



Appendix Z Framework Construction Traffic Management Plan

Fast-Track Approvals Act 2024 Substantive Application

Hinuera Solar Farm

Harmony Energy NZ #6 Limited

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Planning | Surveying | Engineering | Environmental

B25385– Harmony Energy, Hinuera Solar Farm
Framework Construction Traffic Management
Plan

4379 State Highway 29, Hinuera

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Contents

1	Introduction	4
2	Objectives, Obligations and Reviews	5
2.1	CTMP Objectives	5
2.2	Contractor Obligations	5
2.3	CTMP Review	6
3	Health and Safety	6
4	Emergency Response	7
5	Road Network	7
5.1	SH27	8
5.2	SH29	9
5.3	SH27 / SH29 Intersection	9
6	Access & Consultation	11
7	Construction Traffic Management	12
7.1	Construction Traffic Volumes	12
7.2	Employee Traffic	13
7.3	Construction Traffic	14
8	Principles of Temporary Traffic Management	14
9	Communication and Monitoring	15

1 Introduction

This Framework Construction Traffic Management Plan (CTMP) has been prepared on behalf of Harmony Energy NZ Ltd for the construction of the Hinuera Solar farm located at 4379 State Highway 29 (SH29), Hinuera. The proposed solar farm is being submitted for consent through the fast-track application process.

The purpose of this Framework CTMP is to set out the general obligations and principles for the contractor undertaking the construction. This Framework CTMP does not constitute a Detailed CTMP and is intended to inform the requirements of a Detailed CTMP. Refinement of this Framework CTMP to provide the specific details around the transportation aspect of the construction phase will be undertaken once the contractor is appointed.

The Framework CTMP is based on the conclusions and supporting information contained in the Integrated Transportation Assessment (ITA) already prepared for the site, located as shown in Figure 1 and including the proposed concept site access locations shown as red stars for construction and operational traffic.



FIGURE 1: HINUERA SOLAR FARM ACCESS LOCATIONS

A Detailed Construction Traffic Management Plan (CTMP) will be prepared by the contractor undertaking the works to manage the effect of construction traffic and ensure the safe operation of SH29 and SH27. The Detailed CTMP will also include mitigation of any effects of construction traffic to the surrounding road network including the SH29 / SH27 intersection. It is industry standard and good practice, to require the provision of a Detailed CTMP prior to construction activities. Provision of the Detailed CTMP is

recommended to be a condition of consent and can be provided once all relevant construction methodologies and pertinent information is known.

The site is located within the Matamata Piako District Council boundaries, however NZ Transport Agency (NZTA) is the road controlling authority for SH29 and SH27 and as such will likely be the primary liaison for traffic matters should consent be granted.

2 Objectives, Obligations and Reviews

2.1 CTMP Objectives

The purpose of the Framework CTMP is to set out the controls required to manage and mitigate the traffic effects arising during the construction phase of the project.

The objectives of the Framework CTMP are to:

- *Maintain safe use of the road network affected by the site works for the public and for site workers such that:*
- *Construction vehicle traffic is safely accommodated within the existing road network;*
- *So far as is reasonable, avoid congestion or traffic delays;*
- *Any traffic effects associated with construction are no more than minor;*
- *Ensure that access to and from the site is undertaken in accordance with the management protocols of the Framework and in accordance with the Detailed CTMP to be developed by the Contractor once appointed;*
- *Set the parameters for the Detailed CTMP to meet the specific requirements for construction traffic management as may be required by a resource consent for the works and in accordance with the relevant By-Laws, Acts, Regulations and Matamata Piako District Council (MPDC) District Plan Rules, Objectives and Conditions pertaining to traffic, loading and parking and adherence to the requirements for provision of access contained within NZTA Planning Policy Manual (PPM) Access onto State Highway Guide from Private Property;*
- *Set the parameters for the development of Temporary Traffic Management (TTM) to manage changes to normal operating conditions in accordance with NZTA's NZ Guide to Temporary Traffic Management (NZGTTM) as part of the Detailed CTMP;*
- *Adopt a flexible and proactive approach to TTM to respond to the construction activities being undertaken and the needs of other stakeholder groups, or temporary major events, as appropriate.*

