Christchurch City Council
ATTACHMENTS - UNDER SEPARATE COVER

Date: Wednesday 4 February 2026
Time: 9.30 am
Venue: Camellia Chambers, Civic Offices, 53 Hereford Street, Christchurch

TABLE OF CONTENTS NGĀ IHIRANGI **PAGE**

SIDRA Modelling Summary

Date: 12 October 2024

From: Liqi Chen – Transport Network Planner, Christchurch City Council

To: Thomas Williams – Senior Traffic Engineer, Christchurch City Council

Re: Mairehau - Burwood Intersection Upgrade - Schemes Assessment

Background

1. This project was initially launched in 2022, with a SIDRA modelling exercise based on 2021 traffic counts and a site visit survey. The modelling aimed to evaluate the performance of the Mairehau Road and Burwood Road intersection, where significant concerns about roundabout capacity and pedestrian crossing safety were raised.

2. Three design options were developed to identify the preferred solution. Option 1 proposed a signalised intersection, while Option 2 and 3 suggested an upgraded roundabout layout. The modelled outputs indicated that both options could meet the project's objectives. However, due to budget limitations, the project was put on hold.

3. In 2024, the project was re-initiated using the latest 2024 traffic and pedestrian counts, along with an updated signal layout and phasing plan. A new site visit and queue length survey were completed in September. The original options were modelled and re-calibrated, and the intersection performance and sustainability of the schemes were reassessed. It is important to note that the financial feasibility of the proposed schemes is not included in this study.

2022 Site Visit Findings

4. Morning Peak (7:45 – 9:15)
   - Significant bus movements were observed, particularly from the Mairehau East to Burwood North approaches.
   - Heavy vehicle activity was notable, especially at the Mairehau West approach due to residential development.
   - A high number of pedestrians were walking to the bus stop.

1

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- Numerous parents and children walked and crossed the road, increasing foot traffic.
- P10 parking outside the dairy was heavily utilized.
- Queues were observed on all approaches but dissipated quickly.
- The longest queues reached up to 20 vehicles on the Mairehau East, Burwood North, and Burwood South approaches.

5. Inter Peak (11:45 – 13:15)
   - Both bus and truck movements were significant during this time.
   - Hospital staff frequently crossed the road to visit the shop and dairy.
   - P10 parking outside the dairy remained in high demand.
   - There was difficulty and a safety risk for pedestrians crossing the Burwood North approach, as left-turning vehicles from Mairehau West approached at high speeds.
   - Maximum queues of up to 6 vehicles were observed on the Mairehau East, Burwood North, and Burwood South approaches.

6. Evening Peak (14:30 – 16:00)
   - High volumes of bus and heavy vehicle movements were noted.
   - P10 parking outside the dairy was still heavily used.
   - All buses turning right from Mairehau East crossed over the roundabout apron.
   - The longest queue, of 15 vehicles, was observed at the Burwood South approach but quickly dissipated.

2024 SIDRA Model Update – Traffic Counts

7. During the morning peak, the highest demand is observed from the north and east catchment areas towards the south and west, primarily at the Burwood Road North and Mairehau Road East approaches. Conversely, in the evening peak, while demand from the north and east remains dominant, there is also a significant increase in traffic from Burwood Road South and Mairehau Road West, indicating higher demand originating from the west and south. The latest traffic counts were recorded on 16/05/2024, as illustrated in Figure 1 below.

8. When compared to the 2021 traffic data, the volume difference is not significant. Overall, the 2024 traffic counts align closely with the observations made during the 2022 site visit.

	AM			AM Total	PM			PM Total	INT			INT Total
	Cars	Other Vehicles	Cyclists		Cars	Other Vehicles	Cyclists		Cars	Other Vehicles	Cyclists	
Burwood Road North	**508**	**30**	**2**	**540**	**526**	**21**	**1**	**548**	**364**	**24**	**2**	**390**
Left into Mairehau Road East	114	14	0	128	191	11	0	202	121	8	0	129
Thru to Burwood Road South	262	14	2	278	222	10	1	233	148	15	2	165
Right into Mairehau Road West	130	2	0	132	105	0	0	105	90	0	0	90
U-Turn	2	0	0	2	8	0	0	8	5	1	0	6
Mairehau Road East	**453**	**20**	**6**	**479**	**548**	**16**	**5**	**569**	**345**	**21**	**1**	**367**
U-Turn	2	0	0	2	1	0	0	1	1	0	0	1
Left into Burwood Road South	83	1	3	87	75	0	2	77	56	0	0	56
Thru to Mairehau Road West	230	5	2	237	225	6	3	234	148	4	1	153
Right into Burwood Road North	138	14	1	153	247	10	0	257	140	17	0	157
Burwood Road South	**249**	**22**	**3**	**274**	**398**	**17**	**7**	**422**	**285**	**13**	**2**	**300**
U-Turn	0	2	0	2	1	0	0	1	2	0	0	2
Left into Mairehau Road West	18	1	0	19	21	3	1	25	27	1	0	28
Thru to Burwood Road North	164	18	0	182	291	12	4	307	185	12	2	199
Right into Mairehau Road East	67	1	3	71	85	2	2	89	71	0	0	71
Mairehau Road West	**234**	**11**	**0**	**245**	**427**	**8**	**1**	**436**	**301**	**7**	**2**	**310**
U-Turn	0	0	0	0	2	0	0	2	1	0	0	1
Left into Burwood Road North	65	3	0	68	131	1	0	132	106	2	2	110
Thru to Mairehau Road East	150	6	0	156	255	7	1	263	164	4	0	168
Right into Burwood Road South	19	2	0	21	39	0	0	39	30	1	0	31
Grand Total	**1444**	**83**	**11**	**1538**	**1899**	**62**	**14**	**1975**	**1295**	**65**	**7**	**1367**

Figure 1: The latest traffic counts on 25th October 2023

2024 SIDRA Model Update – Base Model

9. The intersection performance was modelled by SIDRA 9 as illustrated in Figure 2.

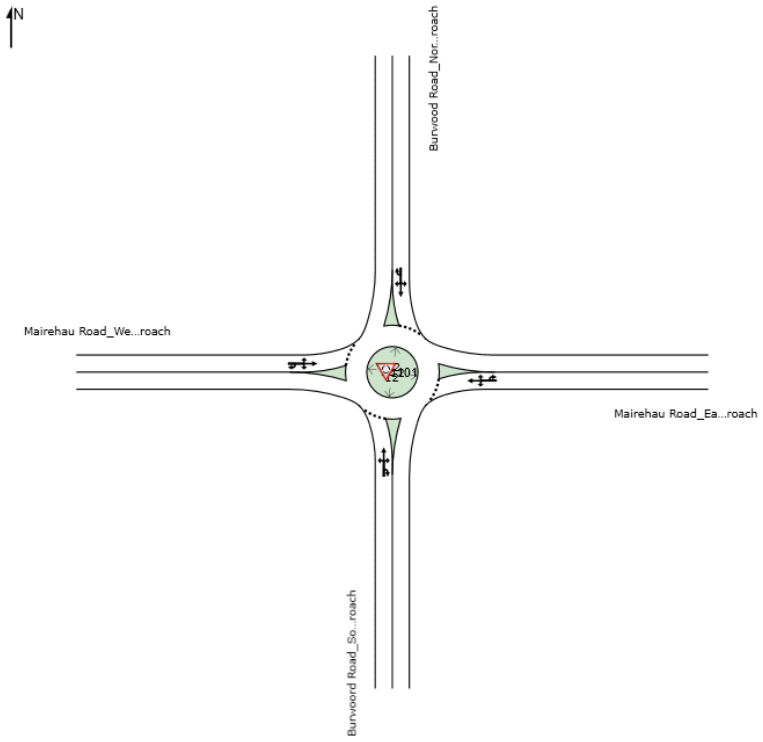

Figure 2: SIDRA Intersection Layout – Base Model

10. The base model was developed using the latest 2024 traffic and pedestrian counts, with calibration based on the queue length survey. According to NZTA – Transport Model Development Guidelines, GEH Chi-Squared statistic is used to compare observed and modelled data for its tolerance of relative and absolute errors. Figure 3 below shows the calibration results.

Queue	Burwood North App	Mairehau East App	Burwood South App	Mairehau West App
	Longest Queue	Longest Queue	Longest Queue	Longest Queue
95th Queue m	19.6	57.0	34.4	28.5
SIDRA Results	29.9	57.0	39.8	31.9
GEH	2.1	0.0	0.9	0.6

Figure 3: Base Model Calibration (Queue Length)

11. Generally, there is a good consistency between the observed and modelled queue length at chosen locations and comply with the criteria as outlined in the NZTA's Transport model development guidelines, thus the base model is considered calibrated and appropriately representing the existing situations.

12. As illustrated in Figure 4, the SIDRA model outputs for both the morning and evening peak periods indicate an overall Level of Service B. This suggests that vehicles are able to traverse the roundabout without significant delays and queuing. There may be no immediate need for signalisation to address the intersection performance issue, but the higher travel and approach speeds present a potential safety risk for pedestrians crossing at the intersection.

Intersection	Approach	Mvt	Base AM 2024				Base PM 2024			
			Ave Delay s	LOS	Queue m	Speed	Ave Delay s	LOS	Queue m	Speed
Mairehau Road /Burwood Road	South	Left	7.8	LOS A	20.4	44.2	10.5	LOS B	39.8	43.0
		Thru	7.9	LOS A	20.4	44.9	10.2	LOS B	39.8	43.8
		Right	11.1	LOS B	20.4	44.8	13.6	LOS B	39.8	43.7
	East	Left	9.7	LOS A	44.8	43.2	10.0	LOS B	57.0	42.8
		Thru	9.7	LOS A	44.8	43.9	10.1	LOS B	57.0	43.4
		Right	13.5	LOS B	44.8	43.7	13.7	LOS B	57.0	43.3
	North	Left	6.1	LOS A	33.4	44.9	5.9	LOS A	29.9	45.0
		Thru	5.9	LOS A	33.4	45.8	5.8	LOS A	29.9	45.8
		Right	9.3	LOS A	33.4	45.7	9.2	LOS A	29.9	45.7
	West	Left	6.6	LOS A	14.0	45.1	8.5	LOS A	31.9	44.2
		Thru	6.5	LOS A	14.0	45.9	8.5	LOS A	31.9	44.9
		Right	10.3	LOS B	14.0	45.7	11.9	LOS B	31.9	44.8

Figure 4: SIDRA Outputs – Base Model

2024 SIDRA Model Update – Option Model Upgraded Roundabout

13. Upgrading the existing roundabout with the incorporation of safety intervention mechanisms to reduce vehicle approach speeds is identified as the most cost-effective solution to address current safety concerns. Figure 5 provides an indicative layout of the upgraded roundabout.

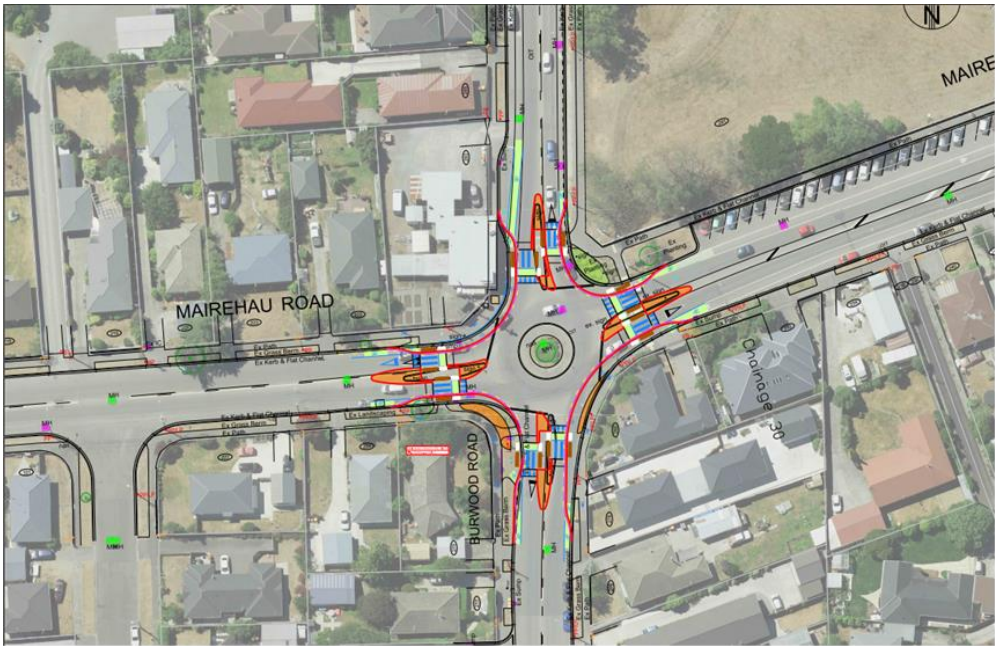

Figure 5: SIDRA Model – Upgraded Roundabout Layout

14. The upgraded roundabout features staggered pedestrian crossings at each approach arm, with specific consideration for wheelchair users from Burwood Hospital, who may have a lower-than-average walking speed. To enhance safety, the design narrows the approach lane width and sharpens the entry radius and angle, that effectively slowing vehicles as they approach the intersection.

15. To achieve these objectives, the SIDRA Model parameters were adjusted to introduce additional geometric delay for vehicles entering the roundabout. Key adjustments included:

- Reducing Entry Width at each approach
- Reducing Entry Radius at each approach
- Increasing Entry Angle at each approach

16. Figure 6 below summarises the modelled outputs for the roundabout upgrade option.

Intersection	Approach	Mvt	Option (Roundabout) AM 2024				Option (Roundabout) PM 2024			
			Ave Delay s	LOS	Queue m	Speed	Ave Delay s	LOS	Queue m	Speed
Mairehau Road /Burwood Road	South	Left	7.5	LOS A	28.5	28.4	20.6	LOS C	78.1	26.0
		Thru	7.2	LOS A	28.5	28.7	19.4	LOS B	78.1	26.3
		Right	9.9	LOS A	28.5	28.9	22.4	LOS C	78.1	26.4
	East	Left	8.6	LOS A	53.6	28.1	8.7	LOS A	66.3	28.0
		Thru	8.1	LOS A	53.6	28.5	8.3	LOS A	66.3	28.4
		Right	11.7	LOS B	53.6	28.6	11.5	LOS B	66.3	28.5
	North	Left	4.2	LOS A	40.2	29.1	8.5	LOS A	61.2	28.2
		Thru	3.5	LOS A	40.2	29.4	7.9	LOS A	61.2	28.6
		Right	6.5	LOS A	40.2	29.6	10.8	LOS B	61.2	28.8
	West	Left	5.5	LOS A	19.2	29.0	26.5	LOS C	92.2	24.8
		Thru	4.9	LOS A	19.2	29.3	26.1	LOS C	92.2	25.1
		Right	8.4	LOS A	19.2	29.5	29.0	LOS C	92.2	25.2

Figure 6: SIDRA Outputs: Option Model (Roundabout Upgrade)

17. As shown above, in particular evening peak, the level of service has further deteriorated compared to the base model. However, an average speed of 27 KPH is successfully achieved, effectively reducing vehicle approach speeds, which enhances pedestrian safety. However, this improvement comes at the cost of an increased queue length, from an average of 39.7m to 74.5m. Despite the longer queues and further vehicle delay, the overall intersection performance remains acceptable and within operational thresholds.

2024 SIDRA Model Update – Option Model Signalisation

18. The signalised intersection was the most popular option based on feedback from local communities. However, its financial feasibility limits it from being the preferred option. The signalised intersection was modelled using SIDRA 9, with the signal phasing plan referenced from the layout illustrated in Figure 2.

19. The basic saturation flow was adjusted from the default 1950 tcu/h to 1800 tcu/h. This adjustment reflects the intersection's layout and surrounding land uses, considering factors such as closely spaced intersections, poor visibility, high pedestrian volumes, and potential interference from parked vehicles, loading activities, and bus movements. Therefore, the environmental class factor was applied with a lower flow rate to represent the actual operational conditions at the intersection.

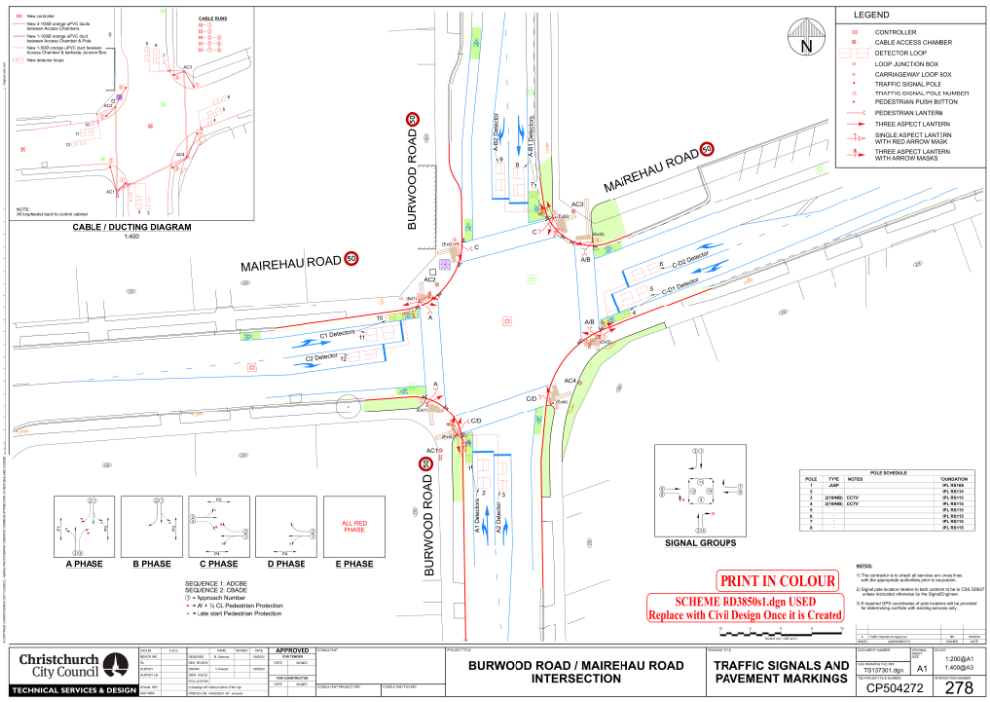

Figure 7: SIDRA Model – Signal and Phasing Plan

Intersection	Approach	Mvt	Option (Signalisation) AM 2024				Option (Signalisation) PM 2024			
			Ave Delay s	LOS	Queue m	Speed	Ave Delay s	LOS	Queue m	Speed
Mairehau Road /Burwood Road	South	Left	34.6	LOS C	50.9	35.0	89.3	LOS F	187.7	23.0
		Thru	30.0	LOS C	50.9	35.3	84.7	LOS F	187.7	23.1
		Right	29.7	LOS C	14.5	35.2	49.9	LOS D	33.5	29.4
	East	Left	17.6	LOS B	50.2	41.5	21.3	LOS C	72.0	39.8
		Thru	13.0	LOS B	50.2	41.8	16.8	LOS B	72.0	40.1
		Right	19.1	LOS B	24.7	39.1	29.9	LOS C	65.0	35.1
	North	Left	28.1	LOS C	94.3	36.9	46.2	LOS D	174.2	31.1
		Thru	23.4	LOS C	94.3	37.3	41.6	LOS D	174.2	31.3
		Right	22.0	LOS C	22.4	38.0	33.5	LOS C	30.8	33.9
	West	Left	31.2	LOS C	50.8	35.9	82.8	LOS F	211.2	23.8
		Thru	26.6	LOS C	50.8	36.1	78.2	LOS E	211.2	23.9
		Right	26.4	LOS C	4.1	36.3	35.1	LOS D	11.4	33.4

Figure 8: SIDRA Model Outputs - Signalisation

20. As shown in Figure 8 above, by introducing signal control at the studied intersection, the level of service is significantly downgraded in both morning and evening peaks. The queue length is significantly increased compared to the base model and roundabout option. LOS F are discovered at left and through movements of the south and west approaches due to the shared lane capacity and higher demand during the evening peak and additional signal control.

7

2024 SIDRA Model Update – Option Model Signalisation – Extended Right-Turn Lane

21. A further study was conducted on the signalisation option by extending the right-turn bay to address the inadequate capacity identified in the right lane, which potentially caused blockages for through and left-turn movements.

22. The model results showed that by extending the right-turn lane at each approach to accommodate the modelled queue length, the impact was slightly mitigated. However, the overall intersection performance remained similar, with no significant improvement in performance. Figure 9 below displays the model outputs for the extended right-turn lanes.

Intersection	Approach	Mvt	Option* (Signalisation) AM 2024				Option* (Signalisation) PM 2024			
			Ave Delay s	LOS	Queue m	Speed	Ave Delay s	LOS	Queue m	Speed
Mairehau Road /Burwood Road	South	Left	34.5	LOS C	50.7	35.0	89.4	LOS F	187.7	22.9
		Thru	29.9	LOS C	50.7	35.3	84.7	LOS F	187.7	23.1
		Right	29.7	LOS C	14.5	35.2	52.3	LOS D	35.2	28.9
	East	Left	17.6	LOS B	50.2	41.5	21.3	LOS C	72.0	39.8
		Thru	13.0	LOS B	50.2	41.8	16.8	LOS B	72.0	40.1
		Right	19.1	LOS B	24.7	39.1	31.1	LOS C	66.8	34.7
	North	Left	26.2	LOS C	90.3	37.7	42.6	LOS D	166.3	32.0
		Thru	21.6	LOS C	90.3	38.0	38.0	LOS D	166.3	32.3
		Right	22.0	LOS C	22.4	38.0	33.3	LOS C	30.6	34.0
	West	Left	31.2	LOS C	50.8	35.9	93.9	LOS F	225.5	22.2
		Thru	26.6	LOS C	50.8	36.1	89.3	LOS F	225.5	22.3
		Right	26.4	LOS C	4.1	36.3	35.7	LOS D	11.6	33.3

Figure 9: SIDRA Model Option – Signalisation with extended right-turn lanes

2024 SIDRA Model Update – Sensitivity Testing

23. With more developments anticipated in the northwest, including intensified housing and infrastructure, future traffic volumes could be affected. To accommodate potential changes in travel demand and trip generation, sensitivity testing has been incorporated into the SIDRA model to evaluate further impacts on the proposed traffic signal operation as the scale of demand flow increases.

24. The sensitivity study was based on a 2% annual traffic growth flow scale. The assessment targeted the parameter of practical spare capacity, which indicates the breaking point for the intersection fails to operate. Figures 10 to 13 below summarise the operational performance for both the roundabout and signalisation options, showing the effects of increasing traffic demand over the years would impact these designs.

Flow Scale (%)	Eff. Cap.	Degree of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	95% Back of Queue (veh)	Perf. Index	Cost Total $/h
100.0	2785	0.581	46	6.7	0.76	7.4	132.5	2254.1
102.0	2739	0.603	41	7.1	0.79	8.1	138.4	2305.9
104.0	2694	0.625	36	7.6	0.81	8.8	144.6	2358.6
106.0	2650	0.648	31	8.0	0.83	9.6	151.1	2412.2
108.0	2605	0.671	27	8.6	0.86	10.5	158.6	2468.6
110.0	2549	0.699	22	9.4	0.90	11.6	167.2	2528.2
112.0	2504	0.724	17	10.2	0.93	12.7	176.2	2589.0
114.0	2460	0.750	13	11.1	0.97	14.1	186.2	2652.6
116.0	2415	0.777	9	12.2	1.02	15.6	198.0	2720.6
118.0	2371	0.806	6	13.7	1.07	17.5	211.9	2794.0
120.0	2327	0.835	2	15.4	1.14	19.8	228.1	2876.0
122.0	2283	0.865	-2	17.6	1.21	22.6	247.3	2967.7
124.0	2244	0.894	-5	20.1	1.30	26.0	269.6	3069.8
126.0	2207	0.924	-8	23.4	1.40	30.3	296.1	3186.7
128.0	2171	0.955	-11	27.5	1.53	35.6	328.3	3323.9
130.0	2135	0.986	-14	32.6	1.67	42.2	367.0	3486.0
132.0	2099	1.018	-17	38.7	1.84	50.0	411.5	3673.5
134.0	2063	1.051	-19	45.4	2.02	58.9	459.8	3880.1
136.0	2021	1.089	-22	53.7	2.22	69.7	516.9	4127.0
138.0	1983	1.127	-25	62.7	2.43	80.9	576.7	4393.2
140.0	1949	1.163	-27	72.1	2.62	92.1	637.9	4674.4
142.0	1915	1.201	-29	82.1	2.82	103.7	701.8	4977.2
144.0	1881	1.239	-31	92.8	3.02	115.5	768.3	5301.2
146.0	1848	1.279	-34	104.1	3.21	127.5	837.0	5646.5
148.0	1815	1.320	-36	116.0	3.40	139.7	908.0	6014.1
150.0	1783	1.362	-38	128.5	3.60	151.9	981.5	6405.4

Figure 10: Sensitivity Assessment – Roundabout Option AMP

Flow Scale (%)	Eff. Cap.	Degree of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	95% Back of Queue (veh)	Perf. Index	Cost Total $/h
100.0	2804	0.741	15	15.4	1.15	13.0	227.2	3044.3
102.0	2739	0.774	10	17.5	1.22	14.7	245.4	3150.4
104.0	2674	0.809	5	20.0	1.30	16.7	266.5	3268.1
106.0	2611	0.844	1	23.2	1.40	19.4	291.5	3401.6
108.0	2548	0.881	-4	27.2	1.52	22.8	321.9	3557.0
110.0	2487	0.919	-8	32.3	1.66	27.3	359.6	3742.3
112.0	2427	0.959	-11	38.9	1.83	33.1	407.0	3967.5
114.0	2368	1.001	-15	47.4	2.04	40.5	466.3	4243.2
116.0	2310	1.044	-19	57.4	2.27	49.2	535.1	4565.2
118.0	2254	1.089	-22	69.3	2.53	59.2	615.2	4943.0
120.0	2255	1.106	-23	78.3	2.73	63.5	684.1	5257.2
122.0	2301	1.102	-23	85.8	2.92	62.0	752.1	5541.1
124.0	2244	1.149	-26	96.0	3.15	72.4	831.9	5900.4
126.0	2189	1.197	-29	107.5	3.39	83.8	919.4	6304.4
128.0	2134	1.247	-32	120.6	3.64	95.6	1014.5	6757.7
130.0	2093	1.291	-34	133.0	3.90	105.9	1107.3	7205.9
132.0	2119	1.295	-34	141.4	4.15	108.0	1177.8	7556.4
134.0	2148	1.297	-34	151.2	4.41	109.8	1255.3	7950.6
136.0	2166	1.305	-35	162.0	4.67	113.0	1338.2	8382.8
138.0	2195	1.307	-35	173.3	4.95	114.8	1425.0	8840.7
140.0	2223	1.309	-35	185.4	5.24	116.7	1516.0	9329.8
142.0	2250	1.312	-35	198.2	5.53	118.7	1610.4	9849.8
144.0	2291	1.307	-35	212.2	5.83	129.6	1709.9	10416.5
146.0	2318	1.310	-35	226.3	6.12	142.0	1810.7	10998.0
148.0	2348	1.310	-35	239.3	6.36	150.1	1903.0	11556.7
150.0	2358	1.322	-36	252.1	6.60	157.2	1997.4	12121.4

