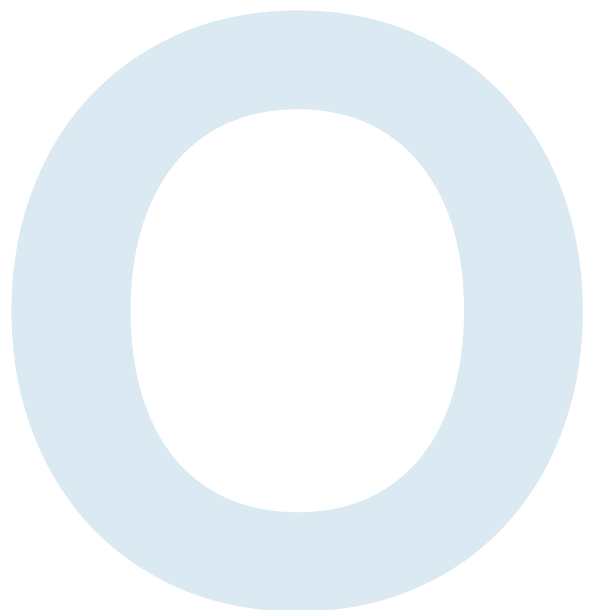


Technical Report O

Traffic Assessment



WM New Zealand

Redvale Landfill Expansion Transportation Assessment

July 2026

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1 Executive Summary

This Transportation Assessment report has been prepared by Don McKenzie Consulting Ltd on behalf of WM New Zealand and addresses the transportation related effects of a proposal to continue sending residual waste to the Redvale Landfill, beyond the existing consent limit of December 2028.

The Redvale Landfill site lies on the northern side of Dairy Flat Highway at Dairy Flat. It is accessed via a high-standard, rural tee-intersection equipped with a formal right turning bay for movements into the Landfill Access Road from the east, and a dedicated left turn slip-lane for entry movements from the west. A number of previous transport assessments have been prepared relating to both the establishment of the Redvale Landfill (with the landfill having been operational since 1993) as well as a previous assessment prepared in 2013 by transportation consultants TDG on behalf of WM New Zealand for an earlier renewal of the landfill consent.

Redvale Landfill is scheduled to cease accepting waste in December 2028, with the Auckland Regional Landfill (“**ARL**”) at Wayby Valley expected to be ready to accept waste during 2028 and take over from Redvale Landfill at that time. However, due to the delayed project approval process involving Environment Court and High Court appeals, it is now projected that the ARL will not be able to commence accepting waste until the mid-2030’s. Accordingly, the proposal is to continue sending the current residual waste (around 600,000 tonnes per year) to Redvale Landfill, beyond the existing consented limit of December 2028.

A condition of the current consent limits the total number of daily vehicle movements to and from the landfill. This applies to the current operation of the site and its connection to the external transport network and will not be altered through the current consent. WM New Zealand proposes to increase the Redvale Landfill’s waste capacity through a combination of landfill design/extent and operational management changes. There will be no change in the daily maximum vehicle movements provided for within the current consent being a total of 650 vehicle movements per day (inclusive of inbound and outbound). The expected number of construction-related vehicles associated with the expansion of capacity can be accommodated in addition to current waste-related movements, while remaining within the consented daily vehicle numbers.

On the basis of the assessments made previously and updated to reflect the changes in the transport environment and the level of operational activity at the Redvale Landfill site currently, it is concluded that the proposed extension of the Redvale Landfill consent duration will have a negligible transportation effect. Beyond the currently consented limit on waste acceptance in December 2028, the continued operation of the Redvale Landfill will involve trucks and other vehicles continuing to access this site at similar levels and frequencies as they do currently. Since the original establishment of the Landfill, the volume and speed of traffic along Dairy Flat Highway have reduced, and the route’s State Highway status has been revoked. In this way, there is no evidence from the data collected or the assessments arising from it, that traffic volumes on Dairy Flat Highway will approach the



levels that existed when the Redvale Landfill was first consented, at a time when Dairy Flat Highway was one of the primary regional State Highway routes through the North Auckland region (prior to the establishment of the Northern Motorway).

There were found to be no reported crash events over the five-calendar year search period 2021 – 2025 associated with heavy vehicles turning to or from the Landfill, or along Landfill Access Road. There is nothing available from within this current road safety record that points to any repeated or specific factors that would adversely affect the continued good road safety record of Landfill Access Road associated with this application.

It is therefore considered that extending the consented Redvale Landfill operation until 2036, will not give rise any additional transport issues in terms of vehicle access and transport operations on the adjoining and surrounding parts of the North Auckland road network.

This assessment has found that the Landfill-generated traffic accounts for only a small proportion (5-8%) of total traffic carried by the DFH route, so if the Landfill were to cease operations post-December 2028 as currently required under the existing consents, there will still be notable volumes of traffic (including heavy traffic) passing through the intersection of Landfill Access Road/Dairy Flat Highway and nearby sections of Dairy Flat Highway. Any generated heavy traffic activity movement associated with site closure and remediation works within the Landfill site would be modest.

Beyond December 2028, the continued operation of Redvale Landfill will involve trucks and other vehicles continuing to access this site at similar levels and frequencies as they do currently.

The effect of continuing Landfill operations is likely to be less than minor in terms of the safety and operational effectiveness of the surrounding area including with respect to other activities such as the Dairy Flat School and the other activities along Landfill Access Road. Extending the consented Redvale Landfill operation until 2036 including the additional landfill construction activities and external traffic movements, is therefore not expected to give rise any additional transport issues or effects in terms of vehicle access and transport operations on the adjoining and surrounding parts of the North Auckland road network.

Overall, this assessment has found that Redvale Landfill operates (within the consented maximum daily vehicle movement total) well within the existing transport environment and the Landfill can continue to operate safely and effectively within the context of surrounding transport environment until 2036. Accordingly, there are no specific or general transportation matters that would prevent the consent under the Fast Track Application Act, as sought, from being granted.



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2 BACKGROUND

2.1 Introduction

Don McKenzie Consulting Ltd has been commissioned by WM New Zealand to prepare a Transportation Assessment report to accompany a Resource Consent application in relation to the extended use of Redvale Landfill, Dairy Flat, Auckland ("**Redvale Landfill**"), past the existing date that Redvale is set to cease accepting waste in December 2028. The Landfill is accessed from the surrounding transportation network via Landfill Access Road, which connects to Dairy Flat Highway ("**DFH**"), approximately 5.3km south-west of the SH1 Silverdale Interchange and approximately 10.5km north of the intersection of Albany Highway/Oteha Valley Road.

The Landfill has been operating continuously for over 30 years having originally opened in 1993. Waste is transported via truck to Redvale from transfer stations and commercial waste operations around the Auckland region and does not accept waste directly from members of the public.

The original Resource Consent for the Landfill was issued in 1992 and imposed a condition that limited the total number of truck movements serving the Landfill to 400 per day (inclusive of inbound and outbound movements). At that stage DFH was classified as part of the State Highway 1 ("**SH1**") national transport route serving the needs of both inter- and intra-regional transport (in advance of the construction and opening of the Northern Motorway). At that time, the DFH route carried daily volumes of approximately 12,000 vehicles per day ("**vpd**").

During the 2003 reconsenting of the Landfill, the Landfill Resource Consent was amended to increase the maximum number of truck movements serving the Landfill to 650 truck movements per day (including inbound and outbound movements) as a result of various changes in the strategic roading network serving the Landfill. The SH1 Northern Motorway had been extended as far Silverdale and Grand Drive (opening in December 1999), following which time DFH was re-classified as State Highway 17 ("**SH17**"). As a result of this, the average daily traffic volumes carried by DFH has reduced to approximately 6,000 vpd. The route was then declassified as a State Highway in 2012, returning to a local arterial under the management of Auckland Transport.

The amended maximum truck movement condition continues to apply to current Landfill operations and there is no change sought through the present resource consent application such that the daily limit of 650 truck movements to and from the site per day will continue unchanged.

This report addresses the transport-related issues of the proposed consent application in relation to the following matters:



- A description of the site and the existing transport context including traffic volumes and road safety records for the DFH access;
- A review of historic and recent Landfill traffic generation data.
- An estimation of likely future traffic growth in the area during the renewed consent timeframe.
- An assessment of effects of Landfill related traffic on local transport networks.
- Commentary and assessment against the relevant transportation standards of the Auckland Unitary Plan – Operative in Part (“**AUP**”).

By way of summary, it can be demonstrated that the proposed extension of activities within the Redvale site will integrate readily and safely with the current and planned transport elements in the Dairy Flat location. Based on the operation of the site over the past 30 years including responding to changes associated with the declassification of DFH as part of the State Highway network, the overall scale of the proposed activity is considered to be in keeping with the likely future form and function of the surrounding transport network.

