

Friday, 14th September 2018

Ben Hawkins
Strategic Planning Manager, Victorian Planning Authority
25 Collins Street
Melbourne VIC 3000

By email: Ben.Hawkins@vpa.vic.gov.au

Dear Ben,

RE: SUBMISSION TO AMENDMENT GC102 – DONNYBROOK/WOODSTOCK ICP

1. Introduction and Background

Mirvac is developing a large parcel of land in the Donnybrook Precinct which is affected by the Donnybrook/Woodstock exhibited Infrastructure Contributions Plan, August 2018 (**ICP**). Mirvac's Masterplan for the site, known as 'Olivine' herein, will deliver some 2250 homes, two schools, a Local Town Centre as well as recreation and community spaces. Mirvac has also recently entered into an agreement with Boral Limited to develop a further 278Ha of land to the north which will comprise a further ~2000 lots and thus becoming a core project in the Northern corridor and the largest in the Donnybrook/Woodstock PSP.

We are currently developing Olivine's first precinct pursuant to Planning Permit (717121) for 580 houses, a park/oval and a non-government school. In undertaking the planning and development of the site, we have been in discussions with Council regarding the delivery of several infrastructure items including active open space, arterial roads and intersections as works-in-kind as the project progresses. Mirvac and the consultant team have very recently prepared functional layout plans and undertaken costings for a number of projects (including intersections, roads and active open space) and are therefore well placed to provide opinions on the Amendment and in particular the benchmark costs. We have reviewed the exhibited material as part of Amendment GC102 relating to the Donnybrook/Woodstock ICP and make this submission to VPA noting that further discussion is anticipated to take place. The benchmark designs and costs which have been commissioned by VPA are an important component of this Amendment as they form the basis of seeking to apply a supplementary levy. As such, whilst we understand that the VPA are running a separate exercise to test the benchmarks (including consultation with the peak industry bodies) Mirvac provides its views on the benchmarks as part of this submission process as it directly affects the Donnybrook ICP and the Mirvac development.

We outline over the following pages the key matters of our submission at chapter 2, and our submission/requests at chapter 3.

Further information is available for discussion with VPA regarding the design and costs assumptions outlined in this submission.

2. Key Matters

We understand that the supplementary levy proposed for Donnybrook Woodstock has been generated by applying the benchmarks designs and costs to the road projects within the PSP to determine whether all the projects can be funded via the Standard Levy. This exercise has determined that there is a shortfall in the funding for the transport items and in particular bridge and culvert projects.

Mirvac does not object to the introduction of a supplementary levy to the Donnybrook ICP if there is a shortfall of funding for transport items. Our view is that if a supplementary levy is going to be applied to the Donnybrook ICP and benchmarks costs are to be assigned to each transport project then it is critical that the benchmarks reflect what will actually be constructed and the associated costs .

The VPA have advised that there is a reluctance to undertake specific design and costings for each of the items in the ICP to determine whether a supplementary levy is necessary to fund all of the allowable items. We understand the rationale for this as it is a costly and time consuming exercise and undermines the intention of introducing the ICP. As such if the VPA are going to rely on the benchmark costings to form the basis for applying a supplementary levy (which will likely then become the default baseline costs) then it is critical that the benchmark costs reflect the most up to date construction rates, design standards and recognise some of the site variations which occur.

It is critical that developers can continue to deliver ICP projects (and in particular large transport items) as works in kind. Whilst some overruns on infrastructure projects may occur over the life of a project, it is not feasible for developers to fund infrastructure well above what is provided through the ICP.

Following a review of the benchmarks scope and costs, SMEC have identified a number of gaps which significantly impact the cost applied to the intersections and roads. This is a matter of concern.

A summary of the initial review of Benchmark costings is provided below and is based on a comparison of recent costings and design for a number of ICP transport projects which are anticipated to be delivered as works in kind by Olivine Estate. SMECs review is based on:

- Olivine, Aug, 2018 construction rates.
- Concept layout plans prepared Cardno's for the Olivine Estate.
- Discussions with VicRoads and Council regarding their expectation for works.

We have principally concentrated on road and intersection projects as these are often required to provide access to development projects and it is also where there is the most discrepancy. However, MDG landscape Architects have also undertaken a review of the benchmark costs for Active Open Space and have advised that the rates in the benchmarks costs are lower than current construction rates and a number of amenities which are ordinarily delivered with Active open Space are not captured in the benchmark costs.

Scope/Design of Benchmarks

The following comments are key items that SMEC have taken out of Cardno's assessment of Benchmark designs compared to their expectations of what will need to be delivered based on site specific traffic volumes and preliminary discussions with Council and VicRoads regarding their expectations.

Intersections

Intersection Footprints in the Benchmark plans are much smaller than what we expect will be required following discussions with VicRoads and Council. In the case of the Donnybrook Road and Patterson Drive Intersection (IN-03) the functional layout plan for the ultimate intersection has been approved by VicRoads. This sets the parameters for the interim intersection given it will be delivered as an interim-on-ultimate, and therefore there is a high degree of certainty with regards to the design and footprint.

Key differences from the Benchmark plans include:

- Narrower nature strip not allowing for 2 right turn lanes
- No provision for bus jump lanes
- Narrower footprint, lanes don't align with PSP cross sections
- Benchmark turning lane lengths are generally shorter than what is anticipated will be required based on Sidra analysis

The impact of this is a wider intersection will be required which will result in longer transitions and an associated increased extent of works and costs.

There are also a number of items within the benchmark designs which Cardno have highlighted which do not meet VicRoads requirements (based on VicRoads Guidance for Planning Road Networks in Growth Areas). These are:

- Primary arterial approaches to primary or secondary arterial intersections - VicRoads generally require 2 right turn lane in ultimate. VPA Benchmark provides for only one 1 right turn lane in ultimate.
- Turn lane length – all Benchmark designs show “baseline” provisions, while VicRoads standard for “High Volume intersections” require turn lane length to cater for traffic queueing.
- It appears that no vehicle turning templates have been applied to the benchmark intersections.
- It appears that the intersection flaring tapers on the interim benchmark designs are inadequate.
- At connector road intersections, the benchmark designs do not allow for a dedicated left turn lane from the arterial road approaches.
- The benchmark design does not allow for shared path on both side of the mid-block.

Benchmark Costs

The following are the key issues identified in SMEC's review of benchmark costs compared to extent of expected works, site specific constraints and current construction rates.

Intersections on existing roads versus "open paddock"

Benchmark costs do not distinguish differences in constructing intersections on existing roads to "open paddock" situations. Key differences are:

- Traffic management costs
- Lower productivity on existing roads as typically intersections would be constructed in 2 sections to maintain traffic flow.
- Often temporary works will be required to maintain traffic flow.
- General alterations/relocation of services when working on existing roads.
- Costs associated with removal of redundant infrastructure and tying into existing conditions.

SMEC have undertaken an assessment of what are believed to be the additional costs associated with constructing on an existing road having regard to the above matters and using IN-03 (Donnybrook / Patterson) as the example. The additional costs are to be in the order of \$1.4Mil additional to P90 benchmark cost.

The impact of this is a significant shortfall in the benchmarks costings to deliver intersections on existing roads.

Construction Rates and Indexation

Rates used in Benchmark costs are generally lower than rates currently obtaining for works at Olivine Estate which are generally comparable to industry rates.

SMEC have applied Olivine, Aug, 2018 construction rates to same scope (Quantities) as used in IN-06 benchmark costs to obtain an appreciation of the difference between Benchmark rates and current construction rates.

Using IN-06 project as an example SMEC have found the following:

- 50% confidence level Benchmark costs are 82% of current rates
- 90% confidence level Benchmark costs are 90% of current rates

For comparison purposes SMEC have prepared estimates for specific ICP projects based on Olivine Estate, Aug, 2018 construction rates and concept plans prepared by Cardno for Olivine Estate. These are summarised in the following table:

ICP Project	VPA Benchmark cost P50 confidence	VPA Benchmark cost P90 confidence	SMEC – Aug, 2018	Difference SMEC to Benchmark P90	
RD-02 – Gunns Gully Road – Eastern edge to railway	\$2,496,471	\$2,787,821	Not assessed		
RD-03 - Patterson Drive – Donnybrook to Merri Creek	\$6,253,080	\$6,920,868	\$10,102,000	\$3,181,132	146%
IN-03 - Donnybrook Road and Patterson Drive	\$5,297,210	\$5,823,000	\$9,556,000	\$3,733,000	164%
IN-06 – Hayes Hill Boulevard and Patterson Drive	\$3,972,466	\$4,383,158	\$4,054,000	-\$329,158	92%
IN-10 – Cameron Street and Patterson Drive	\$4,720,246	\$5,145,136	\$8,959,000	\$3,813,864	174%
IN-13 – Gunns Gully Road and connector Street between Patterson Drive and railway	\$3,275,225	\$3,625,039	Not assessed		
IN-14 – Gunns Gully Road and Patterson Drive	\$5,078,677	\$5,572,439	\$7,014,000	\$1,441,561	126%
IN-16 – Patterson Drive and Connector Street between Gunns Gully and Merri Creek	\$3,006,961	\$3,312,141	Not assessed		
BR-03 - Culvert Patterson Drive	\$690,624	\$794,217	Not assessed		
PED-01 – Patterson Drive crossing between Donnybrook Road and Hayes Hill Boulevard	See RD-03				

There is also an issue with the indexation of costs in the benchmark plans. There needs to be planned indexation or updating costs from the time they are prepared to the time they are inserted into planning scheme. There may be some 18-24 months from the time the costs are prepared to when they come into the planning scheme meaning that 1-2 cycles of indexation are missed. Construction rates at the present time are increasing significantly. If this trend continues, the discrepancy between rates could be significant in 18-24 months which will result in underfunded projects. It is not expected that there would be a significant drop in the construction rates even if there is a general slowing in the construction industry.

The impact of this is a significant shortfall in the benchmarks costings due to missed indexation periods.
Gaps in Benchmark costs

From review, there appears to be some obvious gaps in the benchmark costs including:

- In several projects quantity and rates are not extended through to total.
- Traffic Signal operational and maintenance costs don't appear to be included, these can be in the order of \$140,000.
- Earthworks quantities appear to only allow for pavement boxing and make no allowance for any earthworks between existing surface and design surface.

Moreover, costs do not consider or have allowance for site specific issues. In the case of the Olivine intersection projects this includes:

- IN-10 (Cameron / Patterson) has significant rocky knoll within footprint which will need to be removed to construct works.
- IN-03 (Donnybrook / Patterson) for example will have significant services that will need to be worked around and/or altered.

Whilst it is understood that there will be variations across projects and not all site-specific conditions can be picked up, there needs to be some allowance made (beyond the contingency) to recognize these variations.

The impact of this is a significant shortfall in the benchmarks costings even if the intersection was delivered as per the benchmark designs.

3. Submission/Requests

Our review of the benchmarks costs highlights a number of gaps in the design and costs. Should these be applied to the intersections in Olivine as the 'base case' there would be a significant shortfall in funding to deliver the project to the scope that would be required by VicRoads.

If the benchmarks are to be relied on to substantiate the need for a supplementary levy and form part of the basis for the standard levy for the Donnybrook ICP then at a minimum they need to:

- Reflect the most up to date construction rates.
- Ensure that all common items are included in the project costs.
- Reflect the likely scope of the intersections. It is necessary for VicRoads to be involved in the formulation of the benchmark plans. We are aware that the intersections have been designed to meet Austroads standards however VicRoads often require alternative/additional elements when layout plans are prepared.
- Recognise the difference in works and costs between existing roads versus 'open paddock' road works. This recognition could be the requirement that existing intersections are specifically designed and costed so as to capture the site-specific conditions. Alternatively, and at a minimum, an additional benchmark ought to be prepared for intersections on existing roads to make an allowance (outside of contingency) for the additional traffic management and services works that are ordinarily required.

- Update the benchmarks (using the P90) to reflect more realistic scope of works and associated costs. These updated benchmarks should then be relied upon to generate the required supplementary levy of transport items in the Donnybrook ICP.
- Ensure indexation is captured between the time the project costs are prepared to when they are gazetted and form part of the ICP. There may be a re-costing exercise or a 'catch-up' indexation amount to reflect the time that has passed.
- Provide clarity in the ICP that the benchmark costs are high level estimates of intersections and that specific designs and associated costings would need to be prepared to inform the actual costs of works to be funded under the ICP.

We welcome the opportunity to meet with the VPA and Council to expand on our submission and provide the detailed costing work which has been prepared.

We also reserve the right following these discussions to provide a supplementary submission.

Your sincerely

[Redacted signature block]

**DONNYBROOK WOODSTOCK ICP
BENCHMARK COST REVIEW
TRANSPORT PROJECTS
OLIVINE ESTATE, DONNYBROOK**

7 September 2018



A. Burrows
7 September 2018

Comparison of ICP benchmark rates against Olivine Estate Aug, 2018 rates using benchmark IN-06 as example

Benchmark P50 rates would on average appear to be 82% less than current Olivine August, 2018 rates.
Benchmark P90 rates would on average appear to be 90% less than current Olivine August, 2018 rates.