Figure 11: Sensitivity Assessment - Roundabout Option PMP

Flow Scale (%)	Cycle Time (sec)	Eff. Cap.	Degree of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	95% Back of Queue (veh)	Perf. Index	Cost Total $/h
100.0	60	2002	0.809	11	23.3	0.84	12.7	164.3	1805.0
102.0	60	1995	0.828	9	23.9	0.86	13.4	170.0	1851.7
104.0	60	2036	0.827	9	23.6	0.85	13.5	173.0	1882.7
106.0	60	2113	0.812	11	23.4	0.85	13.2	176.2	1916.4
108.0	60	2106	0.830	8	24.0	0.87	14.0	182.3	1963.8
110.0	60	2098	0.849	6	24.7	0.89	14.8	188.9	2013.9
112.0	60	2087	0.869	4	25.4	0.90	14.6	194.1	2061.9
114.0	60	2134	0.865	4	25.4	0.90	16.0	198.9	2099.1
116.0	60	2128	0.883	2	26.4	0.92	17.1	206.6	2155.9
118.0	70	2102	0.909	-1	30.6	0.93	21.0	237.4	2273.7
120.0	80	2099	0.925	-3	33.9	0.93	20.7	263.6	2376.0
122.0	90	2128	0.928	-3	36.6	0.92	23.3	291.0	2469.0
124.0	90	2102	0.955	-6	39.0	0.95	25.2	304.7	2558.4
126.0	100	2119	0.963	-7	42.6	0.95	26.5	336.3	2672.5
128.0	101	2080	0.996	-10	46.9	0.98	30.5	359.3	2806.6
130.0	102	2114	0.996	-10	47.5	0.98	30.1	369.8	2863.9
132.0	100	2040	1.048	-14	50.9	1.01	30.8	379.4	2987.0
134.0	102	2050	1.058	-15	53.6	1.03	30.8	399.2	3093.8
136.0	102	2060	1.069	-16	56.1	1.04	32.5	413.7	3197.3
138.0	102	2072	1.078	-17	59.4	1.07	34.4	432.9	3319.4
140.0	102	2085	1.087	-17	63.0	1.10	36.5	453.9	3452.7
142.0	102	2069	1.111	-19	67.9	1.13	38.8	475.3	3618.3
144.0	102	2083	1.119	-20	72.1	1.16	41.2	498.1	3769.1
146.0	102	2099	1.126	-20	76.9	1.19	43.8	523.6	3939.0
148.0	102	2081	1.152	-22	79.4	1.20	43.1	537.5	4057.2
150.0	102	1654	1.468	-39	99.8	1.27	53.1	604.5	4620.5

Figure 12: Sensitivity Assessment – Signalisation AMP

Flow Scale (%)	Cycle Time (sec)	Eff. Cap.	Degree of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	95% Back of Queue (veh)	Perf. Index	Cost Total $/h
100.0	102	2127	0.990	-9	51.5	1.01	29.7	382.2	2909.9
102.0	102	2138	1.004	-10	55.0	1.03	32.4	402.9	3043.1
104.0	102	2147	1.020	-12	58.8	1.06	35.9	423.5	3190.1
106.0	102	2146	1.040	-13	62.2	1.08	38.9	444.4	3333.2
108.0	102	2144	1.060	-15	68.5	1.12	42.1	476.3	3548.6
110.0	102	2143	1.081	-17	73.8	1.16	45.4	504.0	3744.3
112.0	102	2142	1.101	-18	79.4	1.19	48.8	532.8	3951.3
114.0	102	2140	1.121	-20	87.5	1.24	52.4	571.5	4223.4
116.0	102	2184	1.118	-20	92.0	1.28	51.1	603.5	4410.3
118.0	102	2137	1.162	-23	117.1	1.40	59.6	693.5	5198.5
120.0	102	1671	1.512	-40	137.9	1.45	58.3	769.0	5774.6
122.0	102	1671	1.537	-41	154.3	1.53	61.9	828.3	6374.2
124.0	102	1671	1.562	-42	156.8	1.54	65.7	840.4	6544.1
126.0	102	1671	1.588	-43	177.7	1.63	69.4	927.5	7227.3
128.0	102	1671	1.613	-44	189.8	1.68	73.2	978.6	7679.9
130.0	102	1671	1.638	-45	221.2	1.79	81.5	1100.8	8690.7
132.0	102	1671	1.663	-46	233.6	1.84	85.6	1154.1	9221.7
134.0	102	1671	1.688	-47	246.6	1.89	89.7	1208.5	9740.5
136.0	102	1671	1.714	-47	259.8	1.93	93.8	1263.7	10274.7
138.0	102	1671	1.739	-48	273.1	1.98	98.0	1319.4	10823.8
140.0	102	1671	1.764	-49	286.6	2.02	102.1	1375.7	11387.4
142.0	102	1671	1.789	-50	300.1	2.06	106.3	1432.6	11964.9
144.0	102	1671	1.814	-50	313.7	2.10	110.5	1490.0	12556.1
146.0	102	1671	1.840	-51	327.3	2.15	114.6	1547.8	13160.8
148.0	102	1671	1.865	-52	341.0	2.19	118.8	1606.2	13778.6
150.0	102	1671	1.890	-52	354.8	2.23	123.0	1665.0	14409.5

Figure 13: Sensitivity Assessment – Signalisation PMP

25. In summary:

Roundabout Option Sensitivity Assessment

- Morning Peak:
  The zero practical spare capacity is identified at a flow scale of 120% which is corresponding to the year 10 in the design life.

- Evening Peak:
  The zero practical spare capacity is identified at a flow scale of 106% which is corresponding to the year 3 in the design life.

Signalisation Option Sensitivity Assessment

- Morning Peak:
  The zero practical spare capacity is identified at a flow scale of 116% which is corresponding to the year 8 in the design life.

- Evening Peak:
  The zero practical spare capacity is identified at a flow scale of 100% which is corresponding to the current year in the design life.

2024 SIDRA Model Update – Conclusion

26. Base Model (Existing)

Pros:

- As shown in the SIDRA outputs. The existing roundabout can handle current traffic demands at an acceptable level.

Cons:

- The current roundabout layout provides the lowest level of pedestrian crossing service.
- The wider entry angles and radius of the roundabout allow vehicles to travel faster, posing significant risks to pedestrians and cyclists.

27. Option (Upgraded Roundabout)

Pros:

- Introducing geometric delay restricts vehicle speed through the roundabout.
- Generate Lower delays throughout the day since traffic only needs to give way.
- Enhanced safety for pedestrians and cyclists with dedicated crossing facilities like raised platforms, zebra lanes, and refuge islands.

Cons:

- The proposed crossing aids still require pedestrians and cyclists to negotiate with vehicles, offering less protection than a fully signalised crossing.
- Extra caution is needed for mobility-impaired users from Burwood Spinal Hospital, such as those in wheelchairs.
- The reduced vehicle speed could lead to capacity issues in the future as traffic demand increases.

28. Option (Signalised Intersection)

Pros:

- Provides better protection for pedestrians and cyclists.
- Controls both vehicle speed and volume effectively with traffic signals.
- Intersection capacity can be maximised by adjusting signal timing and phasing, offering flexibility to handle future traffic growth.
- Likely to encourage more pedestrian and cyclist crossings due to improved safety.

Cons:

- Performs worse compared to roundabout upgrades, introducing more delays to general traffic during peak hours.
- Signals may cause excessive delays during non-peak times, requiring vehicles to stop unnecessarily.
- Sensitivity analysis shows that the signal may not maintain an acceptable level of service as demand increases, with a short design life anticipated. This could require further signal phasing improvements.
- There is a risk of attracting more traffic from nearby local streets due to re-routing, potentially exacerbating congestion.

29. Both the upgraded roundabout and signalised intersection options are able to meet the project objectives and improve to traffic management and pedestrian safety. However, the SIDRA model results do not indicate an immediate need for signalisation, as the upgraded roundabout can effectively handle both current and future traffic demands while enhancing pedestrian protection.

30. In the long-term, signalisation could be reconsidered, especially to accommodate the needs of vulnerable road users and the anticipated growth in traffic from the northwest. If signalisation becomes the preferred solution, I recommend conducting further studies to optimise the signal phasing plan and assess the feasibility of introducing separate left-turn and through lanes of south and west approaches to improve intersection capacity and reduce saturation flow.

MOVEMENT SUMMARY

Site: 101 [2024Base_Mairehau/Burwood_AMP (Site Folder: General)]

2024 Existing AMP
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Burwood Road_South Approach														
1	L2	19	1	20	5.3	0.403	7.8	LOS A	2.7	20.4	0.78	0.83	0.78	44.2
2	T1	182	18	192	9.9	0.403	7.9	LOS A	2.7	20.4	0.78	0.83	0.78	44.9
3	R2	71	1	75	1.4	0.403	11.1	LOS B	2.7	20.4	0.78	0.83	0.78	44.8
3u	U	2	2	2	100.0	0.403	17.7	LOS B	2.7	20.4	0.78	0.83	0.78	44.0
Approach		274	22	288	8.0	0.403	8.8	LOS A	2.7	20.4	0.78	0.83	0.78	44.8
East: Mairehau Road_East Approach														
4	L2	87	1	92	1.1	0.624	9.7	LOS A	6.2	44.8	0.86	0.95	1.04	43.2
5	T1	237	5	249	2.1	0.624	9.7	LOS A	6.2	44.8	0.86	0.95	1.04	43.9
6	R2	153	14	161	9.2	0.624	13.5	LOS B	6.2	44.8	0.86	0.95	1.04	43.7
6u	U	2	0	2	0.0	0.624	14.7	LOS B	6.2	44.8	0.86	0.95	1.04	44.3
Approach		479	20	504	4.2	0.624	10.9	LOS B	6.2	44.8	0.86	0.95	1.04	43.7
North: Burwood Road_North Approach														
7	L2	128	14	135	10.9	0.560	6.1	LOS A	4.6	33.4	0.68	0.68	0.68	44.9
8	T1	278	14	293	5.0	0.560	5.9	LOS A	4.6	33.4	0.68	0.68	0.68	45.8
9	R2	132	2	139	1.5	0.560	9.3	LOS A	4.6	33.4	0.68	0.68	0.68	45.7
9u	U	2	0	2	0.0	0.560	10.8	LOS B	4.6	33.4	0.68	0.68	0.68	46.2
Approach		540	30	568	5.6	0.560	6.8	LOS A	4.6	33.4	0.68	0.68	0.68	45.5
West: Mairehau Road_West Approach														
10	L2	68	3	72	4.4	0.308	6.6	LOS A	1.9	14.0	0.66	0.71	0.66	45.1
11	T1	156	6	164	3.8	0.308	6.5	LOS A	1.9	14.0	0.66	0.71	0.66	45.9
12	R2	20	2	21	10.0	0.308	10.3	LOS B	1.9	14.0	0.66	0.71	0.66	45.7
12u	U	1	0	1	0.0	0.308	11.5	LOS B	1.9	14.0	0.66	0.71	0.66	46.4
Approach		245	11	258	4.5	0.308	6.9	LOS A	1.9	14.0	0.66	0.71	0.66	45.7
All Vehicles		1538	83	1619	5.4	0.624	8.4	LOS A	6.2	44.8	0.75	0.79	0.81	44.8

MOVEMENT SUMMARY

Site: 101 [2024Base_Mairehau/Burwood_PMP (Site Folder: General)]

2024 Existing INP
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Burwood Road_South Approach														
1	L2	25	3	26	12.0	0.572	10.5	LOS B	5.5	39.8	0.91	0.98	1.09	43.0
2	T1	307	12	323	3.9	0.572	10.2	LOS B	5.5	39.8	0.91	0.98	1.09	43.8
3	R2	89	2	94	2.2	0.572	13.6	LOS B	5.5	39.8	0.91	0.98	1.09	43.7
3u	U	1	0	1	0.0	0.572	15.1	LOS B	5.5	39.8	0.91	0.98	1.09	44.3
Approach		422	17	444	4.0	0.572	10.9	LOS B	5.5	39.8	0.91	0.98	1.09	43.7
East: Mairehau Road_East Approach														
4	L2	77	0	81	0.0	0.691	10.0	LOS B	8.0	57.0	0.89	0.96	1.11	42.8
5	T1	234	6	246	2.6	0.691	10.1	LOS B	8.0	57.0	0.89	0.96	1.11	43.4
6	R2	257	10	271	3.9	0.691	13.7	LOS B	8.0	57.0	0.89	0.96	1.11	43.3
6u	U	1	0	1	0.0	0.691	15.1	LOS B	8.0	57.0	0.89	0.96	1.11	43.8
Approach		569	16	599	2.8	0.691	11.7	LOS B	8.0	57.0	0.89	0.96	1.11	43.3
North: Burwood Road_North Approach														
7	L2	202	11	213	5.4	0.503	5.9	LOS A	4.1	29.9	0.74	0.71	0.74	45.0
8	T1	233	10	245	4.3	0.503	5.8	LOS A	4.1	29.9	0.74	0.71	0.74	45.8
9	R2	105	0	111	0.0	0.503	9.2	LOS A	4.1	29.9	0.74	0.71	0.74	45.7
9u	U	8	0	8	0.0	0.503	10.8	LOS B	4.1	29.9	0.74	0.71	0.74	46.2
Approach		548	21	577	3.8	0.503	6.6	LOS A	4.1	29.9	0.74	0.71	0.74	45.5
West: Mairehau Road_West Approach														
10	L2	132	1	139	0.8	0.498	8.5	LOS A	4.5	31.9	0.88	0.88	0.97	44.2
11	T1	263	7	277	2.7	0.498	8.5	LOS A	4.5	31.9	0.88	0.88	0.97	44.9
12	R2	39	0	41	0.0	0.498	11.9	LOS B	4.5	31.9	0.88	0.88	0.97	44.8
12u	U	2	0	2	0.0	0.498	13.5	LOS B	4.5	31.9	0.88	0.88	0.97	45.4
Approach		436	8	459	1.8	0.498	8.8	LOS A	4.5	31.9	0.88	0.88	0.97	44.7
All Vehicles		1975	62	2079	3.1	0.691	9.5	LOS A	8.0	57.0	0.85	0.88	0.97	44.3

MOVEMENT SUMMARY

Site: 101 [2024Opion2_Mairehau/Burwood_AMP (Site Folder: General)]

2024 Option2 AMP
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Burwoord Road_South Approach														
1	L2	19	1	20	5.3	0.398	7.5	LOS A	3.8	28.5	0.98	0.83	0.98	28.4
2	T1	182	18	192	9.9	0.398	7.2	LOS A	3.8	28.5	0.98	0.83	0.98	28.7
3	R2	71	1	75	1.4	0.398	9.9	LOS A	3.8	28.5	0.98	0.83	0.98	28.9
3u	U	2	2	2	100.0	0.398	15.6	LOS B	3.8	28.5	0.98	0.83	0.98	29.2
Approach		274	22	288	8.0	0.398	8.0	LOS A	3.8	28.5	0.98	0.83	0.98	28.8
East: Mairehau Road_East Approach														
4	L2	87	1	92	1.1	0.583	8.6	LOS A	7.4	53.6	1.00	0.94	1.14	28.1
5	T1	237	5	249	2.1	0.583	8.1	LOS A	7.4	53.6	1.00	0.94	1.14	28.5
6	R2	153	14	161	9.2	0.583	11.7	LOS B	7.4	53.6	1.00	0.94	1.14	28.6
6u	U	2	0	2	0.0	0.583	12.1	LOS B	7.4	53.6	1.00	0.94	1.14	29.0
Approach		479	20	504	4.2	0.583	9.3	LOS A	7.4	53.6	1.00	0.94	1.14	28.5
North: Burwood Road_North Approach														
7	L2	128	14	135	10.9	0.486	4.2	LOS A	5.5	40.2	0.83	0.61	0.83	29.1
8	T1	278	14	293	5.0	0.486	3.5	LOS A	5.5	40.2	0.83	0.61	0.83	29.4
9	R2	132	2	139	1.5	0.486	6.5	LOS A	5.5	40.2	0.83	0.61	0.83	29.6
9u	U	2	0	2	0.0	0.486	7.4	LOS A	5.5	40.2	0.83	0.61	0.83	30.0
Approach		540	30	568	5.6	0.486	4.4	LOS A	5.5	40.2	0.83	0.61	0.83	29.4
West: Mairehau Road_West Approach														
10	L2	68	3	72	4.4	0.284	5.5	LOS A	2.6	19.2	0.86	0.67	0.86	29.0
11	T1	156	6	164	3.8	0.284	4.9	LOS A	2.6	19.2	0.86	0.67	0.86	29.3
12	R2	20	2	21	10.0	0.284	8.4	LOS A	2.6	19.2	0.86	0.67	0.86	29.5
12u	U	1	0	1	0.0	0.284	8.9	LOS A	2.6	19.2	0.86	0.67	0.86	29.9
Approach		245	11	258	4.5	0.284	5.4	LOS A	2.6	19.2	0.86	0.67	0.86	29.3
All Vehicles		1538	83	1619	5.4	0.583	6.7	LOS A	7.4	53.6	0.91	0.76	0.96	29.0

MOVEMENT SUMMARY

Site: 101 [2024Option2_Mairehau/Burwood_PMP (Site Folder: General)]

2024 Option2 PMP
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Burwood Road_South Approach														
1	L2	25	3	26	12.0	0.692	20.6	LOS C	10.9	78.1	1.00	1.33	1.53	26.0
2	T1	307	12	323	3.9	0.692	19.4	LOS B	10.9	78.1	1.00	1.33	1.53	26.3
3	R2	89	2	94	2.2	0.692	22.4	LOS C	10.9	78.1	1.00	1.33	1.53	26.4
3u	U	1	0	1	0.0	0.692	23.2	LOS C	10.9	78.1	1.00	1.33	1.53	26.7
Approach		422	17	444	4.0	0.692	20.1	LOS C	10.9	78.1	1.00	1.33	1.53	26.3
East: Mairehau Road_East Approach														
4	L2	77	0	81	0.0	0.639	8.7	LOS A	9.3	66.3	1.00	0.94	1.17	28.0
5	T1	234	6	246	2.6	0.639	8.3	LOS A	9.3	66.3	1.00	0.94	1.17	28.4
6	R2	257	10	271	3.9	0.639	11.5	LOS B	9.3	66.3	1.00	0.94	1.17	28.5
6u	U	1	0	1	0.0	0.639	12.2	LOS B	9.3	66.3	1.00	0.94	1.17	28.9
Approach		569	16	599	2.8	0.639	9.8	LOS A	9.3	66.3	1.00	0.94	1.17	28.4
North: Burwood Road_North Approach														
7	L2	202	11	213	5.4	0.617	8.5	LOS A	8.5	61.2	1.00	0.93	1.15	28.2
8	T1	233	10	245	4.3	0.617	7.9	LOS A	8.5	61.2	1.00	0.93	1.15	28.6
9	R2	105	0	111	0.0	0.617	10.8	LOS B	8.5	61.2	1.00	0.93	1.15	28.8
9u	U	8	0	8	0.0	0.617	11.8	LOS B	8.5	61.2	1.00	0.93	1.15	29.1
Approach		548	21	577	3.8	0.617	8.7	LOS A	8.5	61.2	1.00	0.93	1.15	28.5
West: Mairehau Road_West Approach														
10	L2	132	1	139	0.8	0.741	26.5	LOS C	13.0	92.2	1.00	1.53	1.79	24.8
11	T1	263	7	277	2.7	0.741	26.1	LOS C	13.0	92.2	1.00	1.53	1.79	25.1
12	R2	39	0	41	0.0	0.741	29.0	LOS C	13.0	92.2	1.00	1.53	1.79	25.2
12u	U	2	0	2	0.0	0.741	30.0	LOS C	13.0	92.2	1.00	1.53	1.79	25.5
Approach		436	8	459	1.8	0.741	26.5	LOS C	13.0	92.2	1.00	1.53	1.79	25.0
All Vehicles		1975	62	2079	3.1	0.741	15.4	LOS B	13.0	92.2	1.00	1.15	1.38	27.2

MOVEMENT SUMMARY

Site: 101 [2024Option1_Mairehau/Burwood_AMP_4stages (Site Folder: General)]

2024 Option 1 AMP
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 80.0 %

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Burwood_South Approach														
1	L2	19	1	20	5.3	*0.762	34.6	LOS C	6.7	50.9	1.00	0.95	1.25	35.0
2	T1	182	18	192	9.9	0.762	30.0	LOS C	6.7	50.9	1.00	0.95	1.25	35.3
3	R2	73	1	77	1.4	0.304	29.7	LOS C	2.1	14.5	0.92	0.76	0.92	35.2
Approach		274	20	288	7.3	0.762	30.2	LOS C	6.7	50.9	0.98	0.90	1.16	35.2
East: Mairehau_East Approach														
4	L2	87	1	92	1.1	0.443	17.6	LOS B	7.1	50.2	0.75	0.68	0.75	41.5
5	T1	237	5	249	2.1	0.443	13.0	LOS B	7.1	50.2	0.75	0.68	0.75	41.8
6	R2	155	14	163	9.0	*0.440	19.1	LOS B	3.3	24.7	0.91	0.78	0.91	39.1
Approach		479	20	504	4.2	0.443	15.8	LOS B	7.1	50.2	0.80	0.71	0.80	40.8
North: Burwood_North Approach														
7	L2	128	14	135	10.9	0.810	28.1	LOS C	12.8	94.3	0.91	0.96	1.14	36.9
8	T1	278	14	293	5.0	0.810	23.4	LOS C	12.8	94.3	0.91	0.96	1.14	37.3
9	R2	134	2	141	1.5	*0.483	22.0	LOS C	3.2	22.4	0.96	0.78	0.96	38.0
Approach		540	30	568	5.6	0.810	24.2	LOS C	12.8	94.3	0.92	0.91	1.09	37.4
West: Mairehau_West Approach														
10	L2	68	3	72	4.4	0.699	31.2	LOS C	7.0	50.8	0.98	0.88	1.10	35.9
11	T1	156	6	164	3.8	*0.699	26.6	LOS C	7.0	50.8	0.98	0.88	1.10	36.1
12	R2	21	2	22	9.5	0.071	26.4	LOS C	0.5	4.1	0.84	0.69	0.84	36.3
Approach		245	11	258	4.5	0.699	27.8	LOS C	7.0	50.8	0.97	0.87	1.08	36.1
All Vehicles		1538	81	1619	5.3	0.810	23.2	LOS C	12.8	94.3	0.90	0.84	1.01	37.8

MOVEMENT SUMMARY

Site: 101 [2024Option1_Mairehau/Burwood_PMP_4stages (Site Folder: General)]

2024 Option 1 PMP
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 102 seconds (Site Practical Cycle Time)
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 100.0 %

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Burwood_South Approach														
1	L2	25	3	26	12.0	0.990	89.3	LOS F	26.1	187.7	0.99	1.36	1.70	23.0
2	T1	316	12	333	3.8	*0.990	84.7	LOS F	26.1	187.7	0.99	1.36	1.70	23.1
3	R2	93	2	98	2.2	0.553	49.9	LOS D	4.8	33.5	0.97	0.80	0.97	29.4
Approach		434	17	457	3.9	0.990	77.5	LOS E	26.1	187.7	0.98	1.24	1.54	24.2
East: Mairehau_East Approach														
4	L2	80	0	84	0.0	0.438	21.3	LOS C	10.2	72.0	0.66	0.62	0.66	39.8
5	T1	239	6	252	2.5	0.438	16.8	LOS B	10.2	72.0	0.66	0.62	0.66	40.1
6	R2	258	10	272	3.9	*0.749	29.9	LOS C	9.0	65.0	0.99	0.87	1.08	35.1
Approach		577	16	607	2.8	0.749	23.3	LOS C	10.2	72.0	0.81	0.73	0.85	37.7
North: Burwood_North Approach														
7	L2	202	11	213	5.4	0.874	46.2	LOS D	23.9	174.2	0.91	0.97	1.14	31.1
8	T1	236	10	248	4.2	0.874	41.6	LOS D	23.9	174.2	0.91	0.97	1.14	31.3
9	R2	114	0	120	0.0	*0.594	33.5	LOS C	4.4	30.8	0.97	0.79	0.99	33.9
Approach		552	21	581	3.8	0.874	41.6	LOS D	23.9	174.2	0.92	0.93	1.11	31.7
West: Mairehau_West Approach														
10	L2	133	1	140	0.8	0.978	82.8	LOS F	29.7	211.2	1.00	1.29	1.62	23.8
11	T1	263	7	277	2.7	*0.978	78.2	LOS E	29.7	211.2	1.00	1.29	1.62	23.9
12	R2	41	0	43	0.0	0.135	35.1	LOS D	1.6	11.4	0.79	0.72	0.79	33.4
Approach		437	8	460	1.8	0.978	75.5	LOS E	29.7	211.2	0.98	1.24	1.54	24.5
All Vehicles		2000	62	2105	3.1	0.990	51.5	LOS D	29.7	211.2	0.91	1.01	1.22	29.2


1: 600
488 Mairehau Road Parklands
LV + pole + ECAN imagery
Proposed extent of under grounding
Red circles - poles to be removed
Green circles - first/last poles of overhead lines
MAIREHAU 2

URBAN CONNECTION
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Cashmere Roundabout Safety Improvements

SMART Safety Assessment
Prepared for Christchurch City Council

June 2025 | V0.1 Draft

Contents

Introduction

Site Name:

Cashmere Road / Colombo Street / Centaurus Road / Dyers Pass Roundabout, Christchurch

Client:

Christchurch City Council

Region:

Canterbury, New Zealand

Location:

Latitude -43.56747864811841

Longitude 172.63486523655925

Survey Start (Before):

25 March 2024

Survey End:

31 March 2024

Survey Start (After):

7 April 2025

Survey End:

15 April 2025

Background

The Cashmere roundabout, where Colombo St, Centaurus Rd, Dyers Pass Rd, and Cashmere Rd intersect, is a high-risk intersection with a history of serious crashes, with 27 between 2010 and 2021, including 10 involving serious injuries. The layout includes complex geometry and channelising islands that have contributed to high-speed movements and poor safety outcomes for cyclists, motorcyclists, and pedestrians.

Christchurch City Council identified the site as a priority for safety improvements following extensive community feedback and technical assessments.