2.2 Contractor Obligations

The following items summarise the obligations of the contractor in developing their Detailed CTMP to ensure that the recommendations in this Framework CTMP are adhered to. The contractor will:

- *Provide details of construction programme;*
- *Provide detailed access designs*
 - *Option 1 SH29 and SH27 accesses to be compliant with NZTA PPM Type E for all locations;*
 - *Option 2 SH29 access – assess and detail where required, the need for additional widening to facilitate compliance with NZTA Type E access specifications if this access is to be used and supported;*
- *Outline and provide details of movement limitations through Option 2 SH29 access in accordance with those stated within the ITA summarised below;*

- *2 deliveries per hour maximum*
 - *Maximum of 10 deliveries per day*
- *Develop TTM Plans (if required) with NZTA and MPDC with advance notice of any specific requirements to be agreed;*
- *Consult with properties whose access may be affected during the construction process;*
- *Obtain overdimension vehicle permits, and confirm HCV routes and travel times;*
- *Provide details of staffing levels and associated traffic movements;*
- *Provide details of the construction village including provision of on-site parking facilities for staff;*
- *Outline of measures to control the tracking of dust and sediment onto the road network which may include measures such as:*
 - *The permanent Option 1 SH29 and SH27 access points as shown in Figure 1 will be sealed prior to the construction phase as mentioned in section 6 of the ITA*
 - *Wheel wash-down facilities provided at each access to prevent tracking mud or gravel onto the road corridor;*
 - *Runoff diversion bunds or channels around work areas with lining rock dams to reduce flow velocities;*
 - *Covering any loose loads which might create dust;*
- *Develop a code of conduct for drivers which will be confirmed once a contractor is appointed. This may include measures such as:*
 - *All drivers obeying the rules of the NZ Road Code;*
 - *All staff members, including external sub-contractors, attending a health and safety briefing at the start of their shift;*
 - *All drivers ensuring a GPS tracker is operational within their vehicles;*
 - *Drivers being courteous to other road users;*
 - *Drivers ensuring trucks are in good and clean condition. This includes ensuring that all vehicles have up to date warrants and certificates of fitness; and*
 - *Drivers ensuring that loads are covered and secured before leaving the site.*

2.3 CTMP Review

The Detailed CTMP may be reviewed for the purposes of informing any variation of the methodology or means by which the environmental controls outlined in section 4 will be met.

Detailed CTMP reviews may be undertaken when:

- *A previously unforeseen event occurs;*
- *Following any major environmental incidents; and*
- *At the end of the project (to allow for improvements in subsequent projects).*

3 Health and Safety

The contractor is expected to prepare a full Health and Safety plan as part of the contract. This will include consideration of construction traffic and is expected to include the following as a minimum:

- *An induction will be held with all construction staff at the start of their employment as well as daily tool-box talks prior to the start of each day. This will comprise a reminder to drivers to follow prescribed routes and obey all road rules and cover any notable aspects of construction that would affect the road network, such as the arrival of over-dimension vehicles or any works within the road*

reserve. This same information will also be communicated to external sub-contractors and delivery drivers to ensure any external workers visiting the site are informed of the site-specific rules.

- All staff will be required to report any incidents or near-misses to the site manager. Any action will be undertaken as required and all other staff will be informed accordingly first highlighting the risk and then how to avoid or mitigate the risk; and*
- Any visitors to the site will be required to report to the site manager. This person's contact details will be provided at the site entrance.*

4 Emergency Response

All vehicle entrances to site can facilitate, and are to be made available to, emergency service vehicles should they be required. Serious accidents or emergencies must be reported immediately to the relevant emergency services.

All reports of accidents and other environmental emergencies, regardless of their origin are to be reported to the Construction Manager. An environmental emergency is any event that causes or has the potential to cause material harm to the environment or people.

Where disruption to traffic or significant damage has occurred within the roading network the appropriate road controlling authority shall be notified immediately.

5 Road Network

The road network in the vicinity of the site is shown in Figure 2. The site itself is located with frontage to both SH29 and SH27, directly adjacent to Hinuera township. Construction phase access to the site is planned via SH29 and SH27. It is expected most delivery trucks and employee vehicles will travel to the site from SH29 shown red and along the northern section of SH27 shown blue in Figure 2 below.