Assessment of additional costs associated work construction works on existing roads compared to 'open paddock' situations

Assessment would suggest in the order of \$1,470,000 additional costs associated with working on existing road compared to "open paddock" situations based on P50 rates.
Assessment would suggest in the order of \$1,418,000 additional costs associated with working on existing road compared to "open paddock" situations based on P90 rates.

Comparision of ICP benchmark costs to anticipated scope of works and Olivine Estate, Aug, 2018 rates for Olivine WIK projects

	Benchmark P50	Benchmark P90	SMEC Aug, 2018	Difference SMEC to Benchmark P90	
RD-02 - Gunns Gully Road - Eastern edge to railway	\$ 2,496,471	\$ 2,787,821			
RD-03 - Patterson Drive - Donnybrook Road to Merri Creek	\$ 6,253,080	\$ 6,920,868	\$ 10,102,000	\$ 3,181,132	146%
IN-03 - Donnybrook Road / Patterson Drive	\$ 5,297,210	\$ 5,823,000	\$ 9,556,000	\$ 3,733,000	164%
IN-06 - Hayes Hill Boulevard / Patterson Drive	\$ 3,972,466	\$ 4,383,158	\$ 4,054,000	-\$ 329,158	92%
IN-10 - Cameron Street / Patterson Drive (interim)	\$ 4,720,246	\$ 5,145,136	\$ 8,959,000	\$ 3,813,864	174%
IN-13 - Gunns Gully Road / Connector Street between Patterson Drive and railway	\$ 3,275,225	\$ 3,625,039			
IN-14 - Gunns Gully Road / Patterson Drive	\$ 5,078,677	\$ 5,572,439	\$ 7,014,000	\$ 1,441,561	126%
IN-16 - Patterson Drive / Connector Street between Gunns Gully Road and Merri Creek	\$ 3,006,961	\$ 3,312,141			
BR-03 - Culvert Patterson Drive	\$ 690,624	\$ 794,217			

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISON OF BENCHMARK ESTIMATE RATES TO OLIVINE ESTATE AUGUST, 2018 RATES

A. Burrows
7 September 2018
Use benchmark estimate IN-06 Hayes Hill Boulevard / Patterson Drive as an example.
Applied Olivine Estate, Aug, 2018 construction rates to benchmark estimate scope of works.



Benchmark cost estimate							
Description:	INTERSECTION - Secondary - Connector Intersection						
Civil Component Number:	Cardno Item 9						
Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks and Earthworks	Site Preparation	0	%	\$2.39	\$0	\$2.68	\$0
	Earthworks	6266.35	m3	\$35.43	\$221,985	\$40.30	\$252,550
		6266.35					
		6266.35					
Road Pavement	Primary Arterial Pavement	0	m2	\$157.08	\$0	\$170.80	\$0
	Secondary Arterial Pavement	6970	m2	\$123.23	\$858,905	\$130.03	\$906,277
		6970	m2				
		6970	m2				
	Collector Arterial Pavement	3440	m2	\$91.07	\$313,286	\$100.18	\$344,614
		3440	m2				
		3440	m2				
	Subgrade Preparation	0	%	\$15.21	\$0	\$17.70	\$0
	Pavement Rehab	0	m2	\$45.90	\$0		\$0
	Pavement Other	0	m2	\$0.00	\$0		\$0
Concrete Works	Kerb and Channel	3000	m	\$50.42	\$151,257	\$56.39	\$169,161
	Cycle Path	1090	m2	\$59.60	\$64,964	\$69.01	\$75,218
	SUP/ Footpath	1910	m2	\$58.44	\$111,628	\$67.50	\$128,916
	Traffic Island	105	m2	\$71.43	\$7,501	\$76.57	\$8,040
Drainage	Drainage Pipe 300mm CR Bfilled	280	m	\$162.30	\$45,444	\$175.64	\$49,180
	Drainage Pipe 375mm CR Bfilled	0	m	\$226.68	\$0	\$246.52	\$0
	Drainage Pipe 450mm CR Bfilled	790	m	\$291.67	\$230,417	\$320.95	\$253,552
	Drainage Pipe 525mm CR Bfilled	0	m	\$375.71	\$0	\$402.87	\$0
	Drainage - pits	32	No.	\$2,325.57	\$74,418	\$2,499.15	\$79,973
	Drainage – Sub-soil drainage	3540	m	\$23.05	\$81,586	\$26.53	\$93,931
	Drainage Culvert	0	No.	\$0.00	\$0		\$0
Traffic	Traffic Signals	4	Item	\$88,375.88	\$353,504	\$100,101.03	\$400,404
	Traffic Signal Conduit	0	m	\$45.71	\$0	\$53.47	\$0
Landscape	Tree Planting	88	No.	\$259.62	\$22,846	\$318.78	\$28,053
	Landscaping	5890	m2	\$20.72	\$122,021	\$23.31	\$137,302
	Topsoil Seeding	5890	m2	\$7.00	\$41,206	\$7.92	\$46,661
Street Lighting	Street Lighting (all Inclusive)	0	m	\$207.67	\$0	\$235.63	\$0
	Street Lighting - Intersections	4	Item/ Per Leg	\$0.00	\$0		\$0
Misc	Regulatory Signage	10	Item	\$329.29	\$3,293	\$363.25	\$3,632
	Linemarking	10410	m2 of Pavement	\$2.40	\$25,012	\$2.81	\$29,258
	Landscape maintenance	1	Item	\$75,000.00	\$75,000	\$86,250.00	\$86,250
	Tactile Pavers (Hazard only)	24	Item	\$337.14	\$8,091	\$422.86	\$10,149
Other		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
Delivery	Council Fees	1	%	3.25%	\$91,402	3.25%	\$100,851

SMEC assessment		
OLIVINE August, 2018 RATES		
	Rate	Amount
	\$ 2.50	\$ -
		\$ -
Earthworks - cut	\$ 41.04	\$ 257,171
Earthworks - dispose	\$ 16.12	\$ 101,014
		\$ -
Pavement asphalt area	\$ 122.00	\$ 850,326
Pavement under and behind kerb	\$ 37.91	\$ 264,233
Subgrade improvement allowance	\$ 13.99	\$ 97,538
Pavement asphalt area	\$ 89.66	\$ 308,430
Pavement under and behind kerb	\$ 30.10	\$ 103,544
Subgrade improvement allowance	\$ 13.99	\$ 48,139
		\$ -
		\$ -
		\$ -
	\$ 46.98	\$ 140,937
	\$ 52.38	\$ 57,094
	\$ 52.38	\$ 100,046
	\$ 76.41	\$ 8,023
	\$ 344.69	\$ 96,513
	\$ 378.76	\$ -
	\$ 424.03	\$ 334,984
	\$ 458.62	\$ -
	\$ 3,405.83	\$ 108,987
	\$ 26.25	\$ 92,925
		\$ -
	\$ 70,000.00	\$ 280,000
		\$ -
	\$ 200.00	\$ 17,600
	\$ -	\$ -
	\$ 11.08	\$ 65,261
	\$ 265.20	\$ -
		\$ -
	\$ 234.36	\$ 2,344
	\$ 2.50	\$ 26,025
	\$ 53,949.00	\$ 53,949
	\$ 307.96	\$ 7,391
		\$ -
		\$ -
		\$ -
	3.25%	\$ 111,230

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISON OF BENCHMARK ESTIMATE RATES TO OLIVINE ESTATE AUGUST, 2018 RATES



A. Burrows
7 September 2018

	VicRoads Fees	1	%	1.00%	\$28,124	1.00%	\$31,031
	Traffic Management	1	%	5.00%	\$140,618	5.00%	\$155,156
	Environmental Management	1	%	5.00%	\$14,062	5.00%	\$15,516
	Surveying and Design	1	%	5.00%	\$140,618	5.00%	\$155,156
	Supervision and Project management	1	%	9.00%	\$253,113	9.00%	\$279,281
	Site Establishment	1	%	2.50%	\$70,309	2.50%	\$77,578
	Contingency	1	%	15.00%	\$421,855	15.00%	\$465,468
Total	Excluding Delivery				\$2,812,365		\$3,103,121
	Including Delivery				\$3,972,466		\$4,383,158

	1.00%	\$ 34,225
	5.00%	\$ 171,124
	0.50%	\$ 17,112
	5.00%	\$ 171,124
	10.00%	\$ 342,247
	2.50%	\$ 85,562
	15.00%	\$ 513,371
		\$ 4,868,000

Based on comparison of same scope
Benchmark P50 rates would on average appear to be 82% less than current Olivine August, 2018 rates.
Benchmark P90 rates would on average appear to be 90% less than current Olivine August, 2018 rates.

- Notes:
- Rates based on Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
 - Landscape rates based on MDG estimates 15 Aug, 2018
 - SMEC total is not SMEC assessment of project costs. Total provided is based on benchmark estimate quantiy allowances with Olivine August, 2018 rates for camparision of rates purposes.

A. Burrows
7 September 2018
Use Benchmark costing IN-03 as an example.

Benchmark cost estimate							
Description:	INTERSECTION - Primary - Secondary Intersection						
Civil Component Number:	IN-03 - (Not complete scope)						
Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks and Earthworks	Site Preparation	0	%	\$2.39	\$0	\$2.68	\$0
Road Pavement	Pavement Other	0	m2	\$0.00	\$0		\$0
Other	Service Relocation	0		\$154,713.77	\$154,714	\$177,388.39	\$177,388
		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
Delivery	Council Fees	1	%	3.25%	\$5,028	3.25%	\$5,765
	VicRoads Fees	1	%	1.00%	\$1,597	1.00%	\$1,832
	Traffic Management				\$179,776		\$197,254
	Environmental Management	1	%	5.00%	\$17,056	5.00%	\$19,112
	Surveying and Design	1	%	5.00%	\$17,909	5.00%	\$20,068
	Supervision and Project management	1	%	9.00%	\$19,923	9.00%	\$21,963
	Site Establishment	1	%	2.50%	\$6,032	2.50%	\$6,650
	Contingency	1	%	15.00%	\$37,098	15.00%	\$40,896
Total	Excluding Delivery				\$154,714		\$177,388
	Including Delivery				\$439,133		\$490,928

SMEC assessment					
Description	Detail	Unit	Rate	Quantity	Amount
Preliminaries	Clearing & Grubbing	Item	\$ 2.50	0	\$ -
	Tree removal	No.	\$ 1,000.00	55	\$ 55,000
	Stone wall removal	Item	\$ 5,600.00	1	\$ 5,600
Pavement	Temporary Pavement to maintain traffic flow	sq m	\$ 86.36	1,225	\$ 105,794
	Remove temporary pavement	cu m	\$ 57.16	404	\$ 23,107
Service Relocation	Relocate Telstra XXX Lm	Lm	\$ 300,000.00	1	\$ 300,000
	Relocate electricity Pole - multiple v	No.	\$ 30,000.00	3	\$ 90,000
	Relocate NBN Node to Node (Provisi	Item	\$ 500,000.00	1	\$ 500,000
	Adjust BS manhole cover level	No.	\$ 20,000.00	1	\$ 20,000
			\$ -		\$ -
			\$ -		\$ -
			\$ -		\$ -
				Subtotal	\$ 1,099,501
Council Fees	3.25% of cost of works	item	3.25%	1	\$ 35,734
VicRoads Fees	1% of cost of works	Item	1.00%	1	\$ 10,995
Traffic Management					\$ 350,000
Environmental Management	0.5% of cost of works	item	5.00%	1	\$ 54,975
Survey & Design	5% of cost of works	item	5.00%	1	\$ 54,975
Supervision & Project Managem	10% of cost of works	item	10.00%	1	\$ 109,950
Site Establishment	2.5% of cost of works	item	2.50%	1	\$ 27,488
Contingency	15% of cost of works	item	15.00%	1	\$ 164,925
				TOTAL	\$ 1,909,000

Assessment would suggest in the order of \$1,470,000 additional costs associated with working on existing road compared to "open paddock" situations based on P50 rates.
Assessment would suggest in the order of \$1,418,000 additional costs associated with working on existing road compared to "open paddock" situations based on P90 rates.

Notes:
- Rates Based on Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
- SMEC total is not SMEC assessment of project costs. Total provided is based on Cardno quantiy allowances with Olivine August, 2018 rates for comparision of rates purposes.

