Before the Independent Commissioner Hearing Panel

Under	the Resource Management Act 1991 (**RMA**)
In the matter of	an application by **Dunedin City Council** to develop a landfill at Smooth Hill, Dunedin.

Statement of evidence of Andrew Whaley

29 April 2022

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Qualifications and experience

1 My name is **Andrew Mark Whaley**.

2 My role at GHD is Operations Manager for Transport.

3 I have the following qualifications and experience relevant to the evidence I shall give:

(a) I hold a Bachelor of Engineering, obtained from the University of Canterbury (1994). I am a Chartered Engineer with the Institute of Civil Engineers (UK) – C.Eng MICE.

(b) My work experience includes 27 years in the delivery of civil engineering, highways and transportation projects in New Zealand and the United Kingdom. My early experience was in the construction management (working for a contractor) of civil engineering projects including highway improvements throughout the central North Island and river protection work on the Tongariro River. My experience over the last 19 years has been primarily in the design of civil engineering and major highway projects for the Highways Agency (UK) and Waka Kotahi NZ Transport Agency (Waka Kotahi). This includes team and design leadership of multidisciplinary design teams on:

(i) improvement projects on the M1, M11, and A10 in the UK;

(ii) Cleddau River Flood Protection;

(iii) SH1/SH76 Christchurch Southern Motorway;

(iv) SH82 Kurow Bridges Replacement;

(v) SH1 Russley Road: Harewood Road to Avonhead Park 4-laning; and

(vi) Te Ahu a Turanga: Manawatū Tararua Highway Project.

(c) I have previously given evidence at hearings, have undertaken detailed design, and have assessed construction effects relating to civil engineering projects such as the:

(i) SH1 Russley Road: Harewood Road to Avonhead Park 4-laning;

(ii) Central Plains Water Enhancement Scheme;

(iii) Mokihinui Hydro Project;

(iv) Cleddau River Flood Protection Project; and

(v) Te Ahu a Turanga: Manawatū Tararua Highway Project.

4 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Executive Summary

5 My evidence has been prepared in relation to transportation effects covering the affected transport network, demands arising from the development, and the planned improvements to the network.

6 The planned route for access to the proposed Smooth Hill landfill site is via SH1, McLaren Gully Road, and a short section of Big Stone Road between the end of McLaren Gully Road and the landfill entrance. The existing local roads are unsealed and of variable width.

7 Both McLaren Gully Road and Big Stone Road have low existing traffic flows, with the anticipated traffic demands arising from the landfill to be easily accommodated.

8 Planned improvements are targeted at the safety of the network. This includes improvements to the SH1/McLaren Gully Road intersection, widening and sealing McLaren Gully Road for its full length and widening and sealing of Big Stone Road for the short length leading to the landfill entrance.

9 There are three locations on McLaren Gully Road, constrained by wetlands to both sides of the road, where the improvements will include additional provision to allow safe traverse through sections with reduced width.

Scope of evidence

10 I have been asked to prepare evidence in relation to the transportation effects. This includes:

(a) Affected transport network;

(b) Traffic arising from the project;

(c) SH1/McLaren Gully Road intersection improvement;

(d) Big Stone Road and McLaren Gully Road improvement; and

(e) Proposed Conditions.

Affected transport network

11 Planned access to the landfill site is off State Highway 1 (SH1), approximately 4.5 km south of Allanton, via two rural roads: McLaren Gully Road and Big Stone Road.

12 SH1 is the key national transport route and is the main link between Dunedin and Southland. The road is formed as a sealed two-lane carriageway and in the vicinity of the intersection with McLaren Gully Road has a typically straight and flat alignment, operating under the default open road speed limit of 100 km/h.

13 McLaren Gully Road is a low volume unsealed rural road providing access to a small number of rural residential properties and forestry blocks and links SH1 with Big Stone Road. The intersection with SH1 is a priority T intersection with SH1, formed with a basic provision only. There are no specific threshold or safety treatments.

14 Big Stone Road is a low volume rural road and is unsealed. The proposed landfill site has direct frontage to Big Stone Road and site access is located approximately 400 m from the McLaren Gully Road /Big Stone Road junction. Two existing rural residential driveways access Big Stone Road in the vicinity of the proposed landfill site and the road is also used for commercial forestry activity. The intersection of Big Stone Road and McLaren Gully Road is an uncontrolled 3-way intersection.

15 The 10-year reported crash data for the period from 2009 to July 2019 was extracted from the Waka Kotahi's Crash Analysis System (CAS) for the intersection of SH1 and McLaren Gully Road and 750 m north and 750 m south of the intersection on SH1. There were 19 crashes specifically recorded in this length, with the following being within the length affected by the project.

(a) SH1/McLaren Gully Road:

(i) a non-injury crash occurred in January 2016 just to the north of the McLaren Gully Road junction. This has not been specifically linked to the intersection, however there is potential the presence of the intersection may have been a contributing factor;

(ii) a non-injury crash occurred in September 2013 just to the south of the McLaren Gully Road junction. This has not been

specifically linked to the intersection, however there is potential the presence of the intersection may have been a contributing factor; and

(iii) a minor injury crash occurred in March 2018 just to the south of the McLaren Gully Road junction. This has not been specifically linked to the intersection, however there is potential the presence of the intersection may have been a contributing factor.

(b) McLaren Gully Road

(i) a minor injury crash occurred in April 2010 approx. 250 m from SH1 – the driver lost control travelling towards SH1; and

(ii) a non-injury crash occurred in March 2010 approx. 950 m from SH1 – the driver lost control travelling towards SH1.

16 A traffic survey count was undertaken at the intersection of SH1 and McLaren Gully Road on Wednesday 29 May 2019 between 6 am and 8 am. The hour between 7 am and 8 am is representative of the morning peak for the proposed development, when taking into consideration the estimated future peak arrival and departure of trucks to the landfill site.

17 The intersection counts confirmed very little demand from McLaren Gully Road, with the State Highway north/south traffic movements being dominant (only one vehicle was recorded entering/leaving McLaren Gully Road on the surveyed day).