Site Location

The intersection sits at the base of the Port Hills in the suburb of Cashmere, 5km directly south of the Christchurch CBD. It forms a key link between hillside suburbs and the city, with high volumes of vehicle traffic, buses, and recreational users including cyclists and pedestrians accessing nearby parks, schools, and local routes.

Purpose

The purpose of this report is to identify and understand the areas of crash risk at the Cashmere roundabout and to validate the recent safety improvements by comparing before and after assessments.

Road Layout

DESCRIPTION	Single-Lane Urban Roundabout
ONRC CLASSIFICATION	Arterials & Primary Collector
ONF CATEGORY	Urban Connectors
AADT	7,575 - 16,000 vpd (approach legs vary)
POSTED SPEED LIMIT	50 k/h
CHARACTERISTICS	Approaches median divided
	Priority Give-Way controlled
	Vertical and horizontal curvature
	Footpaths on both sides
	Shared on-road cycling

Site Location

SMART Camera Installation on Cashmere Road (Before Survey)

SMART Safety Assessment

What is it?

A SMART Safety Assessment is a deep-dive Safe Systems analysis into road safety. As part of the survey, data is recorded via a stationary camera for a specified duration, for instance a week. The data is then analysed using artifical intelligence (AI) technology and video analytics.

The factors used within the underlying algorithm include the vehicle type, the speed, the traffic, and even the angle the vehicle turns on as it passes through an intersection or corridor. It monitors near-misses, finds the trends of traffic behaviors, and provides insight into the likelihood and causes of crashes.

This safety analysis method is a new approach pioneered by Advanced Mobility Analytics Group (AMAG) and performed throughout New Zealand by Urban Connection Ltd (UCL).

Some limitations apply, including reduced accuracy at large or complex intersections, or at the edges of the camera view. Detection can also be affected by weather, lighting, and obstructions. These factors are considered during review and interpretation.

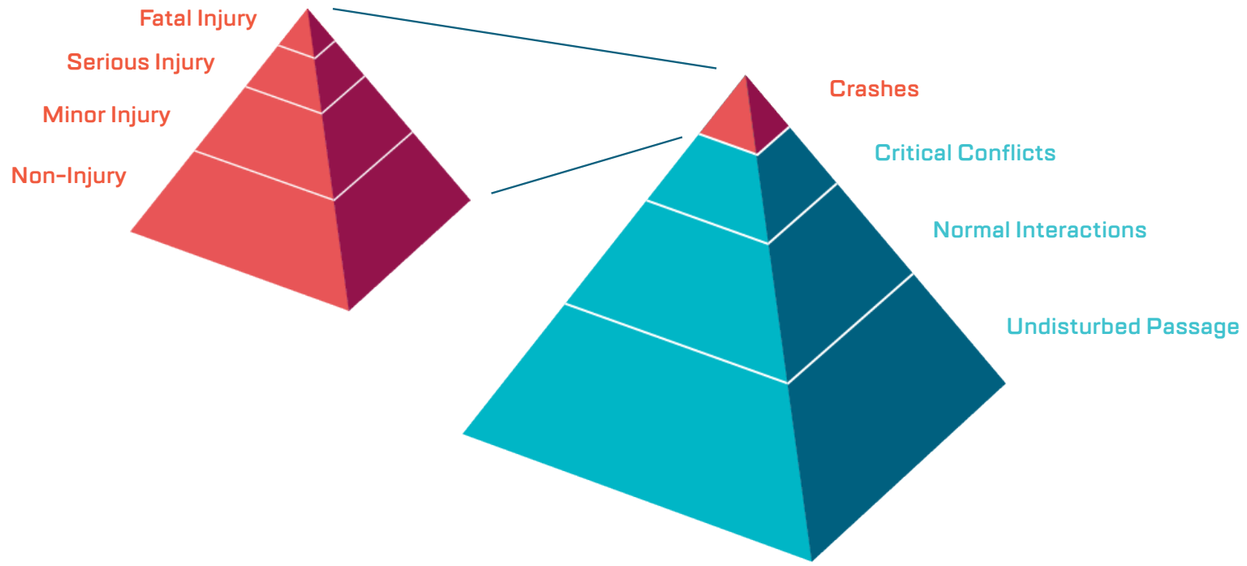
Example of SMART Assessment Camera in Operation

Near-Miss and Conflict Analysis

Historically, crash data has been the primary measure for understanding risk at a given site. However, crashes are often infrequent, are considered lag indicators, and represent only a part of the overall risk. Far more common are near-misses and conflicts, which occur with much greater frequency and, when analysed, provide a more comprehensive picture of the safety risks.

A conflict occurs when road users are on a collision course and are forced to take evasive action, with the severity determined by the available time to avoid a crash and the potential impact forces. There is established research linking the occurrence of these conflicts to the likelihood of future crashes, making them a reliable predictor of safety risk.

The SMART Safety platform leverages this understanding by using an advanced algorithm developed and refined by AMAG over the past 15 years. The comprehensive analysis enables the platform to identify conflicts and repetitive behaviors that might otherwise go unnoticed in traditional crash-only assessments, providing an in-depth understanding of a site's safety risk.



Relationship Between Recorded Crashes and Critical Conflicts and Normal Interactions

Safety & Traffic Impacts

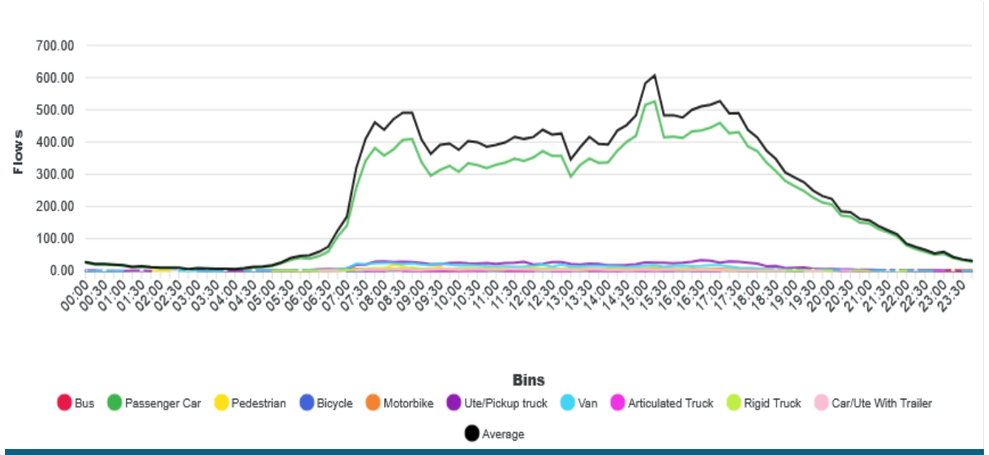
Safety Improvements

In April 2024, Christchurch City Council implemented a series of safety upgrades at the Cashmere roundabout aimed at reducing crash risk and improving conditions for all road users. The works focused on lowering vehicle speeds, improving visibility, and making it safer for people walking and cycling. Key changes included the installation of safe-speed platforms on Colombo Street and Centaurus Road, as well as speed humps on Dyers Pass Road and Cashmere Road. The intersection approaches were narrowed with kerb build-outs to slow turning movements, and a raised concrete apron was added around the central island to reduce circulating speeds. Pedestrian safety was improved through new zebra crossings on the raised platforms and expanded refuge islands on each approach. Shared lane markings (sharrows) were introduced to indicate cyclist presence, and additional crossings were provided to encourage safe walking and cycling. The upgrades were supported by new road markings and signage to reinforce the changed layout. These measures were developed in response to strong community feedback and crash data, providing an interim solution while long-term options continue to be explored.

3D Render of Roundabout Upgrades

Traffic Flows Before Improvements

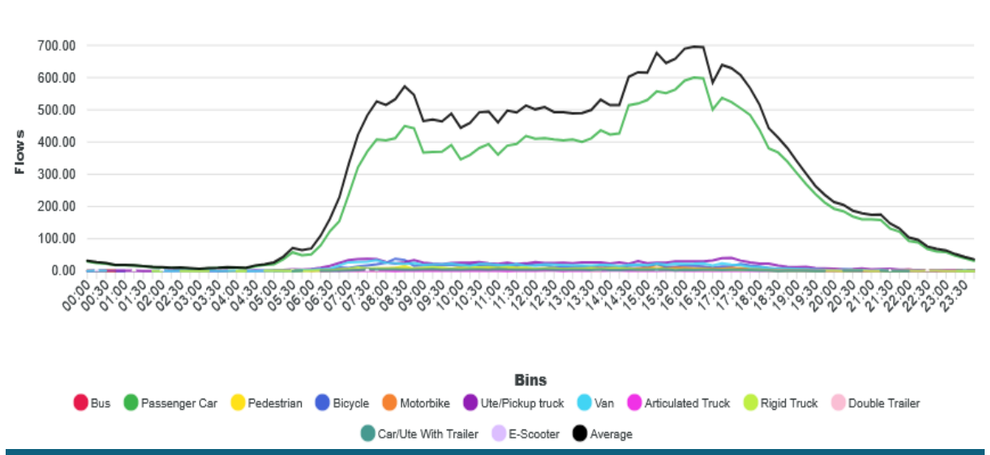
The traffic survey before improvements showed volumes rising sharply and reaching a sustained peak between 8:00 a.m. and 9:00 a.m. Flows remained relatively steady through the middle of the day before building again into a well-defined PM peak between 3:00 p.m. and 3:30 p.m. Passenger cars dominated throughout the day, with relatively low volumes of heavy vehicles, bicycles, and other road users. The profile reflects typical weekday commuting patterns, including nearby school trips,, with higher volumes in both peak periods and a gradual decline after 5:30 p.m.



Total Traffic Flow Distribution Before Improvements

Traffic Flows After Improvements

The follow-up traffic survey showed a similar overall profile, with a sharp increase in flows from around 6:30 a.m., with a well-defined AM peak between 8:00 a.m. and 9:00 a.m. Midday volumes remained consistently high, followed by a longer pronounced PM peak from 3:00 p.m. to 5:00 p.m. Passenger cars remained the dominant vehicle type throughout the day, with relatively low volumes of other users. The overall profile reflects typical weekday commuter, school and business traffic patterns, with sustained activity across most of the day and a steady taper down after 5:30 p.m.



Total Traffic Flow Distribution After Improvements

Speeds

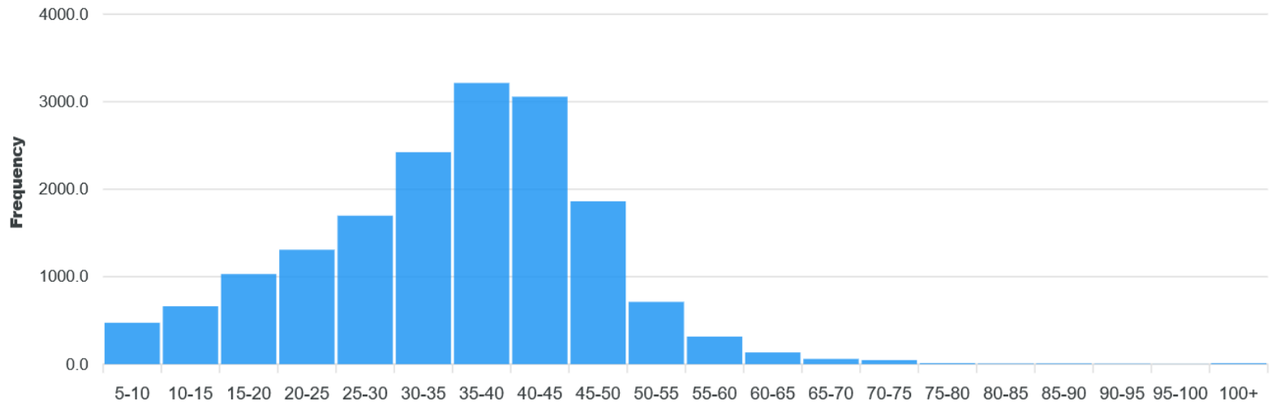
Speed Changes Before and After

The speed profiles before and after the intersection improvements show a clear and meaningful reduction in average vehicle speeds through the intersection. Before the improvements were implemented, speeds were more broadly distributed, with the majority of vehicles travelling between 35 and 45 km/h, and a noticeable tail extending into higher-speed ranges, with some speeds recorded in excess of 70 km/h. Although average speeds may have been considered relatively low compared to typical arterial routes, they still exceeded the Safe System impact thresholds for vulnerable road users.

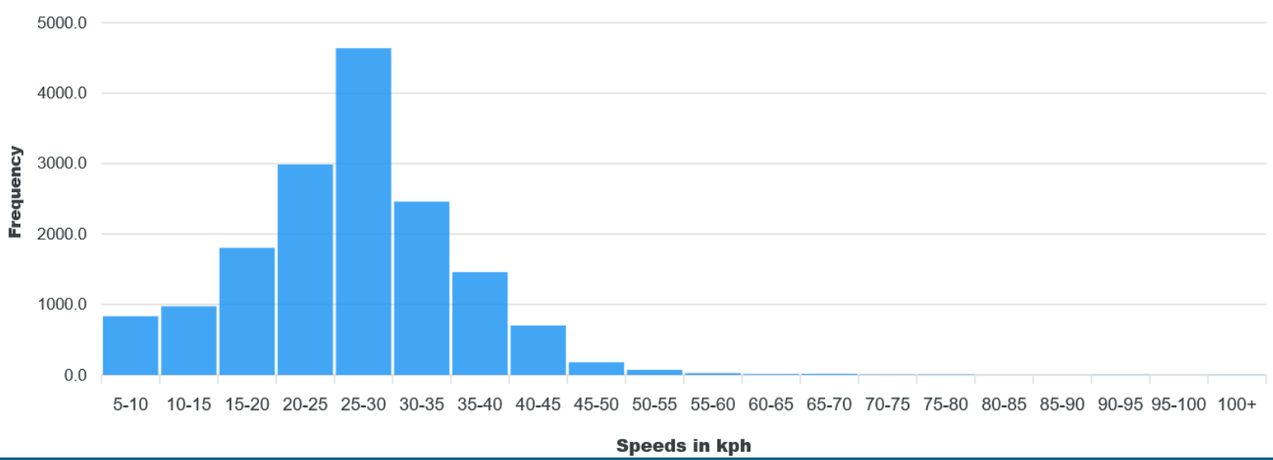
Following the implementation of the intersection improvements, the speed profile shows a distinct shift towards lower speeds. Most vehicles now travel between 20 and 35 km/h, with the peak frequency in the 25–30 km/h range. Very few vehicles exceeded 40 km/h, and almost no vehicles exceeded 50 km/h. This shift is strongly aligned with the Safe System approach, which identifies 30 km/h as the maximum survivable impact speed for pedestrians and cyclists in the event of a crash.

The reduction in average speeds appears to be a reflection of the physical changes made at the site, including raised safety platforms, changes to the intersection geometry and other improvements, all designed to reduce approach speeds and support safer interactions between all road users. This outcome is particularly important at this location, where high volumes of active mode users are present, including school children and cyclists navigating across or along the route.

It is understood that achieving operating speeds closer to Safe System aligned thresholds and making a safer intersection for all road users is one of the goals of the project, and the post-implementation data demonstrates a strong alignment in delivering on that goal. Lower speeds not only reduce crash severity but also improve driver awareness and reaction time, reducing the likelihood of a crash and contributing to a safer and more forgiving environment for vulnerable users.



Speed Profile Before Changes



Speed Profile After Changes

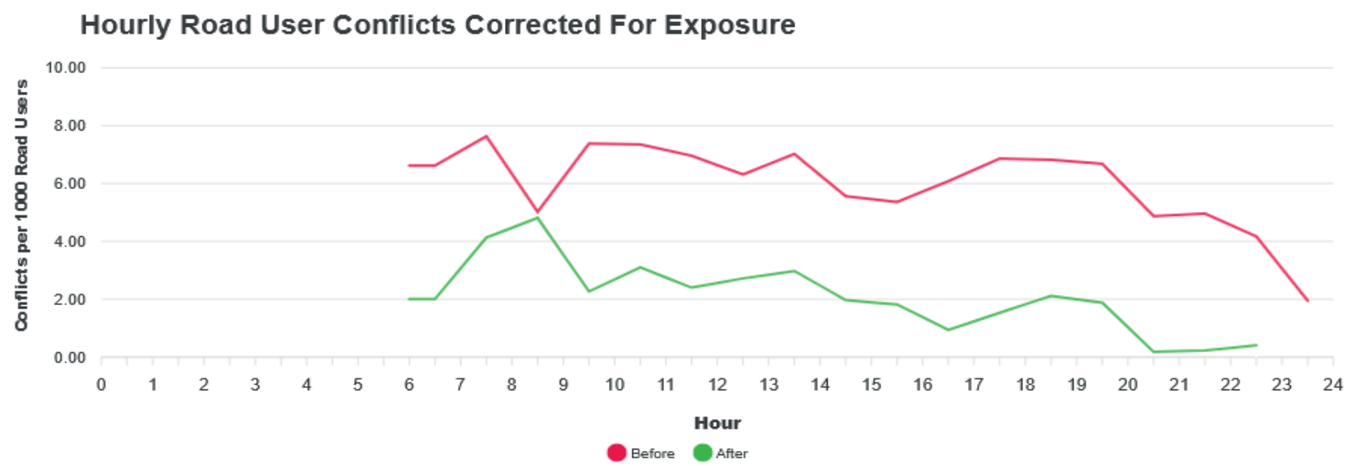
Conflict Summary

Conflict Rate Comparison

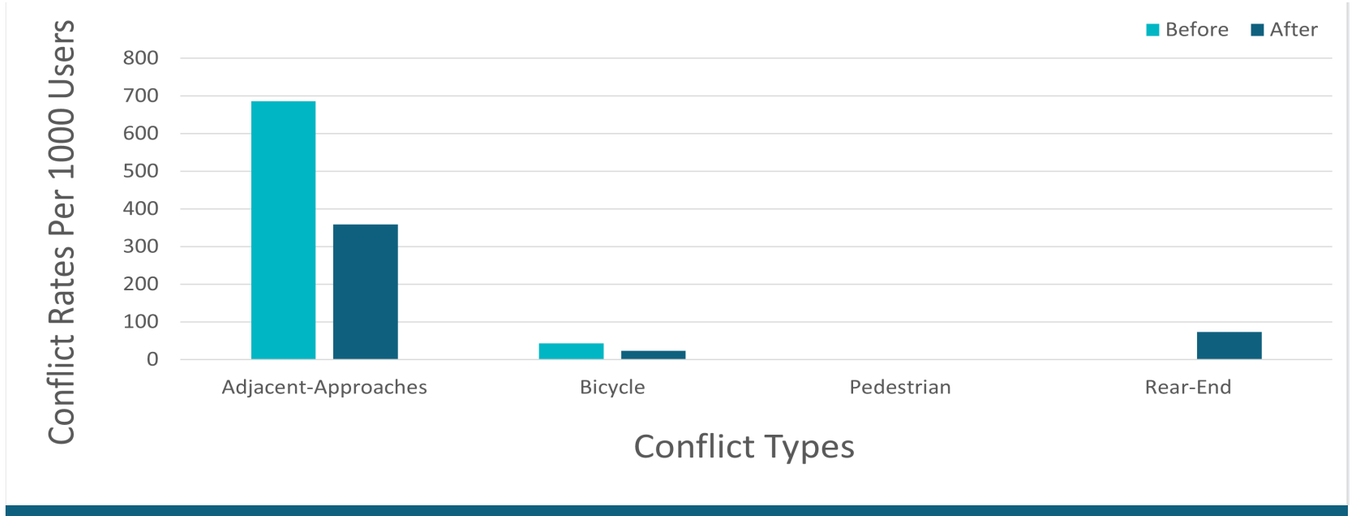
The conflict rate per 1,000 road users was consistently higher before the improvements were implemented, particularly during the late morning and late afternoon hours. In contrast, after the improvements, there was a noticeable and consistent reduction in conflicts across almost all hours of the day. This reduction suggests that the changes helped lower the relative risk of conflict, likely due to improved vehicle speeds, driver behaviour, and intersection geometry.

While a small increase in conflict rates was observed during the morning peak in the 'after' period, particularly between 7:30 a.m. and 9:30 a.m., the overall trend showed substantial safety improvements. In the evening, particularly from 8:30 pm, conflict rates dropped to nearly zero, compared to rates of 4 to 6 conflicts per 1,000 users during the same period in the 'before' survey.

The contrasting results highlight the effectiveness of the treatments in reducing potential crash risk for most of the day and during the more free flow periods of the day, where speeds are likely to be higher. There was an increase in the relative crash rate during the morning peak, potentially due to conflicts arrising from increased congestion.



Conflict Rates Before and After Changes



Conflict Rates Before and After Changes

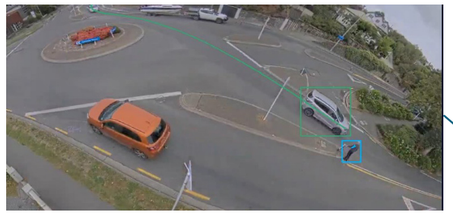
Conflict Type Comparison

The chart illustrates the distribution and comparison of conflict types observed at the intersection before and after the recent improvements. The most significant reduction in conflict rates was observed in adjacent-approach conflicts, which are typical at roundabouts and were the dominant conflict type in both survey periods. These conflicts dropped by nearly half following the improvements, indicating a meaningful reduction in the likelihood of side-impact collisions.

Bicycle-related conflicts also decreased slightly, reflecting improved driver awareness or operating conditions, such as speed, while pedestrian conflicts remained negligible in both periods. There was a noticable increase in rear-end conflicts recorded in after the improvements. While it is difficult to draw any conclusions from the low rate alone, upon review of the video footage it is clear the rear-end conflicts are due to the recently installed pedestrian crossing points and raised platforms. Some brief queues were observed forming within the circulating lanes of the roundabout.

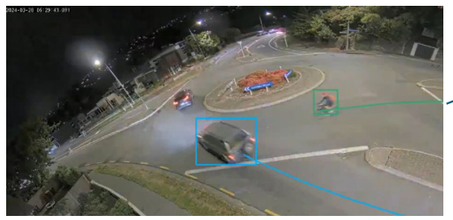
Overall, the results highlight the effectiveness of the changes in reducing higher-risk vehicle-to-vehicle conflicts, particularly those related to failing to give way or incorrect entry behaviour at the roundabout.

Conflict Types



Pedestrian

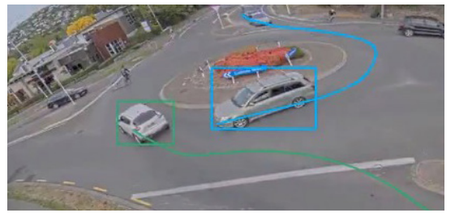
The results show very few pedestrian conflicts at the intersection during the survey period. This is likely due to the low overall volumes on the nearside of the camera and the limitations of capturing smaller objects on the far side, on Centaurus Road.



Cyclist

Conflicts involving cyclists were observed on the northbound approach from Dyers Pass Road, where cyclists were travelling at relatively high speeds. Several incidents involved vehicles entering the roundabout failing to give way to circulating cyclists, or entering immediately after them and encroaching on their path. Additional conflicts occurred where cyclists and vehicles shared a single lane, resulting in lane squeeze risks during entry and exit movements.

Before



Adjacent-Approaches

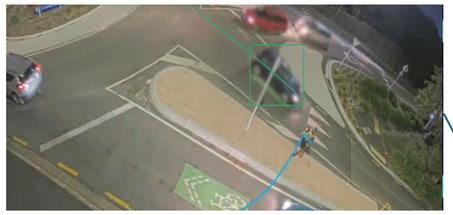
The most common conflict type observed was adjacent approach (side-impact) conflicts, which is typical for a roundabout. While many reflected normal roundabout behaviour, conflict counts were triggered based on approach speeds, trajectories, and other risk factors. The most serious events involved drivers failing to slow or give way to circulating vehicles, especially when turning right and either cutting across or closely following another vehicle.

Rear-End

Only one rear-end conflict was observed during the survey, involving a southbound car following too closely as the lead vehicle slowed to turn right.

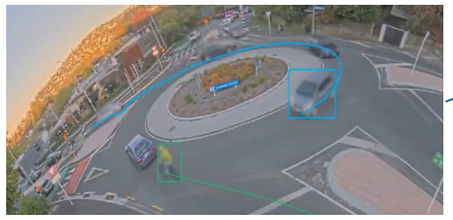
The conflict heat map highlights the location and concentration of conflicts recorded over the week-long survey period between 25/03/2025 and 31/03/2025

Conflicts Types Cont...



Pedestrian

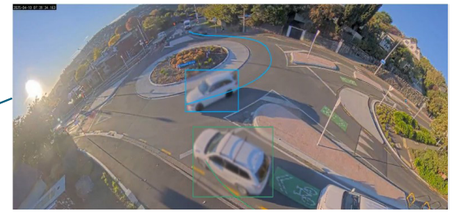
Only a very small number of pedestrian conflicts were recorded during the follow-up survey, consistent with the low number observed in the initial assessment. This suggests that pedestrian movements at the intersection are either limited in volume or generally well separated from vehicle paths.



Cyclist

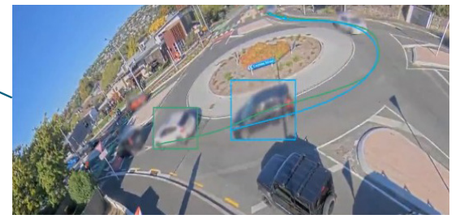
Similar to the pre-implementation survey, the follow-up survey recorded several cyclist conflicts. Many of these involved vehicles entering the roundabout failing to give way to circulating cyclists, or entering immediately after. However, the average speeds of vehicles was notably lower, reducing the likelihood and severity of a collision.

After



Adjacent-Approaches

Adjacent approach conflicts remained the most common type observed in the follow-up survey, as expected for a roundabout. However, the Delta-V, or severity indicator, of these conflicts was reduced compared to the initial survey, largely due to lower vehicle entry speeds into the roundabout.



Rear-End

Compared to the previous survey, the follow-up recorded a notable increase in rear-end conflicts, likely due to the introduction of pedestrian crossings and raised platforms on the exits.

*Note the minor misalignment of the underlying aerial image

The conflict heat map highlights the location and concentration of conflicts recorded over the week-long survey period between 7/04/2025 and 14/04/2025

Conclusion

Summary

The Cashmere roundabout, located at the intersection of Colombo Street, Centaurus Road, Dyers Pass Road, and Cashmere Road, has long been recognised as a high-risk site with a history of serious crashes involving vulnerable road users. In response, Christchurch City Council delivered a package of safety improvements in April 2024 designed to reduce vehicle speeds, improve visibility, and create a safer environment for pedestrians and cyclists.

To assess the effectiveness of these measures, a SMART Safety Assessment was conducted before and after implementation using a temproary camera and AI-based video analytics. The survey captured traffic volumes, speed profiles, and conflict types, providing objective insights into how road user behaviour changed following the upgrades.