Benchmark cost estimate							
Appendix 5							
Description:	Road - Secondary - 1862m						
Civil Component Number:	RD-03						
Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks and Earthworks	Site Preparation	0	%	\$2.39	\$0	\$2.70	\$0
	Earthworks	11981.97	m3	\$35.43	\$424,461	\$40.63	\$486,794
Road Pavement	Primary Arterial Pavement	0	m2	\$157.08	\$0	\$171.71	\$0
	Secondary Arterial Pavement	16758	m2	\$123.23	\$2,065,070	\$130.48	\$2,186,545
	Collector Arterial Pavement	0	m2	\$91.07	\$0	\$100.18	\$0
	Subgrade Preparation	0	%	\$15.21	\$0	\$17.86	\$0
	Pavement Rehab	0	m2	\$45.90	\$0	\$45.90	\$0
Concrete Works	Pavement Other	0	m2	\$0.00	\$0	\$0.00	\$0
	Kerb and Channel	3724	m	\$50.42	\$187,761	\$56.78	\$211,464
	Cycle Path	0	m2	\$59.60	\$0	\$69.63	\$0
	SUP/ Footpath	3724	m2	\$58.44	\$217,645	\$68.10	\$253,595
	Traffic Island	0	m2	\$71.43	\$0	\$76.92	\$0
Drainage	Drainage Pipe 300mm CR Bfilled	232.75	m	\$162.30	\$37,775	\$176.53	\$41,087
	Drainage Pipe 375mm CR Bfilled	814.625	m	\$226.68	\$184,661	\$247.84	\$201,893
	Drainage Pipe 450mm CR Bfilled	814.625	m	\$291.67	\$237,599	\$322.90	\$263,043
	Drainage Pipe 525mm CR Bfilled	0	m	\$375.71	\$0	\$404.67	\$0
	Drainage - pits	37	No.	\$2,325.57	\$86,604	\$2,510.70	\$93,499
	Drainage – Sub-soil drainage	3724	m	\$23.05	\$85,827	\$26.77	\$99,677
Traffic	Drainage Culvert	0	No.	\$0.00	\$0	\$0.00	\$0
	Traffic Signals	0	Item	\$88,375.88	\$0	\$100,881.35	\$0
	Traffic Signal Conduit	0	m	\$45.71	\$0	\$53.99	\$0
Landscape	Tree Planting	154	No.	\$259.62	\$40,067	\$322.72	\$49,806
	Landscaping	0	m2	\$20.72	\$0	\$23.48	\$0
	Topsoil Seeding	5586	m2	\$7.00	\$39,080	\$7.98	\$44,597

SMEC assessment							
RD-03 - Patterson Drive - Mid Block (Interim)							
Description	Detail	Unit	Rate	Quantity Donny to Hayes Hill	Quantity Hayes Hill to Cameron	Quantity Cameron to Merri Ck	Amount
Road length		m		446	328	1083	
Preliminaries	Clearing & Grubbing	Item	\$ 2.50	0	0	0	\$ -
	Tree removal	No.	\$ 1,000.00	2			\$ 2,000
	Stone wall removal	Item	\$ 5,600.00				\$ -
Earthworks	Topsoil strip & stockpile	sq m	\$ 0.85	15,164	11,152	36,822	\$ 53,667
	Cut (for boxing) Primary Arterial road	cu m	\$ 41.04			0	\$ -
	Cut (for boxing) Secondary Arterial road	cu m	\$ 41.04	8,030	190	6,385	\$ 599,404
	Cut (Existing Surface to Design Surface) allowance say 300mm over road reserve area	cu m	\$ 41.04			11,047	\$ 453,352
	Fill (place & compact)	cu m	\$ 7.51	990	12,090	0	\$ 98,231
	Import Type B, place & compact fill	cu m	\$ 7.51			0	\$ -
	Disposal of excess material	cu m	\$ 16.12			17,432	\$ 281,003
			\$ 50.00				\$ -
			\$ -				\$ -
Pavement	Construct deep strength pavement (Primary Arterial Pavement), inside kerbs	sq m	\$ 136.64			0	\$ -
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 54.69			0	\$ -
	Sub grade improvement (allowance)	sq m	\$ 13.99			0	\$ -
			\$ -				\$ -
	Construct deep strength pavement (Secondary Arterial Pavement), inside kerbs	sq m	\$ 122.00	2,854	1,900	6,931	\$ 1,425,571
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 37.91	2,141	943	2,599	\$ 215,450
	Sub grade improvement (allowance)	sq m	\$ 13.99	4,995	2,843	9,530	\$ 243,053
	Regulation layer (depth 0mm to approx 60mm)	sq m	\$ -			0	\$ -
	Overlay existing pavement Asphalt 40mm	sq m	\$ -				\$ -
	Temporary Pavement to maintain traffic flow	sq m	\$ 86.36			0	\$ -
	Remove temporary pavement	cu m	\$ 57.16			0	\$ -
Kerb & Channel	SM2 - Primary Arterial	Lm	\$ 46.98				\$ -
	SM3 - Primary Arterial incl above	Lm	\$ 46.98				\$ -
	SM2 - Secondary Arterial	Lm	\$ 46.98	892	786	2,166	\$ 180,587
	SM3 - Secondary Arterial incl above	Lm	\$ 46.98	892			\$ 41,905
Concrete paths	Shared path	sq m	\$ 52.38	2,676	1,968	6,498	\$ 583,618
	Footpath	sq m	\$ 52.38	206	137	0	\$ 17,966
Splitter Islands	Concrete	sq m	\$ 76.41			0	\$ -
	Other infill	sq m	\$ 76.41				\$ -
Drainage	Drainage Pipe 300 dia - C/R B/Fill	m	\$ 344.69				\$ -
	Drainage Pipe 375 dia - C/R B/Fill	m	\$ 378.76	185	79	795	\$ 401,084
	Drainage Pipe 450 dia - C/R B/Fill	m	\$ 424.03	81	24	400	\$ 214,135
	Drainage Pipe 525 dia - C/R B/Fill	m	\$ 458.62	109	21	400	\$ 243,069
	Drainage Pipe 600 dia - C/R B/Fill	m	\$ 482.00		222	350	\$ 275,704
	Drainage Pipe 750 dia - C/R B/Fill	m	\$ 680.00				\$ -
	Drainage Pipe 1200 dia - C/R B/Fill	m	\$ 974.46		0		\$ -
	Drainage Pits - Regular	No.	\$ 3,405.83	10	3	43	\$ 191,816
	Drainage Pits - Large	No.	\$ 7,000.00		6		\$ 42,000
	Subsoil Drains (SM2 and SM3)	m	\$ 26.25	1,962	865	2,383	\$ 136,752
	Driveable Concrete end wall - small pipe	No.	\$ 3,473.61				\$ -
	Driveable Concrete end wall - large pipe	No.	\$ -				\$ -
	Form Swale Drain	Lm	\$ 7.09				\$ -
Traffic Signals	Full intersection	Item	\$ 280,000.00	1			\$ 140,000
Landscaping	Street trees	No.	\$ 200.00	71	52	172	\$ 58,981
	Topsoil and grass to naturestrips	sq m	\$ 11.08	8,358	6,675	22,093	\$ 411,358

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISON OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
RD-03 - Patterson Drive - Mid Block (Interim)

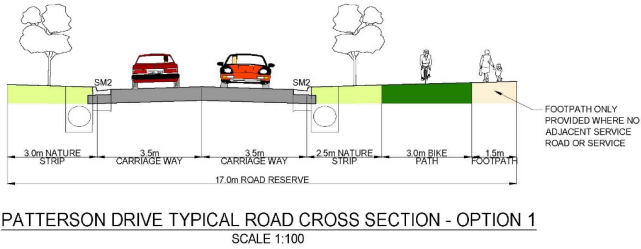
A. Burrows
7 September 2018

Street Lighting	Street Lighting (all Inclusive)	1862	m	\$207.67	\$386,676	\$237.49	\$442,203
	Street Lighting - Intersections	0	Item/ Per Leg	\$0.00	\$0	\$0.00	\$0
Misc	Regulatory Signage	0	Item	\$329.29	\$0	\$365.51	\$0
	Linemarking	16758	m2 of Pavement	\$2.40	\$40,265	\$2.84	\$47,555
	Landscape maintenance	0	Item	\$75,000.00	\$0	\$86,250.00	\$0
	Tactile Pavers (Hazard only)	0	Item	\$337.14	\$0	\$428.57	\$0
Other	Service Relocation and local site conditions	1	Item	\$393,469.18	\$393,469	\$477,971.00	\$477,971
		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
Delivery	Council Fees	1	%	3.25%	\$143,876	3.25%	\$159,241
	VicRoads Fees	1	%	1.00%	\$44,270	1.00%	\$48,997
	Traffic Management	1	%	5.00%	\$221,348	5.00%	\$244,986
	Environmental Management	1	%	5.00%	\$22,135	5.00%	\$24,499
	Surveying and Design	1	%	5.00%	\$221,348	5.00%	\$244,986
	Supervision and Project management	1	%	9.00%	\$398,426	9.00%	\$440,976
	Site Establishment	1	%	2.50%	\$110,674	2.50%	\$122,493
	Contingency	1	%	15.00%	\$664,044	15.00%	\$734,959
Total	Excluding Delivery				\$4,426,959		\$4,899,729
	Including Delivery				\$6,253,080		\$6,920,868

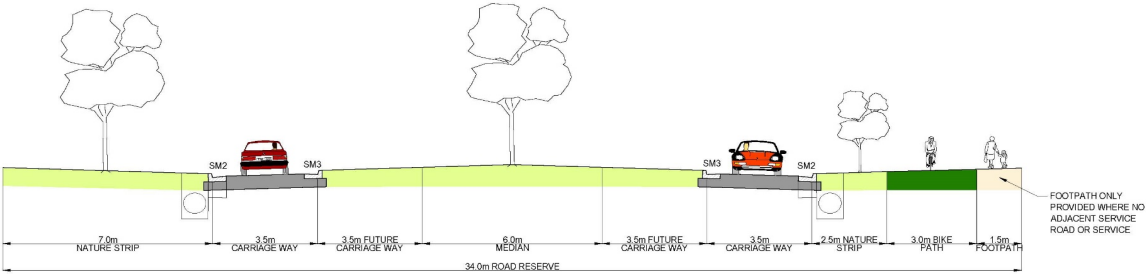
NOTES:
Estimate based on:
- Cross sections to right with Option 2 adopted between Donnybrook Road and Hayes Hill Boulevard and Option 1 adopted north of Hayes Hill Boulevard consistent with advice from Council.
- High level consideration of finished levels and drainage sizing.
- Pavement depths and compositions based on experiences with other similar projects.
- Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
- Landscape rates based on MDG estimates 15 Aug, 2018
Estimates should be reviewed once:
- Authority functional layout approvals are received.
- Geotechnical and survey information is available.
- Designs are developed.
Estimates do not include any allowances for such things as:
- Land acquisition.
- Cultural heritage.
- Biodiversity offsets.
- GAIC contributions.
- Contamination.
- Construction of drainage outfalls beyond limits of works.
- Upsizing of drainage to cater for catchments from adjacent proposed estates. This is considered an estate cost.



Lighting	Intersection lighting	No.	\$ 13,260.00	9	7	22	\$ 492,476
	Mid-block: New lighting poles (All Inclusive)	Item	\$ -				\$ -
Miscellaneous	Signage	No.	\$ 234.36				\$ -
	Linemarking	sq m	\$ 2.50	2,854	1,900	6,931	\$ 29,213
	Landscape establishment watering	sq m	\$ 4.50	8,358	6,675	22,093	\$ 167,068
	Tactile pavers	No.	\$ 307.96				\$ -
	Fencing	m	\$ 21.69				\$ -
Service Relocation	Relocate Telstra XXX Lm	Lm	\$ 300,000.00				\$ -
	Relocate electricity Pole - multiple voltages	No.	\$ 30,000.00			0	\$ -
	Relocate NBN Node to Node (Provisional)	Item	\$ 500,000.00			0	\$ -
	Adjust BS manhole cover level	No.	\$ 20,000.00			0	\$ -
	Adjust water main bypass assemblies	No.	\$ 20,000.00				\$ -
			\$ -				\$ -
			\$ -				\$ -
			\$ -				\$ -
						Subtotal	\$ 6,999,466
Council Fees	3.25% of cost of works	item	3.25%			1	\$ 227,483
VicRoads Fees	1% of cost of works	Item	1.00%			1	\$ 69,995
VicRoads 10 year Signal Maintenance Fee		Item	\$ 75,000.00	\$ 1.00		0	\$ 75,000
VicRoads Prom & controller incl connection		Item	\$ 50,000.00	\$ 1.00		0	\$ 50,000
VicRoads 10 year street light maintenance fee		Item	\$ 20,000.00	\$ 1.00		0	\$ 20,000
Traffic Management	5% of cost of works	item	5.00%			1	\$ 349,973
Environmental Management	0.5% of cost of works	item	0.50%			1	\$ 34,997
Survey & Design	5% of cost of works	item	5.00%			1	\$ 349,973
Supervision & Project Management	10% of cost of works	item	10.00%			1	\$ 699,947
Site Establishment	2.5% of cost of works	item	2.50%			1	\$ 174,987
Contingency	15% of cost of works	item	15.00%			1	\$ 1,049,920
						TOTAL	\$ 10,102,000



PATTERSON DRIVE TYPICAL ROAD CROSS SECTION - OPTION 1
SCALE 1:100



PATTERSON DRIVE TYPICAL ROAD CROSS SECTION - OPTION 2
SCALE 1:100

FOR DISCUSSION PURPOSES

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISION OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
IN-03 - Donnybrook Road & Patterson Drive (Interim)

#REF!