3 Existing Site Location

The Redvale Landfill site comprises approximately 59 ha of engineered landfill ‘footprint’ within operational areas and a buffer zone on approximately 160 ha of land located west of DFH at Dairy Flat. It is located approximately 5km south-west of the SH1 Silverdale Interchange on the Auckland Northern Motorway route between Auckland and Northland, and some 10km north of the Albany Village.

The nearest intersections and arterial/motorway connections to the site include:

- Richards Road/DFH intersection - 550m to the south;
- Horseshoe Bush Road/DFH intersection - 1.6km to the north;
- Kahikatea Flat Road/DFH intersection - 2km to the north;
- Wilks Road/DFH intersection - 2.8km to the north;
- Pine Valley Road/DFH intersection - 4.7km to the north, and
- SH1 Silverdale Interchange – 5km to the north.

Figure 1 shows the location of the Landfill site in relation to the surrounding area. The site is located at Dairy Flat, North Auckland. Access is provided via Landfill Access Road from DFH, which connects to Albany and the Northern Motorway to the south and to Silverdale and the Northern Motorway to the north.

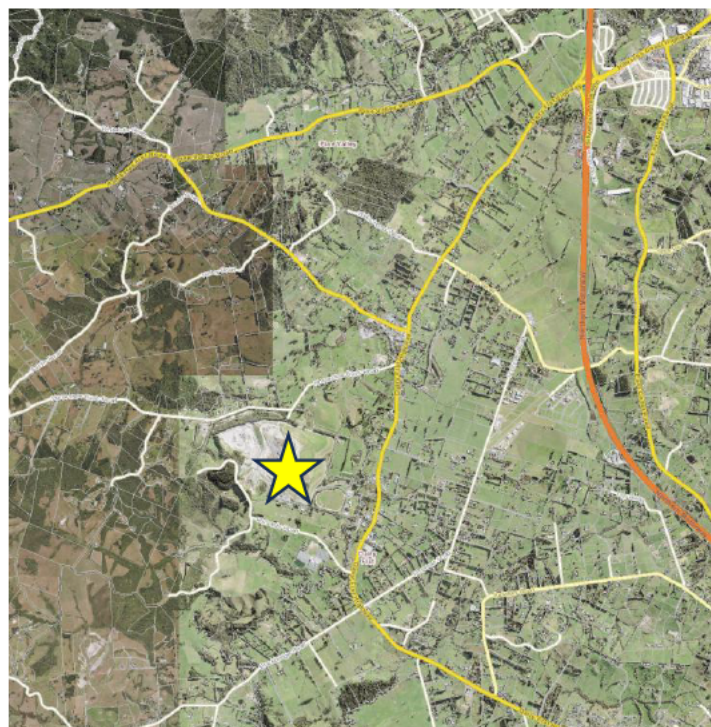


Figure 1: Site Location (Source: Auckland Council GeoMaps)

The Landfill site has legal road frontage to Horseshoe Bush Road along its northern boundary. However, all vehicle access relating to both landfill operational movements and ancillary activities supporting Redvale Landfill occurs via Landfill Access Road – a public road



leading into the site from DFH, managed and maintained by WM New Zealand. It serves the vehicle access needs of Redvale Landfill (and associated ancillary features) and the Dairy Flat Country Club located towards its eastern end.

DFH is a regional arterial route that connects the site to Albany in the south and the State Highway (SH1) Silverdale Motorway Interchange to the north. DFH had previously served as SH1 connecting Auckland to Warkworth/Northland, and once the Northern Motorway was extended northwards to Orewa in 1999/2000, the route was reclassified as SH17 for the period between 1999 until 2012 when the New Zealand Transport Agency | Waka Kotahi (“**NZTA**”) revoked its State Highway status. It is now an arterial route under the control of Auckland Transport.

Dairy Flat School is located approximately 100m south of the intersection of Landfill Access Road on the eastern side of DFH.

Other services in the wider Dairy Flat area include a service station and a group of shops and other services near the Give Way controlled intersection with Kahikatea Flat Road some 2km north of the Landfill.

The Redvale Landfill is therefore well-positioned from a transportation access perspective to maximise connectivity to appropriately classified arterial transport routes within and beyond Dairy Flat. The connections available to other primary routes serving the Auckland region are in the form of high-standard, high-capacity intersections and grade-separated interchanges (along the State Highway network) enabling safe and effective transport movements to and from the wider parts of the Auckland region.



4 Transport Environment

4.1 Network Context

While the site has legal road frontage to Horseshoe Bush Road along its northern boundary, all vehicle access occurs via Landfill Access Road extending from the operational and administration areas towards the south-east of the site. The posted speed limit on Landfill Access Road is 50km/h over the most part with reductions to 30km/h in the vicinity of the WM New Zealand administration offices.

Additional (non-Landfill related) land-uses served by Landfill Access Road include:

- the Dairy Flat Country Club which provides for a range of entertainment and social events to be hosted within the property, as well as on-site bar/bistro facilities. The Club's activities are nominal in terms of traffic activity with any of the larger hosted events typically occurring during weekends, and
- Massimo's Italian Cheeses factory located west of the left-turn slip road entry into Landfill Access Road. It is also understood that the access driveway into the Massimo's site from Landfill Access Road caters for milk tanker deliveries.

DFH has a posted speed limit of 80 km/h from the south of the Horseshoe Bush Road intersection through to a point approximately 500m north of Landfill Access Road, where a 60 km/h limit applies over the next 1.7km through to approximately Jeffs Road, before rising again to 80 km/h for the remainder of the DFH route through to Albany Village.

In addition to these posted speed limits, temporary speed limit signs are located along DFH to the north and south of the Dairy Flat School that introduce a 30 km/h speed limit during morning drop off and afternoon pick up times.

4.2 Network Classifications

Figure 2 presents the setting of the existing land in the context of the surrounding (current) road network for the area surrounding the site at Dairy Flat as defined within the One Network Road Classification ("ONRC") system developed by NZTA and local authorities.

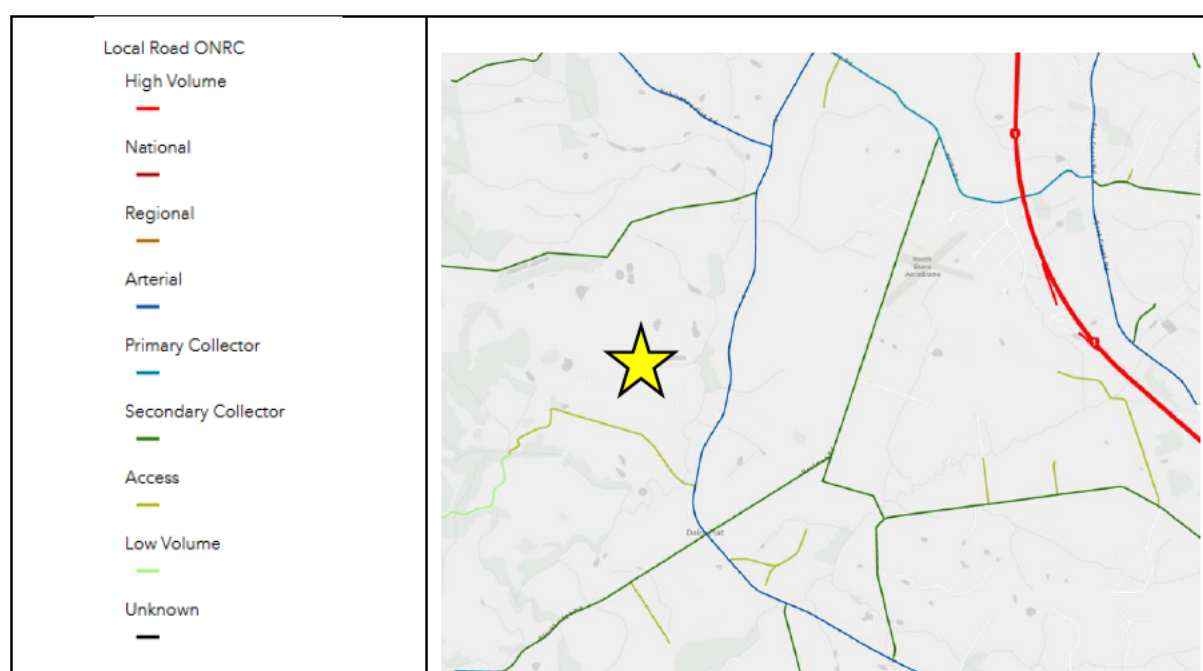


Figure 2: Classified Roding Network (ONRC)

The primary roading network link serving the Landfill and its connections both northwards towards the Silverdale Interchange and southwards towards Dairy Flat/Albany Village is the ONRC¹ classified arterial of DFH. It provides a key intra-regional link providing for both through traffic movement and less-dominant property access functions between Albany and Silverdale. Its primary function is to provide for through-traffic movement between these parts of the North Auckland area, however there are a number of property access points along its length. The access function in relation to the Landfill is in the form of a formalised road intersection (with dedicated turning lanes for both left and right turns into the Landfill), rather than the driveway forms applying to private and other property access connections along the route.