The results show a significant improvement in safety outcomes, with reductions in speeds, conflict rates, and risk exposure, particularly for adjacent approach (side-impact) conflicts, which were the most common type observed pre-upgrade. The average speed reductions recorded indicate a strong alignment with Safe System impact thresholds for vulnerable road users, consistent with Safe system treatments such as raised safety platforms.

Key Findings

1 Significant Reduction in Vehicle Speeds

Post-implementation speed profiles showed a strong shift towards lower operating speeds, with the majority of vehicles now travelling below 35 km/h. This aligns with Safe System thresholds, especially important for vulnerable road users.

2 Adjacent Approach Conflicts Halved

Side-impact conflicts, typical at roundabouts, reduced by nearly 50% after the upgrades. This reflects improved yielding behaviour and lower entry speeds, particularly on raised platform approaches.

3 Cyclist Conflicts Reduced but Still Present

Bicycle-related conflicts decreased slightly, though some close interactions were still recorded, particularly where vehicles entered the roundabout closely behind cyclists.

4 Overall Conflict Rate Declined Significantly

Hourly conflict rates, normalised for exposure, dropped across almost all time periods, with some hours recording near-zero conflict activity following the upgrades.

Recommendations

1 Monitor Cyclist Behaviour and Lane Sharing

Continue to observe cyclist–vehicle interactions, particularly during peak periods, and assess the effectiveness of sharrows and lane widths in reducing passing and side-swipe risks.

2 Conduct Seasonal and School-Term Follow-Up

Repeat SMART Safety surveys during different times of year and school terms to confirm improvements remain effective under varying user demand, especially for school-aged children.

3 Progress Long-Term Redesign Options

While the interim upgrades have delivered clear safety gains, long-term redesign options (e.g. full signalisation or raised safety platform round-about) should remain a focus to further enhance safety and network function.

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2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	
Richmond Community Garden Trust **Funding History** 2025/26 - $30,000 (Riverlution Eco Park) SCF PIC 2024/25 - $15,000 (Riverlution Precious Plastic) Sus 2024/25 - $15,000 (Riverlution Cafe) DRF PIC 2024/25 - $20,000 (Riverlution Eco Park) SCF PIC 2024/25 - $5,000 (Riverlution Eco Park) SCF CBL 2024/25 - $10,000 (In River Clean) Comm Waterways 2023/24 - $20,000 (Riverlution Eco Park) SCF PIC 2023/24 - $12,600 (Riverlution Precious Plastic) SF 2022/23 - $15,000 (Richmond Compost Collective & Urban Trapping) SF 2022/23 - $10,000 (Richmond Community Garden) SCF LCH 2022/23 - $2,000 (Richmond Community Garden) SCF PI 2022/23 - $8,728 (Riverlution Eco Hub) DRF LCH **Council Staff consulted** Yes Sarah Mankelow, Zane Lazarre	**Riverlution Biodiversity Resilience Project** The Riverlution Biodiversity Resilience Project aims to strengthen climate resilience along the Ōtākaro River Corridor through strategic predator control, native planting, and community engagement. Our approach includes building and installing trap boxes and monitoring traps, alongside habitat restoration such as creating insect hotels and planting for pollinators. We engage the community through hands-on workshops, including trapping workshops, Fungi Whānau sessions, and Curiosity Seeds & Plants activities, empowering participants of all ages to take part in conservation efforts. This work not only protects native wildlife but also enhances urban green spaces, making them more vibrant, biodiverse, and self-sustaining. By reducing the impact of invasive species and increasing habitat for birds, insects, and fungi, the project contributes to a thriving and resilient ecosystem.	**Total Cost:** **$245,813** **Requested Amount:** **$18,313** **7% percentage requested** **Other Sources of Funding** Volunteer hours, tool lendery use, Riverlution Eco hub use, plant donation, trapping workshops, traps and trap boxes $227,500 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $7,313 Hui, Conferences and Meetings - $2,500 Administration - $3,000 Volunteer Expenses - $2,000 Salaries and Wages - $3,500	**Recommended Amount** $18,000 That the Council makes a grant from its Environmental Partnership Fund (EPF), 2025/26 of $18,000, 2026/27 of $19,000 to Richmond Community Garden Trust towards Riverlution Biodiversity Resilience Project.	**1**

Outcomes that will be achieved through this project	Staff Assessment
The project aims to achieve four key outcomes: Reduction of Invasive Predators – By building and deploying 500 traps along the Ōtākaro River Corridor and engaging the community in pest control, we aim to reduce predator populations (rats, stoats, possums) by 50% within two years, creating safer habitats for native species. Restoration of Native Biodiversity – Through community planting events, fungi whānau workshops, and the introduction of over 2,000 native plants and curiosity seeds, we aim for an 80% survival rate. Collaborating with local iwi and ecological experts, we will enhance habitat resilience and promote the return of native species. Community Engagement & Kaitiakitanga – Environmental stewardship will be fostered through educational workshops, trapping sessions, and partnerships with schools and local organisations. Integrating tikanga Māori and traditional knowledge ensures culturally guided conservation efforts, empowering participants to take ongoing action for their local environment. Monitoring, Awareness & Accessible Green Spaces – Data from traps, plant survival, and biodiversity monitoring will inform future projects. The initiative also increases community access to green spaces, encourages behaviour change, and strengthens connection to nature. Overall, this project enhances climate resilience by restoring ecosystems, improving biodiversity, reducing threats from invasive species, and fostering lasting community involvement and environmental awareness.	This project is considered priority one because meets all eligibility criteria and contributes significantly to Funding Outcomes and Priorities and meets Bio goals. Highly recommended for funding. RCG have consulted heavily with our team and have constructed their work programme to fit within the CCC goals and objectives for the red zone. We work very closely with the team to set very real expectations and parameters for their programme to focus on their strengths which is those community connections, to sit alongside the work CCC has planned in the predator control space specifically. They recently celebrated their ten year anniversary and the number of representatives from different organisations attending was a true testimony of their success in forming effective partnerships in the environmental and social communities. **Rationale for staff recommendation:** • The key outcomes of this project dovetail directly into the outcomes of the Regeneration plan for the OARC. They work well with operational CCC staff, seeking guidance and support when appropriate. They have established themselves as a centre of excellence for education, engagement and action for the environment and food resilience. they are well established, with strong strategic partnerships and a strong governance and operational team.

Reequest Number: EPF2025/26_0002

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Ōpāwaho Heathcote River Network Incorporated **Funding History** 2025/26 - $7,812 (Tributary Ecological Surveys) CWPF 2025/26 - $20,000 (Administration and Ops) SCF SCH 2024/25 - $4,000 (Operation & project costs) SCF CBL 2024/25 - $17,480 (Operation & project costs) SCF SCH 2023/24 - $102,000 (Pest Plant Management project) Better Off SCH 2023/24 - $1,750 (Operating & project costs) SCF CBL 2023/24 - $17,500 (Operating & project costs) SCF SCH 2022/23 - $4,000 (Operating & project costs) SCF LCH 2022/23 - $12,000 (Operating & project costs) SCF SC 2021/22 - $5,800 (Ōpāwaho Heathcote River Network) SCF LCH 2021/22 - $10,200 (Ōpāwaho Heathcote River Network) SCF SC **Council Staff consulted** Yes Bridie Gibbings, Ruby Mountford-McAuley	**Predator Free Ōpāwaho and Community Group Support** Predator Free Ōpāwaho: This an ambitious and important project to use citizen trappers to remove rats, mice and hedgehogs from the riverbanks of the Ōpāwaho Heathcote River as well as from reserves bordering the river. The overall intention is to reduce the rodent population to such an extent that native bird, insect and plant species may thrive once again in the river corridor and to reduce predation of Inaka (whitebait) eggs during and following the spawning season. All trapping will be undertaken on public land. Stage 1 of the project has been successfully rolled out by OHRN using internal funding but we need support for Stages 2 to 5. Community Group support: A project to support small community groups working within the river catchment by providing them with hand tools, Hi-Viz vests, sunblock, morning tea equipment, first aid kits and vouchers for refreshments so that these do not have to be a cost to volunteer organisers. This equipment allows community work groups to function whether or not a Community Partnerships Ranger is present and provides the means for increased community involvement and socialising. Increasingly, we have found that many residents do not possess wheelbarrows and garden hand tools to use. Hire a Predator Free Ōpāwaho Project Administrator	**Total Cost: $77,216.73** **Requested Amount: $74,470** **96% percentage requested** **Other Sources of Funding** PFŌ: Volunteer time $70,547 PFŌ: OHRN IT, Website overheads $2,560 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $24,850 Salaries and Wages - $49,620	**Recommended Amount** $67,000 That the Council makes a grant of $67,000 from its 2025/26 Environmental Partnership Fund (EPF) to Ōpāwaho Heathcote River Network Incorporated towards Predator Free Ōpāwaho and Community Group Support.	

Outcomes that will be achieved through this project	Staff Assessment
Predator Free Ōpāwaho: 1. Significantly reduced rat and mice populations in the river corridor. 2. Increased populations of native birds, invertebrates and insects along the river corridor. 3. Improved natural regeneration of native plants through increased successful seed dispersal. Community Group support: 1. Increased numbers of volunteers in Community Groups working in the river corridor. 2. Greater sense of community within Community Groups. 3. Volunteer Co-ordinators feel supported and able to maintain the Group objectives. (comment from Hannah - would like to see how they plan to measure seed dispersal)	This project is considered priority one because Known group with track record. Staff are happy for this all to be funded because this group have a proven track record, including the establishment of the first stage of the trapping project. The resources for the community group may not directly relate to biodiversity, but the OHRN are great advocates for the awa and organise many volunteer groups, so we think it is worth funding this as an appreciation of their mahi. If this isn't funded through this, they could look at the discretionary fund from the CB. Staff think they are only using victor traps but recommend they consider using DOC series since hedgehogs have been named as a target species. This would widen their impact on predators. Staff are happy to work with them to come up with biodiversity monitoring strategies for meaningful outcomes. To be honest, the biodiversity outcomes might not be able to be identified, so the community impact would be an important measure from this project. Staff recommend they engage with neighbours of the reserves to reduce invasion (if they haven't already). **Rationale for staff recommendation:** • Known group, well planned, work well with us. There has been a lot of community support for the trapping project so far.

Request Number: EPF2025/26_0003

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
New Zealand Chinese Creative Arts and Culture Troupe Incorporated **Funding History** Nil **Council Staff consulted** Yes	**Volunteer Beach and Community Cleanup** New Zealand Chinese Creative Arts and Culture Troupe (NZCCACT) was officially registered as an incorporated society in New Zealand on 27 August 2025. Our mission is to promote traditional Chinese culture and arts, facilitate cultural exchange between New Zealand and China, and enrich New Zealand's multicultural society. We achieve this by organizing performances, exhibitions, exchanges, workshops, international collaborations and participating in community volunteer activities. Our volunteer team comprises 226 registered members who actively participate in community service, including tree planting, cleanups, retirement home visits and disability support. Their contributions have been recognized by the government and the public, and the team recently received a certificate from the city council for its role in Welcoming Week activities. Upon our legal status establishment, we plan to organize a Beach and Community Cleanup every quarter, starting from late November 2025, in an effort to build community spirit, raise environmental awareness, improve ecological health and promote responsible tourism. This is an environmentally focused project on publicly accessible land and waterways in alignment with the Environmental Partnership Fund. Therefore, we seek support from the government and community and hereby apply for funding to cover operational expenses as well as needed materials and equipment.	**Total Cost:** **$5,400** **Requested Amount:** **$5,400** **100% percentage requested** **Other Sources of Funding** Volunteer time $15,633 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $1,050 Training and Upskilling - $300 Volunteer Expenses - $3,000 Volunteer Recognition - $300 Safety and public liability insurances (three times as quarterly) - $600 Communication and support costs (three times as quarterly) - $150	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF) to New Zealand Chinese Creative Arts and Culture Troupe Incorporated towards Volunteer Beach and Community Cleanup.	

Outcomes that will be achieved through this project

1. Enhanced Environmental Awareness and Stewardship.
Participants will gain a deeper understanding of local environmental issues, including plastic pollution, waste management, and marine ecosystem health. Through hands-on experience, volunteers will learn about the impacts of litter on wildlife and the importance of sustainable living. This awareness is expected to inspire long-term behaviour change — reducing single-use plastics, improving recycling habits, and encouraging ongoing community involvement in environmental initiatives.

2. Protection and Restoration of Coastal and Marine Ecosystems.
The cleanup will directly remove litter and pollutants from Christchurch beaches and nearby waterways, reducing threats to marine life such as entanglement and ingestion. Cleaner coastlines will support healthier habitats for native species and contribute to the overall ecological wellbeing of the region. The project will also collect data on litter types to inform future waste reduction strategies.

3. Strengthened Community Connections and Responsible Tourism.
The project will bring together varied residents and foster teamwork and shared responsibility for the environment. A cleaner, more attractive coastline will enhance community pride and promote Christchurch as a responsible, sustainable tourism destination. The collaboration will exemplify Kaitiakitanga - the Māori principle of guardianship - in action.

Staff Assessment

Staff consider that this would be a good opportunity to provide funding and resources for this group to partake in Beach Clean ups. Staff think some of the money requested for equipment is unnecessary (e.g. there is no need for tongs, brooms or renewing vests every quarter, gloves every quarter).

Rationale for staff recommendation:

- The group has outlined that this work will help to raise awareness of what the community does in their homes can impact the environment, and overall, it is in accordance with the goals of the Biodiversity Strategy.

Request Number: EPF2025/26_0004

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
Cultivate Christchurch **Funding History** 2024/25 $4,000 (Cultivate Explore) SCF M **Council Staff consulted** Yes	**Cultivate Explore** The Explore Cultivate programme promotes youth employment, community engagement, and environmental sustainability through urban horticulture and organic food production. Targeting young people aged 18 to 24, primarily referred by the Ministry of Social Development, the initiative empowers participants who have been on benefits long term to develop green skills that benefit both people and the planet. Operating in Ōtautahi, the programme connects participants to their communities while teaching sustainable growing practices, waste reduction, composting, and regenerative land care. Participants gain confidence, resilience, and a sense of purpose through hands-on outdoor experiences that improve mental health and wellbeing. They learn to grow nutritious food, nurture biodiversity, and contribute to local food security. The programme also strengthens cultural identity through traditional Māori food gathering and ecological stewardship practices, fostering Kaitiakitanga (guardianship of the land). Our goal is to deliver measurable outcomes in employment, education, and environmental responsibility. We plan to launch one programme before the end of this year to demonstrate our impact and secure future government contracts. We seek $20,000 to partially or fully fund this programme, enabling us to continue developing youth-led sustainability initiatives, build environmental awareness, and create pathways toward meaningful green careers.	**Total Cost: $16,681** **Requested Amount: $12,307** **74% percentage requested** **Other Sources of Funding** Volunteer time $1,389 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $6,011 OPEX - $5,270 Travel - $1,026	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF) to Cultivate Christchurch towards Cultivate Explore.	

Outcomes that will be achieved through this project

Expected Outcomes:
1. Enhanced Employability and Education Opportunities:
Participants will gain real-world workplace skills and practical skills in urban horticulture and organic food production. This hands-on experience will encourage re-engagement with educational pathways, providing a foundation for further learning and career development.

2. Improved Mental Health and Well-being:
Through participation in outdoor activities, working together with peers and community engagement, young people will experience improved mental health outcomes. We will focus on building self-confidence and self-esteem, equipping participants with coping strategies for challenges outside their comfort zones. Through this programme, young people eat better diets, move more and tend to improve their sleep patterns. They build new and long-lasting in-person friendships and develop a sense of purpose for their own lives.

3. Strengthened Community Connections and Environmental Awareness:
Our project will foster a sense of community among participants by encouraging collaboration on urban farms and community gardens. It will also promote environmental stewardship through native restoration projects, enhancing participants' understanding of sustainable practices and cultural connections with traditional Māori food gathering methods.

Staff Assessment

This project is considered priority four because applied to incorrect fund

The project sounds amazing but doesn't completely fit this fund. It's hard to tell what benefits there would be for native biodiversity. Staff are not sure of their partnering ability, although according to their application they have partnered with groups that we partner with.

Rationale for staff recommendation:

- The Sustainability Fund would be a better fit.

Request Number: EPF2025/26_0005

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
Tegan Mackay **Funding History** Nil **Council Staff consulted** Yes	**Swant'some: Caterpillars to Classrooms** Swant'Some: Caterpillars to Classrooms is a Christchurch-based environmental education project that grows healthy swan plants and supplies protective enclosures for raising monarch butterflies in schools and early-learning centres. The project enables Tamariki to safely experience the butterfly life cycle while supporting pollinator health and biodiversity. Each enclosure provides a protected, reusable habitat that prevents pest damage, reduces chemical use, and connects children with nature through hands-on learning. Funding is sought to expand nursery capacity, lease suitable growing space, and deliver more enclosures and plants to Christchurch schools and kindergartens. It will also support vehicle and transport costs for regular visits to ensure plant supply remains sufficient throughout the season	**Total Cost: $40,000** **Requested Amount: $32,500** **81% percentage requested** **Other Sources of Funding** Volunteer Labour; Two volunteers working 20 hours per week for 16 weeks (2 × 20 × 16 = 640 hours) Valued at the current Living Wage of $28.95/hour $18,528 Coordination and Labour (unpaid contribution): Ongoing management, plant propagation, deliveries, and reporting provided by the project coordinator, estimated 200 hours $28.95 $5,790 Donated Materials; Reused pots, plant cuttings, and existing nursery equipment from previous season $1,200 Use of Equipment; tools, lighting, vehicle etc $1,000 Cash or out of Pocket Contributions $2,500 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $22,500 Rent / Venue Hire - $2,000 Administration - $8,000	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF)to Tegan Mackay towards Swant'some: Caterpillars to Classrooms.	

Outcomes that will be achieved through this project	Staff Assessment
Swant'Some: Caterpillars to Classrooms will deliver both environmental and educational benefits for Christchurch communities. Environmentally the project will increase local biodiversity by growing and distributing between 600 and 800 healthy, organically raised swan plants. The considered and attentive way I grow the plants using natural feeding methods and close observation instead of sprays directly improves monarch survival rates once caterpillars begin to feed. The protective enclosures will also help reduce the threat of pests and disease, giving more butterflies a chance to reach maturity. Educationally, the project gives Tamariki a chance to learn about the butterfly life cycle in real life. Egg, to caterpillar, to chrysalis, to butterfly. Teachers and children can see and care for each stage while learning about ecosystems, pollination, and how small changes in how we grow and protect plants can make a big difference. Community outcomes include connecting 30 to 40 early-learning centres and schools in a shared environmental project, encouraging more people to grow swan plants, and helping families feel part of something positive that supports local biodiversity.	This project is considered priority four because did not meet criteria. Not a legal entity. This application is not recommended for funding as the application if from an individual, not an organisation. There is no partnership plan with CCC, and no evidence that this would further the Biodiversity Strategy of CCC. **Rationale for staff recommendation:** • This application is not recommended for funding as the application is from an individual, not an organisation. There is no partnership plan with CCC, and no evidence that this would further the Biodiversity Strategy of CCC. The budget is high for the proposed project, in particular the costs assigned to administration, equipment and materials, and the purchase of enclosures.

Request Number: EPF2025/26_0006

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Friends of Coronation Reserve **Funding History** Nil **Council Staff consulted** Yes Hannah Murdoch (ranger)	**Coronation Reserve biodiversity enhancement** 1. Pest plant vegetation clearance - approximately 1400m2 - followed by indigenous revegetation. Funding is sought for contractors to undertake this work. 2. Funding is sought for the purchase of battery powered line trimmer to support ongoing release weeding around recent plantings. 3. Exotic animal pest eradication via trapping. Funding is sought for 28 traps and associated equipment.	**Total Cost: $34,600** **Requested Amount: $32,580** **94% percentage requested** **Other Sources of Funding** Predator trap management $7,200 Weed control / release $2,100 Post clearance planting $1,158 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $4,980 Pest Vegetation clearance - $27,600	**Recommended Amount** $32,580 That the Council makes a grant of $32,580 from its 2025/26 Environmental Partnership Fund (EPF) to Friends of Coronation Reserve towards Coronation Reserve biodiversity enhancement.	

Outcomes that will be achieved through this project

The eradication of exotic animal pests comprising mostly possums, rats, mustelids. The reason is to protect, enhance and increase native bird and reptilian life in the reserve and surrounding area, thereby benefitting overall indigenous faunal biodiversity.
Pest vegetation clearance enabling the planting and establishment of native vegetation as part of a long-term programme to re-establish native bush throughout the 6ha reserve in suburban Christchurch.
The ability to execute ongoing maintenance in a more efficient and effective manner thereby enhancing the establishment of native plantings over wider areas than is currently possible. Also, there is a need to reduce fire risk posed by exotic vegetation.
(Note from Hannah - we won't be doing possum trapping at this stage)

Staff Assessment

This project is considered priority one because the group are proven partners with the Council, great to work with, and diligently work away in the reserve. The trapping would complement existing volunteer work, and the rest supports their native revegetation work.

There are three components to this application.
- Pest animal control would complement the planting and weed control already done by the group. Staff support volunteers taking a holistic approach to their involvement in reserves - looking at multiple aspects of the environment. This group has been asking about trapping in the reserve for a while and were considered for/potentially going to be a part of the community trapping trial run by staff. In terms of measuring biodiversity outcomes, as I said in the NZ Conservation Trust application assessment, they are difficult for community groups to monitor. There is definitely an element of boosting community morale and engagement in the trapping project.
- The weedeater would increase efficiency of their diligent plant releasing. Staff think it would be a useful tool for the group and boost morale.
- The weed removal quoted by Wai-ora is too large/tricky for the volunteers to do themselves. Staff count this part of the application as lowest priority if any component was to not be funded. However, it would unlikely be covered by existing Parks budgets because of amenity weeds being prioritised over environmental weeds in Community Parks. The volunteers would plant over the cleared area.

Rationale for staff recommendation:

- The combination of ŌHRN as the umbrella group and the Friends of Coronation Reserve delivering the project is a recipe for a great outcome - they are both reliable, dedicated hard-working and diligent.
- Coronation Reserve is on the Port Hills so qualifies for volunteering trapping according to the Parks Unit's community trapping decision flowchart.
- ŌHRN have already begun rolling out their trapping project along the Ōpāwaho. Friends of Coronation Reserve are a part of ŌHRN so there can be knowledge sharing amongst volunteers. The ŌHRN project has been commended by the community.
- The weed-eater and weed control would support existing planting.

Request Number: EPF2025/26_0007

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
New Zealand Conservation Trust **Funding History** Nil **Council Staff consulted** Yes Lizzie Tanner and Camille Nieper	**Redwood Stream Trapping Project** The trust aims to establish a tapping project at Redwood Springs – Styx River Conservation Reserve, to reduce introduced pest species and protect the native wildlife and vegetation that makes the area special. The reserve provides habitat for a variety of native birds, lizards and invertebrates, but their survival is threatened by predators such as rats, stoats and possums. By setting up a network of traps, we can significantly reduce predator numbers and create a safer environment where native species can thrive and naturally re-establish. The project will complement our wider trapping efforts at the Styx Mill Reserve, Te Waoku Kahikatea Reserve (Radcliff Road), Shepherds Stream and Janet Steward Reserve, helping to build a connected network of protected areas and wildlife corridors. We have already mapped out where the traps will go, and we are currently running several tracking tunnels to monitor the area. Upon funding approval, we will order the traps needed and they will be place as per the attached map once arrived. Moving forward the traps will be check and cleared monthly by our volunteers and all results recorded, with the aim we will see a reduction in predator numbers.	**Total Cost:** **$4,778.62** **Requested Amount:** **$4,781** **100% percentage requested** **Other Sources of Funding** 4 Volunteers 2 hours each month to clear the traps - 8hrs a month, plus 2hrs a month time given to organize by team leader 10hrs total at a living wage $289.5 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $4,781	**Recommended Amount** $4,781 That the Council makes a grant of $4,781 from its 2025/26 Environmental Partnership Fund (EPF) to New Zealand Conservation Trust towards Redwood Stream Trapping Project.	

Outcomes that will be achieved through this project	Staff Assessment
The expected outcome of the project is a measurable reduction in predators such as rats, stoats and possums, leading to an improvement in health and diversity of native species. Over time this would aim to increase sightings of native birds, lizards and plant regeneration.	This project is considered priority one because they are a known and trusted group, and the project supports lowering introduced predator numbers. This is a known group that has already been working with Council doing trapping in the Styx area. Only comment, as with any community trapping project, is the measurability of the outcome for native biodiversity. This is something that Council should be looking to support these groups with. Also, there is mention of reduction in possums. There are no possum traps in the budget and this would have to be approved by Manager of Community Parks. **Rationale for staff recommendation:** • The Styx area has known biodiversity values and there are already other predator control projects in the Styx catchment, so this project would be able provide more coverage. The NZ Conservation Trust has already been working with Regional Parks staff in a Council Park.

Request Number: EPF2025/26_0009

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
The Living Memorial Trust **Funding History** Nil **Council Staff consulted** Yes Robbie Hewson	**The Ōtukaikino Wildlife Management Reserve Restoration Project** Ōtukaikino Wildlife Management Reserve at 985 Main North Road Belfast is quite unique being a Department of Conservation (DOC) Reserve within the city limits. There is a Christchurch City Council (CCC) easement for Wilson's Drain which flows through the reserve and the reserve acts as a stormwater retention basin in times of flooding. This restoration project has been running for 33 years with the objective of returning the wetland to its original pristine state. There has been a significant investment in weed control with the removal of all mature crack willows (Salix fragilis), grey willow (Salix cinerea) and the near eradication of beggar's tick (Bidens frondosa). The wetland and surrounding areas are searched annually for the highly invasive giant willowherb (Epilobium hirsutum) with the few incursions eradicated. Water speedwell (Veronica anagallis-aquatica) is spreading and needs controlling. The wetland requires at least 400 hours a year for weed control and we are no longer able to meet this commitment on our own. Previously we have received targeted biodiversity funding from ECan to assist with ongoing pest plant control. Funding from ECan is currently limited and the annual grant from Doc is no longer adequate to keep up with the demands of new incursion weed control including the management of Great Willow Herb. Funding support for an initial period would enable enhanced pest plant control on site which would also support the protection and enhancement of other surrounding CCC wetlands in the Otukaikino catchment.	**Total Cost: $161,714** **Requested Amount: $35,000** **22% percentage requested** **Other Sources of Funding** Voluntary Contribution $56,160 L&H Contribution $123,480 Living Memorial Trust $30,000 DOC $7,730 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $35,000	**Recommended Amount** $35,000 That the Council makes a grant of $35,000 from its 2025/26 Environmental Partnership Fund (EPF) to The Living Memorial Trust towards The Ōtukaikino Wildlife Management Reserve Restoration Project.	