7 September 2018

	Street Lighting (all Inclusive)	0	m	\$207.67	\$0	\$235.63	\$0
Street Lighting	Street Lighting - Intersections	4	Item/ Per Leg	\$0.00	\$0		\$0
	Regulatory Signage	16	Item	\$329.29	\$5,269	\$363.25	\$5,812
Misc	Linemarking	13990	m2 of Pavement	\$2.40	\$33,614	\$2.81	\$39,320
	Landscape maintenance	1	Item	\$75,000.00	\$75,000	\$86,250.00	\$86,250
	Tactile Pavers (Hazard only)	24	Item	\$337.14	\$8,091	\$422.86	\$10,149
	Service Relocation	0		\$154,713.77	\$154,714	\$177,388.39	\$177,388
Other		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
	Council Fees	1	%	3.25%	\$116,855	3.25%	\$128,215
Delivery	VicRoads Fees	1	%	1.00%	\$35,955	1.00%	\$39,451
	Traffic Management	1	%	5.00%	\$179,776	5.00%	\$197,254
	Environmental Management	1	%	5.00%	\$17,978	5.00%	\$19,725
	Surveying and Design	1	%	5.00%	\$179,776	5.00%	\$197,254
	Supervision and Project management	1	%	9.00%	\$323,597	9.00%	\$355,058
	Site Establishment	1	%	2.50%	\$89,888	2.50%	\$98,627
	Contingency	1	%	15.00%	\$539,328	15.00%	\$591,763
	Excluding Delivery				\$3,750,237		\$4,122,478
Total	Including Delivery				\$5,297,210		\$5,823,000

NOTES:

Estimates for service alterations should be treated as an order of magnitude allowance only.

Estimate based on:

- Cardno Concept layout Interim DCP, CG140549-TR-SK-0072, rev B.
- High level consideration of finished levels and drainage sizing.
- Pavement depths and compositions based on experiences with other similar projects.
- Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
- Landscape rates based on MDG estimates 15 Aug, 2018

Estimates should be reviewed once:

- Authority functional layout approvals are received.
- Geotechnical and survey information is available.
- Designs are developed.

Estimates do not include any allowances for such things as:

- Land acquisition.
- Cultural heritage.
- Biodiversity offsets.
- GAIC contributions.
- Contamination.
- Construction of drainage outfalls beyond limits of works.
- Upsizing of drainage to cater for catchments from adjacent proposed estates. This is considered an estate cost.



Lighting	Intersection lighting	No.	\$ 13,260.00	16	\$ 212,160
	Mid-block: New lighting poles (All Inclusive)	Item	\$ 13,260.00	12	\$ 159,120
Miscellaneous	Signage	No.	\$ 234.36	30	\$ 7,031
	Linemarking	sq m	\$ 2.50	15,572	\$ 38,929
	Landscape establishment watering	sq m	\$ 4.50	24,101	\$ 108,452
	Tactile pavers	No.	\$ 307.96	44	\$ 13,550
	Fencing	m	\$ 21.69	1,375	\$ 29,824
Service Relocation	Relocate Telstra	Item	\$ 300,000.00	1	\$ 300,000
	Relocate electricity Pole - multiple voltages	No.	\$ 30,000.00	3	\$ 90,000
	Relocate NBN Node to Node (Provisional)	Item	\$ 500,000.00	1	\$ 500,000
	Adjust BS manhole cover level	No.	\$ 20,000.00	1	\$ 20,000
	Adjust water main bypass assemblies	No.	\$ 20,000.00	0	\$ -
			\$ -		\$ -
			\$ -		\$ -
			\$ -		\$ -
				Subtotal	\$ 6,615,864
Council Fees	3.25% of cost of works	item	3.25%	1	\$ 215,016
VicRoads Fees	1% of cost of works	Item	1.00%	1	\$ 66,159
VicRoads 10 year Signal Maintenance Fee		Item	\$ 75,000.00	1	\$ 75,000
VicRoads Prom & controller incl connection		Item	\$ 50,000.00	1	\$ 50,000
VicRoads 10 year street light maintenance fee		Item	\$ 20,000.00	1	\$ 20,000
Traffic Management	5% of cost of works	item	5.00%	1	\$ 330,793
Environmental Management	0.5% of cost of works	item	0.50%	1	\$ 33,079
Survey & Design	5% of cost of works	item	5.00%	1	\$ 330,793
Supervision & Project Management	10% of cost of works	item	10.00%	1	\$ 661,586
Site Establishment	2.5% of cost of works	item	2.50%	1	\$ 165,397
Contingency	15% of cost of works	item	15.00%	1	\$ 992,380
				TOTAL	\$ 9,556,000

Benchmark cost estimate							
Appendix 5							
Description:	INTERSECTION - Secondary - Connector Intersection						
Civil Component Number:	Item 9						
Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks and Earthworks	Site Preparation	0	%	\$2.39	\$0	\$2.68	\$0
	Earthworks	6266.35	m3	\$35.43	\$221,985	\$40.30	\$252,550
Road Pavement	Primary Arterial Pavement	0	m2	\$157.08	\$0	\$170.80	\$0
	Secondary Arterial Pavement	6970	m2	\$123.23	\$858,905	\$130.03	\$906,277
	Collector Arterial Pavement	3440	m2	\$91.07	\$313,286	\$100.18	\$344,614
Concrete Works	Subgrade Preparation	0	%	\$15.21	\$0	\$17.70	\$0
	Pavement Rehab	0	m2	\$45.90	\$0		\$0
	Pavement Other	0	m2	\$0.00	\$0		\$0
	Kerb and Channel	3000	m	\$50.42	\$151,257	\$56.39	\$169,161

SMEC assessment					
IN-06 - Hayes Hill Boulevard & Patterson Drive (Interim)					
Description	Detail	Unit	Rate	Quantity	Amount
Preliminaries	Clearing & Grubbing	Item	\$ 2.50	0	\$ -
	Tree removal	No.	\$ 1,000.00		\$ -
	Stone wall removal	Item	\$ 5,600.00		\$ -
Earthworks	Topsoil strip & stockpile	sq m	\$ 0.85	18,190	\$ 15,462
	Cut (for boxing) Primary Arteial road	cu m	\$ 41.04		\$ -
	Cut (for boxing) Secondary Arteial road	cu m	\$ 41.04	11,660	\$ 478,526
	Cut (Existing Surface to Design Surface) allow 300mm average depth of entire intersection road reserve area	cu m	\$ 41.04	0	\$ -
	Fill (place & compact)	cu m	\$ 7.51	2,120	\$ 15,921
	Import Type B, place & compact fill	cu m	\$ 7.51	0	\$ -
	Disposal of excess material	cu m	\$ 16.12	9,540	\$ 153,785
			\$ 50.00		\$ -
			\$ -		\$ -
Pavement	Construct deep strength pavement (Primary Arterial Pavement), inside kerbs	sq m	\$ 136.64	0	\$ -
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 54.69	0	\$ -
	Sub grade improvement (allowance)	sq m	\$ 13.99	0	\$ -
			\$ -		\$ -
	Construct deep strength pavement (Secondary Arterial Pavement), inside kerbs	sq m	\$ 122.00	3,972	\$ 484,576
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 37.91	1,830	\$ 69,375
	Sub grade improvement (allowance)	sq m	\$ 13.99	5,802	\$ 81,193
					\$ -
	Construct Granular pavement (Connector Boulevard Pavement), inside kerbs	sq m	\$ 89.66	1,365	\$ 122,386
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 30.10	620	\$ 18,674
	Sub grade improvement (allowance)	sq m	\$ 13.99	1,985	\$ 27,784
	Regulation layer (depth 0mm to approx 60mm)	sq m	\$ -		\$ -
	Overlay existing pavement Asphalt 40mm	sq m	\$ -		\$ -
			\$ -		
	Temporary Pavement to maintain traffic flow	sq m	\$ 86.36	0	\$ -
	Remove temporary pavement	cu m	\$ 57.16	0	\$ -
Kerb & Channel	SM2 - Primary Arterial	Lm	\$ 46.98	0	\$ -
	SM3 - Primary Arterial incl above	Lm	\$ 46.98		\$ -
	SM2 - Secondary Arterial	Lm	\$ 46.98	1,525	\$ 71,643

	Cycle Path	1090	m2	\$59.60	\$64,964	\$69.01	\$75,218
	SUP/ Footpath	1910	m2	\$58.44	\$111,628	\$67.50	\$128,916
	Traffic Island	105	m2	\$71.43	\$7,501	\$76.57	\$8,040
Drainage	Drainage Pipe 300mm CR Bfilled	280	m	\$162.30	\$45,444	\$175.64	\$49,180
	Drainage Pipe 375mm CR Bfilled	0	m	\$226.68	\$0	\$246.52	\$0
	Drainage Pipe 450mm CR Bfilled	790	m	\$291.67	\$230,417	\$320.95	\$253,552
	Drainage Pipe 525mm CR Bfilled	0	m	\$375.71	\$0	\$402.87	\$0
	Drainage - pits	32	No.	\$2,325.57	\$74,418	\$2,499.15	\$79,973
	Drainage – Sub-soil drainage	3540	m	\$23.05	\$81,586	\$26.53	\$93,931
	Drainage Culvert	0	No.	\$0.00	\$0		\$0
Traffic	Traffic Signals	4	Item	\$88,375.88	\$353,504	\$100,101.03	\$400,404
	Traffic Signal Conduit	0	m	\$45.71	\$0	\$53.47	\$0
Landscape	Tree Planting	88	No.	\$259.62	\$22,846	\$318.78	\$28,053
	Landscaping	5890	m2	\$20.72	\$122,021	\$23.31	\$137,302
	Topsoil Seeding	5890	m2	\$7.00	\$41,206	\$7.92	\$46,661
Street Lighting	Street Lighting (all Inclusive)	0	m	\$207.67	\$0	\$235.63	\$0
	Street Lighting - Intersections	4	Item/ Per Leg	\$0.00	\$0		\$0
Misc	Regulatory Signage	10	Item	\$329.29	\$3,293	\$363.25	\$3,632
	Linemarking	10410	m2 of Pavement	\$2.40	\$25,012	\$2.81	\$29,258
	Landscape maintenance	1	Item	\$75,000.00	\$75,000	\$86,250.00	\$86,250
	Tactile Pavers (Hazard only)	24	Item	\$337.14	\$8,091	\$422.86	\$10,149
Other		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
Delivery	Council Fees	1	%	3.25%	\$91,402	3.25%	\$100,851
	VicRoads Fees	1	%	1.00%	\$28,124	1.00%	\$31,031

	SM3 - Secondary Arterial incl above	Lm	\$ 46.98		\$ -
	SM2 - Connector Boulevard	Lm	\$ 46.98	517	\$ 24,288
	SM3 - Connector Boulevard incl above	Lm	\$ 46.98		\$ -
Concrete paths	Shared path	sq m	\$ 52.38	3,055	\$ 160,021
	Footpath	sq m	\$ 52.38	0	\$ -
Splitter Islands	Concrete	sq m	\$ 76.41	117	\$ 8,940
	Other infill	sq m	\$ 76.41	0	\$ -
Drainage	Drainage Pipe 300 dia - C/R B/Fill	m	\$ 344.69	0	\$ -
	Drainage Pipe 375 dia - C/R B/Fill	m	\$ 378.76	318	\$ 120,446
	Drainage Pipe 450 dia - C/R B/Fill	m	\$ 424.03	23	\$ 9,753
	Drainage Pipe 525 dia - C/R B/Fill	m	\$ 458.62	208	\$ 95,393
	Drainage Pipe 600 dia - C/R B/Fill	m	\$ 482.00	0	\$ -
	Drainage Pipe 750 dia - C/R B/Fill	m	\$ 680.00	0	\$ -
	Drainage Pits - Regular	No.	\$ 3,405.83	11	\$ 37,464
	Drainage Pits - Large	No.	\$ 7,000.00	6	\$ 42,000
	Subsoil Drains (SM2 and SM3)	m	\$ 26.25	2,246	\$ 58,963
	Driveable Concrete end wall - small pipe	No.	\$ 3,473.61		\$ -
	Driveable Concrete end wall - large pipe	No.	\$ -		\$ -
	Form Swale Drain	Lm	\$ 7.09		\$ -
Traffic Signals	Full intersection	Item	\$ 280,000.00	1	\$ 280,000
Landscaping	Street trees	No.	\$ 200.00	86	\$ 17,200
	Topsoil and grass to naturestrips	sq m	\$ 11.08	8,456	\$ 93,690
Lighting	Intersection lighting	No.	\$ 13,260.00	15	\$ 198,900
	Mid-block: New lighting poles (All Inclusive)	Item	\$ -		\$ -
Miscellaneous	Signage	No.	\$ 234.36	16	\$ 3,750
	Linemarking	sq m	\$ 2.50	5,337	\$ 13,343
	Landscape establishment watering	sq m	\$ 4.50	8,456	\$ 38,051
	Tactile pavers	No.	\$ 307.96	20	\$ 6,159
	Fencing	m	\$ 21.69		\$ -
Service Relocation	Relocate Telstra	Lm	\$ 300,000.00	0	\$ -
	Relocate electricity Pole - multiple voltages	No.	\$ 30,000.00	0	\$ -
	Relocate NBN Node to Node (Provisional)	Item	\$ 500,000.00	0	\$ -
	Adjust BS manhole cover level	No.	\$ 20,000.00	0	\$ -
	Adjust water main bypass assemblies	No.	\$ 20,000.00	0	\$ -
			\$ -		\$ -
			\$ -		\$ -
			\$ -		\$ -
				Subtotal	\$ 2,747,685
Council Fees	3.25% of cost of works	item	3.25%	1	\$ 89,300
VicRoads Fees	1% of cost of works	Item	1.00%	1	\$ 27,477