18 This would be greater when logging activities are taking place and would be variable with respect to light vehicles, however the counts confirmed minimal demand.

19 Across the two-hour traffic count, the surveyor reported four overtaking manoeuvres along SH1, adjacent to the McLaren Gully Road intersection.

20 There is an acknowledged use of both McLaren Gully Road and Big Stone Road by recreational users, predominantly cyclists and equestrians, albeit no specific cycle or similar facilities are provided. Submitters have also indicated pedestrians/walkers use these roads. These demands, being predominantly recreational, are expected to be substantially weekend use.

Traffic arising from the project

21 The following assumptions were made for the traffic assessment:

(a) the AM landfill traffic peak is assumed to be between 7 am to 8 am as traffic arrives ahead of site opening (and an hour later on a Sunday). For most landfills, the hour before the facility opens and then the first open hour are the busiest (i.e. 7 am - 9 am). This is based on general site experience as many waste delivery vehicles are filled the day before and discharge to the landfill when it opens the next morning;

(b) with background week traffic on the road network generally being higher between 7 am - 8 am, this was designated as the morning peak period, and

(c) the proposed landfill at Smooth Hill is expected to be in operation 7 days a week.

22 Site management and operation staff on site are estimated to be between 6-10 personnel. Eight personnel have been assumed to arrive by car in the morning peak time (7 am - 8 am).

23 Assessment of the likely heavy vehicle movements on any particular day indicates a daily average of 10 waste deliveries per day, plus 5 to 8 heavy vehicles per day associated with leachate and water delivery/removal. In practice, the total number of heavy vehicles may fluctuate across any given day due to seasonality or operational requirements and it has been assumed truck movements could be up to approximately 25 per day.

24 It has been assumed that 10 of these 25 vehicles will arrive during the AM Peak (7am - 9am). The balance of the vehicle movements will then occur throughout the balance of the day.

25 Total AM Peak demand arising from the project has therefore been assumed as 10 heavy vehicles and 8 light vehicles arriving and 6 heavy vehicles departing, during the AM peak as landfill traffic, all via McLaren Gully Road and SH1.

26 When modelled using traffic engineering software SIDRA, turning movements from the state highway operate with an acceptable level of service (LOS), i.e. between LOS A and LOS B. However, the right turn from McLaren Gully Road is expected to degrade over time and fall below an acceptable LOS around the year 2040 for the existing intersection arrangement, i.e. LOS E is reached. This is without any improvements.

SH1/McLaren Gully Road intersection improvement.

27 As the LOS on the McLaren Gully Road approach to the intersection is anticipated to be below acceptable levels in the future, in addition to a lighting assessment undertaken, and following consultation with Waka Kotahi, upgrades to the existing SH1/McLaren Gully Road junction are proposed.

28 These will include:

(a) flag lighting;

(b) 3.5 m wide right turn bay with 180 m taper, into McLaren Gully Road;

(c) 3.5 m wide auxiliary left turn in lane with 180 m deceleration taper and painted separator, into McLaren Gully Road; and

(d) localised shoulder widening for right turn out movement from McLaren Gully Road.

29 These improvements are primarily to address perceived and anticipated road safety concerns associated with increased demand on this intersection. These perceived road safety concerns at the intersection, should there not be improvements, are likely to be exacerbated during use by logging or similar operations. While non-landfill related road use is not a driver for the improvements, the improvements themselves will assist the intersection safety and efficiency for non-landfill associated activities.

30 There are secondary benefits associated with intersection efficiency and capacity. In recognition that this stretch of SH1 is used informally for passing, the auxiliary slip lane is required to provide improved driver visibility to and from McLaren Gully Road. Drawing C601 (Application Appendix 4 – Concept Design Plans – Part D) shows the proposed intersection upgrade.

31 Upgrades for both the SH1 junction and McLaren Gully Road/Big Stone Road will be completed as part of the site establishment ahead of operational waste disposal.

Big Stone Road and McLaren Gully Road improvement

32 The proposed upgrades to McLaren Gully Road and Big Stone Road as far as the site entrance are shown on Drawings C601 through C612 (Application Appendix 4 – Concept Design Plans).

33 The roads in their current arrangement have substandard geometry, particularly width and visibility, to safely accommodate two-way traffic. These issues will be exacerbated with the increased traffic demands arising from the routine operation of the landfill including increased usage by heavy commercial vehicles. To mitigate any transport related adverse effects, proposed works to address these issues include widening, re-grading and sealing of the road to the site entrance.

34 The upgrades are based on, and are generally in accordance with, Dunedin City Council's Code of Subdivision and Development 2010 as follows:

(a) vertical gradients limited to 10%;

(b) cross-fall – typical 3%, with a maximum of 8% superelevation around curves where necessary;

(c) lane width – 3.5 m x 2 sealed lanes, with widening to accommodate design vehicle swept paths;

(d) shoulder width – 0.25 m sealed plus 0.25 m unsealed;

(e) shoulders being swales with a 5H:1V roadside slope, 1 m base and 4H:1V boundary side slope;

(f) cut face slope to be 1H:5V beyond swale, based on observed cut faces and desktop review of geotechnical conditions;

(g) embankments slopes at 1V:2H; and

(h) design vehicle – HMPV truck (equivalent to B Double).

35 The design presented on Drawings C601 to C612 has undergone several iterations. The proposed design had been updated to avoid to the extent practicable wetlands identified along the margins of McLaren Gully Road and Big Stone Road. The design as shown on the drawings indicated an impact on existing wetlands (16.5 m^2 of wetlands compared to original designs which impacted 0.53 ha hectares of wetlands). This has been achieved through localised narrowing of the road cross-section (elimination of swales) potentially requiring localised mini-retaining structures and safety or sight barriers at the pavement edge. Swales immediately uphill of the wetland roadside extent, will discharge into the wetlands. The carriageway width is not compromised, however having barriers at the road edge has the visual effect of narrower road. These will be over short lengths only.

36 Since completing the design described above in my evidence I have been asked to review the design again with the intent of avoiding all identified wetlands.