Outcomes that will be achieved through this project	Staff Assessment
The three things we want to achieve from this project are. 1. Working towards the goal of creating a pristine wetland that is an exceptional example of what Christchurch wetlands looked like 200 years ago. Invasive weeds are under control and steadily decreasing. (Work in the wetland is mostly not suitable for volunteers as it up to 1.8m deep in places and requires suitable contractors to fill this role.) 2. By having assistance with the wetland weed control then resources can focus on weed control on the surrounding dry land. A big part of this programme is the establishment of native trees and shrubs that give long term weed suppression. This work is ideal for volunteers guided by the ranger. Resources will also be better able to cope with maintaining the carpark, toilet and tracks. 3.The Ōtukaikino Wildlife Management Reserve is well placed to become a leading partner with the CCC in developing the wider area. The new Belfast stormwater facility which is being built adjacent (on the other side of the Main North Road) is seen as great opportunity to work in partnership with the CCC.	The application proposes priority invasive weed control in a high value wetland and should be supported to some degree. The breakdown of the proposal and prioritisation of work to be funded needs to be considered in a consistent way to how work would be approached internally and aligning to CCCs operational pest plant control plan. In addition, there are some aspects of the proposal which may be more appropriate for other agencies and landowners to fund. Based on this my recommendation would be that some parts of the proposal are funded which is focused on the measurable priority weed work identified that would be sourced out to local contractors. **Rationale for staff recommendation:** The above is based on the following: - Aligning control priorities to work undertaken on CCC reserves and ensuring a consistent allocation of funds for that type of work - Ensuring funding for pest plant control is targeted with measurable outcomes - Ensuring funding from CCC is appropriate

Request Number: EPF2025/26_0010

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
The Green Lab **Funding History** 2025/26 - $25,000 (Past, present, future) PPF 2024/25 - $5,000 (Community co design landscaping & workshops) SCF PIC 2024/25 - $12,000 (Community Codesign Landscaping & workshops) PPF 2024/25 - $5,000 (Discovering the lower Ōtākaro/Avon River) CWP 2024/25 - $5,000 (Philipstown Living Wall) SCF PIC 2024/25 - $35,000 (Mobile Workshop, director wage & comms manager) Better Off CBL 2023/24 - $80,000 (Community Placemaking) Enliven Places Fund 2022/23 - $80,000 (Community Placemaking) Enliven Places Fund **Council Staff consulted** Yes Annaliese Caukwell-Mills	**Rāwhiti Domain** We are seeking funding to develop and expand our work at Rāwhiti Domain. The Green Lab currently has a temporary lease for our Mobile Lab/Workshop on site and a volunteer agreement to care for the Boulder Copper Butterfly site and the swale area. This agreement now also includes a new nature seating area, created after the removal of a large macrocarpa tree that had become unsafe. We will apply for a permanent lease for the lab We currently run weekly community work bees every Wednesday, and we are seeking support to employ an additional staff member to help coordinate these sessions and carry out ongoing maintenance of the areas we care for. This will ensure the sites remain well looked after and maintained to a high standard. In addition, we plan to run community workshops focused on native planting, biodiversity, and environmental education. These sessions will include building and art workshops that encourage people to engage with and learn about the diverse ecological environments surrounding Rāwhiti Domain — including the beach, the Ōtākaro River, and Bottle Lake Forest.	**Total Cost: $86,914.2** **Requested Amount: $17,190** **20% percentage requested** **Other Sources of Funding** Volunteer time $18,817.5 Donated Materials $1,000 Lottery communities $10,000 Pub charity $8,000 paid workshop Koha $3,600 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $12,240 Volunteer Expenses - $450 Equipment and Materials - $4,000 Health and safety - $500	**Recommended Amount** $4,000 That the Council makes a grant of $4,000 from its 2025/26 Environmental Partnership Fund (EPF) to The Green Lab towards Rāwhiti Domain equipment and materials.	

Outcomes that will be achieved through this project	Staff Assessment
1. Increased volunteer engagement and skill development. Grow our volunteer base and enhance participants' skills through hands-on, participatory activities. Build community resilience by encouraging people to contribute to caring for their local environment. Support positive mental and physical wellbeing through engaging in outdoor "greening" activities. 2. Improved planting, site care, increasing native biodiversity. Enhance and maintain the areas we have volunteer agreements for, creating a more attractive, safer, and welcoming space for park users. Removing pest plants such as Tree lupins. Increasing Native butterfly habit, planting and looking after host plants. Increasing native biodiversity through native planting and providing habitat. 3. Strengthened connection to nature through workshops at the Mobile Lab. Provide opportunities for people to connect with the natural environment within an urban setting. Promote environmental Kaitiakitanga through sustainable practices, materials, and design approaches. Encourage a deeper understanding of local biodiversity and ecosystems surrounding Rāwhiti Domain. Use 'iNaturalist' project to digital monitoring local biodiversity and show the people how the app works.	What they are asking for is reasonable. Staff couldn't see a job description for the Rāwhiti Domain Garden maintenance and volunteer agreement overseer, but staff think they are providing assistance to Bridget to run working bees. Staff don't see this as a necessity but the panel may think otherwise. Staff know Green Lab wanted more help with looking after a mulched area with log seats, but wouldn't classify this as biodiversity work. A clear job description would be required to know if all 7 hours a week for this staff member was going towards biodiversity work (sorry didn't get time to ask for clarification). Staff think environmental education is important and Bridget seems passionate about this. It is also good to support volunteer H&S materials. Not all expenses relate to biodiversity directly, but invertebrates are not the top of the list of the animals that people think about when it comes to conservation, so it fills a gap. The team doesn't have allocated funds beyond this FY so we may not be able to fund all of the equipment otherwise. **Rationale for staff recommendation:** • Have partnered with Council in various projects. Support butterflies.

Request Number: EPF2025/26_0011

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Living Springs Trust **Funding History** 2025/26 - $1,931 (eDNA monitoring) CWPF 2025/26 - $10,000 (Making it Happen) SCF CW 2024/25 - $20,000 (Living Springs 2025-2026) BIO 2023/24 - $36,000 (Living Springs native forest enhancement) BIO 2023/24 - $12,000 (Wages/Ops) SCF M 2022/23 - $5,000 (Cooking up a storm) SCF M 2022/23 - $10,000 (Booking Coordinator Wages - Yr 3 of 3) SCF M 2021/22 - $10,000 (Booking Coordinator Wages - Yr 2 of 3) SCF M 2020/21 - $15,000 (Booking Coordinator Wages - Yr 1 of 3) SCF M **Council Staff consulted** Yes Nick Singleton and Rory McNamara	**Living Springs Ecological Restoration** Living Springs is seeking support to purchase a second-hand small digger and extend the employment of our specialist Track Worker to deliver year-round environmental restoration and erosion control across our 400-hectare site on Banks Peninsula. The digger will be used exclusively for ecological work, helping to strengthen habitat restoration and environmental resilience as part of our ongoing partnerships with Christchurch City Council, Environment Canterbury, and other local conservation organisations. The equipment will enable our qualified team to undertake essential ground preparation, slip recovery, and sediment management across steep terrain. By improving drainage and stabilising slopes, the digger will reduce sedimentation loss into Whakaraupō Lyttelton Harbour and protect restored habitats from further erosion. Extending the Track Worker's contract will ensure consistent progress through all seasons, allowing us to maintain safe access tracks, complete erosion-control work, and support volunteers and trappers working across our predator-control network. This combined investment will increase efficiency, protect vulnerable ecosystems, and strengthen our collaborative restoration efforts across the Whakaraupō catchment.	**Total Cost: $72,995** **Requested Amount: $52,995** **73% percentage requested** **Other Sources of Funding** Trapping volunteers (15 volunteers @ 5 hours a month x 12 months $26,055 ACVE Volunteers (5 volunteers @ 30 hrs. a week for 44 weeks = 6600 hours $191,070 Isaac Construction donation of 120 tons of rocks for butterfly nursery $30,000 Plants donated by Southern Woods (4000 half of which large grade @ 4.75 each) $19,000 Engineer/Geolist site assessment for predator proof fence (1 day) $1,000 Pics Peanut Butter (1334 jars) for trapping $6,670 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $25,000 Equipment and Materials - $27,995	**Recommended Amount** $52,995 That the Council makes a grant of $52,995 from its 2025/26 Environmental Partnership Fund (EPF) to Living Springs Trust towards Living Springs Ecological Restoration.	

Outcomes that will be achieved through this project	Staff Assessment
1. Year-round ecological restoration and erosion control Extending our Track Worker's employment will enable continuous progress on restoration, slip recovery, drainage, and weed management across 400 hectares of steep terrain. With the addition of a small digger, this work will be completed more efficiently and to a higher environmental standard, reducing sedimentation into Whakaraupō Lyttelton Harbour and improving native habitat resilience. 2. Improved access and safety for volunteers and community partners The combined capacity of skilled staff and specialised equipment will allow for the creation and maintenance of safe access tracks for volunteers, visitors, and trappers. This will strengthen partnerships with Council and other organisations by ensuring safe, reliable access to restoration and predator-control areas. 3.Increased efficiency and long-term sustainability Together, the digger and extended Track Worker role will ensure timely, cost-effective, and environmentally sensitive restoration across all seasons. This will strengthen the capacity of our multi-partner restoration programme and deliver enduring ecological and community benefits for the Whakaraupō catchment.	This project is considered priority one because Reducing sedimentation into Whakaraupō harbour is a high priority to support the Whaka ora healthy harbours project and Ngati Wheke's aspiration to improve Mahinga Kai. Having good access is essential for environmental education and sustaining the Living Springs program. Staff would recommend fully funding the first year of this application and then if subsequent applications are made to partially funding years 2 and 3. **Rationale for staff recommendation:** • Living Springs is an organisation that has strengthened the relationship between people and the environment for several decades. They have a proven model and yet are ambitious and forward looking. Many of their staff work alongside other organisations to partner on pest control operations and restoring biodiversity. The habitat is making a big contribution to sustaining native birds in the Whakaraupō basin and is a hub for volunteer actions. Living Springs have correctly identified the ongoing need to maintain track access to control animal and plant pests but importantly to enable access for people of all fitness levels to actively engage with nature. Enabling Living Springs to better manage drainage will improve the water quality in the streams and reduce sedimentation in the harbour which is a shared goal with Iwi.

Request Number: EPF2025/26_0012

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
Banks Peninsula Conservation Trust **Funding History** Nil **Council Staff consulted** Yes Di Carter	**Kaituna Community Weeding** This weeding initiative covers high value river catchment, roadside and some private land managed for conservation (but not formally protected) in the upper Kaituna Valley by the locally established community weeding group in which all landowners in the identified area are involved. Two separate funding applications have been made by the Banks Peninsula Conservation Trust for weeds management on adjacent covenanted land to cohesively manage weed burdens for overall catchment benefit. These angles combined form a top-down approach (hoped to eventually include the entire catchment to Te Waihora Lake Ellesmere). Top priority weeds being targeted are old man's beard, blackberry, grey willow, banana passionfruit ivy, periwinkle, and fennel. Secondary targets include Prunus, Acacia, Montbretia and cotoneaster). Significant native biodiversity values are present which will be enhanced greatly by this work. Funding will be used to: 1. Employ professional contractors for further heavy weed infestation knockdowns enabling local group to continue ongoing maintenance 2. Growsafe course training 3. Gear and tools 4. Safety equipment 5. Chemical required 6. Fuel 7. Traps (mustelid focus) 8. Ecological survey and management plan development Track access is being created as work advances into thick infestations, necessary for effective control, maintenance and walking enjoyment.	**Total Cost: $60,000** **Requested Amount: $30,000** **50% percentage requested** **Other Sources of Funding** Chemicals DOC $355 Chemicals ECan $360 Chemical landowners $509 Quad spray set up $4,300 DOC ranger advice/time $300 Landowner roadside spray labour $880 ECan OMB demo day $500 Weeding group cut and paste labour $11,117 Adjacent landowners and volunteers $5,790 Weeding group respray blackberry and omb $800 CCC ranger support, advice $100 Monitoring set up and ongoing $480 Year two and three inputs - ref spreadsheet $44,382 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $21,500 Equipment and Materials - $6,500 Consumables - $2,000	**Recommended Amount** $15,000 That the Council makes a grant from its Environmental Partnership Fund (EPF), 2025/26 of $15,000, 2026/27 of $10,000, 2027/28 of $5,000 to Banks Peninsula Conservation Trust towards Kaituna Community Weeding.	

Outcomes that will be achieved through this project

1. Key weed threats to conservation land and rivers/streams managed to low levels in and around Kaituna riverbed and riparian margins - including directly connected private land areas, complementing limited initial work done to date by locals and ECan.
2. Roadside free of invasive transformer weeds (fennel rapidly invading tributaries from road to river).
3.Thriving biodiversity: plants, invertebrates, birds, lizards and aquatic life (currently being choked).
4. Free flowing river unobstructed by heavy weed infestations.
5.Boosted native flora regeneration, successful seedling colonisation and establishment in the absence of weeds. Enriched balanced vegetation tiers.
6. Boosted community environmental engagement - awareness, inclusion, action.
7. Cooperation handling preventative weed maintenance after initial hard knockdown.
8. Well-trained community members competent in the use of chemicals, equipment and weed and native plant identification.
9. Strengthened positive relationships with agencies through ranger support - DOC, CCC and ECan.
10. Enhanced biodiversity corridor connectivity - to three covenant projects above (including the source of the Kaituna river), private protections adjacent (Tūpari, Mikimiki Trust) to all riparian protection projects below and eventually all the way to Te Waihora Lake Ellesmere with the whole catchment community involved.
11. Access and walkways throughout (informal for weed management, traplines and local people's walking enjoyment).
12. An effective start to pest animal trapping - focusing on mustelids first.

Staff Assessment

This project is considered priority one because the valley has high biodiversity value, strong landowner engagement, good leadership and collaboration with other agencies.

This project meets Goals 1,2 and 3 of the CCC Biodiversity Strategy. It will assist with protecting regenerating forest habitats in the upper catchment that form part of the Mt Herbert/Te Ahu Patiki high peaks biodiversity links. The upper reaches of the awa supports high value freshwater invertebrates and native fish and the lower reaches support multiple native birds of conservation value. The river links to the mudflats at Kaituna lagoon which are staging posts for migratory wading birds. Better management of the hill streams leading to Te Waihora is a desirable objective outlined in the Biodiversity Strategy.
In addition, the project strengthens private landowner engagement with the environment and collaboration between agencies to protect this important catchment.

Rationale for staff recommendation:

- The work proposed is of high value to the Kaituna catchment and in the wider context of weed control on Banks Peninsula. With a current heavily weighted investment on animal pest control on Banks Peninsula, there is high merit in supporting fledgling weeding initiatives such as this one which have been lacking. The freshwater values in this catchment are very high with a number of endemic freshwater invertebrate species present. In addition, the valley has an important forest remnant which supports mature podocarps, ruru and two threatened spider species. Much of the lower altitude areas of the valley is unfortunately becoming highly modified due to intensive farming but the upper catchment has increasing regeneration of vegetation and biodiversity values. The river is considered extremely important as bird habitat and is a Site of Ecological Significance (SES). The group has strong landowner engagement and meets the goals of the CCC Biodiversity Strategy.

Request Number: EPF2025/26_0013

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
Redcliffs Residents Association **Funding History** Nil **Council Staff consulted** Yes Alison Evans	**Regreening Barnett Park/Te Awakura Valley** We began as a small group with a big vision. We started 5 years ago as a small group of volunteers aiming to remove weeds (boneseed, banana passionfruit, pigs ear and elder) from the park and complement the Council led planting. We also started a trapping team, removing possums, weasels, ferrets, rats and mice. We have grown to over 75 regular volunteers and have teams of weeders (twice weekly), planters (early spring every day), trappers (regular baiting and clearing traps), and seed collectors who then propagate seeds for planting in the park. We produce a newsletter twice a year which is left for walkers and visitors to collect from boxes at the 3 Park entrances. We have a strong and now formalised (through a memorandum of understanding) relationship with our Council Rangers and also partner with local businesses (for discounted sustainable plant surrounds, canes and weed mats) our local school and our local Kura Kaupapa. We are very proud of the work that we have done to create a native tree corridor from the sea (The Estuary) to the sky (Summit Rd). We need to continue this work to see the vision realised.	**Total Cost: $20,000** **Requested Amount: $20,000** **100% percentage requested** **Other Sources of Funding** Volunteer time $26,055 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $20,000	**Recommended Amount** $8,650 That the Council makes a grant of $8,650 from its 2025/26 Environmental Partnership Fund (EPF) to Redcliffs Residents Association towards $500 pest control, weeding $2,500 and contract work specifically for Banana Passionfruit control $5,000.	

Outcomes that will be achieved through this project	Staff Assessment
We will plan the planting for the year, paying particular attention to the conditions most appropriate for each species. We will then plant 3000 trees with surrounds and matting and cane stakes, extending the corridor of planted trees further towards the summit. We will continue weeding through a significant further area and remove bone seed, banana passionfruit, pigs ear and elder. We will ensure a reduction in the number of possums, weasels, stoats, ferrets, rats and mice through systematic trapping in the Valley and in the backyards of surrounding properties. And we will have more birds as a result!!	Staff support partial funding of this application. The group have received considerable support from CCC rangers (both financially and in terms of logistical support) over the past 5 years. Their budget (as presented) suggests that they are underspent yet there have been multiple requests for more funding. Staff don't support the funding of further tree planting as they have a nursery which we support by providing potting mix. Staff are also not confident that the group is able to adequately maintain the plantings. The group has a strong group of volunteers and have made good inroads to controlling key species. Staff are supportive of funding for weed control (including contract work), newsletter and some pest control $$. The pest control work has been minimal but ongoing. **Rationale for staff recommendation:** • As above. The group has a dedicated group of volunteers that are well supported. However, there are requests for funding that staff don't feel are well justified by the group or can be supported by existing funds and/or the nursery that they have established. Staff suggest the following partial funding: Pest Control $500.00 only, Weeding $2500, Newsletter $650 and Contract work specifically for Banana Passionfruit control $5000.

Request Number: EPF2025/26_0014

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
Styx Living Laboratory Trust **Funding History** 2025/26 - $7,000 (Pūharakekenui Programme Delivery & Support Officer) CWPF 2025/25 - $16,000 (Pūharakekenui Programme Delivery & Support Officer) SCF CW 2024/25 - $30,000 (Weed Survey of the Pūharakekenui/ Styx River Catchment) BIO 2024/25 - $7,425 (Water Quality Monitoring) CWP 2024/25 - $10,000 (Community Resilience & Connection: Free Trees Project & Sustainable Transport) Sus 2024/25 - $8,000 (Styx Living Laboratory Trust Education Work Program Initiative) SCF CBL 2024/25 - $8,000 (Styx Living Laboratory Trust Education Work Programme Initiative) SCF PIC 2023/24 - $41,000 (Willow control) BIO 2023/24 - $10,000 (Styx Living Laboratory Trust Education Work Program Initiative) Better OFF FWH 2023/24 - $10,750 (The Pūharakekenui Free Trees Project) Sus 2023/24 - $2,000 (Styx Living Laboratory Trust Work Programme Support) SCF CBL 2023/24 - $8,000 (Styx Living Laboratory Trust Work Programme Support) SCF PIC 2023/24 - $7,000 (Styx Living Laboratory Trust Work Programme Support) SCF FWH 2022/23 - $10,000 (Styx Living Laboratory Trust) Sus 2022/23 - $5,000 (Pūharakekenui Education Project) SCF FWH 2022/23 - $8,000 (Pūharakekenui Education Project) SCF PI 2022/23 - $2,000 (Pūharakekenui Education Project) SCF CB **Council Staff consulted** Yes Dr Antony Shadbolt – Team Leader – Parks Biodiversity	**Pūharakekenui Styx River Catchment Enrichment Planting** We will work with the local community and hapu on the next stage of forest restoration at Te Waoku Kahikatea Reserve, the Rongoa Māori Demonstration Site, Styx River Reserve Living Laboratory, and Redwood Springs. This will involve running a series of regular community-led events to plant specialist local native species in the maturing forest understorey and light gaps to help achieve an authentic, resilient and self-sustaining native forest ecosystem that supports a wide range of indigenous fauna and flora. Over a 24-month period, The Trust will run at least eight community planting days, and will set up a volunteer group to run monthly forest restoration days to carry out pest plant control, further enrichment planting and also initiate a programme of standardised native forest monitoring (including plant growth, understorey development, invertebrates and other attributes as expertise become available). Through this work we hope to not only improve the condition, authenticity and resilience of restored forests in the Styx catchment but also help lessen the maintenance burden on Council's ranger staff (i.e.: we are not intending to embark on planting additional areas that will need added maintenance, but instead working within existing plantings to make them more resilient).	**Total Cost: $85,573** **Requested Amount: $85,573** **100% percentage requested** **Other Sources of Funding** Volunteer time (8 4-hour planting sessions with 30 volunteers) $27,792 Use of equipment $10,000 Leftover Project Kotare materials (guards etc.) $5,000 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $45,860 Salaries and Wages - $23,190 Administration - $3,200 Volunteer Expenses - $2,165 Travel - $9,700 Administration - $1,458	**Recommended Amount** $20,000 That the Council makes a grant from its Environmental Partnership Fund (EPF), 2025/26 of $20,000, 2026/27 of $20,000 to Styx Living Laboratory Trust towards focusing on the weed work.	

Outcomes that will be achieved through this project

1: Viable and Authentic Native Forest Ecosystem.
Establishing new populations of eco-sourced plants that are currently absent from reserves or are only present in small numbers. Entails establishing at least 3500 plants of at least 35 new species by the end of August 2026 achieving 75% plant survival by the end of September 2027.

2: Engaged Volunteer Community
New monthly forest restoration and monitoring events held on the first Saturday of each month as an extension to the monthly bird monitoring sessions.

3: Promote Matauranga Māori.
Partner with the Kahu Kura Rongoa Māori Trust on at least four hapu-led planting events in either Te Waoku Kahikatea Reserve or Ka Putahi Confluence Conservation Reserve. Includes the annual Matariki event at the Rongoa site, regular Thursday working-bees organised by the Rongoa Māori Trust, or the Styx Living laboratory Trust's annual 'Summer in The Styx' community event.

4: Volunteer Restoration Monitoring Programme.
By September 2026, establish four 20 x 20 m Permanent Sample Plots (PSP) to enable long-term community volunteer monitoring of restoration success, and one 20 x 20 m PSP as a demonstration plot for (e.g.) school groups and community education events such as the Trust's 'Summer in the Styx' event.

Staff Assessment

The application focuses mainly on additional enhancement planting of the site. It talks about pest plant control however there's no real detail on how this will be achieved, and the costings don't really show this has been factored in.
The priority at these sites should consider the resourcing of invasive weed control as a priority. Some of the sites mentioned shouldn't be receiving enrichment planting until the threat of invasive climbers or other weeds have been addressed e.g. Redwood Springs.
The proposal describes councils' management of these reserves prioritising only a basic level of weed control and maintenance with seldom funding available to continue restoration efforts into successional, enrichment or understory plantings. The reality is that operational funding for comprehensive pest plant control is highly constrained, while capital funding for enhancement planting is comparatively more accessible. This leaves essential weed control under-resourced.
Staff would have liked to have seen this approach taken and given the opportunity to have input that's the advice we would have given.

Rationale for staff recommendation:

- Staff would recommend that some funding could be considered here. Staff think the priorities need to be reviewed and a heavier weighting be placed on supporting the Styx Trust to coordinate and manage a volunteer (or Styx Field Team) programme to undertake weed control first and foremost.
  For context the amount requested is not far off the entire annual regional parks operational budget for the upper Styx catchment.
  An additional comment is that it would have been good to have had prior knowledge and input into this application which may have helped understand the need for enrichment planting as the priority.

Request Number: EPF2025/26_0015

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
Sea Cleaners Trust **Funding History** 2024/25 - $8,000 (Restoring Chch Waterways Together.) CWP 2024/25 - $21,000 (Sea Cleaners) Sus Rd 1 2023/24 - $10,000 (Sea Cleaners - Chch) Sus Rd 1 2022/23 - $10,000 (SEA CLEANERS) DRF M **Council Staff consulted** Yes Georgina St John-Ives	**Restoring the mauri of Banks Peninsula's coastlines together** Since December 2022, Sea Cleaners Canterbury has worked to restore and protect the mauri of Banks Peninsula's freshwater and marine environments. We are seeking support to further cultivate local partnerships, working together to build lasting capability for environmental protection and community resilience. Our integrated services prevent waste at its source by combining daily litter removal with volunteer engagement, hands-on education, and new pathways toward a circular economy. Working alongside iwi, schools, community groups, businesses, and funders, we turn environmental awareness into practical action that strengthens community stewardship and drives systemic change. By building stronger cohesion in environmental action, and drawing on the extensive data we collect daily, this collaborative approach will further drive systemic change for lasting environmental impact.	**Total Cost: $300,000** **Requested Amount: $25,000** **8% percentage requested** **Other Sources of Funding** 1,800 volunteer hrs / year x $28.95 $52,110 Annual management and coordination 216 hrs x $60 $12,960 Estimated annual corporate volunteer support $4,000 Estimated annual contribution from recycling alliance partners $8,000 Estimated annual in-kind value beyond budget for vessel use and equipment $8,000 **Other Grant Funding** **Contribution Sought Towards:** Annual services for Canterbury - $25,000	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF) to Sea Cleaners Trust towards Restoring the mauri of Banks Peninsula's coastlines together.	

Outcomes that will be achieved through this project	Staff Assessment
In 2026, Sea Cleaners Canterbury will: - remove an estimated 480,000 litres of marine waste - coordinate approximately 1,800 volunteer hours - deliver environmental education to more than 8,000 students. Other key environmental and community benefits beyond these metrics: Sea Cleaners' initiatives create lasting benefits for both people and the environment, addressing marine pollution while overcoming social and economic barriers that prevent communities from connecting with nature. Local families, iwi, volunteers, students, visitors, and businesses all take part in hands-on clean-ups and education programmes that foster behavioural change and empower individuals to reduce their environmental footprint. These shared actions build resilience, community cohesion, and capacity for long-term stewardship, enabling local groups to lead their own environmental initiatives. By removing barriers to participation, Sea Cleaners ensures that people of all backgrounds and ages can contribute to restoring the health of their waterways. The results are cleaner rivers, estuaries, and coastlines that support biodiversity, reduce microplastic contamination, and strengthen natural coastal defences against erosion and extreme weather. Together, these efforts create more resilient ecosystems, sustainable local economies, and resilient communities better prepared for the challenges ahead.	This project is considered priority one because it strongly aligns with Biodiversity Strategy and there is support from Ngāti Wheke (local Runanga). Staff think that this project is beneficial and aligns with Biodiversity strategy. Staff are unsure about what the 25K requested looks like in terms of rubbish removed and community interaction which is why I'm not recommending full funding. **Rationale for staff recommendation:** • The request is for a month's operating costs, without much specific on what the output is, which is why I have some reservations about complete funding.