With respect to the ONRC definitions, the Arterial function also applies to Kahikatea Flat Road and Pine Valley Roads to the north, while the SH1 Northern Motorway is classified as a High Volume (and National) road. Other supporting network elements comprised of lesser-hierarchy function (i.e. enabling and expecting to accommodate greater proportions of access function) near the Landfill include Horseshoe Bush Road and Blackbridge Road secondary collector roads.

The Landfill site is well placed with respect to appropriately classified arterial transport routes catering for the longer distance travel typically associated with the waste movement between the region's transfer stations and the Landfill. The connections available from DFH to other routes is generally in the form of high-standard, high-capacity intersections and interchanges enabling effective transport movements to and from the wider parts of the Auckland region via the hierarchy of roads, especially via the SH1 route accessed via both

¹ <https://nzta.maps.arcgis.com/apps/webappviewer/index.html?id=95fad5204ad243c39d84c37701f614b0>

the grade-separated interchanges at Silverdale to the north and Oteha Valley/Greville Road to the south.

4.3 Intersection Geometry

The cross-section of DFH in the vicinity of Landfill Access Road typically consists of one 3.5m wide traffic lane in each direction with sealed shoulders on both sides and separated by a 3.5m wide flush median/right turning bay. A kerbside parking lane is also available along the eastern kerb line of the road for both school parents/caregivers of Dairy Flat School, as well as other casual parking.

The intersection of Landfill Access Road with DFH was upgraded prior to the Landfill commencing operations in order to safely accommodate the expected nature and scale of waste-related truck movements. The intersection provides a dedicated, channelised right-turn bay on DFH, a channelised left-turn slip lane, and the flush median which connects the right turn bays for Landfill Access Road and that associated with the Dairy Flat School intersection.

The following photograph shows the intersection of Landfill Access Road and adjoining section of DFH including the access point into Dairy Flat School.



Figure 3: Dairy Flat Highway near Landfill Access Road
(Source: QGIS, LINZ)

The posted speed limit along DFH is 60 km/h at the intersection of Landfill Access Road and for approximately 500m to the north of the intersection and some 1.2km to the south. The Austroads Guide to Road Design Part 4A (“AUSTROADS Guide”) sets out the required safe intersection sight distance for 60 km/h posted speed limit to be 151m².

The following photos show the view from Landfill Access Road looking north and south (taken from a car driver’s height of 1.15m).



Figure 4: Dairy Flat Highway Intersection (view towards the south)

² Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Edition 3.1, Feb 2021) – Table 3.2, $R_T = 2.0\text{sec}$, assume design speed 70km/h within a 60km/h posted speed limit



Figure 5: Dairy Flat Highway Intersection (view towards the north)

The measured sight distance³ to the north of the Landfill Access Road intersection is a minimum of 200m (a point approximately at the point of the school zone signage and associated red pavement marking) and to the south is over 300m.

Austrroads recommendation in respect of the measurement of Safe Intersection Sight Distance (“**SISD**”) (and Approach Sight Distance (“**ASD**”) relevant for visibility of intersections for vehicles approaching along side roads) is given in Section 3.2.2 of AUSTROADS Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (and its Figure 3.2) for between 3 and 5m back from the lip of a channel (if there is no edgeline or shoulder) or edge line (if there is a shoulder).

In the case of the DFH / Landfill Access Road intersection, the edge of the eastbound traffic lane can be seen in the photograph above as being beyond the yellow limit or Stop line. The recommended point of measurement for the ASD or SISD is therefore a point 5m back from the edge line (and dashed white continuity line outside the yellow limit line) which is a point approximated by the outer edge of the splitter traffic island. This shows that visibility to approaching westbound traffic (needed for vehicles turning right out of Landfill Access Road) is at least 200m. The visibility to the west is confirmed as being in excess of 300m.

Both current sight distances exceed the AUSTROADS guideline recommendation for minimum SISD for the 60km/h posted speed limit (outside the periods when the school speed zone applies) (referenced at Table 3.2 of the AUSTROADS guideline) of 123m.

These available sight distances exceed the minimum standards set out in the Austrroads Guide (and as adopted widely by roading authorities through New Zealand including Auckland Transport), and

³ Truck driver heights are typically in the range of 2 – 2.5m, therefore the measured distances taken from a car driver’s eye height are considered to represent a conservatively (low) level of available sight distance. The sight distance available from the more elevated truck drivers’ eye height will be greater than those measured from the car drivers’ eye height.



are expected to continue to provide safe, appropriate and adequate driver sight distances to and from the Landfill Access Road in support of the Landfill for the period of this consent.

4.4 Traffic Counts

4.4.1 Two-Way Traffic Volumes

A seven-day automatic traffic count was commissioned as part of this transport assessment undertaken at a site just to the north of the Landfill Access Road intersection with DFH. The count data was for a seven-day period between 23 and 29 July 2025, representing a typical period of activity for both the Redvale Landfill and the wider DFH route (including during term time at Dairy Flat School).

The key statistics derived from this count included:

- Weekday (two-way) average daily volume of 8,109 vehicles per day (“**vpd**”), with a seven-day average of 7,338 vpd;
- The weekday average, two-way peak hour volume was determined as 788 vehicles per hour (“**vph**”) in the hour end 5.00pm. During this time, the directional split of traffic along DFH was found to be approximately 67% northbound and 33% southbound;
- The busiest morning peak hour on a weekday was found to occur in the hour ended 9.00am with a two-way volume of 723 vph (with a northbound/southbound split of approximately 47%/53%);
- The two-way volumes on a Saturday generally display a single broad middle of the day peak with a two-way hourly volume of approximately 700 vph in the hour ended 1.00pm.

The pattern of hourly traffic volumes recorded over this period is shown in the following **Figure 6**.

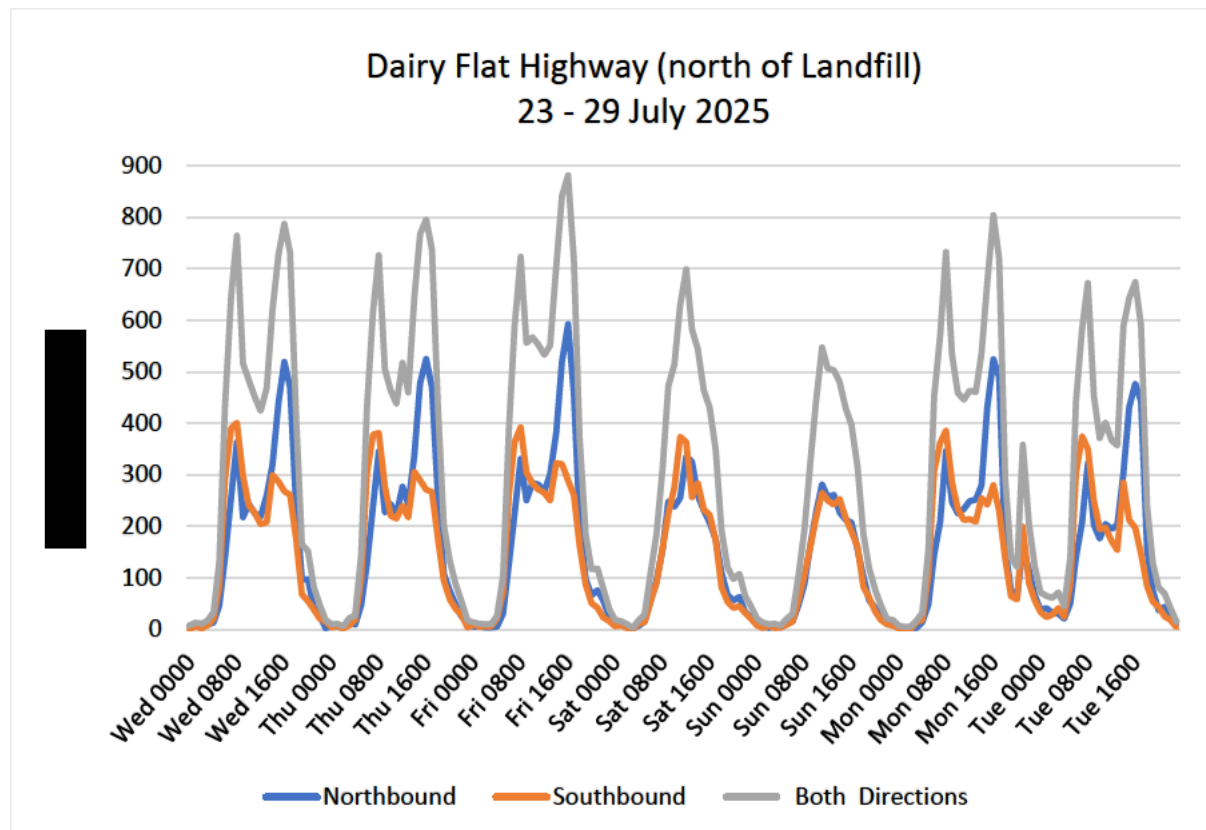


Figure 6: Dairy Flat Highway Hourly Traffic Volume)

Such volumes sit well within the ordinary operating capacity of a rural arterial route such as this (typically in the order of at least 2,500 vph both ways), offering appropriate levels of spare traffic-carrying capacity for future growth. The directional patterns demonstrated in the chart show a directional bias slightly greater southbound flows during the morning peak but more significant northbound flows along DFH during the weekday late afternoon. It is anticipated that these patterns reflect some road users' preferences to adopt the less-congested DFH route rather than the generally busier SH1 Northern Motorway route especially during peak commuting periods.