37 In order to avoid the remaining 16.5 m^2 of wetlands, it is proposed to avoid the majority in their entirety by either localized adjustment (lateral adjustment of up to 1m) of the road alignment within the proposed corridor, adjustment to the road height locally, or by the installation of retaining at the road edge.

38 For locations where retaining structures such as low walls or gabions are required, this will require the use of edge protection (safety barriers) which may result in losing between 0.5 m and 1 m of carriageway width if unable to achieve a corresponding lateral shift of the road alignment.

39 The resultant carriageway width would be a minimum of 6.25 m sealed with narrow sealed or unsealed shoulders of up to 0.5 m each side, being the setback from lane edge to the face of the barrier. Figure 1 below shows how this could be achieved, with plans, and accompanying Road Safety Audit, provided to the Road Controlling Authority for acceptance during the detailed design. We are confident these adjustments can be made without unduly compromising the road safety.

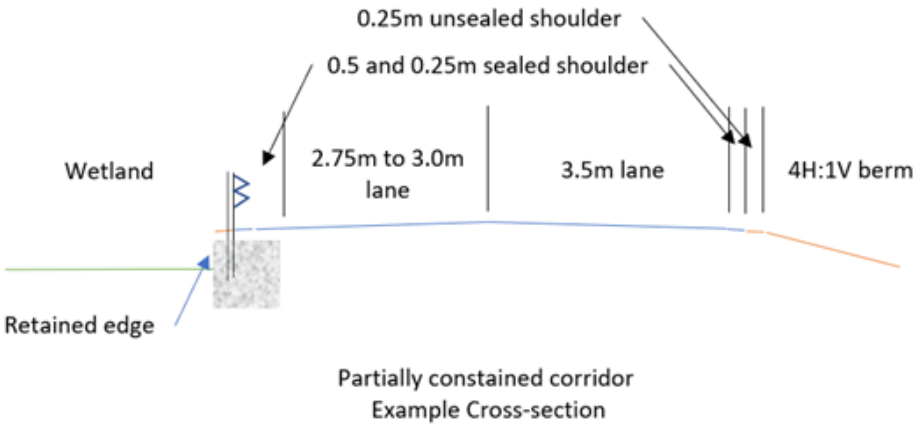

Figure 1

40 At circa chainage 3120 on drawing 12506381-01-C607, (see Figure 2 and 3 for location) the existing wetland extends into the proposed carriageway by approximately 1 m with an estimated total area of approximately ~7 m^2. To avoid this wetland, noting the alignment is also constrained by the wetland on the opposite side of the road, it may be necessary to retain the road edge on one side with corresponding safety barrier, and construct the other side with a formed channel, such as a concrete dish against the wetland edge resulting in a potential residual carriageway width of 5.25 m plus 0.5 m to face of barrier and kerb edge. Figures 4 and 5 show a sketch of the current arrangement and how this might be adjusted to avoid the wetland.