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISION OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
IN-06 - Hayes Hill Boulevard & Patterson Drive (Interim)

A. Burrows
7 September 2018

	Traffic Management	1	%	5.00%	\$140,618	5.00%	\$155,156
	Environmental Management	1	%	5.00%	\$14,062	5.00%	\$15,516
	Surveying and Design	1	%	5.00%	\$140,618	5.00%	\$155,156
	Supervision and Project management	1	%	9.00%	\$253,113	9.00%	\$279,281
	Site Establishment	1	%	2.50%	\$70,309	2.50%	\$77,578
	Contingency	1	%	15.00%	\$421,855	15.00%	\$465,468
Total	Excluding Delivery				\$2,812,365		\$3,103,121
	Including Delivery				\$3,972,466		\$4,383,158

NOTES:
Estimate based on:

- Cardno Concept layout Interim DCP, CG140549-TR-SK-0072, rev B.
- High level consideration of finished levels and drainage sizing.
- Pavement depths and compositions based on experiences with other similar projects.
- Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
- Landscape rates based on MDG estimates 15 Aug, 2018

Estimates should be reviewed once:

- Authority functional layout approvals are received.
- Geotechnical and survey information is available.
- Designs are developed.

Estimates do not include any allowances for such things as:

- Land acquisition.
- Cultural heritage.
- Biodiversity offsets.
- GAIC contributions.
- Contamination.
- Construction of drainage outfalls beyond limits of works.
- Upsizing of drainage to cater for catchments from adjacent proposed estates. This is considered an estate cost.



VicRoads 10 year Signal Maintenance Fee		Item	\$ 75,000.00	1	\$ 75,000
VicRoads Prom & controller incl connection		Item	\$ 50,000.00	1	\$ 50,000
VicRoads 10 year street light maintenance fee		Item	\$ 20,000.00	1	\$ 20,000
Traffic Management	5% of cost of works	item	5.00%	1	\$ 137,384
Environmental Management	0.5% of cost of works	item	0.50%	1	\$ 13,738
Survey & Design	5% of cost of works	item	5.00%	1	\$ 137,384
Supervision & Project Management	10% of cost of works	item	10.00%	1	\$ 274,769
Site Establishment	2.5% of cost of works	item	2.50%	1	\$ 68,692
Contingency	15% of cost of works	item	15.00%	1	\$ 412,153
				TOTAL	\$ 4,054,000

Benchmark cost estimate							
Appendix 5							
Description:	INTERSECTION - Secondary - Secondary Intersection						
Civil Component Number:	Item 8						
Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks and Earthworks	Site Preparation	0	%	\$ 2.39	\$ -	\$2.68	\$0
	Earthworks	9867	m3	\$ 35.43	\$ 349,538	\$40.30	\$397,666
Road Pavement	Primary Arterial Pavement	0	m2	\$ 157.08	\$ -	\$170.80	\$0
	Secondary Arterial Pavement	13800	m2	\$ 123.23	\$ 1,700,559	\$130.03	\$1,794,350
	Collector Arterial Pavement	0	m2	\$ 91.07	\$ -	\$100.18	\$0
Concrete Works	Subgrade Preparation	0	%	\$ 15.21	\$ -	\$17.70	\$0
	Pavement Rehab	0	m2	\$ 45.90	\$ -		\$0
	Pavement Other	0	m2	\$ -	\$ -		\$0
	Kerb and Channel	2000	m	\$ 50.42	\$ 100,838	\$56.39	\$112,774

SMEC assessment					
IN-10 - Patterson Drive & Cameron Street (Interim)					
Description	Detail	Unit	Rate	Quantity	Amount
Preliminaries	Clearing & Grubbing	Item	\$ 2.50	0	\$ -
	Tree removal	No.	\$ 1,000.00		\$ -
	Stone wall removal	Item	\$ 5,600.00		\$ -
Earthworks	Topsoil strip & stockpile	sq m	\$ 0.85	29,375	\$ 24,969
	Cut (for boxing) Primary Arteial road	cu m	\$ 41.04		\$ -
	Cut (for boxing) Secondary Arteial road	cu m	\$ 41.04	53,250	\$ 2,185,380
	Cut (Existing Surface to Design Surface) allow 300mm average depth of entire intersection road reserve area	cu m	\$ 41.04	0	\$ -
	Fill (place & compact)	cu m	\$ 7.51	1,880	\$ 14,119
	Import Type B, place & compact fill	cu m	\$ 7.51	0	\$ -
	Disposal of excess material	cu m	\$ 16.12	51,370	\$ 828,084
	Rocky knol removal extra over earthworks	cu m	\$ 50.00	1,000	\$ 50,000
			\$ -		\$ -
Pavement	Construct deep strength pavement (Primary Arterial Pavement), inside kerbs	sq m	\$ 136.64	0	\$ -
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 54.69	0	\$ -
	Sub grade improvement (allowance)	sq m	\$ 13.99	0	\$ -
			\$ -		\$ -
	Construct deep strength pavement (Secondary Arterial Pavement), inside kerbs	sq m	\$ 122.00	8,283	\$ 1,010,509
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 37.91	2,906	\$ 110,182
	Sub grade improvement (allowance)	sq m	\$ 13.99	11,189	\$ 156,584
					\$ -
	Construct Granular pavement (Connector Boulevard Pavement), inside kerbs	sq m	\$ 89.66	1,466	\$ 131,442
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 30.10	804	\$ 24,200
	Sub grade improvement (allowance)	sq m	\$ 13.99	2,270	\$ 31,766
	Regulation layer (depth 0mm to approx 60mm)	sq m	\$ -		\$ -
	Overlay existing pavement Asphalt 40mm	sq m	\$ -		\$ -
			\$ -		
	Temporary Pavement to maintain traffic flow	sq m	\$ 86.36	0	\$ -
	Remove temporary pavement	cu m	\$ 57.16	0	\$ -
Kerb & Channel	SM2 - Primary Arterial	Lm	\$ 46.98	0	\$ -
	SM3 - Primary Arterial incl above	Lm	\$ 46.98		\$ -

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISION OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
IN-10 - Patterson Drive & Cameron Street (Interim)

A. Burrows
7 September 2018



	Cycle Path	0	m2	\$ 59.60	\$ -	\$69.01	\$0
	SUP/ Footpath	1700	m2	\$ 58.44	\$ 99,354	\$67.50	\$114,742
	Traffic Island	680	m2	\$ 71.43	\$ 48,575	\$76.57	\$52,071
Drainage	Drainage Pipe 300mm CR Bfilled	260	m	\$ 162.30	\$ 42,198	\$175.64	\$45,667
	Drainage Pipe 375mm CR Bfilled	0	m	\$ 226.68	\$ -	\$246.52	\$0
	Drainage Pipe 450mm CR Bfilled	900	m	\$ 291.67	\$ 262,500	\$320.95	\$288,857
	Drainage Pipe 525mm CR Bfilled	0	m	\$ 375.71	\$ -	\$402.87	\$0
	Drainage - pits	40	No.	\$ 2,325.57	\$ 93,023	\$2,499.15	\$99,966
	Drainage – Sub-soil drainage	3100	m	\$ 23.05	\$ 71,446	\$26.53	\$82,256
	Drainage Culvert	0	No.	\$ -	\$ -		\$0
Traffic	Traffic Signals	4	Item	\$ 88,375.88	\$ 353,504	\$100,101.03	\$400,404
	Traffic Signal Conduit	0	m	\$ 45.71	\$ -	\$53.47	\$0
Landscape	Tree Planting	60	No.	\$ 259.62	\$ 15,577	\$318.78	\$19,127
	Landscaping	3000	m2	\$ 20.72	\$ 62,150	\$23.31	\$69,933
	Topsoil Seeding	3000	m2	\$ 7.00	\$ 20,988	\$7.92	\$23,766
Street Lighting	Street Lighting (all Inclusive)	0	m	\$ 207.67	\$ -	\$235.63	\$0
	Street Lighting - Intersections	4	Item/ Per Leg	\$ -	\$ -		\$0
Misc	Regulatory Signage	16	Item	\$ 329.29	\$ 5,269	\$363.25	\$5,812
	Linemarking	13800	m2 of Pavement	\$ 2.40	\$ 33,158	\$2.81	\$38,786
	Landscape maintenance	1	Item	\$ 75,000.00	\$ 75,000	\$86,250.00	\$86,250
	Tactile Pavers (Hazard only)	24	Item	\$ 337.14	\$ 8,091	\$422.86	\$10,149
Other		0		\$ -		\$0.00	
		0		\$ -		\$0.00	
		0		\$ -		\$0.00	
Delivery	Council Fees	0	%	3.25%	\$ 108,607	3.25%	\$118,384

	SM2 - Secondary Arterial	Lm	\$ 46.98	2,422	\$ 113,783
	SM3 - Secondary Arterial incl above	Lm	\$ 46.98		\$ -
	SM2 - Connector Boulevard	Lm	\$ 46.98	670	\$ 31,476
	SM3 - Connector Boulevard incl above	Lm	\$ 46.98		\$ -
Concrete paths	Shared path	sq m	\$ 52.38	2,345	\$ 122,831
	Footpath	sq m	\$ 52.38	0	\$ -
Splitter Islands	Concrete	sq m	\$ 76.41	1,468	\$ 112,170
	Other infill	sq m	\$ 76.41	0	\$ -
Drainage	Drainage Pipe 300 dia - C/R B/Fill	m	\$ 344.69	0	\$ -
	Drainage Pipe 375 dia - C/R B/Fill	m	\$ 378.76	496	\$ 187,865
	Drainage Pipe 450 dia - C/R B/Fill	m	\$ 424.03	93	\$ 39,435
	Drainage Pipe 525 dia - C/R B/Fill	m	\$ 458.62	0	\$ -
	Drainage Pipe 600 dia - C/R B/Fill	m	\$ 482.00	93	\$ 44,826
	Drainage Pipe 750 dia - C/R B/Fill	m	\$ 680.00		\$ -
	Drainage Pits - Regular	No.	\$ 3,405.83	17	\$ 57,899
	Drainage Pits - Large	No.	\$ 7,000.00		\$ -
	Subsoil Drains (SM2 and SM3)	m	\$ 26.25	3,401	\$ 89,282
	Driveable Concrete end wall - small pipe	No.	\$ 3,473.61		\$ -
	Driveable Concrete end wall - large pipe	No.	\$ -		\$ -
	Form Swale Drain	Lm	\$ 7.09		\$ -
Traffic Signals	Full intersection	Item	\$ 280,000.00	1	\$ 280,000
Landscaping	Street trees	No.	\$ 200.00	94	\$ 18,800
	Topsoil and grass to naturestrips	sq m	\$ 11.08	13,958	\$ 154,652
Lighting	Intersection lighting	No.	\$ 13,260.00	21	\$ 278,460
	Mid-block: New lighting poles (All Inclusive)	Item	\$ -		\$ -
Miscellaneous	Signage	No.	\$ 234.36	16	\$ 3,750
	Linemarking	sq m	\$ 2.50	9,749	\$ 24,373
	Landscape establishment watering	sq m	\$ 4.50	13,958	\$ 62,810
	Tactile pavers	No.	\$ 307.96	20	\$ 6,159
	Fencing	m	\$ 21.69		\$ -
Service Relocation	Relocate Telstra	Lm	\$ 300,000.00	0	\$ -
	Relocate electricity Pole - multiple voltages	No.	\$ 30,000.00	0	\$ -
	Relocate NBN Node to Node (Provisional)	Item	\$ 500,000.00	0	\$ -
	Adjust BS manhole cover level	No.	\$ 20,000.00	0	\$ -
	Adjust water main bypass assemblies	No.	\$ 20,000.00	0	\$ -
			\$ -		\$ -
			\$ -		\$ -
			\$ -		\$ -
				Subtotal	\$ 6,195,806
Council Fees	3.25% of cost of works	item	3.25%	1	\$ 201,364

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISION OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
IN-10 - Patterson Drive & Cameron Street (Interim)

A. Burrows
7 September 2018

	VicRoads Fees	0 %	1.00%	\$ 33,418	1.00%	\$36,426
	Traffic Management	0 %	5.00%	\$ 167,088	5.00%	\$182,129
	Environmental Management	0 %	5.00%	\$ 16,709	5.00%	\$18,213
	Surveying and Design	0 %	5.00%	\$ 167,088	5.00%	\$182,129
	Supervision and Project management	0 %	9.00%	\$ 300,759	9.00%	\$327,832
	Site Establishment	0 %	2.50%	\$ 83,544	2.50%	\$91,064
	Contingency	0 %	15.00%	\$ 501,265	15.00%	\$546,386
Total	Excluding Delivery			\$ 3,341,767		\$3,642,574
	Including Delivery			\$ 4,720,246		\$5,145,136

NOTES:
Estimate based on:
- Cardno Concept layout Interim DCP, CG140549-TR-SK-0072, rev B.
- High level consideration of finished levels and drainage sizing.
- Pavement depths and compostions based on experiences with other similar projects.
- Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
- Landscape rates based on MDG estimates 15 Aug, 2018
Estimates should be reviewed once:
- Authority functional layout approvals are received.
- Geotechnical and survey information is available.
- Designs are developed.
Estimates do not include any allowances for such things as:
- Land acquisition.
- Cultural heritage.
- Biodiversity offsets.
- GAIC contributions.
- Contamination.
- Construction of drainage outfalls beyond limits of works.
- Upsizing of drainage to cater for catchments from adjacent proposed estates. This is considered an estate cost.