Further changes to the volumes carried by the transport network surrounding the Landfill are expected to be associated with future growth and developments within the Silverdale West/Dairy Flat area. There are a number of recently approved projects and developments that form part of the environment against which this assessment has been undertaken:

- Private Plan Change 103 to rezone approximately 107ha land at Silverdale West from Future Urban Zone to Business – Light Industry Zone;
- Auckland Transport's Designations 1497 and 1498 for upgrading of the DFH route including provision for a roundabout to be established at the intersection with Landfill Access Road, a new Rapid Transit Network corridor route from SH1 Northern Motorway to Silverdale, and upgrades to the SH1 Silverdale Interchange, and
- Auckland Surf Park Community (Stage 1) – the staged development of a surf park at 1350 DFH, Silverdale, Auckland. Only this first stage of development has been consented, which includes the construction and operation of a surfing lagoon,



restaurant(s), market space, visitor accommodation units (including eco-cabins); a solar farm; a standard data centre, and associated infrastructure, earthworks and landscaping.

These projects have each been supported by various assessments of transportation effects and specific consideration of traffic impact along DFH – the most comprehensive of which accompanied the Supporting Growth Alliance’s Notices of Requirement for Designations 1497 and 1498. Those assessments predicted via regional transport modelling, that DFH (Wilks Road and Richards Road) with the various proposed future roading projects in place (such as widening of the DFH to the north of the Redvale Landfill, upgrades to the SH1 Silverdale Interchange and the proposed future Northern Busway extension to the west of SH1), would be carrying approximately 15,700 vpd by 2048. This represents a growth of approximately 6,600 vpd (or +72%) compared with the current daily volume along DFH north of Redvale Landfill.

The growth of the surrounding area led Supporting Growth Alliance (an alliance between Auckland Transport and NZTA) to make provision via Notice of Requirements for the creation of a dedicated Rapid Transit Network (“RTN”) busway (that has yet to be confirmed), and the upgrades to the DFH route corridor including an upgrade to the Landfill Access Road intersection in the form of a roundabout (confirmed via Designations 1497 and 1498). At this time however, it is understood that there is no funding commitment on the part of NZTA or Auckland Transport for these projects to be either designed or constructed. It is anticipated that their delivery (and associated changes to traffic volumes and patterns along DFH and at the Landfill Access Road intersection) is expected to be at least 10 years away placing them beyond the life of the extension of operations at the Redvale landfill.

4.4.2 Speeds

A seven-day automatic traffic count undertaken in July 2025 also collected speed data for vehicles travelling along DFH. Diagrams indicating the directional travel speeds alongside the equivalent directional hourly traffic volumes across the average weekday during the survey week 23-29 July⁴.

⁴ Note that the bar graph portion of the diagrams indicate the traffic volume and use the vertical axis and scale of vph to the left of the chart, while the speeds are displayed using the line graphs and the right had vertical axis and scale of speeds in km/h.

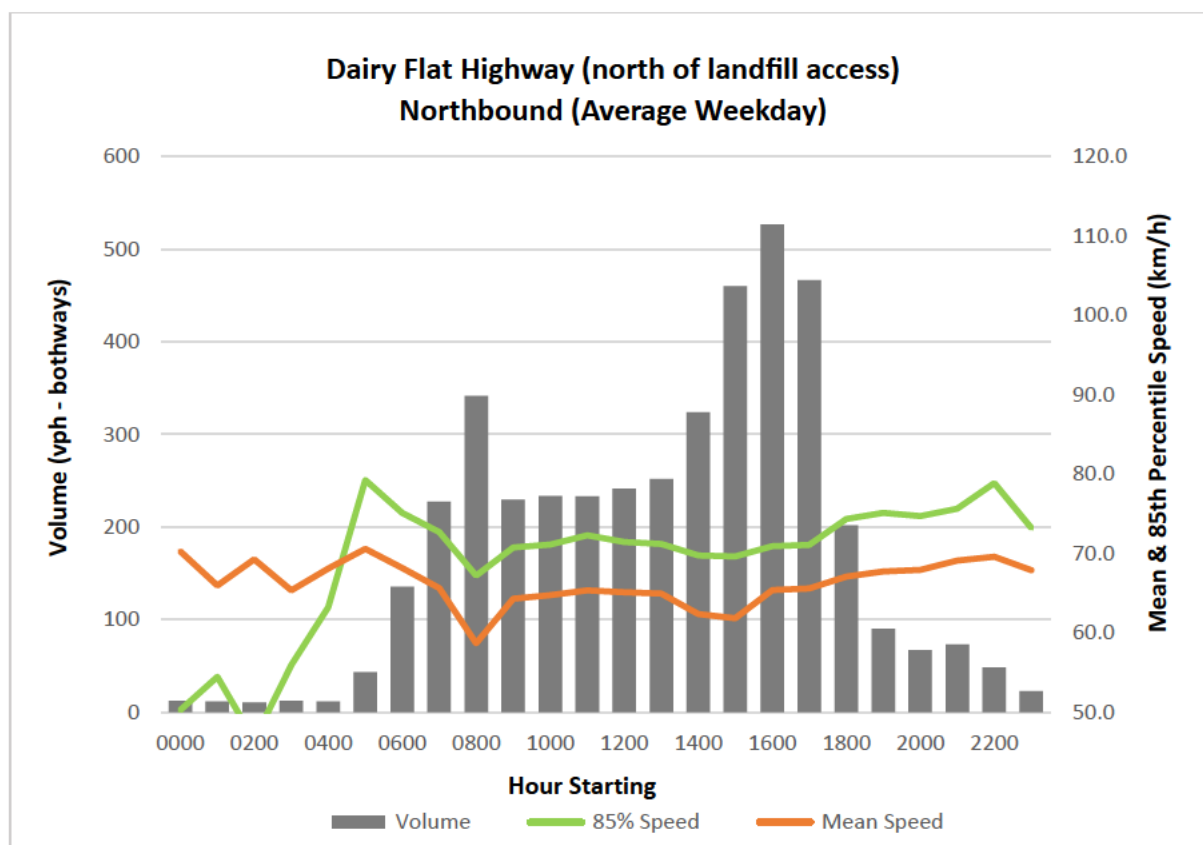


Figure 7: Dairy Flat Highway Northbound Speed and Volume (weekday average)