Figure 2

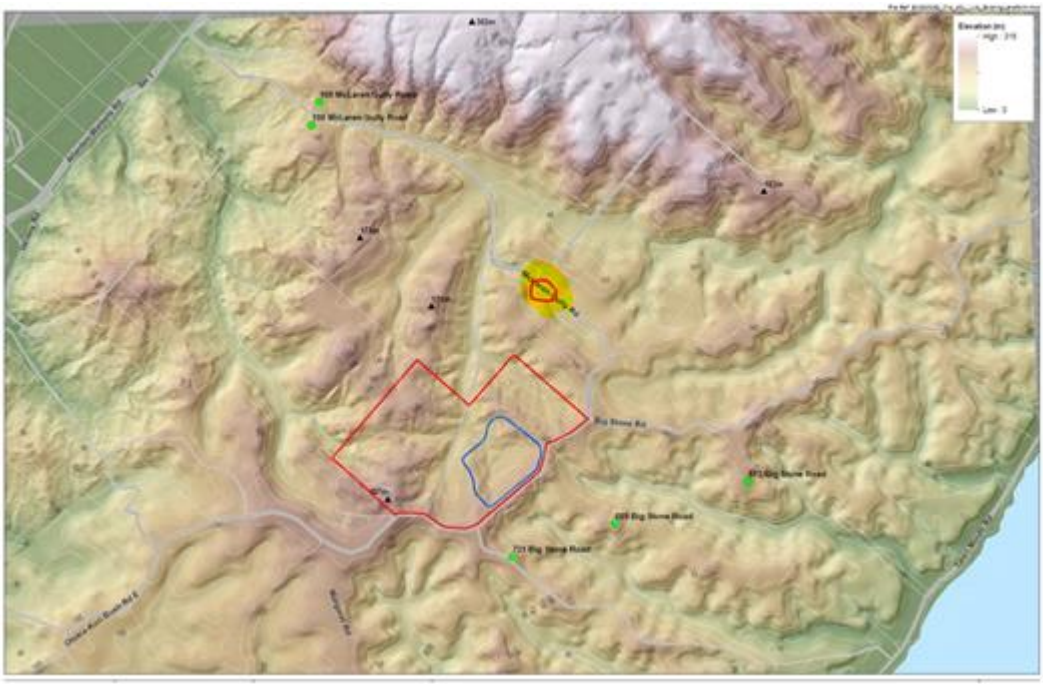

Figure 3

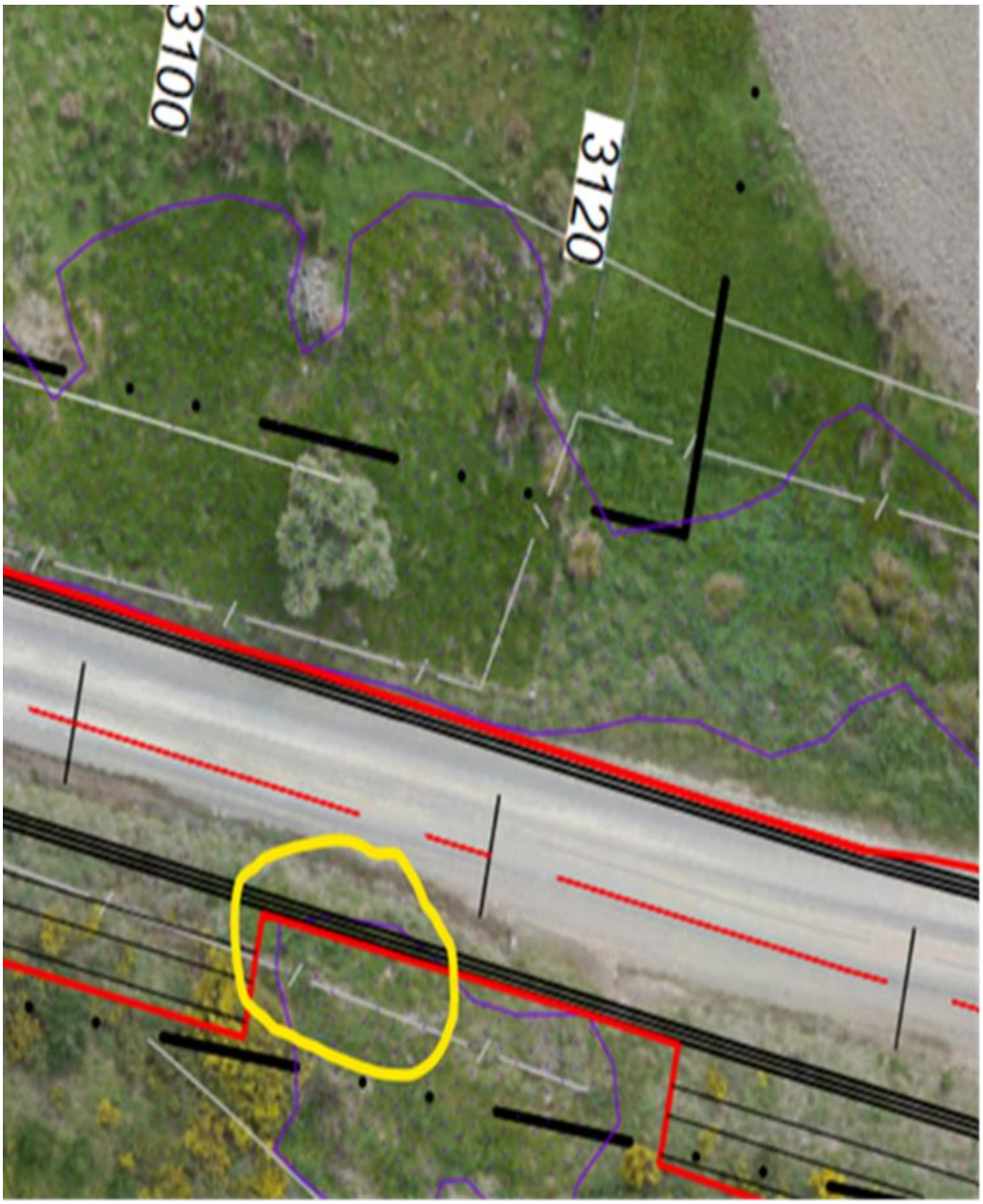

Figure 4 Current design with indicative area of lost wetland

Figure 5 Conceptual sketch of proposed revised design

41 Without mitigation this is potentially an unsafe arrangement should opposing truck and trailer units, with standard widths of up to 2.4 m, be passing at this location at the same time. This scenario has equal or greater concerns where cyclists, equestrians or other users are within the constrained length when a vehicle passes through it. This will include leading and tail lengths to the safety barrier, making it potentially 50 m+ in length. With roadside barriers there is little to no opportunity to find refuge for these users prior to a vehicle passing through. It is probable this will result in the design without further mitigation at this location being raised as a serious or significant concern during a future Road Safety Audit which will be completed following detailed design.

42 Mitigations to be considered at detailed design will include: a short section of give-way carriageway, with priority likely to be in the uphill direction; speed restriction; or both; all to be adequately sign posted, taking into account forward visibility and safe stopping distances for Heavy Commercial Vehicles. Further mitigation could be the use of speed restriction and traffic signals should forward visibility and stopping distances be insufficient. These mitigations will be subject to Road Safety Audit to confirm their suitability for the various affected user groups.

43 Drawings C601 to C612 show the following information:

(a) Extent of existing mapped wetlands;

(b) Road reserve and property boundaries;

(c) Road design centre line;

(d) Road edge and swales; and

(e) Where required, boundary extent of proposed earthworks for areas of cut and fill.

44 I have also attached (Attachment 1) the design changes described in paragraphs 35 through 40 of my evidence undertaken to avoid all wetlands associated with the upgrade of McLaren Gully Road. I have included revised Drawings C606 and C607 and a sketch showing the proposed details for Drawing C607.

Proposed conditions

45 I confirm I have read and am in agreement with the proposed conditions

Response to issues in DCC peer review

Logan Copland[1]

46 Mr Copland has expressed substantial agreement with the proposed transport assessment and proposed improvements with respect to the DCC infrastructure, noting his assessment does not include the network controlled by Waka Kotahi and in particular the SH1/McLaren Gully Road intersection.

47 Mr Copland has advised that he considers that the proposed typical cross-section and design parameters as set out in the Integrated Transport Assessment (ITA) are generally appropriate for the anticipated use of these roads, however, he notes that detailed design for these are to be provided prior to construction. I confirm the provision of the detailed design to DCC prior to construction is the applicant's intent.

48 Mr Copland specifically identified that detailed design consideration be given to arrangement of the access to the landfill off Big Stone Road. In particular he expressed the concern that the available sight distance to the northeast is slightly short, at around 125 m, being less than the desirable minimum sight distance of 139 m. I confirm this will be considered, with full details of the detailed design provided to DCC prior to construction. This will also undergo Road Safety Audit prior to construction.

Kirstyn Lindsay[2]

49 Ms Lindsay has requested confirmation of how the applicant will ensure that heavy transport associated with the landfill (both construction and

[1] Mr Logan Copland, Transport Planner DCC.

[2] Kirstyn Lindsay, Resource Management Planner, Southern Planning Solutions Limited on behalf of DCC.

operation) will use the primary access route (SH1 - McLaren Gully Road - Big Stone Road (west of the intersection)) rather than over Big Stone Road from Brighton.