Request Number: EPF2025/26_0016

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Avon Ōtākaro Network INC **Funding History** 2025/26 - $9,600 (In River Clean Final Phase) CWPF 2025/26 - $15,000 (Event costs and salaries) SCF CW 2025/26 - $6,950 (Facilitator) EF 2024/25 - $4,300 (Matariki in the Zone) DRF PIC 2024/25 - $10,000 (In river Clean) CWPF 2024/25 - $20,000 (Ōtākaro Avon River Clear Up) Sustain 2024/25 - $2,500 (Communities to Action) SCF PIC 2024/25 - $2,000 (Communities to Action) SCF FWH 2024/25 - $8,000 (Communities to Action) SCF CBL 2023/24 - $1,500 (Matariki in the Zone) DRF CBL 2023/24 - $3,000 (Matariki in the Zone) DRF PIC 2023/24 - $15,000 (River upper reaches and tributaries) Sustain 2023/24 - $2,500 (Network Manager and Administration costs) SCF PIC 2023/24 - $5,000 (Network Facilitator costs) SCF CBL 2022/23 - $10,000 (Avon Ōtākaro in River Clean-up project) Sustain 2022/23 - $6,000 (Matariki in the Zone 2023) EFSF **Council Staff consulted** Yes Georgina St John Ives, Sarah Mankelow, Roselyn Kerr	**Avon Ōtākaro Network catchment wide restoration and community engagement** The Avon-Ōtākaro Network seeks funding to expand our catchment-wide restoration and community engagement programme across the Ōtākaro Avon River Corridor. Our 2025–2030 focus is on regenerating Mahinga kai landscapes, supporting biodiversity, and strengthening partnerships through practical restoration, education, and storytelling. Funding will resource coordination, our schools' programmes, native planting, pest management, in-river clean-ups, and community-led ecological projects that restore the health and mana of the river and its people.	**Total Cost:** **$185,304** **Requested Amount:** **$30,000** **16% percentage requested** **Other Sources of Funding** Volunteer time $289,500 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $30,000	**Recommended Amount** $30,000 That the Council makes a grant Environmental Partnership Fund (EPF), 2025/26 of $30,000, 2026/27 of $30,000, 2027/28 of $30,000 to Avon Ōtākaro Network INC towards Avon Ōtākaro Network catchment wide restoration and community engagement.	

Outcomes that will be achieved through this project	Staff Assessment
This project will deliver visible and lasting ecological, cultural, and social benefits. Outcomes include increased native planting and survival rates, improved habitat connectivity, enhanced waterway health, and expanded community participation in restoration and understanding of our stormwater systems. It will strengthen partnerships with mana whenua, schools, businesses, and community groups, aligning collective action under a shared vision for a thriving, climate-resilient catchment where nature and people flourish together.	This project is considered priority one because meets all eligibility criteria and contributes significantly to Funding Outcomes and Priorities. Highly recommended for funding. Improving the quality of the city's waterways is one of the Council's strategic priorities: Vision: The surface water resources of Christchurch support the social, cultural, economic and environmental well-being of residents, and are managed wisely for future generations **Rationale for staff recommendation:** • The Avon River/Ōtākaro flows through the heart of Christchurch, from its spring source in Avonhead to the Avon-Heathcote Estuary/Ihutai. Improving the quality of our waterways is a goal of our community and is a priority for the Council. It is a priority catchment for enhancement, with multiple projects supporting this work e.g. Addington Brook AvON are following a good model set by the OHRN to create a catchment-wide conglomerate of community action and fill the gaps. They are a key partner in the Community Waterways Partnership. They work well with Council at a governance and operational level and have already demonstrated the value they offer through their activities such as the in-river litter collection.

Request Number: EPF2025/26_0017

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
The Little River Wairewa Community Trust **Funding History** 2024/25 - $5,000 (Banks Peninsula Walking Festival) PPF 2024/25 - $1,909 (Purchase of an AED for Little River) DRF BP 2024/25 - $20,000 (Staff Wages and Banks Peninsula Walking Festival) SCF BP 2023/24 - $18,000 (Staff Wages/Communications, Little River Big Ideas, and Banks Peninsula Walking Festival) SCF BP 2022/23 - $17,000 (Staff Wages and Banks Peninsula Walking Festival) SCF BP **Council Staff consulted** Yes Alison Evans, Di Carter	**Wairewa Weedbusters** The project will help eradicate invasive weed plants from the Wairewa catchment. Sycamore, grey willow, wattle, gunnera are other invasive species will be targeted. The project will engage the community to help identify pest species along riparian areas and on public land and report them to the 'Wairewa Weedbusters team'. As residents of Wairewa, they would investigate and evaluate whether the plant is an issue and remove it if feasible to do so. Ideally, we would be removing younger trees before they became too big to handle quickly and safely. The project would start in autumn, a good time to see deciduous species. The Little River Wairewa Community Trust is applying for a group of local environmental advocates.	**Total Cost:** **$20,000** **Requested Amount:** **$20,000** **100% percentage requested** **Other Sources of Funding** Community volunteers $500 consultation/ site visits $2,000 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $4,000 Salaries and Wages - $16,000	**Recommended Amount** $20,000 That the Council makes a grant of $20,000 from its 2025/26 Environmental Partnership Fund (EPF) to The Little River Wairewa Community Trust towards Wairewa Weedbusters.	

Outcomes that will be achieved through this project	Staff Assessment
Control of weed species spreading into native bush and waterways in the Wairewa district. This will benefit the nurturing of native bush and provide better habitat for species of birds and tuna etc. The spread and variety of weed species is increasing and Ecan and the CCC can only do so much. Our goal is to remove seed trees to lessen the spread. This will encourage the community to be more optimistic about our local environment and the ability to help improve it, due to the removal of weeds and the regrowth of natives. If 'The Wairewa Weedbusters' gain support, we can help CCC and Ecan with the eradication of pest species or help them contain it. A win, win, win for the local authorities, the community and the environment.	Overall, this is a well justified project in terms of protecting the high biodiversity values in Okuti Valley. The weeding work will certainly complement other projects and efforts in the valley to enhance and protect flora and fauna. There is a DOC reserve with outstanding remnant podocarp trees in it and this is well buffered by other native vegetation. There are also contiguous areas of podocarp forest on neighbouring properties which are sites of ecological significance (SES). The Okuti River itself is also an SES due to the bird values that it supports. The river has very high invertebrate values and is one of only a few known spawning areas for Lamprey (kanakana). The valley is also inhabited by many tui and other native birds such as ruru, rifleman and frequently used falcon in the higher altitudes. This new group has good governance support from the umbrella organisation. I recommend partial funding of this project to help them build capacity. **Rationale for staff recommendation:** • In the past 10 years the focus has been on controlling animal pests on Banks Peninsula. However, weeds are equally as invasive and detrimental to the environment. To a large extent, weeds have been ignored and yet are transforming the environment reducing the resilience of habitats to support biodiversity. Staff are supporting of more focus and funding to be put towards weed control. It is great to see some dedication towards weed control coming from within the community.

Request Number: EPF2025/26_0018

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Predator FreeNB/Coastal Kaitiaki **Funding History** 2025/26 - $2,500 (Community wide pest control) SCF CBL **Council Staff consulted** Yes Pieter Borchards, Jason Edwards	**Predator Free NB/Coastal Kaitiaki** We are seeking funding for PFNB/Coastal Kaitiaki, expanding our trapping network to best practice spacings in New Brighton's coastal, Estuary, Red Zone, and Parks areas. We control predators (rats, stoats, possums, hedgehogs) to protect native species and ecosystems, preparing for planting/restoration initiatives. Building on our community partnership with Christchurch City Council, we'll deploy traps, monitor recovery, and engage the community through volunteers, education, and outreach.	**Total Cost: $44,000** **Requested Amount: $20,000** **45% percentage requested** **Other Sources of Funding** Donations $10,000 Equipment $10,402 Volunteer hours $37,982 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $15,000 Equipment and Materials - $5,000	**Recommended Amount** $10,000 That the Council makes a grant of $10,000 from its 2025/26 Environmental Partnership Fund (EPF) to Predator FreeNB/Coastal Kaitiaki towards Predator Free NB/Coastal Kaitiaki, $5,000 equipment and materials, $5,000 towards contractor.	

Outcomes that will be achieved through this project

- Creation of a predator-free corridor linking Banks Peninsula to New Brighton, Bottle Lake, and Travis Wetlands
- Increased native species migration and biodiversity
- Enhanced ecosystem health and resilience
- Strengthened community partnerships and collaboration
- Increased community engagement and conservation awareness
- Locally sourced native plants propagated and planted, enhancing ecosystem authenticity
- Collective impact of predator-free zones amplifying conservation benefits

Staff Assessment

The application was not clear, so staff clarified details with him over the phone, especially in regard to where the traps are going. He wants to fill the gaps in existing trap networks in Bligh's Garden, along the coastal dunes, as well as trap in Cockayne Reserve and Red Zone.
In terms of equipment on the list to be purchased, staff would not approve funding for flipping timmys.
Zane Lazare has not given approval for the Red Zone, and unfortunately it is named in the volunteer agreement with Luke. This wording will need to be altered. Luke also mentioned Cockayne Reserve - Pieter is okay with him trapping in here but it would be planned and done in conjunction with his team for placement.
In terms of measurability, he says he will be monitoring with pest detection tools. In terms of biodiversity, he says he has been doing 5 min bird counts and would continue that - or whatever bird monitoring is acceptable to Council. He also mentioned anecdotal sightings for native wildlife as well as animal pests - which is a weak form of monitoring but does boost community buy-in/enthusiasm. Community engagement may be a better measure for this project. In terms of protecting wildlife around the estuary, there are other more important management tools than trapping.
In terms of partner-ability, some of what he is wanting to do was not discussed with staff from Community Parks and Red Zone. Staff put that more down to his idea that he has been approved to do certain sites because they are in the volunteer agreements, which do note Red Zone and Rāwhiti Domain. This was an error in creating these documents.

Rationale for staff recommendation:

- Staff included some rationale in the previous box, but in general are recommending the funding of equipment minus possum traps because Luke has been working with Jason well and the traps will increase density of cover in existing trapped areas. He is dedicated and is trapping in parks already.
  With the exclusion of the wages and Flipping Timmys, it is not a large amount of money, hence why staff would recommend it.

Request Number: EPF2025/26_0019

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
Te Hapū o Ngāti Wheke Inc **Funding History** 2025/26 $5,000 (Kaumātua Wellbeing) SCF BP 2024/25 $150,000 (Office, Conference Facility and Atea Extension) CEF **Council Staff consulted** Yes Georgina St John-Ives, Rodney Chambers, Di Carter	**460 Governors Bay Road Project** Te Hapū o Ngāti Wheke are seeking funding to support our project in 460 Governors Bay Road, which is of benefit to Council and Rūnanga combined. We expect to plant 6,100 trees to support and mitigate sediment and erosions risks to the harbour and the ongoing impacts of sedimentation and run-off. Te Hapū o Ngāti Wheke are also interested in pest management of the area, including setting up traps and regular maintenance of these. This bid and project aims to provide for environmental, social, economic and cultural outcomes to Whakaraupō Harbour and all who travel from Christchurch.	**Total Cost:** **$89,071** **Requested Amount:** **$89,071** **100% percentage requested** **Other Sources of Funding** Use/ donation of equipment $3,000 volunteer time $1,800 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $77,470 Trapping - $5,346 Trapping maintenance - $6,255	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF) to Te Hapū o Ngāti Wheke Inc towards 460 Governors Bay Road Project.	

Outcomes that will be achieved through this project

- Sediment and erosion risk mitigation
- Slope stabilisation
- Native vegetation cover
- Enhanced Biodiversity
- Continued partnership between council and Te Hapū o Ngāti Wheke
- Roading impact issues mitigated
- Creating climate resilient landscapes
- Provide for Kaitiakitanga by manawhenua (this is also identified as an area of Cultural Significance under the District Plan)

Staff Assessment

This is a well-aligned project for Council and Te Hapū o Ngāti Wheke. They have a proven track record with bigger projects, and this project helps to further "develop and maintain strategic partnerships for the benefit of biodiversity" and support local people's initiatives to protect and enhance biodiversity.

Rationale for staff recommendation:

- This is a well-aligned project for Council and Te Hapū o Ngāti Wheke. They have a proven track record with bigger projects, and this project helps to further "develop and maintain strategic partnerships for the benefit of biodiversity and support local people's initiatives to protect and enhance biodiversity". It meets all the goals of the Biodiversity Strategy and many of the Climate Resilience Strategy goals (Building the foundation - partnerships and resourcing, Adapting and greening infrastructure, Carbon removal and natural restoration).

Request Number: EPF2025/26_0020

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Te Hapū o Ngāti Wheke Inc **Funding History** 2025/26 - $5,000 (Kaumātua Wellbeing) SCF BP 2024/25 - $150,000 (Office, Conference Facility and Atea Extension) CEF **Council Staff consulted** Yes Di Carter, Alison Evans, Paul Devlin	**Rāpaki ki tai** Te Hapu o Ngāti Wheke are seeking funding to support ecological enhancement within the coastal margin- carried out by manawhenua. The mahi involves weed eradication in areas of concern within the coastal margin. The Tiaki Taiao team (on behalf of Te Hapū o Ngāti Wheke) will carry out pest weed work within the coastal margin to enhance the area and provide for positive environmental outcomes.	**Total Cost: $169,072** **Requested Amount: $169,072** **100% percentage requested** **Other Sources of Funding** App $6,000 Data input $7,727 Project scope mahi $3,000 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $129,819 Power - $18,545 Equipment and Materials - $12,981 Training and Upskilling - $7,727	**Recommended Amount** $54,700 That the Council makes a grant of $54,700 from its 2025/26 Environmental Partnership Fund (EPF) to Te Hapū o Ngāti Wheke Inc towards Rāpaki ki tai.	

Outcomes that will be achieved through this project

The expected outcomes of project Rāpaki ki tai would look like an enhanced coastal margin, increased native plant species and taonga species habitat, reduced sediment and erosion risk and increased knowledge of the coastal margin (by Tiaki Taiao monitoring).
This would enhance a resilient and climate adaptive coastal margin for our entire Whakaraupō Harbour and areas worked, while supporting biodiversity outcomes and mahinga kai values to the entire Harbour and its community.
The project would enable appropriate access to areas where access isn't appropriately provided for, and eradication of pest weed species of concern.

Staff Assessment

This project is considered priority one because

Overall, it's unclear what the scale of the problem is, and the targets are a bit vague/high level. A survey would help to ensure that the scope of the project matches the scale of the problem, species to target and particular areas of priority. Staff think partial funding for 1 year for the group to survey the area and develop a management strategy alongside Council staff, perhaps with a trial eradication area.

Rationale for staff recommendation:

- It aligns well with the Biodiversity Strategy, particularly the goals to conserve and restore indigenous biodiversity in Christchurch and Banks Peninsula, ecosystems supporting biodiversity are protected and restored, species and habitats important to Ngāi Tahu are protected and restored, pests are managed to minimise their impact on biodiversity. A baseline survey would help to ensure that the scope of the project matches the scale of the problem, determine what species to target and particular areas of priority. Staff think partial funding for 1 year for the group to survey the area and develop a management strategy alongside Council staff, perhaps with a trial eradication area would be a good way to initiate this project and feed into future work.

Request Number: EPF2025/26_0021

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
The Royal New Zealand Society for the Prevention of Cruelty to Animals **Funding History** Nil **Council Staff consulted** Yes Roslyn Kerr	**Animal Desexing to Help Protect the Taonga Species of Christchurch and Banks Peninsula** This project addresses a pressing need by providing up to 70 community desexing vouchers for pet-owning households facing financial hardship, so that they can desex their companion animals free of charge through the SPCA Centre and 12 participating Vet practices in Christchurch and Banks Peninsula. Uncontrolled litters contribute to stray and unmanaged cat and dog populations, increasing pressure on animal welfare services and local ecosystems. Domestic and stray cats and dogs in New Zealand are implicated in the predation of native species: for example, one study found that a majority (62.2%) of free-roaming owned cats engaged in predation events, some involving native species. Conservatively, it is estimated that domestic cats kill over a million native birds per year. By enabling more animals to be desexed, the programme aims to reduce the number of unwanted litters, minimise the number of animals entering the stray/feral pool and thereby reduce predation risk to native birds, reptiles and other taonga species. This links strongly to Goal 4 of the Ōtautahi Christchurch Climate Resilience Strategy - “We are guardians of our natural environment and taonga” - by helping maintain ecosystem health, supporting biodiversity and building community stewardship of our shared environment.	**Total Cost:** **$100,470** **Requested Amount:** **$10,000** **10% percentage requested** **Other Sources of Funding** Volunteer Time $3,474 Fundraising Income (confirmed) $65,000 Fundraising Income (unconfirmed) $35,470 **Other Grant Funding** **Contribution Sought Towards:** Community Desexing Vouchers - $10,000	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF)to The Royal New Zealand Society for the Prevention of Cruelty to Animals towards Animal Desexing to Help Protect the Taonga Species of Christchurch and Banks Peninsula.	

Outcomes that will be achieved through this project	Staff Assessment
1. Enhanced environmental protection and biodiversity: Reducing stray and roaming animal numbers will lessen predation and disturbance of native species, helping protect Christchurch’s unique biodiversity and natural taonga. This outcome aligns with Goal 4 of the Ōtautahi Christchurch Climate Resilience Strategy - supporting the community to act as guardians of the natural environment and to strengthen the city’s ecological resilience for future generations. 2. Fewer unwanted litters and reduced stray populations: Through increased access to desexing for pet owners facing hardship, the project will significantly reduce the number of unplanned litters in Christchurch. This will prevent animals from entering the stray population, easing pressure on shelters and improving community wellbeing by reducing the stress and costs associated with unwanted animals. 3. Stronger community responsibility and wellbeing: By offering support to people who could not otherwise afford desexing, the project will promote responsible pet ownership, compassion, and social inclusion. Participants will experience greater peace of mind and pride in knowing they are helping both their animals and the wider community.	This project is considered priority four because not targeted enough to gain measurable outcomes for environment. There is no measurable direct outcome that funding this programme will provide to our key species and ecosystems as its stands. Staff think it could be a good idea if it was in association with a specific community, in an area where we are already doing predator control, particularly around rats and mice, which are often predated upon by cats, (i.e. if less cats there could be more rats...) and we can measure more specific outcomes. If this was a programme rolled out alongside a wider predator control programme in an environmentally sensitive area, then staff think it would have more value. Some more work around relationships with local predator-free groups and rangers in specific areas where we have identified a cat problem. Coastal communities could be a good option - e.g. Southshore. Suggest the SPCA talks to community predator-control groups about a partnership alongside trapping programmes that already work with council and develop a relationship with rangers that way - and targets communities in and around those spaces. Staff would suggest either Southshore or OHRN. **Rationale for staff recommendation:** • No direct connection to parks / environment outcomes and no way to measure direct impact apart from no. of vouchers given away. If they were to form a relationship with a specific community alongside other predator-control efforts, then it could be reconsidered.

Request Number: EPF2025/26_0023

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	4
Food Resilience Network INC **Funding History** 2025/26 - $2,000 (24/7 Central City Stormwater Education) CWPF 2025/26 - $12,000 (Operational Costs) SCF CW 2024/25 - $100,000 (Ōtakaro Orchard Project) CEF 2024/25 - $1,000 (Composting scheme set up costs) Sustain 2024/25 - $12,000 (Salaries and Wages) DRF M 2023/24 - $13,600 (Salaries and Wages) Sustain 2023/24 - $20,000 (Salaries and Wages) Sustain 2022/23 - $8,000 (Salaries and Wages, Volunteer Expenses, Equipment / Materials) SCF LCH **Council Staff consulted** Yes Georgina St John Ives	**Nature Works: Exploring Green Infrastructure at Ōtākaro Orchard** We are seeking funding to deliver a series of community workshops and install permanent educational signage that highlights the environmental benefits of our living roof and integrated stormwater management systems. These features are central to our sustainable building and landscape design, and we aim to use them as interactive teaching tools. The project will involve developing and delivering a programme of public workshops focused on urban ecology, climate resilience, and sustainable water practices, alongside the design and installation of interpretive signage that explains the function and value of these green infrastructure elements to visitors year-round.	**Total Cost: $6,214** **Requested Amount: $6,214** **100% percentage requested** **Other Sources of Funding** Landscaping prep $6,500 **Other Grant Funding** **Contribution Sought Towards:** Salaries and Wages - $4,800 Equipment and Materials - $1,414	**Recommended Amount** $0 That the Council declines a grant from its 2025/26 Environmental Partnership Fund (EPF) to Food Resilience Network INC towards Nature Works: Exploring Green Infrastructure at Ōtākaro Orchard.	

Outcomes that will be achieved through this project	Staff Assessment
Increased public awareness and understanding of sustainable urban design, particularly green roofs and stormwater management. Empowerment of community members to implement similar practices in their homes, schools, or workplaces. Enhanced community engagement with the Ōtākaro Orchard site as a living classroom and demonstration hub. Long-term educational value through permanent signage that informs thousands of annual visitors. Contribution to Christchurch's climate resilience and biodiversity goals through the promotion and demonstration of nature-based solutions.	This project is for a discrete piece of work - sign and workshops - in relation to the green roof and stormwater gardens. this is a unique opportunity to showcase these green infrastructure solutions to a wider community, and staff know there is lots of appetite in the community for this. It supports community waterways partnership goals and supports other ccc initiatives. **Rationale for staff recommendation:** • Rounded down to $5000 - staff would expect the sign to cost more than the quote to include install - and question whether the size is correct? Central location - replacement costs accounted for if damaged or stolen? Staff support the project for all the reasons highlighted already – staff are aware there is plans to do a bioblitz of the green roof with UC and discover what habitat benefits it might have. More education about stormwater gardens and what you can do in your own backyard would fit well with Councils' key priority works and initiatives under the community waterways programme.

Request Number: EPF2025/26_0024

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	1
Witch-Hazel McAlister **Funding History** Nil **Council Staff consulted** Yes Alison Evans, Rodney Chambers	**Okuti Reserve Education Trail** The Okuti Reserve Education Trail will promote nature-based education and conservation using interactive activities, signage, and online resources for visitors. The project will provide an environment for the public to learn about the importance of conserving habitats for wildlife, and predator control. Based in Okuti Valley Scenic Reserve, this location supports lowland forest habitat home to several rare endemic plant and insect species and is classified as a site of ecological significance (SES). The reserve represents one of the most intact examples of this forest type on Banks Peninsula. The project expands upon pre-existing work in the area, including trapping and native plantings. A small private donation has been provided, and we have permission to use leftover funds from the Okuti Track construction to kickstart the project. We anticipate the trail will be well utilised given positive feedback from local schools, the proximity of a popular family campground and the recently opened Rod Donald education trail. DOC will support CCC management of the track and will continue managing the wider reserve.	**Total Cost:** **$20,327** **Requested Amount:** **$17,327** **85% percentage requested** **Other Sources of Funding** Cash contributions (as provided by Cooke Family and held by the LRWCT) $5,000 Trap line maintenance, 1hr P/fortnight @ $28.95/h (ongoing) $752.7 Use/donation of equipment and traps. $200 Leftover funds from Okuti Outdoor classroom $600 Fund management by Little River Wairewa Community Trust (LRWCT) 10hrs/yr @ $75.00 $750 Donated materials cost $200 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $13,827 Incidentals - $200 Administration - $300 Contingency - $3,000	**Recommended Amount** $14,327 That the Council makes a grant of $14,327 from its 2025/26 Environmental Partnership Fund (EPF) to Witch-Hazel McAlister towards Okuti Reserve Education Trail.	

Outcomes that will be achieved through this project	Staff Assessment
Outcome #1 Environmental enhancement The environment will be enhanced and protected in an already significant ecological corridor. Outcome #2 Environmental education A tailored environmental education experience will ensure the most engaging visitor experience possible, whilst highlighting best environmental practices and promoting conservation activities. Outcome #3 Enhancing Community Resources Once set up, the project will provide a valuable community resource in the vicinity of popular destinations and routes for Christchurch residents. In addition, overwhelming interest from enviro-schools, local schools and preschools indicate this trail would be in regular use as an educational resource every term.	This project is considered priority one because it meets all eligibility criteria and contributes significantly to Funding Outcomes and Priorities. It assists with realisation of multiple Biodiversity Strategy Goals. Recommend full funding for this project. Priority 1 - FULL OR PARTIAL FUNDING - Meets all eligibility criteria and contributes significantly to Funding Outcomes and Priorities. Highly recommended for funding. **Rationale for staff recommendation:** • The Okuti Reserve Education Trail assists realisation of multiple Biodiversity Strategy Goals and is realistic and achievable. It is well supported by LRWCT, in partnership with CCC and DOC. Project Lead has the skills and experience to deliver this project, and the outcomes are measurable.

Request Number: EPF2025/26_0025

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
Taumutu Runanga Limited **Funding History** Nil **Council Staff consulted** Yes Diane Shelander	**Whakaora Te Muriwai o Whata (The Restoration of Muriwai o Whata / Coopers Lagoon)** Taumutu Rūnanga Limited is committed to the enhancement and restoration of te Taiao / the environment and the wider restoration efforts within the Waihora catchment and wider Selwyn District. Whakaora Te Muriwai o Whata is part of ongoing restoration efforts and works within the wider Waihora catchment. Whakaora Te Muriwai o Whata builds long-term resilience by restoring & futureproofing a vital cultural & ecological taonga. Muriwai o Whata is a coastal lagoon (hydrologically connected to Te Waihora) & significant mahinga kai. Its aquatic / terrestrial habitats are a hotspot for biodiversity, provide habitat for threatened species (incl mataku-hūrepo/bittern), & are a sink for blue carbon. Whakaora Te Muriwai o Whata will improve resilience through: Resilience to Climate Change: Stabilising soils & establishing buffers against coastal erosion & flooding, through fencing & plant pest control. Enhanced Resilience of Ecosystems: Preventing further degradation of the site & enhancing resilience of the cultural and ecological values through plant pest & pest predator control. Reestablishment of Natural Infrastructure: Wetland restoration (fencing, pest plant control, and pest predator control) will also restore wetlands as natural infrastructure, filtering water and improving mahinga kai values.	**Total Cost:** **$2,227,774.49** **Requested Amount:** **$1,231,364** **55% percentage requested** **Other Sources of Funding** Environment Canterbury. Secured funding, to be spent by June 30 2026. FY27 funding to be confirmed. $30,000 Taumutu Runanga Ltd. Secured funding, to be spent by 30 June 2026. $30,000 Te Runanga o Ngai Tahu. Secured Funding, Split across Fy26 and Fy27. $60,000 **Other Grant Funding** **Contribution Sought Towards:** Hui, Conferences and Meetings - $2,500 Salaries and Wages - $234,957 Travel - $1,750 Maintain fencing. - $20,000 Engage contractor to undertake pest plant & mammal control - $892,907 Engage contractor to develop and implement a mātauranga Māori and applied research methodology including methodology to test changes in water quality - $75,000 Develop and deliver Communications and Engagement Action Plan - $4,250	**Recommended Amount** $50,000 That the Council makes a grant from its Environmental Partnership Fund (EPF), 2025/26 of $50,000, 2026/27 of $50,000, 2027/28 of $50,000 to Taumutu Runanga Limited towards Whakaora Te Muriwai o Whata (The Restoration of Muriwai o Whata / Coopers Lagoon).	