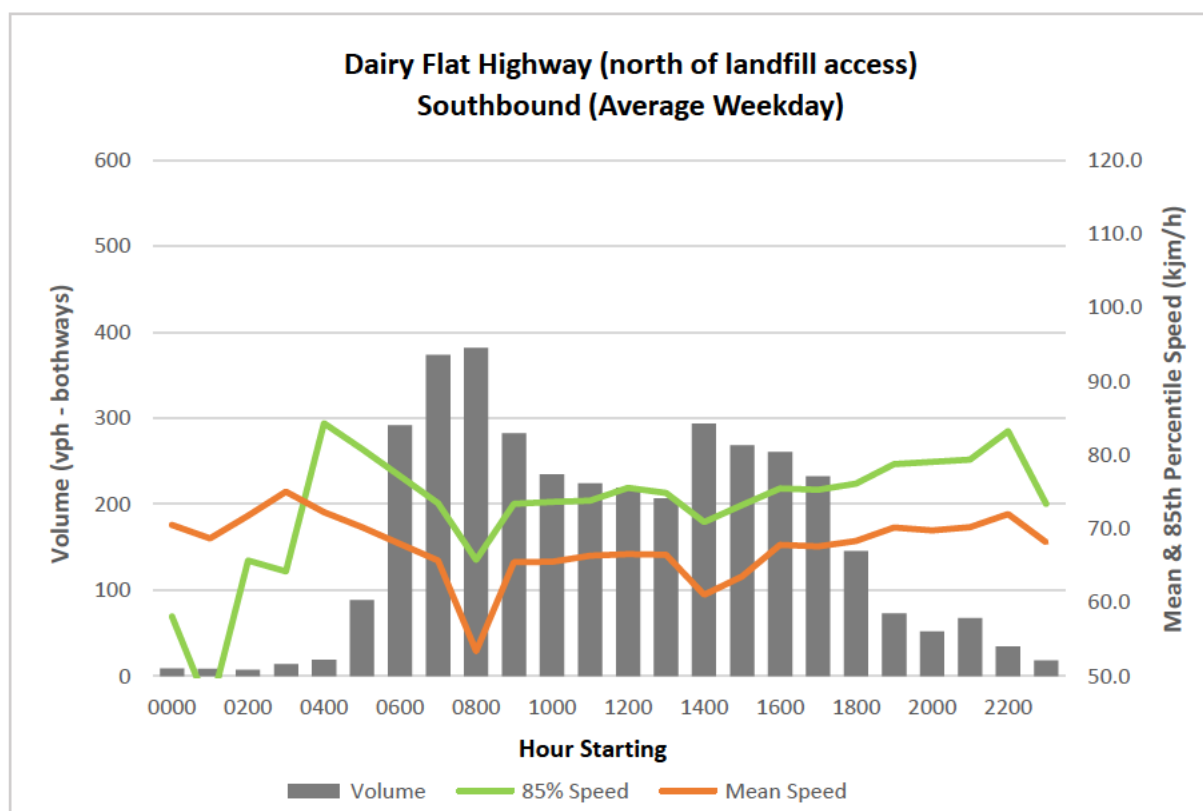


Figure 8: Dairy Flat Highway Southbound Speed and Volume (weekday average)



The charts show that the average or mean travel speeds along the DFH route north of the Landfill Access Road intersection generally sit within the 60 – 70km/h speed band consistent with the posted speed limit of 60km/h through this local area transitioning from the 80km/h posted speed limit to the north of the count location. Evident drops in both average and 85th percentile⁵ speed are seen by the shape of the speed line graphs in each of the weekday hours starting 8.00am and 2.00pm (and to a lesser extent in the hour starting 3.00pm) associated with the temporary school speed limits applying to the pick-up/drop-off periods at Dairy Flat School.

Increases in the speed parameters through the later evening and early morning generally reflect the lower volumes through these periods (typically less than 50vph) and the greater effect of higher speeds within the average and 85th percentile metrics during these periods.

4.5 Redvale Landfill Traffic Generation

Trucks accessing the Landfill are required to be processed via a weighbridge when entering and exiting the landfill. The weighbridge records truck movements and weight of waste material processed. WM New Zealand has supplied the weighbridge data for the full calendar year 2025.

The following diagram presents the total daily truck movements (both ways) across each operational day of the year. The green dotted line indicates the consent limit of 650 truck movement per day.

⁵ 85th percentile speed is the speed exceeded by 15% of the surveyed vehicles

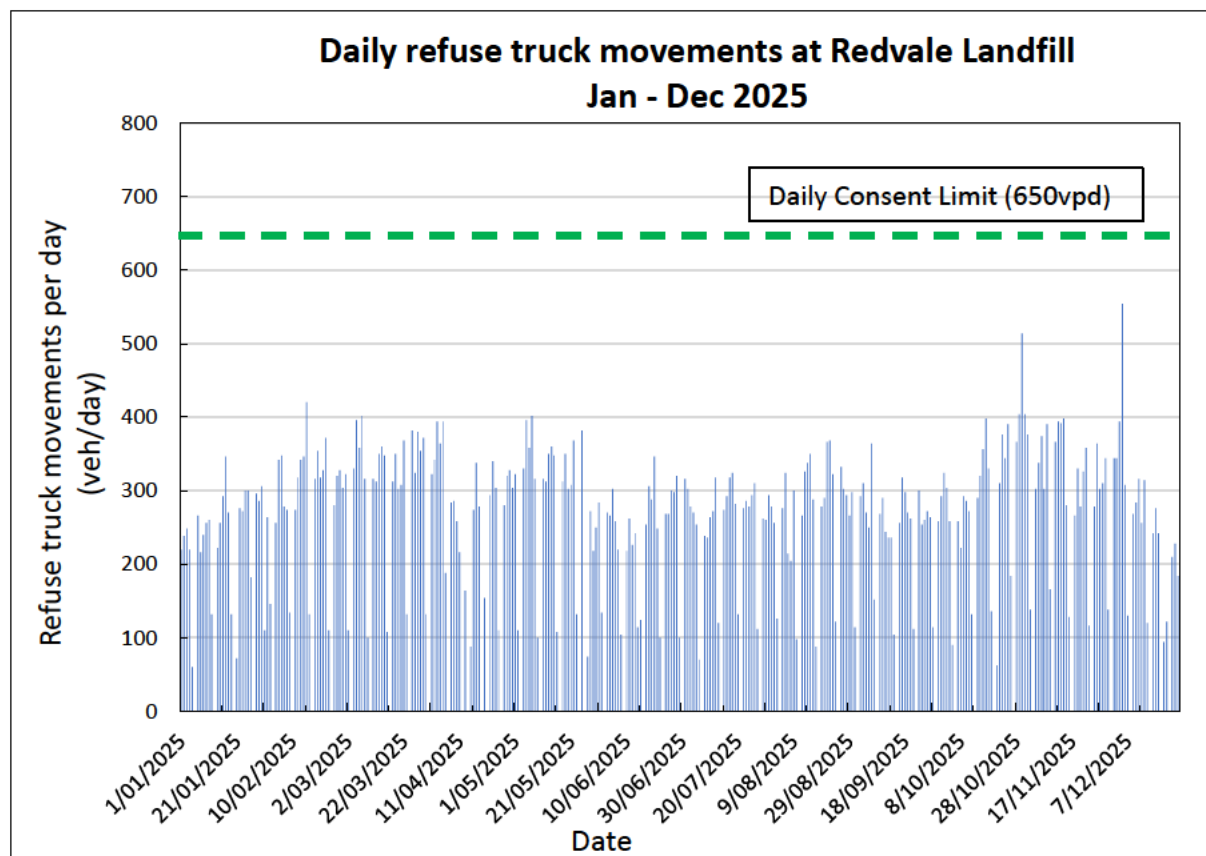


Figure 9: Total Daily Truck Movements (Jan 2025 – Dec 2025)

The chart of daily truck movements derived from the weighbridge data clearly demonstrates that the Landfill currently operates well within the 650 daily vehicle movements limit – typically being below 400 truck movements per day. The annual pattern involves generally higher activity during the summer months and somewhat lower movement totals during winter.

Overall, this pattern and scale of waste-related trucking activity generated by the Landfill is broadly similar to (and potentially lower than) that presented in the Transportation Assessment report accompanying the 2013 variation application relating to the waste truck patterns of 2012-2013.

WM New Zealand does not envisage the daily volume of waste truck movements to notably change over the course of the consent period. Accordingly, the consented limit of 650 movements per day allows an appropriate degree of flexibility for the Landfill to accept and process waste should demand dictate such as that associated with a major construction or demolition project.

4.6 Peak Hour Generated Movements

Intersection turning counts were conducted on 24 July 2025 at the intersection of Landfill Access Road and DFH between 5.00am and 7.00pm on a typical weekday (Tuesday) to capture the likely peak periods of activity generated to and from Redvale Landfill.



The following diagrams (**Figure 10 and 11**) show the turning movement counts for the morning and afternoon peaks of activity through the Access Road/DFH intersection identifying light and heavy traffic movements.