50 The applicant will include within the Landfill Management Plan and Construction Traffic Management Plan (CTMP) requirements that heavy vehicles utilise the SH1-McLaren Gully Road-Big Stone Road access route during both construction and operation, except in emergency situations where access via that route is impassable. Mr Dale's evidence addresses changes to the consent conditions required to ensure this.

51 It is also noted that regardless of these requirements, once improvements are completed to McLaren Gully Road/Big Stone Road, the travel time from Green Island/Dunedin CBD to the landfill site via SH1 will be shorter, with a higher standard of road. It is expected this will encourage the use of the SH1/McLaren Gully Road rather than the slower Brighton Road/Big Stone Road route for heavy vehicles.

Response to matters raised in submissions

Brighton Pony Club

52 The Brighton Pony Club has expressed concern about effects on safety and horse-riding opportunities for its members arising from increased traffic numbers, advising that many members ride up Big Stone Road and use the forestry blocks on either side of the road for horse-riding.

53 The affected length of Big Stone Road is approximately 350 m from its intersection with McLaren Gully Road to the landfill entrance. The geometry of this length will be improved (widened), with the affected length having straight to slight bends, resulting in good visibility through this length. There are no additional specific provisions proposed beyond the carriageway upgrade.

A & M Granger – 731 Big Stone Road (opposite application site)

54 The submitters have requested that McLaren Gully Road and Big Stone Road be sealed up to 731 Big Stone Road. They consider it is more likely that private contractors will take Big Stone Road to access the landfill and have noted heavy vehicles drive straddling the centreline causing a hazard to oncoming traffic, as experienced with logging trucks.

55 The proposal is to seal McLaren Gully Road and Big Stone Road from SH1 to the entrance to the landfill. The proposed improvements including minimum lane widths of 3.5 m plus 0.25 m sealed shoulder, result in a

minimum 7.5 m sealed width (except in short stretches to avoid roadside wetlands). There will be localised widening at bends to allow for heavy vehicles (truck and trailers) to remain within lane.

56 The noted experience of heavy vehicles, and in particular logging trucks, straddling the centreline causing a hazard to oncoming traffic, pertains to the existing un-delineated and narrower gravel road and will be mitigated through the road improvements.

57 731 Big Stone Road is approximately 750 m south of the entrance to the Landfill and beyond the junction with McLaren Gully Road. As described earlier in my evidence, except during emergency situations where access is blocked, all DCC waste disposal and commercial waste disposal will be directed to enter from SH1 via McLaren Gully Road and the short length of Big Stone Gully Road north of the Landfill entrance. It is not anticipated there will be demand for waste disposal from south of the Landfill entrance on Big Stone Road. Therefore, I do not consider it necessary to extend the sealing 731 Big Stone Road to mitigate the impact arising from the landfill development.

S Hart – 291 Big Stone Road (2.5km east of site)

58 The submitter has advised the affected roads are used very frequently by cyclists, walkers, horse riders, motor cyclists, dog walkers, hunters, and the Otago motor rally. They have opined any changes would put an end to these activities.

59 The submitter has similarly expressed concern with respect to the following:

(a) safety of the SH1 intersection, describing it as a known serious harm accident site, being exacerbated with increased traffic demands and turning movements;

(b) the potential for DCC to take rubbish from other areas, thus increasing the truck movements further; and

(c) the potential use of Brighton Road and Big Stone Road as a secondary route having greater than anticipated use should the McLaren Gully Road and SH1 intersection prove to be too hazardous, with any extra use of the secondary route severely impacting on the safety, enjoyment, and wellbeing of those who live there, and those who use that route, and the amenities along the way.

60 I am unable to comment on the impact on the demand by the listed users, (being cyclists, walkers, horse riders, motor cyclists, dog walkers, hunters,

and the Otago Motor Rally) on affected roads once proposed improvements are implemented.

61 I consider the planned improvements will be able to safely accommodate cyclists, walkers, motor cyclists, dog walkers, hunters and the Otago motor rally, noting the Otago Motor Rally typically utilises unsealed roads, with these roads now being sealed.

62 I consider the planned improvements will allow sufficient space to accommodate horse riders, the safety of which will be influenced primarily by driver behaviour rather than an engineered solution. I do note however that the provision of a wider carriageway with shoulder plus swales to both sides provides for increased separation for equestrians and traffic from the existing situation.

63 The submitter has described the SH1/McLaren Gully Road intersection as a 'known serious harm accident site'. The accident history (from CAS) at the site does not support this, however I acknowledge that there are often unreported accidents that locals may have a heightened awareness of. Also, the intersection in its current geometric arrangement is not conducive to safely accommodating increased movements, hence the proposed intersection safety improvements described earlier. These will be designed, including pre and post construction Road Safety Audits, to the Waka Kotahi standards and requirements as has been agreed.

64 I am unable to comment on the potential for DCC taking rubbish from other areas. I consider the concern for the potential use of Brighton Road and Big Stone Road as a busy secondary route, arising from the McLaren Gully Road/SH1 intersection proving to be too hazardous, is substantially mitigated with the proposed improvements to McLaren Gully Road and the SH1 intersection. Furthermore, heavy traffic will be required to use the SH1/McLaren Gully Road route as discussed earlier in my evidence.

P L Hasler, Cycling Otago

65 The submitter disagreed with the statement in the ITA '*There are no explicit provisions for walking or cycling on the surrounding roads. McLaren Gully Road and Big Stone Road are predominantly used by logging trucks, and therefore, walking and cycling on these rural roads is not encouraged*.'

66 The submitter advised that Big Stone Road and McLaren Gully Road are very popular with off road cyclists, and regularly used, including for Brevet events (i.e. Tuatara 1000).

67 The submitter has opined that:

(a) having a gravel road network linking the Brighton and Taieri regions is a significant recreational asset for Dunedin;

(b) the proposed roading infrastructure changes would ruin this asset by sealing the roads with their subsequent use by rubbish trucks/associated vehicles; and

(c) given the rarity of local gravel roads, and in an area of significant landscape importance and value, the proposed changes would represent a major loss to the growing Dunedin / Otago cycling community.