VicRoads Fees	1% of cost of works	Item	1.00%	1	\$ 61,958
VicRoads 10 year Signal Maintenance Fee		Item	\$ 75,000.00	1	\$ 75,000
VicRoads Prom & controller incl connection		Item	\$ 50,000.00	1	\$ 50,000
VicRoads 10 year street light maintenance fee		Item	\$ 20,000.00	1	\$ 20,000
Traffic Management	5% of cost of works	item	5.00%	1	\$ 309,790
Environmental Management	0.5% of cost of works	item	0.50%	1	\$ 30,979
Survey & Design	5% of cost of works	item	5.00%	1	\$ 309,790
Supervision & Project Management	10% of cost of works	item	10.00%	1	\$ 619,581
Site Establishment	2.5% of cost of works	item	2.50%	1	\$ 154,895
Contingency	15% of cost of works	item	15.00%	1	\$ 929,371
				TOTAL	\$ 8,959,000

Benchmark cost estimate							
Appendix 5							
Description:	INTERSECTION - Primary - Secondary Intersection						
Civil Component Number:	Item 6						
Group	Sub Item	Qty	Unit	Rate (P50)	Amount (P50)	Rate (P90)	Amount (P90)
Siteworks and Earthworks	Site Preparation	0	%	\$2.39	\$0	\$2.68	\$0
	Earthworks	10002.85	m3	\$35.43	\$354,351	\$40.30	\$403,141
Road Pavement	Primary Arterial Pavement	6840	m2	\$157.08	\$1,074,450	\$170.80	\$1,168,277
	Secondary Arterial Pavement	7150	m2	\$123.23	\$881,087	\$130.03	\$929,681
	Collector Arterial Pavement	0	m2	\$91.07	\$0	\$100.18	\$0
	Subgrade Preparation	0	%	\$15.21	\$0	\$17.70	\$0
	Pavement Rehab	0	m2	\$45.90	\$0		\$0
	Pavement Other	0	m2	\$0.00	\$0		\$0
Concrete Works	Kerb and Channel	1900	m	\$50.42	\$95,796	\$56.39	\$107,135
	Cycle Path	1120	m2	\$59.60	\$66,752	\$69.01	\$77,288
	SUP/ Footpath	735	m2	\$58.44	\$42,956	\$67.50	\$49,609
	Traffic Island	850	m2	\$71.43	\$60,718	\$76.57	\$65,088

SMEC assessment					
IN-14 - Gunns Gully Road & Patterson Drive (Interim)					
Description	Detail	Unit	Rate	Quantity	Amount
Preliminaries	Clearing & Grubbing	Item	\$ 2.50	0	\$ -
	Tree removal	No.	\$ 1,000.00		\$ -
	Stone wall removal	Item	\$ 5,600.00		\$ -
Earthworks	Topsoil strip & stockpile	sq m	\$ 0.85	43,070	\$ 36,610
	Cut (for boxing) Primary Arterial road	cu m	\$ 41.04	5,979	\$ 245,397
	Cut (for boxing) Secondary Arterial road	cu m	\$ 41.04	4,823	\$ 197,922
	Cut (Existing Surface to Design Surface) allow 300mm average depth of entire intersection road reserve area	cu m	\$ 41.04	0	\$ -
	Fill (place & compact)	cu m	\$ 7.51		\$ -
	Import Type B, place & compact fill	cu m	\$ 7.51	0	\$ -
	Disposal of excess material	cu m	\$ 16.12	10,802	\$ 174,130
			\$ 50.00		\$ -
			\$ -		\$ -
Pavement	Construct deep strength pavement (Primary Arterial Pavement), inside kerbs	sq m	\$ 136.64	6,716	\$ 917,692
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 54.69	1,589	\$ 86,888
	Sub grade improvement (allowance)	sq m	\$ 13.99	8,305	\$ 116,217
			\$ -		\$ -
	Construct deep strength pavement (Secondary Arterial Pavement), inside kerbs	sq m	\$ 122.00	5,452	\$ 665,133
	Sub-base layers and capping layer under and behind kerb	sq m	\$ 37.91	1,746	\$ 66,191
	Sub grade improvement (allowance)	sq m	\$ 13.99	7,198	\$ 100,729
	Regulation layer (depth 0mm to approx 60mm)	sq m	\$ -		\$ -
	Overlay existing pavement Asphalt 40mm	sq m	\$ -		\$ -
			\$ -		
	Temporary Pavement to maintain traffic flow	sq m	\$ 86.36	0	\$ -
	Remove temporary pavement	cu m	\$ 57.16	0	\$ -
Kerb & Channel	SM2 - Primary Arterial	Lm	\$ 46.98	1,324	\$ 62,200
	SM3 - Primary Arterial incl above	Lm	\$ 46.98		\$ -
	SM2 - Secondary Arterial	Lm	\$ 46.98	1,455	\$ 68,354
	SM3 - Secondary Arterial incl above	Lm	\$ 46.98		\$ -
Concrete paths	Shared path	sq m	\$ 52.38	5,323	\$ 278,819
	Footpath	sq m	\$ 52.38	0	\$ -
Splitter Islands	Concrete	sq m	\$ 76.41	1,193	\$ 91,157
	Other infill	sq m	\$ 76.41	0	\$ -

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISION OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
IN-14 - Gunns Gully Road & Patterson Drive (Interim)

A. Burrows
7 September 2018



Drainage	Drainage Pipe 300mm CR Bfilled	260	m	\$162.30	\$42,198	\$175.64	\$45,667
	Drainage Pipe 375mm CR Bfilled	0	m	\$226.68	\$0	\$246.52	\$0
	Drainage Pipe 450mm CR Bfilled	870	m	\$291.67	\$253,750	\$320.95	\$279,228
	Drainage Pipe 525mm CR Bfilled	0	m	\$375.71	\$0	\$402.87	\$0
	Drainage - pits	39	No.	\$2,325.57	\$90,697	\$2,499.15	\$97,467
	Drainage – Sub-soil drainage	3000	m	\$23.05	\$69,141	\$26.53	\$79,602
	Drainage Culvert	0	No.	\$0.00	\$0		\$0
Traffic	Traffic Signals	4	Item	\$88,375.88	\$353,504	\$100,101.03	\$400,404
	Traffic Signal Conduit	0	m	\$45.71	\$0	\$53.47	\$0
Landscape	Tree Planting	62	No.	\$259.62	\$16,096	\$318.78	\$19,764
	Landscaping	2600	m2	\$20.72	\$53,863	\$23.31	\$60,609
	Topsoil Seeding	2600	m2	\$7.00	\$18,190	\$7.92	\$20,598
Street Lighting	Street Lighting (all Inclusive)	0	m	\$207.67	\$0	\$235.63	\$0
	Street Lighting - Intersections	4	Item/ Per Leg	\$0.00	\$0		\$0
Misc	Regulatory Signage	16	Item	\$329.29	\$5,269	\$363.25	\$5,812
	Linemarking	13990	m2 of Paveme nt	\$2.40	\$33,614	\$2.81	\$39,320
	Landscape maintenance	1	Item	\$75,000.00	\$75,000	\$86,250.00	\$86,250
	Tactile Pavers (Hazard only)	24	Item	\$337.14	\$8,091	\$422.86	\$10,149
Other		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
		0		\$0.00		\$0.00	
Delivery	Council Fees	1	%	3.25%	\$116,855	3.25%	\$128,215
	VicRoads Fees	1	%	1.00%	\$35,955	1.00%	\$39,451
	Traffic Management	1	%	5.00%	\$179,776	5.00%	\$197,254
	Environmental Management	1	%	5.00%	\$17,978	5.00%	\$19,725
	Surveying and Design	1	%	5.00%	\$179,776	5.00%	\$197,254

Drainage	Drainage Pipe 300 dia - C/R B/Fill	m	\$ 344.69	0	\$ -
	Drainage Pipe 375 dia - C/R B/Fill	m	\$ 378.76	815	\$ 308,689
	Drainage Pipe 450 dia - C/R B/Fill	m	\$ 424.03	162	\$ 68,693
	Drainage Pipe 525 dia - C/R B/Fill	m	\$ 458.62	0	\$ -
	Drainage Pipe 600 dia - C/R B/Fill	m	\$ 482.00	71	\$ 34,222
	Drainage Pipe 750 dia - C/R B/Fill	m	\$ 680.00	77	\$ 52,360
	Drainage Pits - Regular	No.	\$ 3,405.83	37	\$ 126,016
	Drainage Pits - Large	No.	\$ 7,000.00		\$ -
	Subsoil Drains (SM2 and SM3)	m	\$ 26.25	3,057	\$ 80,244
	Driveable Concrete end wall - small pipe	No.	\$ 3,473.61		\$ -
	Driveable Concrete end wall - large pipe	No.	\$ -		\$ -
	Form Swale Drain	Lm	\$ 7.09		\$ -
Traffic Signals	Full intersection	Item	\$ 280,000.00	1	\$ 280,000
Landscaping	Street trees	No.	\$ 200.00	220	\$ 44,000
	Topsoil and grass to naturestrips	sq m	\$ 11.08	22,719	\$ 251,722
Lighting	Intersection lighting	No.	\$ 13,260.00	25	\$ 331,500
	Mid-block: New lighting poles (All Inclusive)	Item	\$ -		\$ -
Miscellaneous	Signage	No.	\$ 234.36	16	\$ 3,750
	Linemarking	sq m	\$ 2.50	12,168	\$ 30,420
	Landscape establishment watering	sq m	\$ 4.50	22,719	\$ 102,234
	Tactile pavers	No.	\$ 307.96	24	\$ 7,391
	Fencing	m	\$ 21.69		\$ -
Service Relocation	Relocate Telstra	Lm	\$ 300,000.00	0	\$ -
	Relocate electricity Pole - multiple voltages	No.	\$ 30,000.00	0	\$ -
	Relocate NBN Node to Node (Provisional)	Item	\$ 500,000.00	0	\$ -
	Adjust BS manhole cover level	No.	\$ 20,000.00	0	\$ -
	Adjust water main bypass assemblies	No.	\$ 20,000.00	0	\$ -
			\$ -		\$ -
			\$ -		\$ -
			\$ -		\$ -
				Subtotal	\$ 4,828,679
Council Fees	3.25% of cost of works	item	3.25%	1	\$ 156,932
VicRoads Fees	1% of cost of works	Item	1.00%	1	\$ 48,287
VicRoads 10 year Signal Maintenance Fee		Item	\$ 75,000.00	1	\$ 75,000
VicRoads Prom & controller incl connection		Item	\$ 50,000.00	1	\$ 50,000
VicRoads 10 year street light maintenance fee		Item	\$ 20,000.00	1	\$ 20,000
Traffic Management	5% of cost of works	item	5.00%	1	\$ 241,434
Environmental Management	0.5% of cost of works	item	0.50%	1	\$ 24,143
Survey & Design	5% of cost of works	item	5.00%	1	\$ 241,434

DONNYBROOK / WOODSTOCK ICP - August 2018 for exhibition edition
COMPARISION OF ICP COST TO SMEC PRELIMINARY ESTIMATE OF COSTS
IN-14 - Gunns Gully Road & Patterson Drive (Interim)

A. Burrows
7 September 2018

	Supervision and Project management	1	%	9.00%	\$323,597	9.00%	\$355,058
	Site Establishment	1	%	2.50%	\$89,888	2.50%	\$98,627
	Contingency	1	%	15.00%	\$539,328	15.00%	\$591,763
Total	Excluding Delivery				\$3,595,523		\$3,945,089
	Including Delivery				\$5,078,677		\$5,572,439

NOTES:

- Estimate based on:
- One Mile Grid Interim Intersection Concept Layout, CLP214, rev C with allowance for kerbs in lieu of shoulders.
 - High level consideration of finished levels and drainage sizing.
 - Pavement depths and compositions based on experiences with other similar projects.
 - Olivine stage 3 tender rates or Olivine st 1 intersection rates factored up by cost increase stage 1 to stage 3
 - Landscape rates based on MDG estimates 15 Aug, 2018

Estimates should be reviewed once:

- Authority functional layout approvals are received.
- Geotechnical and survey information is available.
- Designs are developed.