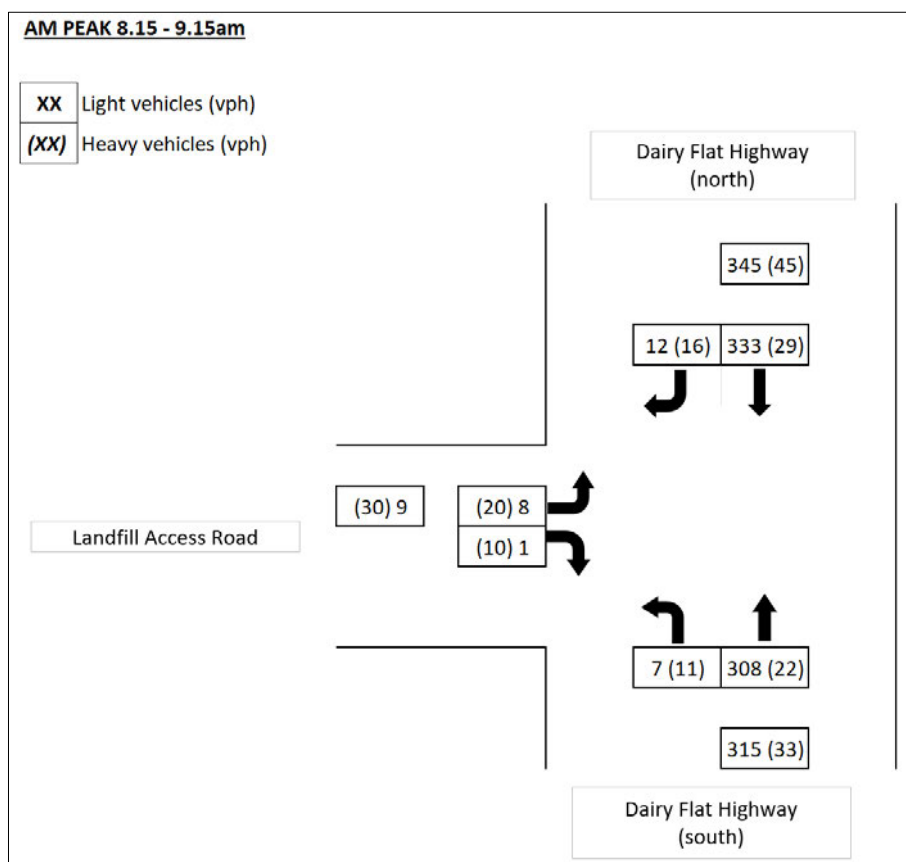


Figure 10: Landfill Access Road/DFH – Morning Peak of Landfill Activity (8.15-9.15am)

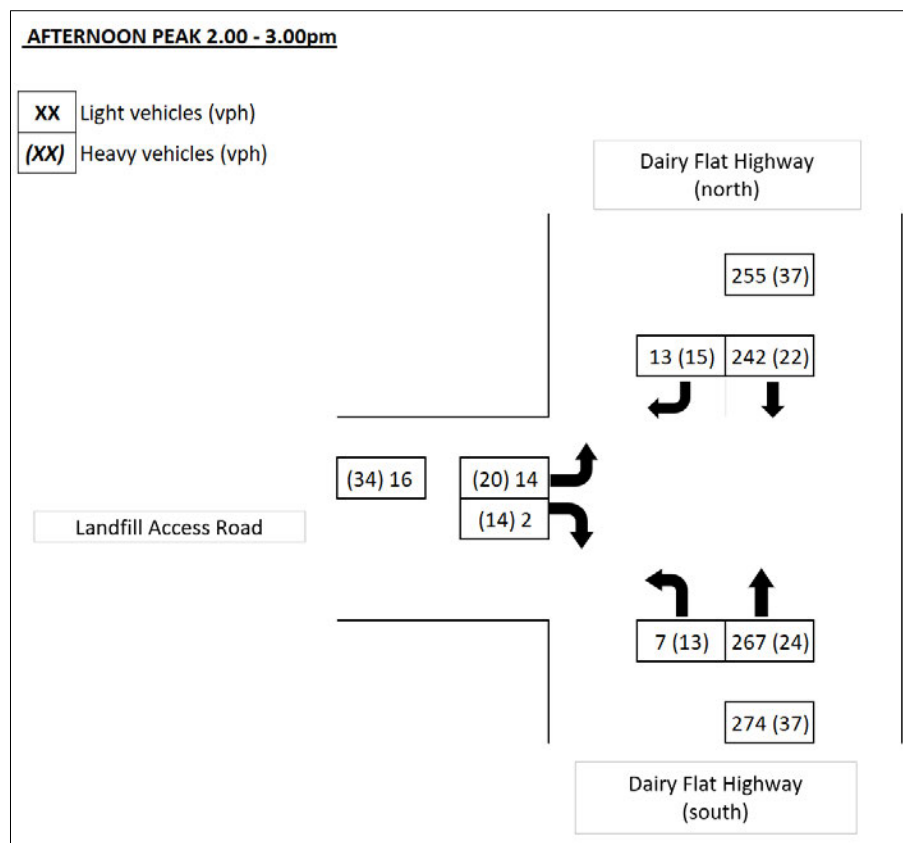


Figure 11: Landfill Access Road/DFH – Afternoon Peak of Landfill Activity (2.00-3.00pm)

The above turning count diagrams shows that across each of these peak periods of the Landfill-generated traffic, the proportion of heavy traffic movement generated by the landfill is between approximately 60-70%, with a strong bias (63-66%) of movements (both heavy and light) directed to and from the north and the wider region via SH1.

Across the full course of the survey on 24 July the total two-way truck movements recorded along Landfill Access Road (inclusive of movements not directly associated with the landfill) was 573 trucks/day – well within the 650 trucks per day limit applying to the current landfill.

4.7 Road Safety

A search was made of NZTA's Crash Analysis System for the local section of DFH within a 500m length of the Landfill Access Road intersection (i.e. 250m to both the north and south of the intersection) over the five-year reporting period between 2021 and 2025 inclusive. The following summary of the two reported crash events is reported:

- DFH at Dairy Flat School access – a minor crash (queuing within the roadway) occurred when one southbound vehicle following another southbound vehicle that was turning into the Dairy Flat School during the school pick-up period at 2.20pm on a weekday afternoon, failed to react to the slowing/turning vehicle in front, and collided with the rear of the turning vehicle;
- DFH near the bus stop adjacent to Dairy Flat School – a non-injury injury crash was reported involving a driver u-turning intending to travel north, after dropping off a



child adjacent to the bus stop on the eastern side of DFH south of the school entrance.

In this regard, it is of note that there were no events occurring associated with heavy vehicles turning to or from the Landfill, or along Landfill Access Road over the past five calendar years of records. There is nothing available from within this current road safety record that points to any repeated or specific factors that would adversely affect the continued good road safety record of Landfill Access Road associated with this application.



5 The Proposal

The Resource Consent application being made by WM New Zealand relates to an extension of the existing Resource Consent for the Redvale Landfill activity. WM New Zealand is not seeking to make any amendments to the existing Resource Consent conditions⁶ in relation to traffic and transport matters, including the condition (Condition 36) that limits the maximum number of daily waste truck movements to the Landfill at 650 vehicle movements (inclusive of inbound and outbound movements) per day (vpd), or any modification to the design or operation of the Landfill vehicle access arrangements including Landfill Access Road and its existing intersection with DFH. This condition is specific to vehicle movements processed at the Landfill weighbridge and excludes any vehicles associated with the Landfill administration office that occur outside the weighbridge and operational area of the Landfill.

Expansion of the landfill capacity to cater for the extension by way of creation/extension to bunds, drainage facilities and liner elements is expected to be associated with a maximum of 20 construction-related heavy vehicle movements per day (inclusive of inbound and outbound movements). In reference to the patterns and scale of landfill traffic generation presented in Section 4.5 / Figure 9 above, the additional construction-related movements can be readily accommodated in addition to current waste-related movements, while remaining within the consented maximum daily vehicle numbers (even on the busiest day of the year).

The current Landfill vehicle weigh station is located at the entrance to the operating area of the Landfill and records all waste truck movements and waste volumes. An automated truck wheel wash is provided to wash truck wheels before the vehicles exit the Landfill.

Approximately 50 staff are employed at the Landfill site full time, with approximately 26 staff and visitor carparking spaces located outside the Landfill administration buildings positioned to the east of the entrance to the Landfill operational area.

Consented operating hours of the Landfill are limited via Condition 47 of the current consent to:

- 6.00am to 6.00pm Monday to Saturday;
- Closed on Christmas Day, New Year's Day, Good Friday and Anzac Day.

While the above are the consented time periods for the Landfill, the Landfill typically operates Monday to Friday 6.00am to 4.30pm and Saturday 7.00am to 2.00pm. WM New Zealand office and administration hours for staff are generally between 8.00am and 5.00pm weekdays.

⁶ Conditions 36, 55, 56 and 57



6 Assessment of Transportation Effects

To consider the potential impact of the proposed development on the surrounding road network, consideration has been given to the potential traffic movements that could be expected to be generated by the ongoing operation of the Landfill (noting that this is no proposal within this application to vary the existing Condition 36 which limits daily vehicle movements to and from the landfill to no more than 650 vehicle movements per day).

6.1 Period between 2025 and December 2028

The operation of the Landfill over this period under the current consent effectively forms the baseline of transport activity against which this assessment is compared. The current application will have no net change in transport effects on the surrounding transport network over this period (i.e. through to the point at which WM New Zealand is currently required to cease accepting waste in December 2028). The expected landfill construction and associated traffic activity will form part of this baseline on the basis that the additional generated traffic movements will be within the consented maximum daily traffic movement limit at the site.