68 The statement '*There are no explicit provisions for walking or cycling on the surrounding roads*' pertained specifically to there being no specific cycle or walking facilities provided, which are traditionally seen as 'encouraging' use. I acknowledge the existing unsealed carriageway has a recreational use and demand from non-motorised users.

69 I consider the planned improvements will be able to safely accommodate recreational users, acknowledging the change from unsealed to sealed carriageway.

P L Hasler, Cycling Otago

70 The submitter has raised the concern that there is nothing to stop contractors using Brighton Road and Big Stone Road as a preferred route once the landfill is operational. Their specific concerns arise from the following:

(a) Brighton Road is an extremely popular road for cyclists. At present, there is almost no trucking activity on this road, meaning that it is generally safer to use than other areas;

(b) there are several cycling, running, and multi-sport events which use Brighton Road and the Taieri Mouth area. Regular use by rubbish trucks would significantly increase the site traffic management risk and potentially affect the ability for organisers to hold events; and

(c) the increased danger to everyday recreational users such as cyclists, pedestrians, and surfers using Brighton Road and lay-bys, etc. would be significant if large scale rubbish truck activity became normalised.

71 The submitter has suggested that if the consent is granted, there needs to be conditions enforced on the use of Brighton Road as a transport link for landfill trucks and associated vehicles.

72 The DCC in operating the landfill and contracting the transport of waste are able to stipulate routes that contactors take. The stipulated route will be via SH1, and McLaren Gully Road. Heavy trucks should be required to take this route.

73 As noted earlier in my evidence, for private contractors, the majority will be coming from Green Island or further north, or from Fairfield/Taieri. It is envisaged the preferred route for these would be via SH1 and McLaren Gully Road being a high standard sealed route. The SH1 route is approximately 5km longer, however given the higher standard of road, it has the same predicted travel time. Once improvements to McLaren Gully Road are implemented, it is anticipated the SH1/McLaren Gully Road route will be the quicker and more desirable route.

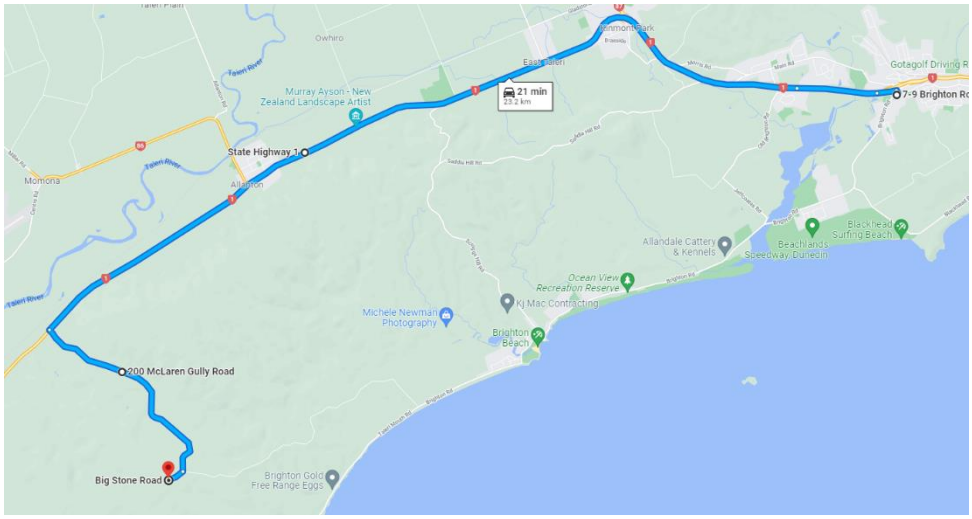

Figure 6 Green Island to Smooth Hill via SH1

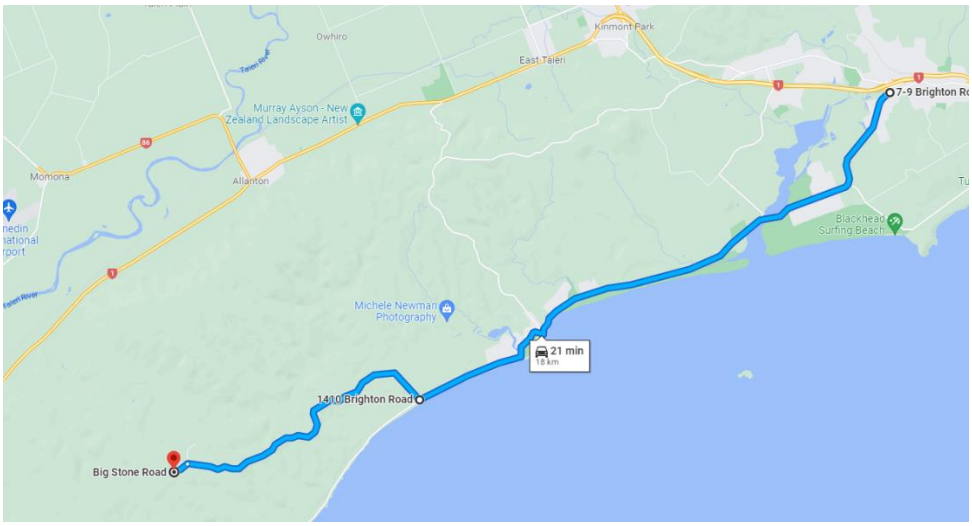

Figure 7 Green Island to Smooth Hill via Brighton Road

74 As such it is not anticipated Brighton Road would be utilised to an extent of significance, which alleviates the concerns of the Submitter. Nevertheless,

heavy traffic will be required to use the SH1/McLaren Gully Road route as discussed earlier in my evidence.

G & E McLeod (immediate neighbour to the northeast)

75 The submitter has expressed concerns with respect to the increase in traffic on local roads having a likely negative effect on stock due to frequent disturbance and creating a greater hazard when using roads to move stock.

76 I am unable to comment on the effects of increased traffic on stock, although I do not consider the forecast traffic movements to be disproportionate to many rural roads which pass through or adjacent to grazed land.