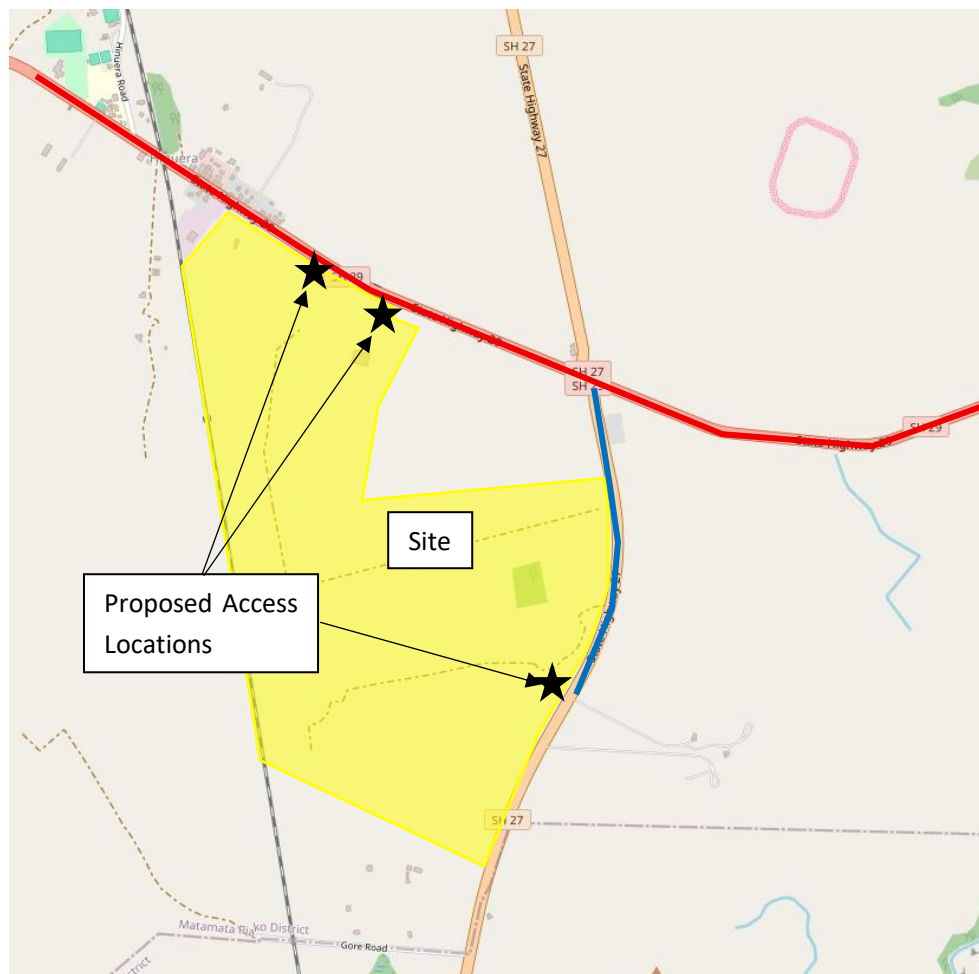


FIGURE 2: ROAD NETWORK

5.1 SH27

SH27 is classified as a significant road within the District Plan and as a rural connector within the one network framework (ONF). As a rural connector, SH27 functions as an arterial, collector and access road serving as an essential rural 'link' road for inter-regional travel and property access. SH27 has a posted speed of 100km/h and comprises of a two-way, two-lane, 6.5m wide carriageway with centreline and edgeline delineation. The carriageway contains no consistent, significant sealed shoulders and is bound by grassed drainage berms both sides as is typical of rural roads. It is also noted that SH27 is classified by the New Zealand Transport Agency (NZTA) as a limited access road (LAR).

A typical cross-section of SH27 along the site frontage, as observed during the site visit undertaken on the 25th November 2025, is shown in Figure 3 below.