The transport environment supporting the Landfill and the generated transport volumes associated with the Landfill operation as part of this baseline will continue as per existing consent conditions. Accordingly, the proposed consent will have no measurable effect on the transport environment for this period given that these activities and associated transport effects are authorised by the current consents, and regardless of the consent being sought, the Landfill will continue to operate as existing, with a similar level of traffic generation (within the consented conditional limits), until at least 2028.

6.2 Period between January 2029 - 2036

From 1 January 2029 through to 2036 when ARL is predicted to be ready to accept waste and take over from the Redvale Landfill operations, the proposed consent will see the Landfill continuing to operate and attracting waste truck movements as per the existing situation and in accordance with the existing consented limits of traffic movement to and from the Landfill. Over this maximum eight-year period, the ongoing landfilling activities and associated truck movements are expected to have a less than minor noticeable or measurable effect on transport capacity or safety of operation of DFH and surrounding road network elements. This conclusion is reached on the basis that there will be no change in the consented maximum of 650 vehicle movements per day.

Over this period, there will be background growth in traffic activity using DFH on the basis of increases in overall vehicle ownership and frequency of travel undertaken by the surrounding community, as well as various new and additional land-use developments, and changes to the surrounding primary and arterial road networks (such as the consented aspects of the Surf Park development and Silverdale West industrial area). This will have the effect of reducing the net proportional effect of the current consented levels of Landfill



traffic activity when compared to these increased future traffic movements along DFH and other routes in the area.

In this regard it is noted:

- the proportional contribution of Redvale Landfill-generated traffic movements (representing both trucks and light traffic) is only some 5-8% of the total volumes carried by DFH, and
- the background growth of total volumes carried by the route over the past 20 years, while Redvale Landfill waste truck volumes have remained approximately constant.

As such, this reflects an incorporation and absorption of the Redvale Landfill activity as part of the established pattern and scale of traffic movements along DFH and its connections to the wider regional road network. This is consistent with the defined and expected role and functioning of the DFH route as an arterial.

If the Redvale site was to cease operations while ARL was not ready to accept waste, the Auckland region would still require access to Landfill site waste disposal beyond 2028. Therefore, waste trucks would be diverted to a different site/sites (either established or new) rather than being completely removed from the regional transport network. In this regard therefore, the effects of closing the Landfill at Redvale would simply be transferred elsewhere rather than removed altogether from the region's road transport network. As such post-closure traffic generation effects would be minimal.

6.2.1 Future Growth and Changes in Transport Network

Changes to land-use and the transport network through the Dairy Flat area during the period of proposed continued Landfill activity are expected to contribute to changes in traffic volumes along DFH. There are current proposals proceeding through approval processes for both land-use changes and transportation network enhancements.

As noted in Section 4.4.1 above, the Assessment of Transportation Effects accompanying NOR 8 for DFH and the accompanying regional transport modelling, predicted that DFH (between Wilks Road and Richards Road) would be carrying 15,700 vpd by 2048⁷. This represents a growth of approximately 6,600 vpd (or +72%) compared with the current daily volume provided by Auckland Transport for the section of DFH to the north of the Landfill.

Auckland Transport intends to upgrade parts of DFH⁸ including construction of a single-lane roundabout to be provided at the Landfill Access Road / DFH intersection, however the timing of delivery of these projects is currently unconfirmed. Auckland Transport states that there is currently no funding for the delivery of these projects, but they are likely to be

⁷ "North – Assessment of Transport Effects", Te Tupu Ngatahi | Supporting Growth Alliance, August 2023, Version 1.0 accompanying the application for Designation 1497 (Notice of Requirement 8), relating to the upgrade of DFH between Silverdale and Dairy Flat.

⁸ Designations 1497 and 1498



delivered within the next 30 years in line with Auckland Council's land release strategy⁹. It is recognised through the projects alongside the wider strategic view adopted by Auckland Transport in respect of the DFH upgrades, that the access needs of the regionally significant infrastructure provided by the Landfill are important and should be provided with an enhanced facility in order to accommodate the wider traffic growth of the DFH route.

There is no available evidence to suggest that the traffic volumes expected along DFH will rise to these 2048 levels within the five-year period of extended Landfill activity being sought through this consent to continue landfill activities to 2036. Even applying a conservative 3% per annum rate of growth rate of daily volumes over the period between now and 2036 (~10 years @ 3% p.a. = + 30%) the future daily volume along DFH would be in the range of 11,000 – 12,000vpd.

This level of daily traffic movement would remain less than the volumes carried by the route when the original consent for the Landfill represented by the 2016 Environment Court decision when DFH was carrying volumes of approximately 12,000vpd. It is also noted in this context that the current level and intensity of waste truck movements generated to and from the Landfill is at a level of approximately 60% of the consented maximum level of movements, meaning that the expected performance of the Landfill Access Road/DFH intersection remains in excess of the minimum level anticipated through the previous consent processes.

There is therefore no reason to believe that the existing road network supporting the Landfill (focussed on the primary DFH route) would not be able to continue to safely and efficiently accommodate Landfill traffic up to the current consented daily maximum traffic generation over the proposed extended maximum of eight-year life span of the Landfill as sought by this consent application.

6.3 Effects on Surrounding Activity

Neighbouring properties to the Landfill include the Dairy Flat Country Club, Massimo's Cheese Factory and Dairy Flat School. As noted in above, the effect of continued vehicle movements to and from the Landfill are authorised and will therefore be negligible up until 2028 and have formed the baseline of background traffic activity within the surrounding Dairy Flat area over the past 30 years.

Continued Landfill operations and associated effects on the Country Club and Massimo's Cheese Factory are expected to be modest based on the established and consented activity already operating along Landfill Access Road. The July 2025 surveyed activity at the Landfill Access Road/DFH intersection showed hourly volumes past the access points to these activities at levels of no more than approximately 100 vph at peak. At this level, there is ample ability and convenience for movements into and out these accesses, with numerous gaps for traffic to enter and leave the Landfill Access Road carriageway and traffic stream.

9 Auckland Transport "Upgrade to Dairy Flat Highway", www.at.govt.nz



Neither of these activities are significant generators of vehicle trips, and the trips that are generated, are catered for by a public road standard of roadway and access into their site from Landfill Access Road. Vehicles moving to and from these activities are unlikely to significantly overlap or conflict with landfill activity. WM New Zealand maintains the Landfill Access Road to a high standard benefiting the access movements to and from these activities along Landfill Access Road that would otherwise not be the case if the Landfill were to cease.

Landfill traffic does interact with vehicle movements associated with Dairy Flat School, and cessation of Landfill operations would lead to a reduction in heavy traffic movements through the Landfill Access Road/DFH intersection and a reduced potential for conflict with school traffic. However, the overall net effect of continuing Landfill operations is considered to have a no more than minor effect on the safety and operational effectiveness of Dairy Flat School, and the other activities near the Landfill Access Road intersection with DFH.

Additionally, the safety assessment demonstrates that in the past five years, there have been no reported road crashes involving Redvale Landfill vehicles in the vicinity of the intersection (and for 250m either side of the intersection including across the frontage of the school) over this period. The DFH route remains as the primary, non-motorway, non-State Highway arterial route between Albany and Dairy Flat/Silverdale. This assessment has found that the Landfill-generated traffic accounts for a small proportion (5-8%) of traffic carried by the DFH route, such that even if the Landfill ceases operations post-2028, there will still be notable volumes of traffic (including heavy traffic) passing Dairy Flat School.



7 Auckland Unitary Plan Compliance

An assessment of the proposal to extend the landfill operations at the site has been undertaken against the key relevant transport-related permitted activity standards of the AUP to assist in understanding the resource consent requirements for the site.