77 The safe movement of stock on a public road is the responsibility of the person(s) moving the stock, with suggested minimum standards to achieve safe movement being suggested within the Code of Practice for Temporary Traffic Management (CoPTTM), and in particular Section I-5 Stock Droving, which states:

> '(5) A person moving untethered animals from place to place along or across a road must exercise due care towards other road users, and must ensure that any disruption to traffic is minimised.'[3]

78 The hazards associated with stock movements are not considered to be measurably greater with routine, albeit not continuous traffic movement, as will occur from the proposed landfill, than occasional or infrequent traffic as occurs currently. I consider having somewhat more frequent traffic may improve the adoption of safe practice, as opposed to relying on being unlikely to encounter traffic. Additionally the greater available width of the improved road corridor may allow for improved management of traffic and stock movement.

A McMillan – 291 Big Stone Road (2.5km east of site)

79 The submitter has advised they consider the turn off from State Highway 1 to McLaren Gully Road to be a 'known high risk crash site with the current crash rate', let alone when trucks are frequently turning up the road.

80 The submitter has also requested truck movements meet NZTA requirements.

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[3] Land Transport (Road User) Rule 2004 SR 2004/427 > Pt 11 > r 11.1

81 The accident history (from CAS) at the site does not support this, however I acknowledge that there are often unreported accidents that locals may have a heightened awareness of. Also, the intersection in its current geometric arrangement is not conducive to safely accommodating increased movements, hence the proposed intersection safety improvements described earlier. These will be designed, including pre and post construction Road Safety Audits to the Waka Kotahi standards and requirements as has been agreed.

82 The intersection improvements will be designed to Waka Kotahi's requirements, with consideration given to the turning demands arising from predicted heavy vehicle movements

Waka Kotahi New Zealand Transport Agency

83 Waka Kotahi has advised of support for the proposed SH1 intersection upgrades and considers it important that the final design is to an acceptable standard including the lengths of the right turn taper, left turn acceleration lane, and management of stormwater from McLaren Gully Road in the vicinity of the intersection. Waka Kotahi requests conditions and advice notes be included as part of the consent as set out in its submission. These conditions are addressed in Mr Dale's evidence.

Andrew Whaley

29 April 2022

ATTACHMENT 1 – Revised Drawings and Sketch

PROPOSED ROAD IMPROVEMENT CORRIDOR

SCALE 1:500

LEGEND:

- PROPERTY BOUNDARY
- EXISTING FENCE
- INDICATIVE CENTERLINE
- EXTENT OF EARTHWORKS (1m BEYOND DESIGN)
- CARRIAGEWAY
- SWALE
- WETLANDS

PROPOSED ROAD IMPROVEMENT CORRIDOR

SCALE 1:500

FOR CONSENT

NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
3	RE-ISSUE FOR CONSENT - AVOIDING WETLANDS	RG	NE*	SD*	07.04.22
2	RE-ISSUE FOR CONSENT	RG	NE*	SD*	21.05.21
1	FOR CONSENT	SLP	NE*	SD*	14.08.20

Note: * indicates signatures on original issue of drawing or last revision of drawing

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti

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DO NOT SCALE

Drawn	S. LE PAGE	Designer	S. LE PAGE
Drafting Check	G. DOUGHERTY*	Design Check	A. WHALEY*
Approved (Project Director)	S. DOUGLASS*		
Date	14.08.2020		
Scale	1:500	This Drawing must not be used for Construction unless signed as Approved	

Client: DUNEDIN CITY COUNCIL
Project: SMOOTH HILL LANDFILL
Title: MCLARENS GULLY ROAD IMPROVEMENTS PLAN

Original Size: A1

Drawing No: 12506381-01-C606

Rev: 3

Plot Date: 7 April 2022 - 10:26 AM Plotted by: Rey Emmanuel Geronimo Cad File No: C:\12d\SW\data\P-00-12D-001\51-12506381 - Smooth Hill Landfill_293\CADD\Drawings\51-12506381-01-C602_C610.dwg

PROPOSED ROAD IMPROVEMENT CORRIDOR

SCALE 1:500

PROPOSED ROAD IMPROVEMENT CORRIDOR

SCALE 1:500

LEGEND:

- PROPERTY BOUNDARY
- EXISTING FENCE
- INDICATIVE CENTERLINE
- EXTENT OF EARTHWORKS (1m BEYOND DESIGN)
- CARRIAGEWAY
- SWALE
- WETLANDS

FOR CONSENT

NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
3	RE-ISSUE FOR CONSENT - AVOIDING WETLANDS	RG	NE*	SD*	07.04.22
2	RE-ISSUE FOR CONSENT	RG	NE*	SD*	21.05.21
1	FOR CONSENT	SLP	NE*	SD*	14.08.20

Note: * indicates signatures on original issue of drawing or last revision of drawing

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

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Drawn	S. LE PAGE	Designer	S. LE PAGE
Drafting Check	G. DOUGHERTY*	Design Check	A. WHALEY*
Approved (Project Director)	S. DOUGLASS*		
Date	14.08.2020		
Scale	1:500	This Drawing must not be used for Construction unless signed as Approved	