FIGURE 3: SH27 SEALED CROSS-SECTION

5.2 SH29

SH29 is classified as a significant road under the District Plan and as an inter-regional connector within the ONF. As an inter-regional connector, SH29 is of both regional and national significance providing an essential goods and service travel route with limited residential property access. As such, inter-regional connectors typically also experience higher percentages of heavy commercial vehicle (HCV) movements.

SH29 operates predominantly as a posted 100km/hr speed environment however it is noted that a 270m section of SH29 to which Lot 1 DPS 83767 has its frontage, at the western end of the site, is a 70km/h speed environment. SH29 typically comprises a two-way, two-lane carriageway approximately 6.5m in width, with centreline and edgeline delineation. The carriageway does not include consistent sealed shoulders and is bound on both sides by grassed drainage berms, which is typical of a rural road environment. It is also noted that SH29 is classified by NZTA as a LAR.

A typical cross section of SH29 along the site frontage and showing the speed transition from 70km/h to 100km/h for eastbound vehicles is shown in Figure 4 below.



FIGURE 4: TYPICAL CROSS SECTION OF SH29

5.3 SH27 / SH29 Intersection

The SH29 and SH27 intersection takes the form of a staggered, stop controlled, crossroad style intersection with priority afforded to through traffic on SH29. The intersection is fully sealed and includes a painted flush median with back-to-back marked right-turn bays on SH29 to accommodate turning movements while maintaining through traffic flow. Clear lane delineation is provided on the SH27 legs to guide vehicle movements and reduce conflict.

An aerial view of the staggered SH27/SH29 intersection is shown in Figure 5 below.



FIGURE 5: TYPICAL CROSS SECTION OF HUGHES LINE

It is noted that the approach speeds towards the intersection on the SH29 road corridor are reduced using a permanent variable speed limit of 60km/h as shown in Figure 5 above and Figure 6 below.



FIGURE 6: VARIABLE SPEED SIGN ON SH29 – WESTERN INTERSECTION APPROACH

Overall, the intersection is designed to operate within a high-speed rural highway environment, with visibility, priority control, and median treatments that support the safe and efficient operation of SH29.

6 Access & Consultation

Consultation was undertaken with NZTA on 31 March 2026 to ascertain access preferences for construction, operation and maintenance activities. During this process two options were discussed and determined to be appropriate and are summarised below:

- Option 1
 - SH29 – provide a new vehicle crossing to NZTA Access to State Highway from Private Property (Access Guide) Type E specifications. This is to be located mid-span between existing access 1 and existing access 2 to achieve minimum compliant separation distance based on operational speed
 - SH27 – upgrade existing access 5 to Access Guide Type E specifications
- Option 2
 - SH29 – retain existing access 2 with minor upgrades and control use to no more than 10 deliveries per day
 - SH27 – upgrade existing access 5 to Access Guide Type E specifications

Detailed assessment of these access options is undertaken in Section 6 of the ITA. All site accesses intending to be retained through construction, operation and maintenance activities are to be constructed in accordance with NZTA Access Guide Type E shown in Figure 7 below.