Estimates do not include any allowances for such things as:

- Land acquisition.
- Cultural heritage.
- Biodiversity offsets.
- GAIC contributions.
- Contamination.
- Construction of drainage outfalls beyond limits of works.
- Upsizing of drainage to cater for catchments from adjacent proposed estates. This is considered an estate cost.



Supervision & Project Management	10% of cost of works	item	10.00%	1	\$ 482,868
Site Establishment	2.5% of cost of works	item	2.50%	1	\$ 120,717
Contingency	15% of cost of works	item	15.00%	1	\$ 724,302
				TOTAL	\$ 7,014,000

From: [Brett Foulis](#)
To: [Sarah McQuillen](#)
Cc: [Jason Forde](#); [Cameron Bergmeier](#); [RJ Javier](#); [Melissa CASTLE](#); [Burrows, Alan \(Alan.Burrows@smec.com\)](#); [Peter Grouios](#); [Andrew Cartledge](#)
Subject: Active Open Space - headline differences between VPA allowance and OPC
Date: Tuesday, 18 September 2018 6:16:45 PM
Attachments: [1214P Olivine Active Open Space OPC vs ICP comparison 18.09.2018.pdf](#)

Hi Sarah,

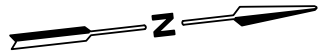
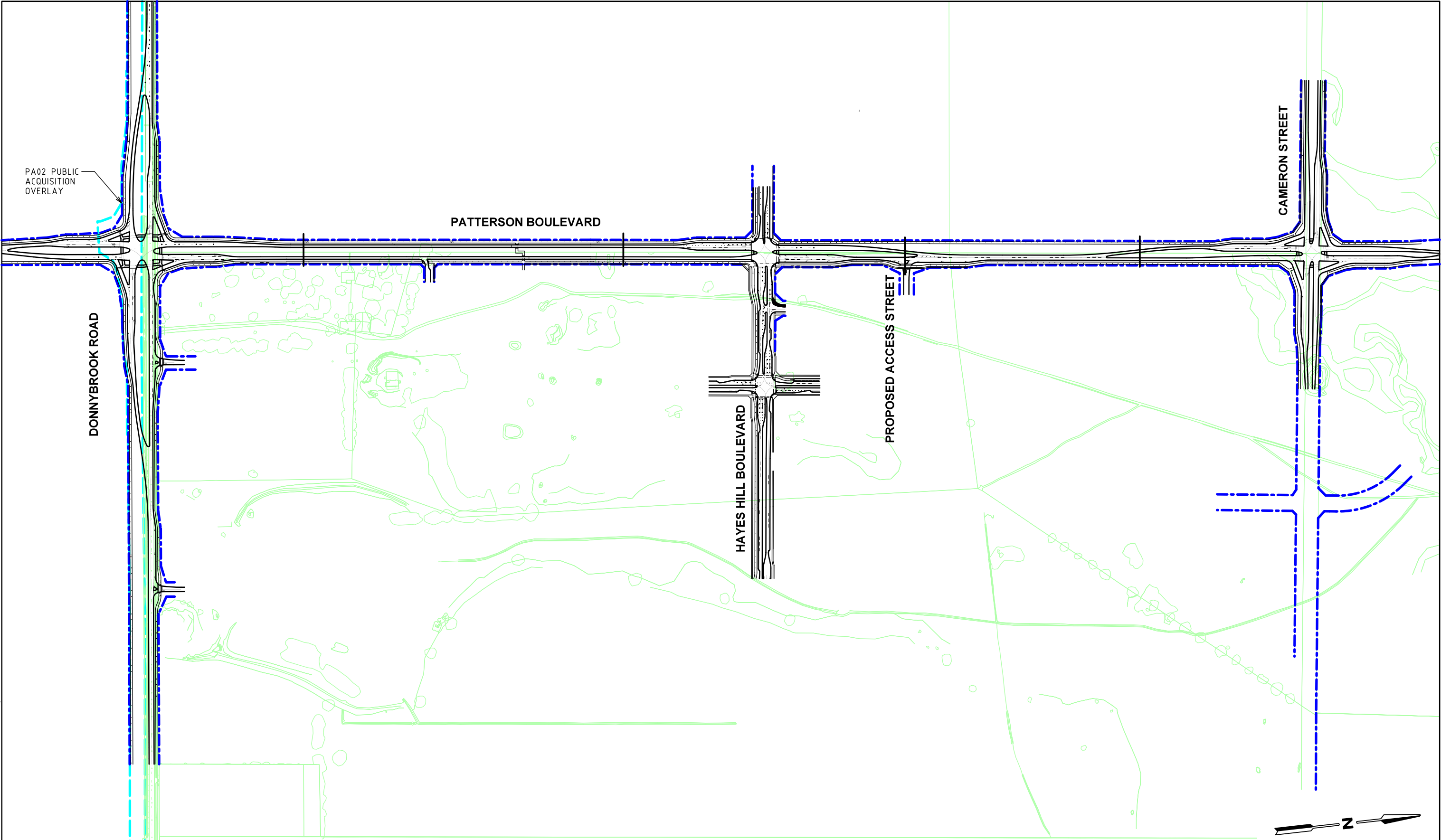
Please find below summary of headline differences between ICP costing (P50) and OPC for Active Open Space. Note that (red) text indicates deficiency in allowance:

- ICP allowance for **football fields** is less than half allowed in OPC. ICP does not make clear what inclusions are. Total discrepancy for 2 ovals is (\$2.15M).
- ICP allowance for **netball courts** is less than half allowed in OPC. ICP does not make clear what inclusions are. Total discrepancy for 2 courts is (\$142k).
- ICP makes allowance for **tennis courts and lighting**. We have **not** included tennis courts in the OPC. Total discrepancy is \$135k.
- It is unclear what is included in ICP allowance for **'Landscape Level A'**. We have nominated garden bed, trees and edging. ICP allowance is less than a third allowed in OPC. Total discrepancy is (\$198k).
- ICP allowance for **car park kerb and channel** is around a third of that allowed in the OPC. Total discrepancy is (\$42k).
- ICP allowance for **footpaths and paved areas** is very low at around a tenth the cost of that allowed in the OPC. Extent by m2 allowed for is around a sixth allowed for in the OPC. Total discrepancy is (\$403k).
- ICP allowance for **stormwater drainage** is around a third of that allowed in the OPC. It is unclear if the ICP allows for ag drain to ovals as the OPC does. Total discrepancy is (\$334k).
- ICP allowance for **water service** is less than a third that allowed in the OPC. Total discrepancy is (\$122k).
- ICP allowance for **light and power** is very low. We have included \$600k for servicing and infrastructure for the electrical supply to the sports lighting as well as pathway lighting. Total discrepancy is (\$818k)
- ICP allowance for **communications** is \$130k. Civil and landscape OPCs do not currently make an allowance for communications.
- ICP allowance for **access road** is \$267k. We do not have a separate item for this. Road paving is included in the carpark costs in the civil OPC.
- ICP allowance for **playground** is much higher than in OPC (\$700k vs \$253k). Does the VPA envisage a major regional playground in this location? Total discrepancy is \$446k.
- ICP allowance for **irrigation** is considerably lower than allowed in OPC. Total discrepancy is (\$112k)
- ICP allowance for **basic landscaping** appears to be a lot higher than what would be expected for the described 'top soil and seeding'. We have included most landscape amenity outside of the ovals, courts, trees and playground in this category. Total discrepancy is \$1M.
- ICP allowance for **trees** is around a tenth of the number allowed for in the OPC. Total discrepancy is (\$111k)
- ICP allowance for **supervision and project management** are around half of that anticipated for these works. Total discrepancy is (\$661k)
- ICP allowance for **contingency** is significantly lower than that allowed in the OPC. Total discrepancy is (\$495k)

I've made a minor update to the spreadsheet attached as I had double counted the oval lighting in both 'light and power' and 'football oval lighting' – corrected now.

Appendix 5														
Description:	Item 43 - Sporting & Recreation Facilities (8-10 Ha)													
Civil Component Number:	Item 43													
Group	Sub Item	Code	OPC incusions	Qty	MDG Qty	Unit	Rate (P50)	MDG Rate	Amount P(50)	MDG Amount	Rate (P90)	Amount P(90)	Discrepancy between OPC and P(50)	Notes
Playing Fields	Football Field	FF	Civil - bulk earthworks Landscape - laser grading and trimming to achieve design levels, growing medium, pre-grown turf, concrete oval edge, 1200mm high perimeter fence, 4 x pedestrian and 1 x maintenance gates, 6m high ball catching fence (to 1 oval only), goal posts, electronic scoreboard	2	2	No	\$792,283.33	\$1,867,401.50	\$1,584,566.67	\$3,734,803.00	\$907,601.25	\$1,815,202.50	(\$2,150,236.33)	ICP allowance is low
	Cricket Pitch	CP	Landscape - slab, synthetic turf	2	2	No	\$18,750.00	\$12,750.00	\$37,500.00	\$25,500.00	\$21,952.11	\$43,904.23	\$12,000.00	
	Cricket Nets	CN	Landscape - slab, synthetic turf and fencing	0	3	No	\$41,200.00	\$17,200.00	\$0.00	\$51,600.00	\$46,835.72	\$0.00	(\$51,600.00)	ICP makes no allowance for cricket nets
	Soccer Field			0	0	No	\$509,390.67		\$0.00		\$585,759.19	\$0.00		
	Netball Court	NC	Landscape - slab, sports surfacing, fencing, futsal goals, netball goals,	2	2	No	\$39,200.00	\$110,500.00	\$78,400.00	\$221,000.00	\$51,675.20	\$103,350.40	(\$142,600.00)	ICP allowance is low
	Tennis Court			2	0	No	\$52,060.29		\$104,120.58		\$64,055.58	\$128,111.16	\$104,120.58	ICP makes allowance for tennis courts (we do not allow for tennis courts)
Lighting	Lighting Netball Court	LNC	Landscape - Lighting to 1 netball court only	2	1	No	\$20,000.00	\$80,000.00	\$40,000.00	\$80,000.00	\$23,000.00	\$46,000.00	(\$40,000.00)	ICP allowance is for 2 courts but is very low
	Lighting Tennis			2	0	No	\$15,750.00		\$31,500.00		\$18,112.50	\$36,225.00	\$31,500.00	ICP makes allowance for tennis courts (we do not allow for tennis courts)
	Lighting Soccer			0	0	No	\$49,000.00		\$0.00		\$68,026.78	\$0.00		
	Lighting Football	LF		2	2	No	\$110,416.67	\$140,000.00	\$220,833.33	\$280,000.00	\$119,811.96	\$239,623.92	(\$59,166.67)	
Landscaping	Landscaping Level A	LLA	Landscape - Garden bed 3,975m2, mulch to existing trees, mulch to garden beds, timber edge, 150mm pot shrubs @ 4/m2.	4000	1	m2	\$20.41	\$280,243.00	\$81,657.14	\$280,243.00	\$30.16	\$120,626.82	(\$198,585.86)	Not exactly sure what 'Landscaping level A' includes
Car Parking	Pavement		Civil - bulk earthworks, pavement	5180	1	m2	\$91.07	\$390,435.00	\$471,752.96	\$390,435.00	\$100.18	\$518,928.26	\$81,317.96	
	Kerb and Channel		Civil - barrier kerb, spoon drain, vehicle crossing to existing road	450	1	m	\$50.42	\$65,073.00	\$22,688.55	\$65,073.00	\$57.19	\$25,733.76	(\$42,384.45)	
	Drainage Pipes		Civil - drainage	530	1	m	\$162.30	\$54,950.00	\$86,019.00	\$54,950.00	\$177.43	\$94,036.81	\$31,069.00	
	Drainage Pits		Civil - pits	21	12	No	\$2,325.57	\$3,128.80	\$48,836.97	\$37,545.60	\$2,522.39	\$52,970.28	\$11,291.37	
	Linemarking/ Signage		Civil - linemarking	5180	1	m2/pavement	\$2.40	\$5,000.00	\$12,432.00	\$5,000.00	\$2.86	\$14,828.03	\$7,432.00	
Site Works	Footpaths and paved areas	F & P	Landscape - plaza paved areas (exposed ag 1,590m2), shared paths and footpaths (plain concrete 3,340m2)	800	1	m2	\$58.44	\$450,050.00	\$46,755.05	\$450,050.00	\$68.71	\$54,965.77	(\$403,294.95)	ICP allowance is very low
Services	Stormwater Drainage	SD	Civil - Site stormwater infrastructure (pipes), grated pits to ovals, ag drain to oval perimeter Landscape - Ag drain to ovals, Hard pipe to ovals	1	1	Item	\$160,000.00	\$494,111.00	\$160,000.00	\$494,111.00	\$184,000.00	\$184,000.00	(\$334,111.00)	ICP allowance is very low
	Sewer		Civil	1	1	Item	\$10,000.00	\$49,590.00	\$10,000.00	\$49,590.00	\$11,500.00	\$11,500.00	(\$39,590.00)	
	Water		Civil - potable and non-potable, including contribution fees	1	1	Item	\$50,000.00	\$172,420.00	\$50,000.00	\$172,420.00	\$57,500.00	\$57,500.00	(\$122,420.00)	
	Gas			1		Item	\$10,000.00		\$10,000.00		\$11,500.00	\$11,500.00	\$10,000.00	No allowance in SMEC costing
	Light & power	L&P	Landscape - Preliminaries (Testing and site survey), servicing and infrastructure, allowance for "future proofing" lighting to 100 lux (one oval only), power bollard to cricket nets and netball courts, pole top lights to primary predestrian routes	1	1	Item	\$30,000.00	\$848,000.00	\$30,000.00	\$848,000.00	\$34,500.00	\$34,500.00	(\$818,000.00)	MDG OPC includes a \$600k amount for servicing and infrastructure for oval and netball lighting, irrigation controller (NB: does not include carpark lighting).
	Communications			1		Item	\$130,000.00		\$130,000.00		\$149,500.00	\$149,500.00	\$130,000.00	Nothing included in SMEC or MDG costing
	Fire		Civil - fire water main	1	1	Item	\$30,000.00	\$31,970.00	\$30,000.00	\$31,970.00	\$34,500.00	\$34,500.00	(\$1,970.00)	
Miscellaneous	Gates			1		Item	\$600.00		\$600.00		\$690.00	\$690.00	\$600.00	
	Works maintenance-1 year			0		Item	\$0.00		\$0.00		\$0.00	\$0.00		Not sure what this line refers to
	Interchange shelter	IS	Landscape - Coaches box	10	4	Item	\$9,166.67	\$10,000.00	\$91,666.67	\$40,000.00	\$11,600.65	\$116,006.48	\$51,666.67	
	Fencing	FE	Landscape - Bollard and cable fencing to perimeter	1300	1170	m	\$87.00	\$70.00	\$113,100.00	\$81,900.00	\$111.62	\$145,099.96	\$31,200.00	SMEC allowance for bollards to perimeter of AOS is a duplication and has not been included here
	Signage			20		No	\$329.29		\$6,585.78		\$367.80	\$7,355.91	\$6,585.78	
	Landscape maintenance-1 year/2 summers	LM	Landscape - Includes ovals and non-oval maintenance for full 2 year period	1	1	Item	\$0.00	\$322,400.00	\$0.00	\$322,400.00	\$0.00	\$0.00	(\$322,400.00)	ICP costing has not included an amount for maintenance