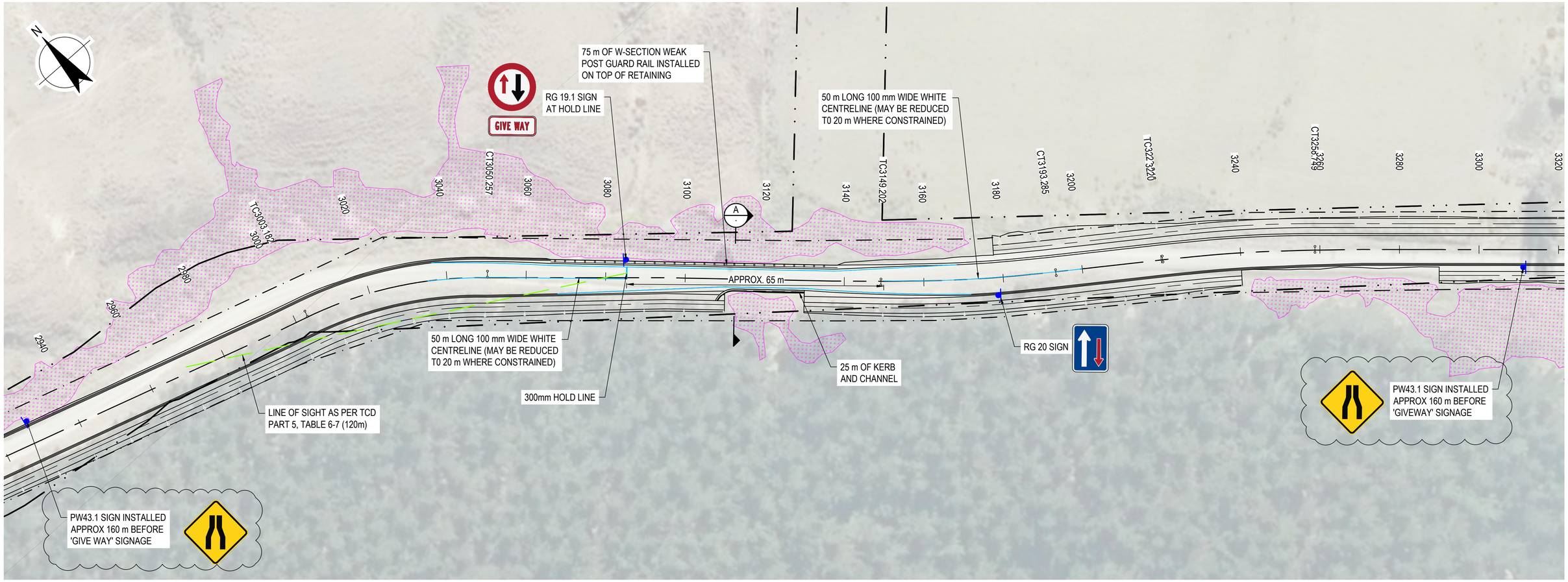
Client DUNEDIN CITY COUNCIL
Project SMOOTH HILL LANDFILL
Title MCLARENS GULLY ROAD IMPROVEMENTS PLAN

Original Size A1

Drawing No: 12506381-01-C607

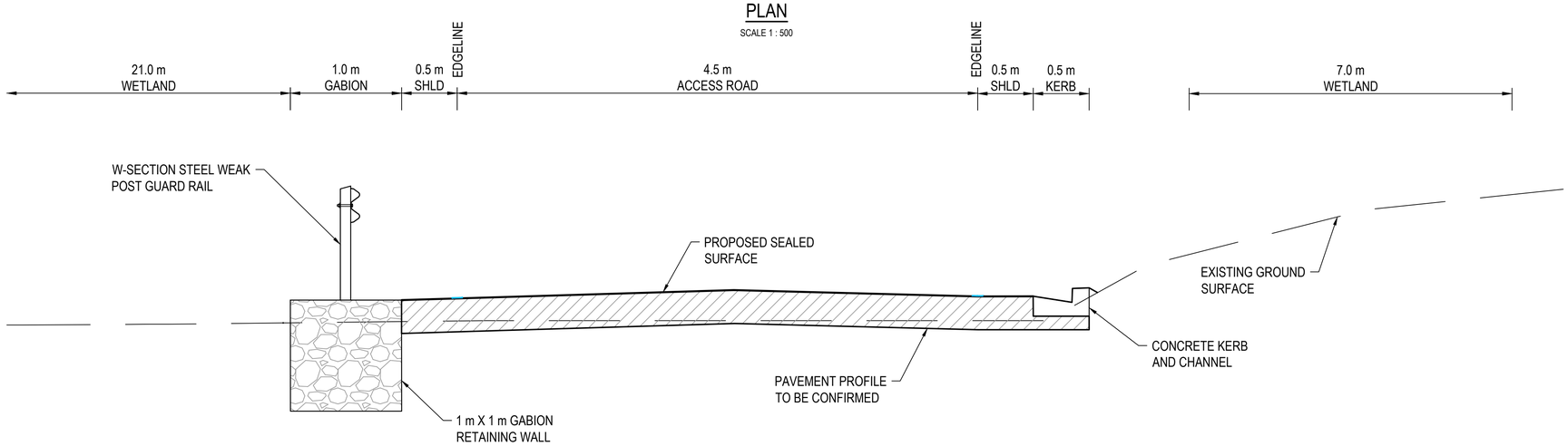
Rev: 3

Plot Date: 7 April 2022 - 10:26 AM Plotted by: Rey Emmanuel Geronimo Cad File No: C:\12d\SW\data\P-00-12D-001\51-12506381 - Smooth Hill Landfill_293\CADD\Drawings\51-12506381-01-C602_C610.dwg



PLAN

SCALE 1 : 500



A SECTION

SCALE 1 : 25

LEGEND EXISTING:

- PROPERTY BOUNDARY
- WETLANDS

LEGEND PROPOSED:

- CONTROL LINE AND CHAINAGE (3100)
- NEW 100mm WIDE EDGE LINE
- NEW 300mm WIDE LIMIT LINE
- KERB AND CHANNEL
- BARRIER
- SIGN

Rev	Description	Checked	Approved	Date
B	UPDATED LEADERS FOR ADVANCED SIGNAGE	NE*	SD*	26.04.22
A	FOR CONSENT	NE*	SD*	07.04.22

Author R. GERONIMO **Drafting Check** G. DOUGHERTY*
Designer J. NEEDHAM **Design Check** A. WHALEY*

0 0.25 0.5 0.75 1.0 1.25m
SCALE 1:25 AT ORIGINAL SIZE

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

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Project No. 12506381

Client DUNEDIN CITY COUNCIL
Project SMOOTH HILL LANDFILL
Status PRELIMINARY Status Code S2

Drawing Title MCLARENS GULLY ROAD CONSTRAINED SECTION PLAN AND DETAILS

Size A1
Drawing No. 12506381-SK720
Rev B

Plot Date: 26 April 2022 - 10:02 am Plotted by: Jack Needham
File Name: C:\12d\SW\data\P-00-12D-001\51-12506381 - Smooth Hill Landfill_293\CADD\Drawings\51-12506381-SK720.dwg