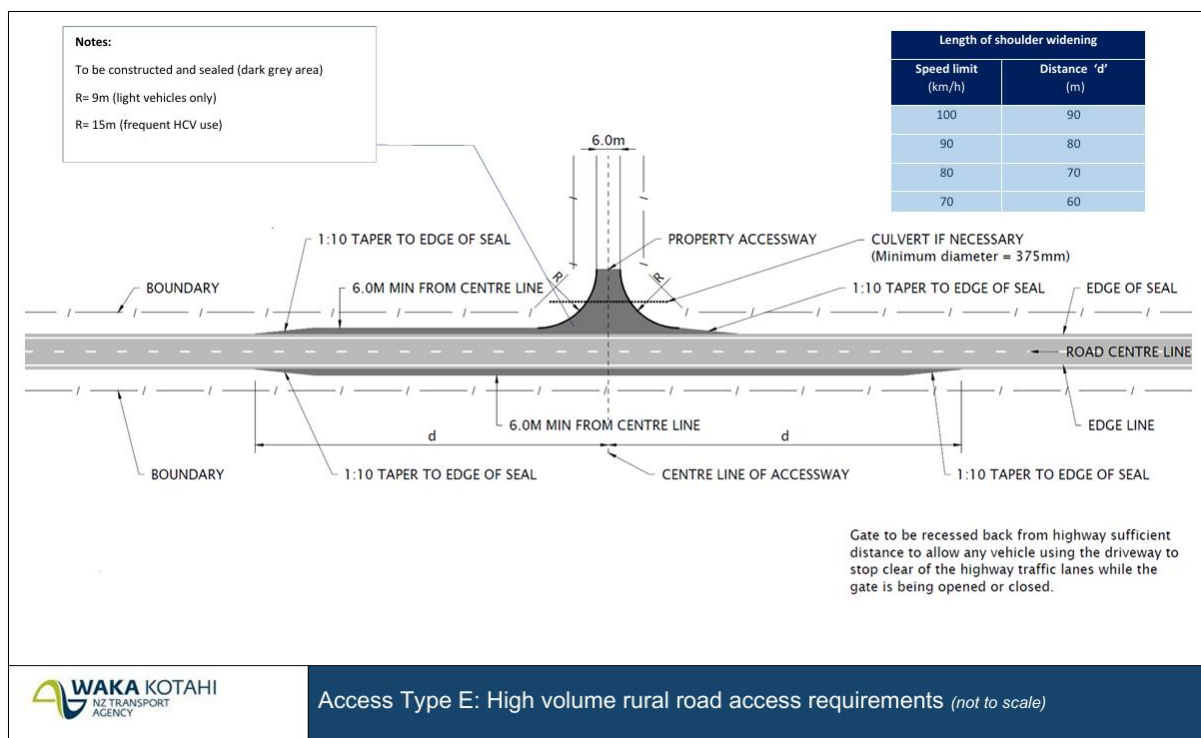


FIGURE 7: NZTA ACCESS GUIDE TYPE E

Should Option 2 be implemented as means of access to SH29 it is recommended that HCV deliveries through this access be limited to a maximum 1 – 2 per hour and up to 10 per day. This is considered to be generally in keeping with agricultural level of use. It is noted that NZTA does not agree with this approach and would prefer upgrade to Diagram E standard.

7 Construction Traffic Management

7.1 Construction Traffic Volumes

Construction of the site will be staged over the 24-month timeframe, with different phases expected to have different traffic demands depending on the activities being undertaken.

An estimate of the staff and delivery numbers associated with each phase on a daily and monthly basis is given in Table 1 and Table 2 respectively. These will be confirmed by the Contractor as each stage of activity is progressed.

TABLE 1: DAILY ON-SITE STAFF NUMBERS

Months	Projected Staff Numbers Per Day
1	25
2	40
3	55
4	55
5	30
6	80
7	80
8	110
9	140
10	150
11	170
12	180
13	150
14	160
15	110
16	90
17	80
18	50
19	35
20	35
21	35
22	30
23	40
24	40

TABLE 2: MONTHLY DELIVERY VOLUMES

Months	Proposed Construction Deliveries per Month	Calculated HCV Movements Per Day
1	63	3
2	618	28
3	648	29
4	641	29
5	660	30
6	660	30
7	339	15
8	250	11
9	227	10

10	360	16
11	325	15
12	329	15
13	306	14
14	297	14
15	201	9
16	183	8
17	64	3
18	64	3
19	62	3
20	74	3
21	29	1
22	29	1
23	29	1
24	29	1

7.2 Employee Traffic

Based on information provided by Harmony Energy, the anticipated construction days of operation will be Monday to Saturday with construction hours 7am to 6pm Monday to Saturday.

Once the Contractor is confirmed and resource consent for the proposed solar farm is granted, exact construction dates and working hours will be determined to ensure compliance with the resource consent requirements. The contractor will also provide a construction program outlining timing of the expected construction stages and highlight any periods where construction traffic activity is anticipated to be higher than average e.g., large concrete pours. Based on the current construction timeline, 180 staff members are expected to be on-site during the peak construction month 12.