Others	Access Road			1980		m	\$135.00		\$267,300.00		\$162.00	\$320,760.00	\$267,300.00	Included in carpark works? SMEC to confirm
	Playground	PG	Landscape - Combination unit, swing, seesaw, rocker, fitness equipment, rubber and organic softfall, play audit, log seating,	1	1	Item	\$700,000.00	\$253,040.00	\$700,000.00	\$253,040.00	\$840,000.00	\$840,000.00	\$446,960.00	ICP includes a very large amount for playground
	Sport Field Irrigation system	SFIS	Landscape - Includes water tapping and pay contribution fees (WT \$8,700, Meter \$4,100 & Contractor \$3,800), Pumpset, Cabinet, Inlet and outlet mainifolds, Council IRRInet wireless system, field size 19,920m2 x 2 = 39,840m2	31680	1	m2	\$4.90	\$268,000.00	\$155,232.00	\$268,000.00	\$5.88	\$186,278.40	(\$112,768.00)	ICP allowance for irrigation is very low. Allowance for contribution fees (\$100k) is covered under SMEC allowance for Services - Water
	Basic Landscape including top soil-seeding	BL	Landscape - Fine grade and trim, drainage, tactile indicators for steps, topsoil and hydroseeded grassing to lawn areas outside of ovals, extraover for turf, boulders, picnic shelter, picnic tables, bench/backed seats, BBQ, bike hoops, drinking fountain, bins, handrails for steps, retaining wall,	55440	1	m2	\$32.50	\$798,662.50	\$1,801,800.00	\$798,662.50	\$39.00	\$2,162,160.00	\$1,003,137.50	ICP includes a relatively large amount for basic landscaping but it is unclear what this covers
	Tree Planting	TP	Landscape - 270No. x 45L, 195No. x 100L trees,	40	1	No	\$260.00	\$122,250.00	\$10,400.00	\$122,250.00	\$312.00	\$12,480.00	(\$111,850.00)	ICP allowance for trees is very low
Delivery	Council Fees			1	1	%	3.3	\$130,585.00	\$209,096.77	\$130,585.00	\$3.25	\$245,970.98	\$78,511.77	
	VicRoads Fees			1		%	0.0		\$0.00		\$0.00	\$0.00	\$0.00	
	Traffic Management		Civil - traffic management	1	1	%	2.0	\$4,000.00	\$128,674.93	\$4,000.00	\$2.00	\$151,366.75	\$124,674.93	SMEC allowance is comparatively very low
	Environmental Management		Civil - environmental management	1	1	%	0.5	\$30,000.00	\$32,168.73	\$30,000.00	\$0.50	\$37,841.69	\$2,168.73	
	Survey/Design		Civil - survey/geotech	1	1	%	5.0	\$7,000.00	\$321,687.33	\$7,000.00	\$5.00	\$378,416.89	\$314,687.33	SMEC allowance is comparatively very low
	Supervision & Project Management		Civil, Landscape and Irrigation consultant fees combined	1	1	%	9.0	\$1,240,688.00	\$579,037.20	\$1,240,688.00	\$9.00	\$681,150.39	(\$661,650.80)	
	Site Establishment	SE	Civil and landscape contracts combined, incl removal of existing trees, temp fencing, TPZ fencing	1	1	%	2.5	\$256,835.27	\$160,843.67	\$256,835.27	\$2.50	\$189,208.44	(\$95,991.60)	
	Contingency	Con	Civil - removal of unsuitable material for oval/carpark areas, 20% contingency Landscape - 10% Contingency	1	1	%	15.0	\$1,460,785.55	\$965,062.00	\$1,460,785.55	\$15.00	\$1,135,250.66	(\$495,723.55)	
Total		Excluding Delivery							\$6,433,747.00			\$7,568,338.00		
		Including Delivery							\$8,830,317.00	\$12,288,436.92		\$10,387,543.00	(\$3,458,119.92)	Total discrepancy between OPC and P(50) total



VICROADS COUNTRY STREET DIRECTORY
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MIRVAC LIMITED DONNYBROOK PSP, DONNYBROOK CITY OF WHITTLESEA CONCEPT LAYOUT PLAN OVERALL - INTERIM DCP			
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LEGEND

ALL PROPOSED, FUTURE & EXISTING SERVICE LOCATIONS ARE SHOWN INDICATIVELY

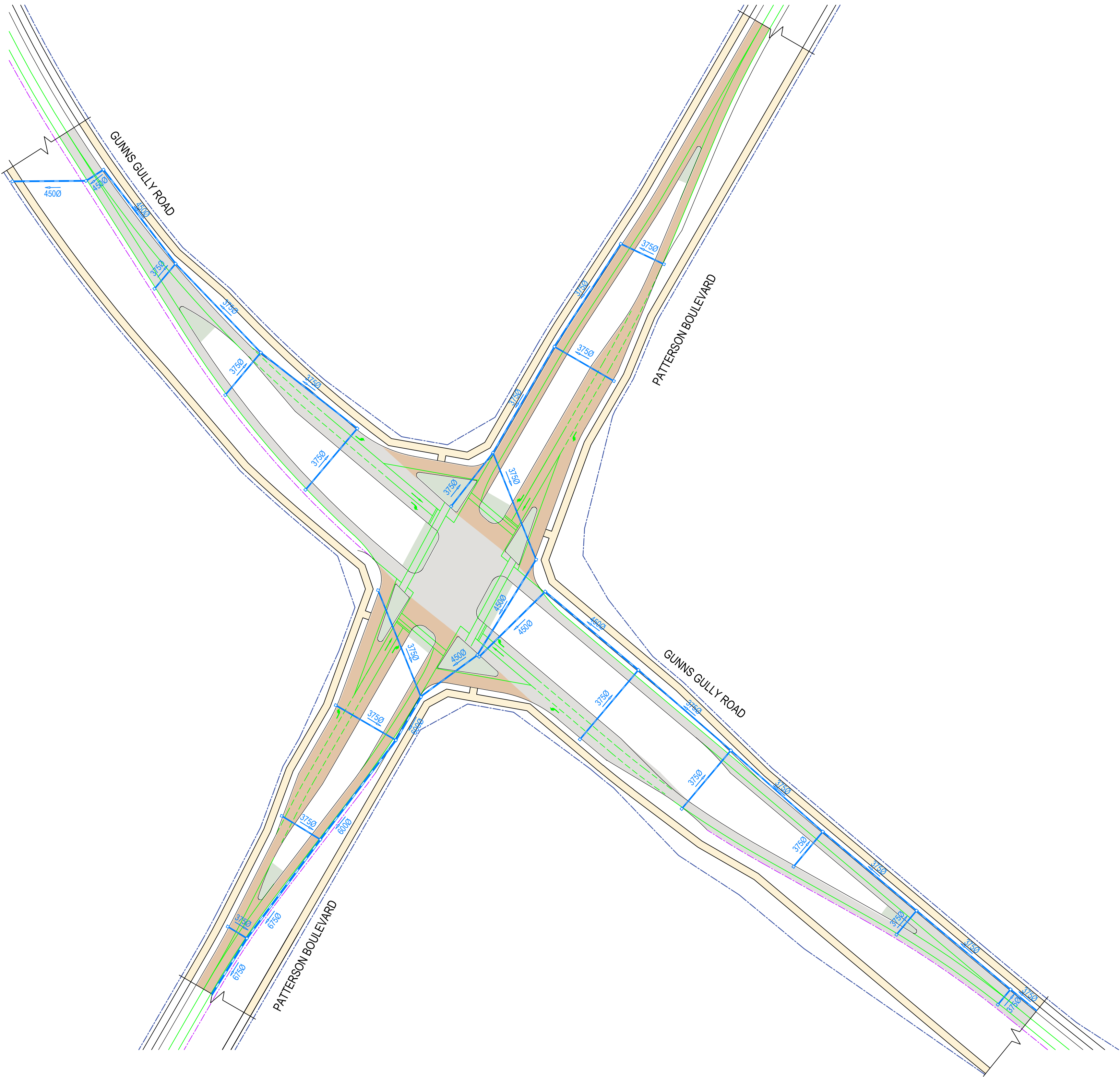
STORMWATER DRAIN AND PIT

(PRIMARY ARTERIAL PAVEMENT),
INSIDE KERBS

(SECONDARY ARTERIAL PAVEMENT),
INSIDE KERBS

SPLITTER ISLANDS CONCRETE

SHARED PATHS



REV	DATE	AMENDMENT / REVISION DESCRIPTION	DES/DT	APPROVAL
-	-	-	-JAF	AB

All setting out should be carried out in accordance with MPA/Council's standard drawings or as nominated on hard copy plans provided by SMEC. Any digital information supplied by this office is for information only. Any discrepancies should be discussed with the superintendent.

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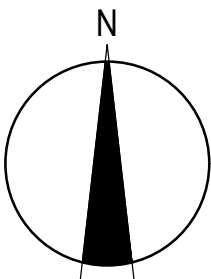
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DESIGNER	-
CHECKED	A. Burrows
AUTHORISED	
REFERENCE No. 1	
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DONNYBROOK / WOODSTOCK ICP

ESTIMATE OF ADDITIONAL COSTS ASSOCIATED
WITH CONSTRUCTION ON EXISTING ROADS

MELWAYS REF	PROJECT / DRAWING No.	SHEET No.	REVISION
-	1700E - ICP	1 of 1	-