Outcomes that will be achieved through this project	Staff Assessment
Staff comment - No attached pest plant and animal plans - tricky to evaluate aims and outcomes). Increased Climate Resilience: Healthy wetlands providing nature-based solutions to address flood protection, erosion control, carbon storage, increasing the lagoon's ability to withstand climate change impacts. Restored Wetland Ecosystems: Removal of invasive species & stock exclusion allowing native wetland, riparian, & coastal vegetation to regenerate, improve water quality, natural hydrology, & ecosystem resilience. Long-term: Cultural Revitalisation: Supporting mana whenua to exercise Kaitiakitanga, strengthens cultural identity, & sustains traditional practices. Thriving Biodiversity / Mahinga Kai: Wetland restoration, predator control & restoring biodiversity, while investigating new ways of harnessing nature to remove emissions from the atmosphere, will protect taonga & threatened species such as matuku-hūrepo/bittern, longfin tuna, enabling the return of healthy mahinga kai resources. Collaborative Stewardship: Strengthened partnerships with landowners, agencies, the wider community, creating a legacy of shared responsibility & long-term protection. Long term rūnanga aspirations include linking Muriwai o Whata to Te Waihora / Lake Ellesmere, through coastal wetlands and estuaries, strengthening climate resilience and offering natural flood protection. Ultimately, the project ensures Muriwai remains a thriving, resilient hapua, supporting cultural connection, mahinga kai, ecosystem services, biodiversity, & community wellbeing for future generations.	The funding they have stated they require is more than double the total amount of the EP fund available and outside CCC district. However, CCC is a partner of the Te Waihora Co-Governance Agreement - "to share responsibility for Te Kete Ika a Rākaihautū and the wider Te Waihora catchment." Staff recommend we provide some funding for weed control. Reason for not funding other items: - The purpose of fencing is not stated and is not relevant in a biodiversity capacity that staff can see - Vehicle travel could be paid through internal operational budgets - Some of the items do not relate to a direct biodiversity outcomes, and there are other applications that should be prioritised that would have clearer gains for the CCC district and community engagement within it. **Rationale for staff recommendation:** • Weed control is an important aspect of ecological restoration but is not always prioritised. We are neighbours of the Selwyn district, and weeds do not follow borders, so weed control in their district supports us. It would be interesting to know what species they plan to target though. The amount they have quoted for weed control is large, but we could help with a portion of that. CCC has a partnership with Taumutu, one of the six rūnanga in Te Pātaka o Rākaihautū.

Request Number: EPF2025/26_0026

2025/26 ENVIRONMENTAL PARTNERSHIP FUND (EPF)DECISION MATRIX

Organisation Name	Project	Request Budget	Recommendation	2
Takamatua Ratepayers Association **Funding History** Nil **Council Staff consulted** Yes Alison Evans	**Takamatua Stream Esplanade Reserve restoration** The project is a continuing part of the work done in the Takamatua Stream Esplanade Reserve since 2018 by TEK (Takamatua Environmental and Kaitiakitanga group) a sub-committee of the Takamatua Ratepayers Association (TRA). TEK has been working in the Inaka spawning site since 2018 alongside CCC, Ōnuku, ECan, EOS to restore the biodiversity alongside the spawning site. The boundary fence alongside the north (true right) of the stream in not on the legal boundary, it is too close to the stream. The land to the north of the stream is owned by the Combined Church of Akaroa, it is currently grazed by cattle and this arrangement will cease in late March 2026. The land will then be allowed to revert to the wetland it is. This application is for the land that is the Esplanade Reserve currently being grazed. We want to remove the fence and continue to plant further away from the stream to continue to increase biodiversity alongside the stream. To be able to plant taller vegetation which may assist with shading of the stream during the warmer periods of the year. This will also be alongside the bigger project of the wetland reversion on the Church land.	**Total Cost: $6,000** **Requested Amount: $6,000** **100% percentage requested** **Other Sources of Funding** Volunteer time (800) $23,160 **Other Grant Funding** **Contribution Sought Towards:** Equipment and Materials - $6,000	**Recommended Amount** $6,000 That the Council makes a grant of $6,000 from its 2025/26 Environmental Partnership Fund (EPF) to Takamatua Ratepayers Association towards Takamatua Stream Esplanade Reserve restoration.	

Outcomes that will be achieved through this project	Staff Assessment
To continue to extend the ecological corridor in the Takamatua Stream Esplanade on what has already been done since 2018. Takamatua sub-catchment is the pilot sub-catchment for Ōnuku's Te Kori a te Kō (intergenerational climate adaptation and resilience plan), the stream is the vein that runs through the catchment and to provide the ecological corridor for plants and animals to thrive. This project as indicated in last point is part of a much large vision that involves at its core the community (volunteers), assisted by various organisations Ōnuku, CCC, ECan, BPCT, EOS, NIWA.	Staff think it is a great project - it complements the existing work on the Takamatua Stream Esplanade Reserve, and it will increase the area being restored since the reserve is just a narrow strip along the stream. TEK are a capable and dedicated group, and Chris is always keen to partner with others and learn more. They have been working with ecologists to monitor īnaka along the stream, to see how the planting affects their spawning. This work is a priority for the Ōnuku rūnanga, and CCC does not own a lot of land at the head of the Akaroa Harbour to influence work to reduce sedimentation. It is not necessarily publicly accessible land that this project relies on, so we need to know how the church sees the future of access to and ownership of this land. It sounds like potentially the church are open to this but need confirmation. Since it is church land, the church may have funding to support what is going on their land. The only in-kind contribution on the application is volunteer hours, and this could be all coming from TEK. Staff would want to see volunteer time and financial support coming from the church and can't see that from this application. Need to also know 6676 Christchurch Akaroa Road owners are aware of plan. If unsuccessful in this fund, would suggest TEK could apply to the Sustainability Fund, but I know this gets oversubscribed to. **Rationale for staff recommendation:** • Rūnanga support for this project. If TEK can partner with all parties involved (which they have a positive track record of doing), it would be a great project for community involvement in climate change preparedness and habitat restoration. We could support with plants and plant protection. We need more accurate costs though. TEK should speak to the church to support the fence removal, since it is their asset.

Request Number: EPF2025/26_0027

Memorial Avenue - Corridor Optimisation–Single Stage Business Case

September 2019

Memorial Avenue - Corridor Optimisation

Christchurch City Council

NZ TRANSPORT AGENCY WAKA KOTAHI

New Zealand Government

APPROVAL

PREPARED BY	REVIEWED BY	ENDORSED BY	ENDORSED BY	ENDORSED BY
John Dore	Emerson Yeoman	Richard Holland	Lynette Ellis	Richard Osbourne
Transport Network Planner	Transport Network Planner	Team Leader Asset Planning Transport	Manager Planning & Delivery Transport	Head of Transport
Date:	Date:	Date:	Date:	Date:

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REVISION STATUS*

REVISION NUMBER	IMPLEMENTATION DATE	SUMMARY OF REVISION
First Draft	September 2019	First Draft

Delete revision status table on production of final version

Table of Contents

GLOSSARY OF TERMS

ABBREVIATION	TERM
BCR	Benefit-cost ratio
CBD	Central business district
CCC	Christchurch City Council
EEM	*Economic evaluation manual*
FYRR	First year rate of return
GPS	Government Policy Statement
NMP	Christchurch City Council - Network Management Plan
NZTA (or the Agency)	The New Zealand Transport Agency
PBC	Programme Business Case
PT	Public transport
SC	Strategic Case
SSBC	Single Stage Business Case
SE	Scheme estimate
TA	Territorial Authority
UDS	Urban Development Strategy Transport Group
WEBs	Wider economic benefits

EXECUTIVE SUMMARY

This Single Stage Business Case (SSBC) follows on from a Strategic and Programme Business Cases (PBC) that outlined problems facing the Christchurch City Council network including; safety, travel time, reliability/localised congestion, road condition and network continuity[1].

Travel time reliability problems exist on a non-typical section of Memorial Ave included in Cluster 9 of the Programme Business Case.

Memorial Ave travel time reliability data confirms that evidence provided in previous business cases is valid. This SSBC aligns with previous business case work and meets strategic priorities and objectives in the 2018 Government Policy Statement.

Attachment A shows the preferred concept scheme to improve travel time reliability along Memorial Ave, providing the following benefits:

- Travel times become consistent and reliable
- Estimated 3 minute saving in travel time for buses during PM peak
- Estimated 3 minute saving in travel time for general traffic during PM peak
- Traffic demand removed from surrounding road network
- Improved on road cycle facilities
- Benefit Cost Ratio of about 3
- First Year Rate of Return of approximately 18%

The preferred option is estimated to cost $1,600,000 excluding risk.

This business case seeks investment from NZTA to fund; balance of scheme design work, detailed ground and service investigations to understand risk, stakeholder consultation and statutory approvals process, detailed design and construction.

Location

Figure 1 shows the subject site on Memorial Ave from its intersection with Clyde Road to its intersection with Greers Rd.

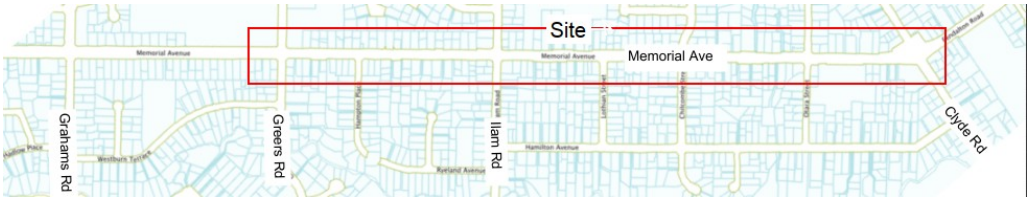

Figure 1 Memorial Avenue Project Location

Memorial Ave is a regional road that links Christchurch International Airport and the City Central Business District.

[1] 'The Case for Change: Christchurch City Council's Transport System', Strategic Case and Funding Application – 10 June 2016; and Programme Business Case 26 - January 2017.

Memorial Ave has an approximate average weekday traffic volume of 20,000-26,000 vehicles per day, that includes half hour bus service from city to the airport and approximate peak hour cycle volumes of about 35-40 cyclists per hour. Attachment B illustrates traffic patterns in the area.

Problem

A single lane section of Memorial Ave between Clyde Rd and Greers Rd restricts traffic flow either side of continuous two lane carriageway sections that make up balance of route between Russley Rd and Harper Ave. This route inconsistency and constraint creates a bottle neck for traffic in both directions, increasing vehicle travel times, reducing travel time reliability and forcing traffic to take alternative routes on roads less suited to higher traffic volumes.

Further details on problem definition provided in; ' Problems Opportunities and Constraints' section.

Objectives

A range of options and design iterations were completed and assessed against objectives. The primary objectives are listed below, aiming to achieve improvements in journey time, CCC strategic alignment and achieve value for money

- **PBC Objective 2** - Improve journey time reliability
- Support strategic and wider network outcomes, CCC Network Management Plan (NMP)
- Value for Money

Options were assessed against the primary objectives first to discount or develop further and assess against the following design objectives:

- **PBC Objective 3** - Improve the convenience and connectivity of walking, cycling and PT
- **PBC Objective 1** - Reduce transport related fatalities and serious injuries by 5% per annum
- Aligns with current best practise
- In accordance with Land Transport Rules

The main focus of option development was to achieve improved journey time reliability, in accordance with CCC NMP, followed by iterative design starting from low cost solutions to demonstrate value for money as defined in the Government Policy Statement (GPS) – *'deliver the right infrastructure and services to the right level at the best cost'*

Serious and significant road safety issues were identified in early option iterations. Further design iterations were required to mitigate road safety risk. Revised designs included intersection widening that removes road safety risk and substantially increases estimated implementation costs and construction risk. A summary of options and alignment with objectives is summarised on Attachment C.

The preferred concept shown on Attachment A is best cost to satisfy objectives.

PREVIOUS BUSINESS CASE REVIEW

This SSBC is consistent with below documents:

- CCC Case for Change – Strategic Case June 2016
- CCC Transport System – Program Business Case (PBC), The Case for Change January 2017

Strategic Case and Programme Business Case can be viewed at:

https://www.ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/strategies/transport-strategic-plan-2012/

Travel time data gathered shows travel time variance during peak times along the subject corridor and supports evidence base in Strategic and Programme Business Cases.

Strategic Case (SC)

Evidence suggests that network performance and capability is a significant driver for private sector investment. Localised congestion and pinch points identified as key issues on CCC transport network are associated with several factors including post-earthquake growth (population and land use), the lack of sequencing of growth with transport infrastructure and the high reliance on the private vehicle. Further refinement of the location of these issues and significance was provided in the PBC.

Programme Business Case (PBC)

Programme Overview

The PBC facilitated workshops to develop investment objectives based on the problem statements identified in the Strategic Case, these were further refined by Urban Development Strategy Transport Group (UDS). The three agreed investment objectives are:

- **Objective 1** – Reduce transport related fatalities and serious injuries by 5% per annum
- **Objective 2** – Improve journey time reliability on key corridors by 2027
- **Objective 3** – Improve the convenience and connectivity of walking, cycling and public transport to increase the use of these modes by 2027

The PBC identified specific; safety, travel time reliability, congestion, network continuity and road condition problems affecting the operation of the CCC transport system. The recommended programme (programme 7) was used to prioritise locations where the most significant impact and strategic fit could be made.

*'**Programme 7**: Mixed with a convenience and connectivity focus There will likely be an increase in walking, cycling and public transport (Objective 3). Greater use of these modes will help improve reliability, through reduced traffic demand (Objective 2). This programme also has a secondary focus to address localised reliability and safety hotspots, which may help to reduce crashes (Objective 1 and 2) It is also recognised that behaviour is a key cause*

of many safety problems in Christchurch, therefore the travel demand management element of this programme is also likely to contribute to the safety objective and reduce the number of death and serious injuries (Objective 1)'

Prioritised locations were clustered together using spatial analysis. Nine clusters were identified that addressed 80% of the highest scoring problems and strategic fit locations. Reliability problems identified on Memorial Ave are included within cluster 9.

The PBC programme implementation strategy is broken into three phases. Phase 3 'Gateways' includes Memorial Ave within cluster 9. The PBC defines phase 3 as:

'The clusters identified in Phase 3 are identified as key gateways to the city and link the wider SH network with both key activity centres and the central city. Projects in phase 3 will focus more on efficiency around these key vehicle routes and support neighbouring residential and employment areas (such as the airport and industrial sites around Hornby and Blenheim areas). Phase 3 is supported by the Urban Development Strategy, which seeks to maintain and develop key corridors and transport networks across Greater Christchurch to connect markets, transport hubs and communities.'

Programme Outcomes – Meeting Objectives

The PBC recommended programme 7 has a secondary focus to address localised reliability and safety hotspots. Memorial Ave is also identified as a key gateway to the city, key gateway projects focus more on efficiency around these key vehicle routes and support neighbouring residential and employment areas (such as the airport and industrial sites around Hornby and Blenheim areas).

Options identified in this SSBC provide travel time reliability benefits for buses, general traffic and improves existing cycle facilities meeting planned outcomes identified in PBC.

Government Policy Statement (GPS) 2018

The below figure from the GPS summarises strategic direction. Overall the options identified in this SSBC meet key GPS strategic priorities and objectives.

GPS 2018:
Strategic direction

Figure 1: Strategic direction of the GPS 2018

The GPS outlines four strategic priorities. Options identified in this SSBC meet the key access strategic priority and the *'providing increased access to economic and social opportunities'* objective.

Section 2.7 of the GPS tables relationships between strategic priorities, objectives, results and reporting. Sections highlighted below are relevant to this business case.

Access		
Long-term results (10+ years)	**Short to medium term results** (3-6+ years)	**Reporting measures**
National land transport objective: A land transport system that provides increased access to economic and social opportunities		
Metropolitan and high growth urban areas are better connected and accessible	6. A more accessible and better integrated transport network including public transport, walking and cycling	Proportion of travel journeys that include mode change/s (in metropolitan and high growth urban areas)*
	7. Improved land use and transport planning to create more liveable cities	Change in liveability index score (e.g. walkability) in metropolitan and high growth urban areas* Proportion of district plans and business cases using integrated land use and transport planning Proportion of population who live within a reasonable travel time of economic and social opportunities (e.g. schools, hospitals, employment opportunities)*
	8. Improved throughput of people and goods in major metropolitan areas	Freight and passenger throughput in major metropolitan areas* Reliability of freight and passenger average travel times in major metropolitan areas
	9. Improved transport access to new and existing housing including provision of public transport services	Expansion of public transport catchment area in metropolitan and high growth urban areas Proportion of population who live within a reasonable walking or cycling distance to frequent and reliable public transport*

Base data gathered and subsequent modelling show the preferred option of this SSBC will result in improvements to passenger average travel times and improvements to journey time reliability.

Options identified in this business case also satisfy to a lesser extent all other GPS strategic priorities as shown in Table 1 below:

Table 1 – GPS Strategic Priorities

GPS - Priority	GPS - Objective	Business Case Preferred Option -Alignment
Access	Enables transport choice and access	• Reduction in kerbside parking around school – drives School Travel Planning and active modes to school • Marked cycle lanes, encourage cycling • Improved bus travel time reliability
Access	Is resilient	• Extra lane airport bound, greater chance maintaining accessibility if an incident occurs blocking a lane
Safety	Safe system free of death and serious injury	• No reduction in existing level of road safety risk • Opportunities to include operational road safety improvements at existing intersections
Environment	Reduces greenhouse gas emissions as well as adverse effects on the local environment and public health.	• Improvement to travel time reliability and travel times, less time vehicle on road therefore less emissions. • Marked cycle lanes and improved bus travel time reliability, possibly generate some mode shift
Value for Money	Delivers the right infrastructure and services to the right level at the best cost	• Iterative design approach focused on making best use of existing road space to improve reliability of passenger travel times

BACKGROUND

Location

Figure 2 shows the subject site on Memorial Ave from its intersection with Clyde Road to its intersection with Greers Rd.

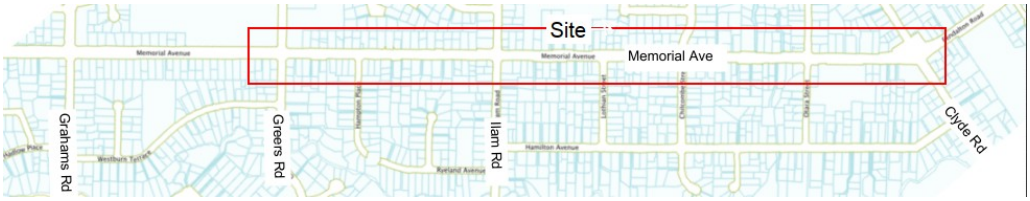

Figure 2 Memorial Avenue Project Location

Memorial Ave is a regional road that links Christchurch International Airport and the City Central Business District.

Memorial Ave has an approximate average weekday traffic volume of 20,000-26,000 vehicles per day, that includes half hour bus service from city to the airport and approximate peak hour cycle volumes of about 35-40 cyclists per hour. Attachment B illustrates traffic patterns in the area.

Problem

A single lane section of Memorial Ave between Clyde Rd and Greers Rd restricts traffic flow either side of continuous two lane carriageway sections that make up balance of route between Russley Rd and Harper Ave. This route inconsistency and constraint creates a bottle neck for traffic in both directions, increasing vehicle travel times, reducing travel time reliability and forcing traffic to take alternative routes on roads less suited to higher traffic volumes.

Further details on problem definition provided in; 'Problems Opportunities and Constraints' section.

Objectives

The PBC recommends a works programme that includes Memorial Ave and addresses below three investment objectives:

- **Objective 1** – Reduce transport related fatalities and serious injuries by 5% per annum
- **Objective 2** – Improve journey time reliability on key corridors by 2027
- **Objective 3** – Improve the convenience and connectivity of walking, cycling and public transport to increase the use of these modes by 2027

Improvement options on Memorial Ave align with these PBC objectives. Further design objectives were added to strengthen an iterative design approach to develop preferred option and alternative option. These objectives are:

- Support strategic and wider network outcomes, CCC Network management Plan
- Low Cost
- Aligns with current best practise
- In accordance with Land Transport Rules

Attachment C shows options and objectives matrix. Solution options are discussed in further detail later in the 'Options' section.

Existing Road Environment and Traffic Patterns

Attachment B shows the location of Memorial Ave within the road network. Memorial Ave is a Regional Road that links Christchurch International Airport with the central city.

Memorial Ave has an approximate average weekday traffic volume of 20,000-26,000 vehicles per day, and is classified as Regional Road by the NZTA, One Network Road Classification System (ONRC).

The ONRC developed by NZTA divides New Zealand's Roads into six categories based on how busy there are, whether they connect to important destinations, or are they the only route available. The NZTA ONCR general guide provides below definition:

'Regional roads make a major contribution to the social and economic wellbeing of a region and connect to regionally significant places, industries, ports and airports. They are major connectors between regions and, in urban areas, may have substantial passenger transport movements.'

Major intersecting roads include; Greers Rd, Ilam Rd and Clyde Rd, these roads are all classified as Arterial roads in the ONRC. The NZTA ONCR general guide provides below definition:

'Arterial roads make a significant contribution to social and economic wellbeing, linking regionally significant places, industries, ports or airports. They may be the only route available to important places in a region, performing a lifeline function.'

Average daily traffic around these intersections is summarised below and shown on Attachment B:

- Greers Rd - 10,000 to 12,000vpd
- Ilam Rd – 7,000-8,000vpd
- Clyde Rd North – 10,000vpd
- Clyde Rd South – 18,000vpd

Other minor intersections and the Fendalton mall access/egress on the route have relatively low volumes of traffic.

Memorial Ave from Clyde Rd to Christchurch International Airport (CIAL) is predominantly a residential area. Other notable land use includes;

- New World and Fendalton Mall near the Clyde Rd intersection
- Burnside High School at intersection of Greers Rd
- Christ the King School at intersection of Greers Rd
- Burnside Primary and Cobham Intermediate around the intersection of Ilam Rd
- Burnside Park, north west of Grahams Rd

- Some visitor accommodation such as hotels north-west of Roydvale Ave
- Russley golf course, close to the airport
- Land zoned for industrial park close to the airport

The above land use is indicatively shown in Attachment B.

Posted Speed Limits

Memorial Ave is 50km/h from Harper Ave to Grahams Rd and 60km/h from Grahams Rd to Russley Rd. A variable 40km/h operates before and after school between Greers Rd and Grahams Rd outside Burnside High School.

Road Cross Section and Road Features.

The subject section of Memorial Ave provides one traffic lane in each direction separated by a painted flush median. The available lane widths can accommodate a cyclist and general traffic although no cycle lane is formally marked on the ground. Kerbside parking is available on both sides of the road. Footpath and berm with intermittent trees take up the space between property boundary's and the road side kerb. This typical cross section is shown on Figure 3 and on below photograph:

Photograph 1 –Memorial Ave, typical cross section between Greers Rd and Clyde Rd

The sections of Memorial Ave upstream and downstream of Greers Rd and Clyde Rd allow for two traffic lanes in each direction. These sections are also shown on Figure 3.

Two minor give way/stop controlled T intersections and two minor give way/stop cross intersections are spread along the route. These intersections have a relatively low volume of traffic, a painted flush median is available for right turning vehicles to turn into and out of at these intersections, and a marked right turn flush median is available at the intersection of Otara/Memorial.

The Fendalton shopping centre and supermarket is a notable feature and is accessed off Memorial Ave via a separate access and egress approximately 50m apart. A marked right turn flush median is available at the access and painted median for egressing vehicles.

A pedestrian refuge is located near the Fendalton shopping centre around the intersection of Memorial/Otara, the refuge island provides safe pedestrian access from/to a bus stop on the north side of Memorial Ave.

Public Transport/Cyclists and Pedestrians

Bus route 29 operates in both directions along Memorial Ave from the city to the airport.

Attachment B shows total bus volumes per day in the area, and the average daily bus stop patronage recorded on a typical weekday in March 2018. Key trends noted below:

- Relatively high bus patronage around schools near Greers and Ilam Rd
- Greers Rd is part of Orbiter bus route and has highest volume of buses per day
- Outside the scope, noted that Roydvale Ave and Memorial NW of Roydvale have high bus volumes

Buses run every thirty minutes along Memorial Ave in both directions connecting the Airport and City. The Orbiter bus route operates in both directions along Greers Rd, as shown in Attachment B.

Existing Traffic

Attachment D shows average weekday traffic volumes measured over seven continuous days, collected from a count device in October 2016 located between Greers Rd and Ilam Rd. Key trends are:

- Airport bound traffic peaks at 1,200 vph from 5pm until 6pm
- City bound traffic peaks at 1,200vph from 8am to 9am
- Airport bound traffic of 1,000vph from 8am to 9am
- City bound traffic of 1,100vph from 5pm to 6pm
- City bound inter peak traffic averages 875vph from 9am to 5pm
- Airport bound inter peak traffic averages 890vph from 9am to 5pm
- Weekend hourly traffic volume is approximately 700vph in either direction during a peak from 11am to 3pm

During peak time there is small difference in directional flows, slightly greater volume travelling towards the city in the morning and a slightly greater volume travelling towards the airport in the evening. Overall traffic volumes are evenly split in both directions.

Heavy Traffic Volumes

Approximately 6.5% of the total traffic volume are heavy goods vehicles. Slightly more than half of the heavy traffic is travelling towards the city.

Parking Demand

Parking demand around Burnside Primary and Cobham Intermediate near Ilam Rd is high, typically elsewhere demand is less than 50% of available supply. Further survey work required to assess.

Road Safety

Memorial Ave from Clyde Rd to the Airport has an assessed collective road safety risk of medium, based on the NZTA Kiwi Rap risk assessment methodology. Risk is ranked into five categories from High to Low, medium is in the middle. Collective risk is the number of crashes per kilometre.

