property on the western side of the AMC within the Proposed KiwiRail 'Notice of Requirement' area is assumed to be leased from KiwiRail at no cost and has therefore been excluded from the AMC project. This is on the basis that the AMC is likely to be constructed at the same time as the 4-tracking project proceeds.
- Private property west of the alignment has been identified for permanent acquisition.
- Full 7m wide AMC located in private property is required for permanent acquisition.
- The property at 32 Flanagan Road is assumed to have already been acquired for the Drury Central Rail Station upgrade, so this has been excluded.
- The property at 168 Flanagan Road is assumed to have already been acquired for the SH1 Drury Interchange Upgrade, so this has been excluded.

¹ Developed by Beca and Auckland Council in June 2024.

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Appendix A – Physical Works Estimate

Estimate Summary

<p>Project: Active Mode Corridor (Drury Central Building: Station to Drury West Station)</p>	<p>Details:</p>
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Code	Description	Quantity	Unit	Rate	Total
	<p>ACTIVE MODE CORRIDOR (DRURY CENTRAL STATION TO DRURY WEST STATION) - CONCEPT DESIGN COST ESTIMATE</p> <p>Estimated By : Apolinario Briones/Stephen Li Verified By : Jason Luo Date : 20 December 2024 Job No: 3815367</p> <p>Inputs This Estimate is based on the following: Preliminary Design for Active Mode Corridor - Drury West Station to Drury Central Station</p> <p>Scope of Work Construction of Active Mode Corridor Bridges and underpass Drainage works Signage, line marking and lighting Landscaping works</p> <p>Assumptions Work during normal hours. 80% of cut material to be stockpiled and re-used as fill material, 20% to be disposed off site. 7m wide active mode corridor Lighting at 30m centres</p> <p>Allowances Provisional Sum of \$232k for ptotection of existing underground services</p> <p>Exclusions GST Property costs Fees Client Managed costs</p>				10,810,000

Estimate Summary

Project: Active Mode Corridor (Drury Central Building: Station to Drury West Station)	Details:
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Code	Description	Quantity	Unit	Rate	Total
	Environmental Compliance Costs				
	Traffic Management Costs				
	Preliminary and General Costs				
	Contingency				
	Escalation from April 2025				

Estimate Details

Project: Active Mode Corridor (Drury Central Building: Station to Drury West Station)	Details:
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Code	Description	Quantity	Unit	Rate	Total
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ACTIVE MODE CORRIDOR (DRURY CENTRAL STATION TO DRURY WEST STATION) - CONCEPT DESIGN COST ESTIMATE

EARTHWORK					
Demolition and Site clearance					
	General site clearance	37,566	m2	6.00	225,396
	Remove existing trees	938	m2	60.00	56,280
	Strip topsoil and cart to stockpile for re-use	3,200	m3	25.00	80,000
	Strip topsoil and dispose off site	2,435	m3	90.00	219,150
	Fill with imported engineered fill	3,083	m3	130.00	400,789
	Cut to fill (assume 80% of cut volume)	9,228	m3	30.00	276,840
	Cut to waste (assume 20% of cut volume)	2,307	m3	90.00	207,630
	Undercut soft areas and backfill with imported fill material (GAP65) (assume 20% of AMC area x 200mm thick)	650	m3	290.00	188,500
	Sub Total for Earthworks				1,654,585
DRAINAGE					
	Culvert extension (assume 600mm dia. RCRRJ pipe)	85	m	850.00	72,250
	Headwall for 600mm dia. stormwater pipe	4	No	6,000.00	24,000
	Kerb and Channel	2,319	m	130.00	301,470
	Subsoil drain	2,319	m	110.00	255,090
	Surface flow conveyance swale	397	m	80.00	31,760
	Wetland 1 (1894m2) water depth 1.6m	1	No	395,000.00	395,000

Estimate Details

Project: Active Mode Corridor (Drury Central Building: Station to Drury West Station)	Details:
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Code	Description	Quantity	Unit	Rate	Total
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ACTIVE MODE CORRIDOR (DRURY CENTRAL STATION TO DRURY WEST STATION) - CONCEPT DESIGN COST ESTIMATE (Continued)

	Wetland 2 (698m2) water depth 1.6m	1	No	210,000.00	210,000
	Sub Total for Drainage				588,320
	BRIDGES/UNDERPASS				
	Bridge active mode	420	m2	7,500.00	3,150,000
	Underpass active mode	210	m2	4,000.00	840,000
	Cable trays (one side)	90	m	500.00	45,000
	Sub Total for Bridges/Underpass				4,035,000
	TRAFFIC SERVICES				
	Signage				
	<i>Ground Mounted Single Post Signage</i>				
	Small Signs (1 per 100m each corridor)	24	No	500.00	12,000
	Medium Signs (1 per 500m each corridor)	5	No	2,200.00	11,000
	Line Marking				
	100mm wide edge line reflectorised HPLL marking	4,638	m	6.00	27,828
	Cycleway greening to be AS2700 S1996 colour G13 emerald (60m intervals)	780	m2	80.00	62,400
	Cycle lane symbol (1 per 300m)	8	No	75.00	600
	Lighting				
	Allow to locate all existing utilities and excavate for pilot hole at each light pole location to confirm constructibility and foundation type	1	LS	26,000.00	26,000

Estimate Details

Project: Active Mode Corridor (Drury Central Building: Station to Drury West Station)	Details:
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Code	Description	Quantity	Unit	Rate	Total
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ACTIVE MODE CORRIDOR (DRURY CENTRAL STATION TO DRURY WEST STATION) - CONCEPT DESIGN COST ESTIMATE (Continued)

	Allow for 6m high steel column, 0m outreach and luminaire - Single pole at 30m centers	78	No	9,000.00	702,000
	Sub Total for Traffic Services				841,828
	UTILITY SERVICES				
	Allow to pilot trench all existing utilities and confirm locations	1	LS	26,000.00	26,000
	Allow to protect existing services	1	PS	232,000.00	232,000
	Sub Total for Services Relocations				258,000
	ACTIVE MODE				
	Active mode	16,232	m2	130.00	2,110,160
	Sub Total for Active Mode				2,110,160
	LANDSCAPING				
	New Fencing				
	New timber fencing to boundaries	2,069	m	80.00	165,520
	Planting & Grassing				
	Weed control to grass areas (Berms)	21,333	m2	2.00	42,666
	Topsoil uplifted from stockpile for grass areas, 150mm	3,200	m3	30.00	96,000
	Grass seeds	21,333	m2	5.00	106,665
	Maintenance of grass areas (24 months)	21,333	m2	10.00	213,330
	Sub Total for Landscaping				624,181
	Rounding	1	LS	-3,324.44	-3,324

Estimate Details

Project: Active Mode Corridor (Drury Central
Building: Station to Drury West Station)

Details:

Code	Description	Quantity	Unit	Rate	Total
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**ACTIVE MODE CORRIDOR (DRURY CENTRAL STATION TO
 DRURY WEST STATION) - CONCEPT DESIGN COST
 ESTIMATE
 (Continued)**

	TOTAL FOR PHYSICAL WORKS				10,810,000
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Appendix B – Land Transaction List
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