Standard reference	Summary of the standard	Compliance/Comment
E27.6.1(1)	Where a proposal exceeds a trip generation threshold (100vph for an activity not specified in Table E27.6.1.1) resource consent for a restricted discretionary activity is required.	N/A
E27.6.1(2)	Standard E27.6.1(1) does not apply when development is being undertaken in accordance with a consent or provisions approved on the basis of an Integrated Transport Assessment where the land use and the associated trip generation and transport effects are the same or similar in character, intensity and scale to those identified in the previous assessment	N/A
E27.6.2(1) & (5)	There is no minimum or maximum parking rate for 'all other industrial activities' within Table E27.6.2.4 which applies to all other zones and areas not specified in Table E27.6.2.1, Table E27.6.2.2 and Table E27.6.2.3.	Complies
E27.6.2(6)	Visitor cycle parking (short-stay) minimum rate (Table E27.6.2.5) – Industrial activities and storage and lock-up facilities: 1 space plus 1 space per 750 sqm of office area (Requirement: 2 visitor cycle spaces on the basis of approximately 789sqm of office area)) Secure cycle parking (long-stay) minimum rate: 1 space per 300 sqm GFA of office: (Requirement: 3 spaces on the basis of approximately 789sqm of office area)	Does not Comply:
E27.6.3.1(1)(a)	Parking spaces must comply with the minimum dimensions in Table E27.6.3.1.1. Size and location of parking spaces: 90 degree (regular users). 2.5 wide and 5m length from a wall and 6.7m manoeuvring space; 75 degree (all users). 2.5 wide and 4.2m length from a kerb, and 6.3m manoeuvring space 60 degree (all users). 2.5 wide and 4.2m length from a kerb, and 4.1m manoeuvring space	Complies. Dimensions of staff and visitor spaces at WMNZ Administration building meet the overall minimum dimensions of parking stall length and manoeuvring width
E27.6.3.2 (1)	Loading spaces must comply with the minimum dimensions in Table E27.6.3.2.1. Loading spaces for industrial activities must be a minimum of 11 m in length and 3.5 m in width.	Complies: Specific design of "loading spaces" suited to specific operation of the landfill and satisfying the intent of the Standard.
E27.6.3.3 (1)	Every parking space must have driveways and aisles for entry and exit of vehicles to and from	Complies.



	the road, and for vehicle manoeuvring within the site. Access and manoeuvring areas must accommodate the 85 percentile car tracking curves in Figure E27.6.3.3.1	
E27.6.3.3 (2)	For every loading space accommodating heavy vehicles the access and manoeuvring areas associated with that loading space must comply with the tracking curves set out in the NZTA guidelines: RTS 18: NZ on-road tracking curves (2007).	Complies – site design caters for truck and trailer vehicles
E27.6.3.4	Sufficient space must be provided on the site, so vehicles do not need to reverse off the site or onto or off the road from any site where any of the following apply: (a) four or more parking spaces are served by a single access; (b) there is more than 30m between the parking space and the road boundary of the site; or (c) access would be from an arterial road or otherwise within a Vehicle Access Restriction covered in Standard E27.6.4.1.	Complies – no reverse manoeuvring required
E27.6.3.5	Vertical Clearance - To ensure vehicles can pass safely under overhead structures to access any parking and loading spaces, the minimum clearance between the formed surface and the structure must be: (b) 2.3m where access and/or parking for cars is provided for all other activities; (c) 2.5m where access and/or accessible parking for people with disabilities is provided; or (d) 3.8m where loading is required.	Complies – no vertical obstructions
E27.6.3.6	Formation and Gradient: Standard E27.6.3.6 (2): All weather surfacing not required for parking, loading spaces, and manoeuvring areas and aisles in the Rural – Mixed Rural Zone. Standard E27.6.3.6 (3): The gradient of any parking spaces: 1 in 25 in any direction for accessible spaces for people with disabilities; and 1 in 20 in any direction for other spaces. Standard E27.6.3.6 (4): Gradient for the manoeuvring area must not exceed 1 in 8	Complies
E27.6.4.2 (2) & E27.6.4.3 (1)	The width of a vehicle crossing must meet the minimum width and not exceed the maximum width as specified in Table E27.6.4.3.2. Every on-site parking and loading space must have vehicle access from a road, with the vehicle access meeting the minimum formed access width specified in Table E27.6.4.3.2. Vehicle crossings in rural zones, shall be a minimum width of 3.0m and maximum width of 6.0m at the site boundary (however the width of permitted crossings can be increased to 9.0m to cater for the swept movement paths of heavy vehicles). There are no minimum formed access width requirements.	Complies – Landfill Access Road crosses from the public road reserve of DFH into the WM New Zealand property via a “crossing” width of 8m. It is noted that this crossing is not strictly in the form of a property access driveway but does represent the crossing width from road reserve to private land.



E27.6.3.4(1)(a)	Sufficient space must be provided on the site, so vehicles do not need to reverse off the site or onto or off the road from any site where four or more required parking spaces are served by a single access.	Complies. Adequate space is provided to manoeuvre on-site to avoid reversing off the site.
E27.6.3.6(3)	The gradient for the surface of any parking space must not exceed: (a) 1 in 25 in any direction for accessible spaces for people with disabilities; or (b) 1 in 20 (five per cent) in any direction for other spaces	Complies
E27.6.3.6(4)	The gradient for the manoeuvring area must not exceed 1 in 8.	Complies
E27.6.3.7(1)	Lighting is required where there are 10 or more parking spaces which are likely to be used during the hours of darkness. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit during use in a manner that complies with the rules in Section E24 Lighting.	Complies – lighting provided within staff/visitor parking
E27.6.4.1(3)(a)	Vehicle crossings must not be constructed across that part of a site boundary within 10m of an intersection.	Complies – minimum 700m to nearest intersection (DFH/Landfill Access Road)
E27.6.4.2(1)	Table E27.6.4.2.1 specifies the maximum number of vehicle crossings and separation distance between crossings. - Maximum number of vehicle crossings per road frontage of the site: 1 per 25m of frontage or part thereof - Minimum separation from crossings serving adjacent sites: 2m. Where two crossings on adjacent sites can be combined and where the combined crossings do not exceed a total width of 6m at the property boundary, no minimum separation distance will apply. - Minimum separation between crossings serving same site: 6m	Complies. One crossing connects to Landfill Access Road Complies. One crossing Complies. One crossing

Table 2: Unitary Plan Compliance Assessment

The only matter generating a minor, technical non-compliance with respect to AUP Chapter 27 matters relates to the provision of cycle parking spaces for staff and visitors within the site. In the context of the Redvale site and its relationship with DFH however, it is considered neither appropriate nor safe for the provision of cycle parking within the site given that there are no dedicated cycle facilities within this part of DFH near the site. The overall effect of this non-compliance is therefore considered negligible.

In addition to (or in replacement of the above rules/standards derived from the operative version of the AUP), there are a number of additional or replacement matters included in Plan Change 79 which typically refer to additional assessment and requirements in support of residential development. In the context of the renewed consent at Redvale Landfill it is not considered that any of the specific Plan Change 79 matters have direct relevance to this site and its associated layout/operation.



8 Conclusions

This assessment of transportation effects has been commissioned by WM New Zealand to support its Resource Consent application to extend and continue operating the Redvale Landfill until 2036. The current consent for the Landfill expires in December 2028, however due to the extended time period associated with the consent approvals for the new ARL at Wayby Valley, the Redvale Landfill may be required to continue regional waste landfilling operations until 2036.

The current consent for the Redvale Landfill includes a condition limiting the maximum number of vehicle movements associated with the landfilling operations to no more than 650 vehicle movements per day (inclusive of inbound and outbound truck movements over the site's weighbridge). WM New Zealand expects future truck movements inclusive of the construction related movements to facilitate the expanded landfill capacity, to remain similar to those generated today which are currently at a level where the annual daily maximum waste truck volume is around 60% of the consented maximum level. The consent limit of 650 trucks per day is considered to remain an appropriate upper limit suitable to cater for activity generated by major construction and other projects, in addition to the landfill expansion construction-related activity. WM New Zealand proposes to retain the 650 movements per day limit as part of the consent application.

The review and assessment of the existing transport environment supporting the Landfill and its ability to continue to operate safely and effectively from a transportation point of view, has been undertaken and has confirmed that vehicle access to and from the site via Landfill Access Road is appropriate for the size, volume and intensity of vehicles currently generated by the Landfill. Total Landfill traffic represents a small proportion (5-8%) of the traffic volumes on DFH. Road safety assessment of the reported crash records over the past five years did not identify any reported issues with the existing local road geometry or interaction with other activity in the vicinity of the Landfill.

Based on the assessment undertaken, it is concluded that:

- Redvale Landfill's site has operated in the current location and in the current mode of operation for 30 years;
- It is located adjacent to and served by a regional arterial route (that was previously operated as part of the State Highway network) and provides access to the SH1 motorway system via high-standard grade separated interchanges. This arrangement is well-suited to the regional waste management role played by Redvale Landfill;
- The extension of landfilling activities to 2036 (including the construction-related activity to facilitate the landfill life extension) will remain within the consented maximum daily limit of waste-transport movements applying through the current consent, and the current proposal carries over the current daily maximum limit; and
- Continuing Redvale Landfill operation is not expected to bring about any new or additional transportation-related issues in terms of vehicle access, safety or road network performance on the road network serving Redvale Landfill site.



Overall, the transport effects associated with the proposed landfill extension on the safety and operational effectiveness of the DFH route and surrounding activities are expected to be less than minor.

Don McKenzie Consulting Ltd