Collective road safety risk at all intersections along the subject corridor are reported in below table:

Table 1 – Collective Intersection Risk

Intersection	Collective Risk
Clyde Rd	Medium High
Ilam Rd	Medium
Greers Rd	Medium
Otara St	Low
Gleneagles/Chilcombe	Low
Lothian St	Low
Hampton Pl	Low

There is an opportunity to incorporate road safety improvements at the intersections of Memorial/Clyde and Memorial/Ilam.

Project Sponsorship and Governance

Christchurch City Council (CCC) is the project sponsor and seeks co-investment from NZTA.

CCC is the road controlling authority and have established project management and project governance processes in place to appoint a project team, allocate responsibilities and include all relevant external and internal key stakeholder information to inform the decision making process and subsequent design and construction delivery.

PROBLEMS, OPPORTUNITIES AND CONSTRAINTS

A single lane section of Memorial Ave between Clyde Rd and Greers Rd restricts traffic flow either side of continuous two lane carriageway sections that make up balance of route between Russley Rd and Harper Ave. This route inconsistency and constraint creates a bottle neck for traffic in both directions, increasing vehicle travel times, reducing travel time reliability and forcing traffic to take alternative routes on roads less suited to higher traffic volumes. Typical single and two lane sections are shown in **Figure 3.**

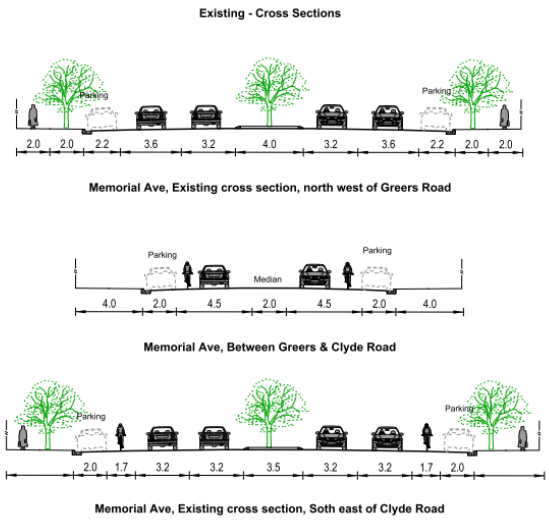

Figure 3 Existing Typical Cross Sections

Vehicle travel times collected from CCC blue tooth detectors during the morning and afternoon peak are relatively high on approach and through the single lane section. A continuous two lanes would relieve the bottle neck. Figure 4, shows measured peak vehicle travel times along the corridor, compared to inter peak free flow weekday travel times for comparison.

Figure 4a shows directional travel time variability during the; AM, PM and inter peak periods.

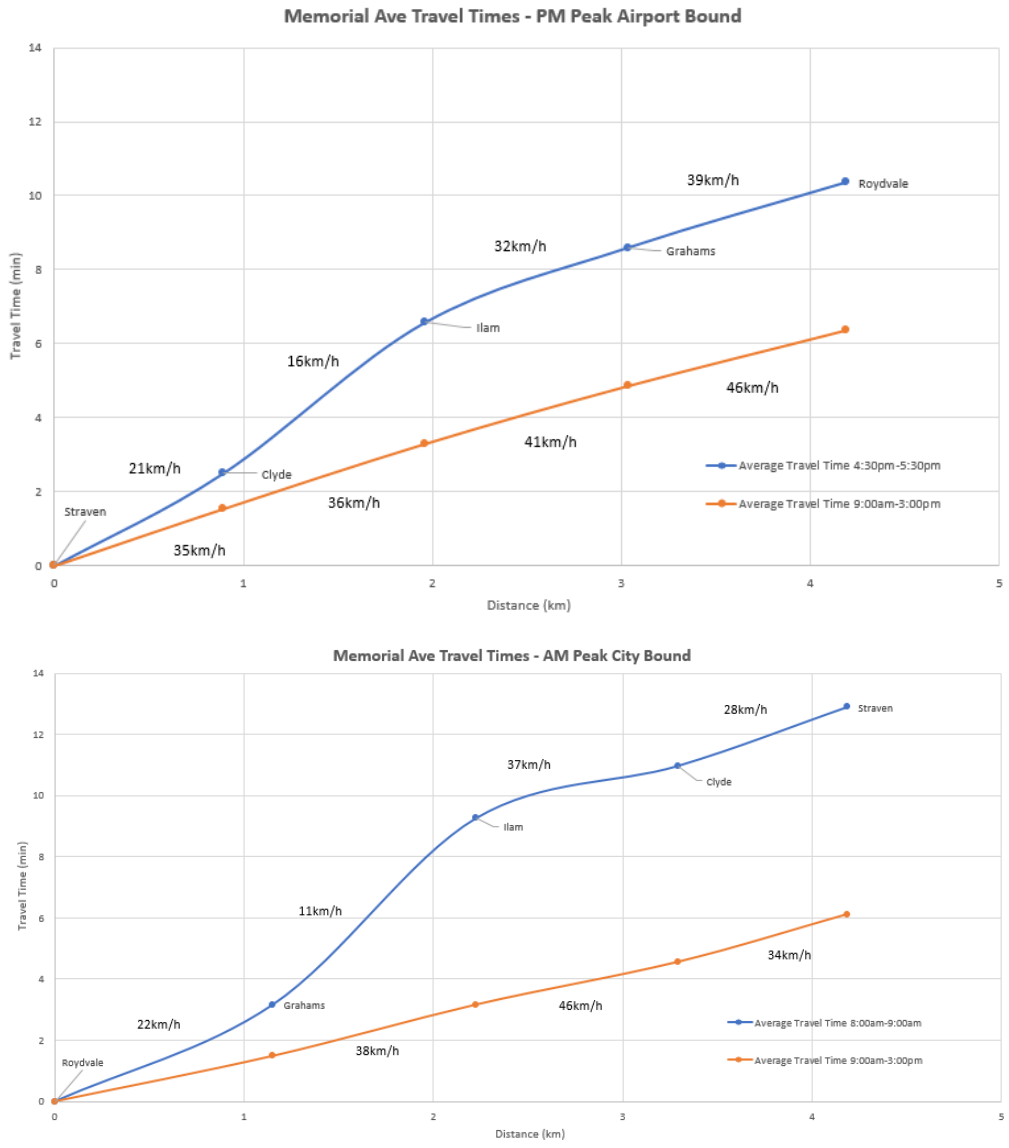

Figure 4 – Travel Times

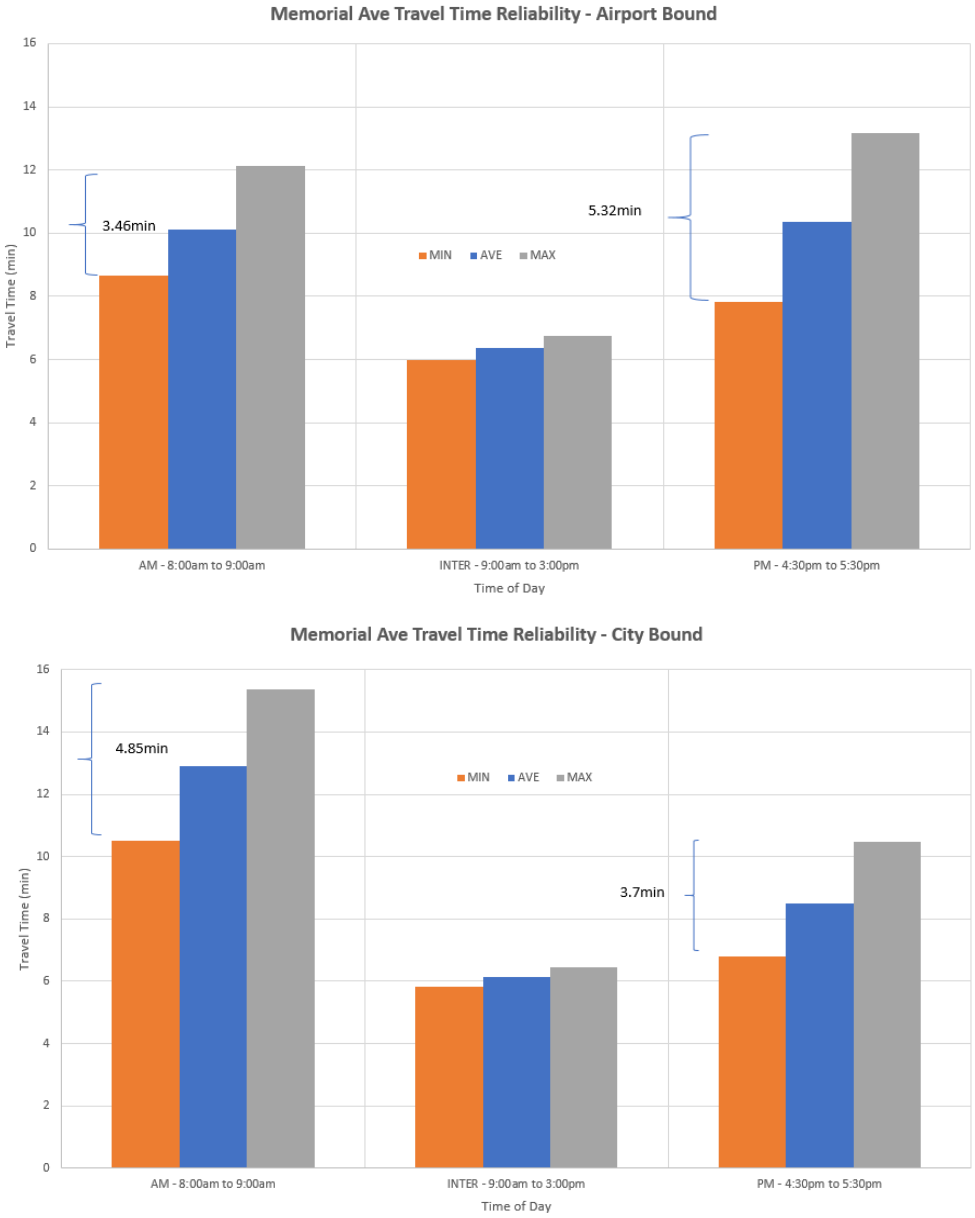

Figure 4a – Travel Time Reliability

AM peak city bound and PM peak airport bound have the highest travel times compared to free flow conditions from 9am to 3pm. A notable decrease in vehicle speeds occurs from Clyde Rd to Ilam Rd in PM peak and from Grahams Rd to Ilam Rd in the AM peak as shown on Figure 4.

Variability in journey times is highest during PM airport bound and AM peak city bound. During free flow conditions from 9am to 3pm travel times remain consistent and reliable.

Problems – Surrounding Road Network

The high delays generated by the bottle neck effect push traffic flows away from the regional arterial Memorial Ave and onto the lower classified surrounding road network. The most important of these effects are:

- Increased traffic flow along Clyde Rd and Maidstone Rd in the PM peak refer Figure 4
- Increased traffic demand on Clyde Rd in the AM peak
- Developing options to resolve these problems satisfy objectives outlined in the CCC Transport System Programme Business Case Final Version 26 January 2017 (PBC).

OPTION ASSESSMENT

A range of options and design iterations were completed and assessed against objectives. The primary objectives are listed below, aiming to achieve improvements in journey time, CCC strategic alignment and achieve value for money

- **PBC Objective 2** - Improve journey time reliability
- Support strategic and wider network outcomes, CCC Network Management Plan (NMP)

Value for Money options were assessed against the primary objectives first to discount or develop further and assess against the following design objectives:

- **PBC Objective 3** - Improve the convenience and connectivity of walking, cycling and PT
- **PBC Objective 1** - Reduce transport related fatalities and serious injuries by 5% per annum
- Aligns with current best practise
- In accordance with Land Transport Rules

The main option development focus was to achieve improved journey time reliability, followed by iterative design starting from low cost solutions to demonstrate value for money as defined in the Government Policy Statement (GPS) – *'deliver the right infrastructure and services to the right level at the best cost'*

Options and objectives are summarised on Attachment C.

Low cost options allowed for two lanes airport bound, two lanes city bound and two lanes in both directions. These options were developed further and modelled in; Christchurch Assignment and Simulation Transport model (CAST), Lin Sig and Network Management Plan (NMP).

A second key objective was alignment with the Network Management Plan (NMP). The NMP model predicts that two AM peak lanes city bound will attract heavy goods vehicles from the strategic freight network, attract demand for more light vehicle trips, and possibly a mode shift away from public transport and cycling. Therefore two lanes city bound options were discounted.

Two lanes airport bound has the best NMP alignment. NMP modelling details are included in Attachment E

Serious and significant road safety issues were identified in early option iterations. Further design iterations were required to mitigate road safety risk. Revised designs included intersection widening that removes road safety risk and substantially increases estimated implementation costs and implementation construction risk.

The preferred option delivers; improved public transport travel times, improved cycle facilities, improved travel times for general traffic and mitigates effects on existing kerbside parking.

An alternative to the preferred option provides the same travel reliability benefits, has a slight reduction in road safety, reduction in level of service for pedestrians and cyclists, and has less of an impact on residential kerbside parking.

The preferred and alternative option both include an intersection upgrade that greatly increases estimated delivery cost and risk.

Key features of these design iterations are shown on **Table 2** over page.

Table 2 – Options Summary

Option	Traffic Lanes	Flush Median	Parking	Cycling	Cost
B3 – Preferred Option	Two airport bound at all times One city bound	2m flush median	No parking restrictions both sides of road. Indented parking bays	1.8m marked cycle lane airport bound 1.6m marked cycle lane city bound	High
B2 – Alternative Option	Two airport bound 7am-6pm or 3pm to 6pm One city bound	2m flush median at junctions 1m median midblock	Clearway 7am-6pm or 3pm to 6pm airport bound Majority of kerbside parking remain city bound	4.3m traffic/cycle lane during clearway, airport bound 2.3m lane outside clearway time, airport bound 4.5m traffic/cycle lane city bound	High
Early iterations - B/B1	Two airport bound 7am-6pm or 3pm to 6pm One city bound	1m flush median	Clearway 7am-6pm or 3pm to 6pm airport bound Maintain existing kerbside parking city bound	4.3m traffic/cycle lane during clearway, airport bound 2.3m lane outside clearway time, airport bound 4.5m traffic/cycle lane city bound	Low
Early iterations – B/B1 REVA	Two airport bound at all times One city bound	2m flush median	No parking restrictions both sides of road.	1.8m marked cycle lane airport bound 1.6m marked cycle lane city bound	Low

PREFERRED OPTION – ASSESSMENT

Outcomes – Meeting Objectives

The preferred options meets all of the primary and design objectives. The alternative option meets all of the primary objectives, does not meet some of the design objectives and satisfies balance of design objectives to a lesser extent.

Implementability

Constructability

Construction includes realignment of kerbs, construct pedestrian islands, installation of signal poles foundations, signal poles, associated signal equipment, removal of redundant road markings and re marking entire subject corridor section.

This work is standard civil construction the below construction risks have been identified:

- Removal and disposal of contaminated material such as coal tars
- High water table and sub-standard sub grade material
- Significant realignment or alterations to existing underground infrastructure

At this stage of investigation and design process no further work has been undertaken to understand extent of above risks and likely effects on estimated costs.

Construction work is in a residential area on a high volume road, work hours are expected to be restricted to day time hours outside of peak traffic periods.

At this stage there is no reason to suppose construction will present challenges or risks any greater than would be typically expected in a road infrastructure construction project of this nature which CCC undertake on a frequent basis.

Operability

No operational issues have been identified. Operational staff have been involved with concept development and will continue to have input through balance of scheme, design and delivery process.

Potential operational enforcement problems have been noted for the clearways included on alternative option B2 as described in Table 2.

Statutory requirements

The project team will carry out stakeholder and public engagement and present CCC staff recommendation to relevant council committee, community board with appropriate level of council delegation to make formal decision on scheme.

Agreement with various underground service stakeholders may be required if any existing underground service alterations are required.

Not aware of any other relevant consents or approvals required. Further scheming and detailed design is likely to confirm this assumption.

Property impacts

All works planned within existing road reserve, no property acquisition required.

Asset management

The asset remains the same as existing, the main change is reallocation of road space and will operate differently from existing.

Wider project impacts

Social impact

Available kerbside parking will change significantly from existing. This will have greatest impact on operation of school pick up and drop off around Burnside Primary School.

Availability of residential kerbside parking will be reduced.

Early engagement with Burnside Primary, School Travel Planning and provision of indented car park spaces aim to mitigate effects on kerbside parking.

Based on anecdotal observations, it is expected that parking effects can be mitigated. Further surveys and observations will be undertaken in the next phases of the project required.

PREFERRED OPTION - ECONOMIC ANALYSIS

Table summary of economic analysis below:

TIMING				
Earliest implementation start date				
Expected duration of implementation				
ECONOMIC EFFICIENCY				
Time zero			1 July 2019	
Base date for costs and benefits			1 July 2019	
Present value of total project cost of do minimum			N/A	
Present value net total project cost of recommended option			$1,516,000	
Present value net benefit of recommended option (exc. WEBs)			$ 4,886,554	
Present value net benefit of WEBs of recommended option			N/A	
BCR (exc. WEBs)			3.25	
BCR (inc. WEBs)			N/A	
First year rate of return (FYRR)			18.50%	
P50 COSTS				
			Present value	
	Do minimum (N/A)	Recommended option	Do minimum (N/A)	Recommended option
Design				$170,000
Statutory applications				included in design
Property				$ 0
Construction/ implementation				$ 1,346,000
External impact mitigation				Included in construction and implementation
Other capital (eg insurances)				$
Capital risk				Refer risk section
Management				Included in design, construction

				and implemnation
TOTAL IMPLEMENTATION COST				$ 1,516,000
Maintenance				No change from existing
Renewal				No change from existing
Operating				No change from existing
Other ongoing costs (eg toll collection)				N/A
Post project evaluation				Included in total implementation cost
ONGOING COST				
Project contingency				$130,000 included in total implementation cost
TOTAL P50 PROJECT COSTS		$1,600,000		$1,516,000
BENEFITS				
			Present value	
	Do min (N/A)	Recommended option	Do min (N/A)	Recommended option
Travel time savings		$3,257,703		$4,886,554
Vehicle operating cost savings				
Accident cost savings				
Vehicle emissions reductions				
Reduced driver frustration				
Walking and cycling (EEM v2)				
Travel behaviour change (EEM v2)				
PV total net benefits				$ 4,886,554

Sensitivity analysis

Cost/Benefit variability

The estimated benefits are conservatively based on vehicle travel time savings during one hour only in the PM peak on a weekday. Given the high volumes of traffic throughout both peak periods, the estimated yearly travel time saving benefits are expected to be higher than reported in this business case. Due to the significant travel time savings to all traffic, no further benefits were estimated. Benefit estimation is included on simplified procedure three on Attachment F.

The estimated construction cost of $1,600, 000 is scheduled out in Attachment F. A number of risk items have been identified and described in below sections. At this stage of design it is difficult to estimate the cost, contingency has been allowed for minor civil work unknowns and it is also assumed that full signal replacement is required. Construction risks identified requires further investigation work too understand. Identified risks could add another 40% to estimated cost.

Sensitivity analysis shows:

- 40% increase in construction costs
- Decrease in benefits estimated value

Decided to decrease benefit values due to uncertainty around discount factors used in simplified procedure and assumed values from Economic Evaluation Manual.

Table 0-1: Sensitivity analysis

SENSITIVITY ANALYSIS						
Variable	**Base case (PV)**			**Sensitivity**		
	$	**Benefit**	**BCR**	**Cost**	**Benefit**	**BCR**
Cost variability						
Construction / implementation	$1,504,000	$4,886,554	3.25	$2,105,600	$4,886,554	2.32
Benefit variability						
Travel time savings	$1,504,000	$4,886,554	3.25	$1,504,000	$4,500,000	2.99
Cost and Benefit Variability						
	$1,504,000	$4,886,554	3.25	$2,105,600	$4,500,000	2.13

FINANCIAL CASE

The estimated project cost schedule is included as Attachment F The project construction time frames are outlined below:

- 12 months – Scheme design, community and stakeholder engagement, statutory approvals
- 6 months to complete construction

Construction work is limited to road markings, kerb realignments, associated drainage and upgrading signal infrastructure. The cost to maintain and operate is no different from existing situation.

CCC is seeking investment from council to co fund the work.

Table 3 summarises project risks.

Table 3: Project Risk Register

Risk Description/Cause	Risk Consequences	Consequence	Probability	Mitigation
Relocating kerbs and signal pole foundations conflicting with non CCC underground services, requiring relocation	***Significant increase to estimated cost – stops the project.***	***High***	***???***	***Carry out detailed investigation before any commitment to deliver. Includes underground service investigation, boreholes and potholing. Make funds available early to complete this work. Approx $50,000***
Discover contaminated material, requiring disposal to approved off site location. Eg. Coal Tars	***$250/t- increase in excavation costs***	***Low***	***Medium***	***Test bore hole samples, allow for in final estimate contingency***
Possible unsuitable subgrade	***Unsuitable subgrade requiring further excavation and pavement materials***	***Medium***	***Low***	***Test bore hole samples, allow for in final estimate contingency***
Waterblasting existing flush median may damage existing road surface	***Possible resurfacing***	***Medium***	***Low***	***Carry out detailed investigation before any commitment to deliver. TSD/road maintenance team provide some design input on pavement suitability for water blasting.***
Proposals not acceptable to community, stakeholders and CCC decision makers	***Extends time and cost to complete scheme design and statutatory approvals***	***Medium***	***Medium***	***CCC project team development engagement strategy and engage early with key stakeholders such as; Burnside primary, community board and airport.***

Risk Description/Cause	Risk Consequences	Consequence	Probability	Mitigation
Changes or increase to project scope	***Increasing the project's completion times and costs***	***Medium***	***High***	***Contingency in preliminary estimate covers this. Revise estimates at each design stage and peer review of estimate.*** ***Robust project management processes.***
Safety issues with proposal	***Crashes, delays, loss of project benefits***	***Medium***	***Low***	***A road safety audit has been completed on an early option iteration, the preferred option resolves all issues.*** ***Scheme, detailed design and post construction road safety audits recommended***

If funding becomes available it is recommended to progress with detailed design investigations at the intersection of Memorial/Ilam to assess high risk items.

Robust project management processes and relevant expertise within council is available to deliver this work

Post construction monitoring includes a road safety audit, vehicle/bus travel time comparisons using blue tooth sensors, on board bus travel time measurements, link tube and intersection counts to measure change in traffic volumes and bus patronage data. A line item in the cost estimate schedule allows for this work and reporting.

ATTACHMENTA – PREFERRED OPTION – CONCEPT DRAWINGS

ATTACHMENT B – TRAFFIC PATTERNS

ATTACHMENT C – OPTIONS MATRIX AND OBJECTIVES

ATTACHMENT D – TRAFFIC COUNTS

ATTACHMENT E – MODELLING REPORT

ATTACHMENT F – PREFERRED OPTION ESTIMATE AND COST BENEFIT EVALUATION

Site	Option	Description	Drawing	Objectives							
				Support strategic and wider network outcomes. (NMP)	Reduce travel times	Low Cost	No reduction in cycle LOS	Aligns with current best practise	In accordance with Land Transport Rules	No increase in road safety risk	Comments
Memorial Ave - Greers to Clyde	Option B3 - Preferred Option	Ilam intersection upgrade, wide median and island outsdie Burnside Primary, 2m wide median entire length, no parking both sides of road	Attachment B	✓✓✓	✓✓✓	x	✓✓✓	✓✓	✓✓	✓✓	
Memorial Ave - Greers to Clyde	Option B2	Ilam intersection upgrade, wide median and island outsdie Burnside Primary, widen median at minor intersections, widening at Clyde Rd approach, clearway on south side and some kerbside parking on north	Attachment B	✓✓✓	✓✓✓	x	x	✓✓	✓✓	x	Slight reduction in cycle level of service, 4.2m lane width. Moderate road safty issues remain. Survey data outstanding, required to demonstrate no serious/significant risk remains. Operational issues/cost with enforcing clearways
Memorial Ave - Greers to Clyde	Option B1 - REVA Maintains flush median	Airport bound peak - 1.6m cycle lane, 3.2m traffic lane, 2.2m flush median. City bound (all times) - 1.6m cycle lane, 3.2m traffic lane . Removes all kerbside parking	Attachment G - Options A, B1, C	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓	xx	RSA - identified serious and significant issues
Memorial Ave - Greers to Clyde	Option - B and B1	Airport bound peak (7am-6pm or 3pm to 6pm) - 4.3m cycle/traffic lane, 3.2m traffic lane, 1m flush median. Airport bound off peak - 2.1m kerbside parking, 2.2m cycle lane, 3.2m traffic lane. City bound (all times) - 2m kerbside parking, 4.5m cycle/traffic lane .	Attachment G - Options A, B1, C	✓✓✓	✓✓✓	✓✓	x	✓✓	✓✓	xx	RSA - identified serious and significant issues
Memorial Ave - Greers to Clyde	Option - A	City bound peak time - 4.3m cycle/traffic lane, 3.2m traffic lane, 1m flush median. City bound off peak - 2.1m parking - 2.2m cycle lane, 3.2m traffic lane. Airport bound (all times) - 2m kerbside parking, 4.5m cycle/traffic lane	Attachment G - Options A, B1, C	xx							
Memorial Ave - Greers to Clyde	Option - C	Airport and City bound peak (All times) - 4.3m cycle/traffic lane, 3.2m traffic lane, no parking in both directions and narrow flush median.	Attachment G - Options A, B1, C	xx							
Memorial Ave - Greers to Clyde	Option - D	Option A/B with dynamic centre line, to allow two lanes to switch direction depending on peak	No drawing	x							
Memorial Ave - Greers to Clyde	Option - E	Similar to Option B/B1 Airport bound peak (7am-6pm) - Shared cycle/peds behind south kerb , 3.25m traffic lane, 3.25m traffic lane, 2m flush median. Airport bound off peak -Shared cycle/peds behind south kerb , 2m kerbside parking 1.25m cycle lane, 3.2m traffic lane. City bound (all times) - 2m kerbside parking, 4.5m cycle/traffic lane	No drawing			x					
Memorial Ave - Greers to Clyde	Option - F	Variation of Option E - allow for widening at junctions to accommodate wider lanes for cyclists	No drawing			x					
Clearway Widths - Apply to all options with clearways	Option A	4.8m - allow for 3.2m lane and 1.6cycle during peak. Off peak - offset parking requiring contradictory road markings. Traffic control devices rules states, must convey clear consistent message (3.1c)						x	x		
Clearway Widths - Apply to all options with clearways	Option B	Reduce clearway width to 4.2-4.3m. Peak, 3m traffic lane and 1.2-1.3m cycle lane. Off peak, 2m parking and 2.2-2.3m cycle lane						✓✓	✓✓✓		

Key:

✓	Some contribution to achieving the desired outcome
✓✓	Contributes to achieving the desired outcome
✓✓✓	Significantly contributes to achieving the desired outcome
x	Does not achieve the desired outcome
xx	Detracts from achieving the desired outcome