As stated in section 2.3 of the ITA, existing bi-directional peak hour volumes on the surrounding roads are less than 800vph, which is well below the carrying capacity of a single traffic lane of a highway (approximately 1,400vph). Due to the anticipated construction hours, it is reasonable to assume that staff movements will occur outside peak network hours, typically assessed to be 7am to 9am and 3pm to 6pm. In the worst-case scenario whereby:

- All existing network traffic is travelling in the same direction;
- All construction employees drive their own vehicle generating up to 180 movements per peak period; and
- Construction hours were altered to result in staff traffic movements coinciding with peak network hours.

It is considered the surrounding road network has sufficient capacity to accommodate the additional traffic with minor anticipated effects to the surrounding network. The addition of 180 vehicles outside typical network peak hour is therefore considered to have less than minor effects and is unlikely to have an adverse impact on the efficient operation of the road corridors.

Carpooling and the use of minibuses is to be encouraged to reduce staff vehicle numbers with a target of reaching an average car occupancy of two people per vehicle. To further reduce employee traffic movements, it is recommended that on-site facilities for staff are provided to minimise the need for employees to travel back into town throughout the day.

It is also recommended to give staff toolbox talks on safe access and safe driving tips. Any complaints received from members of the public, Council or NZTA in relation to driver behaviour during construction will be investigated within 24 hours and appropriate action taken in accordance with Harmony Energy's health and safety policies and disciplinary processes. All complainants will receive a response from Harmony Energy confirming that the matter has been addressed. Council and NZTA will also be kept informed of all complaints raised in relation to this CTMP.

7.3 Construction Traffic

Given the nature and the size of the site, various large deliveries consisting of solar panels, construction equipment and machinery will be received on site during the construction phase. The toolbox talks on safe access, safe driving tips and site-specific rules as stated in section 7.2 will also be communicated to all subcontractors and external delivery drivers prior to visiting the site.

Figure 2 shown previously identifies the likely route options from the State Highway network to the site. Exact routing will be confirmed based on the starting point of the delivery.

Furthermore, it is recommended during the construction period, a minimum of monthly inspections of SH29 and SH27 within a 100m radius of each site access must be undertaken. These inspections are to be undertaken to identify any damage / adverse effects of HCV braking / turning movements through the access(es) such as shoving, with any damage reported within 24hrs to NZTA and MPDC and repaired within one week, weather permitting, at the consent holders expense. In the event weather prevents repair within one week, adequate traffic management is to be established where required, to inform drivers of altered traffic management conditions, and the repair is to be undertaken as soon as conditions improve to a satisfactory level for normal traffic flow to commence.

As part of the Detailed CTMP, the Contractor will liaise with Council to identify major events where additional traffic management or control of construction activities may be required.

Any security gates at each of the proposed three site accesses will be located such that construction vehicles can turn fully off SH29 and SH27 before having to stop for security checks. Significant deliveries or over dimension vehicle access should be programmed, where possible, to arrive outside of peak staff arrival and departure times or the network peak hours.

Wheel washes, or other appropriate means of ensuring material is not tracked onto SH29 and SH27 will be appropriately located within the site. In the event of material being tracked onto the public road network, the contractor will employ road washing machines to remedy this. All construction vehicles carrying loose material must be covered.

8 Principles of Temporary Traffic Management

Any temporary traffic management required to manage access to the site is to be undertaken in accordance with the NZGTTM. TTM is to be flexible and will respond to changing intensities of construction activities and prevailing road conditions. This includes ensuring that major events are considered as appropriate.

The contractor will appoint a Site Traffic Management Supervisor (STMS) and will maintain that role for the duration of the works. This may be a specialist sub-contractor.

Detailed TTM measures and layout plans will be provided by the Contractor to the consenting authority or designated alternative for approval in accordance with the consent conditions. TTM measures should focus

on assisting drivers travelling along SH29 and SH27. As an indication, it is anticipated that these may include:

- *Use of 'truck turning' signs;*
- *Setting of temporary speed limits; and*
- *Lighting.*

The addition of stop / go controls may be required during peak HCV months two to six during which time HCV movements are double the remaining construction timeframe on a per month basis. The increase in movements during this time is largely due to the importation of fill to site.

During months seven to twenty-four, it is unlikely that additional measures will be required given the significantly decreasing number of large trucks visiting the site per day. No changes will be made to the approved TTM unless agreed in advance with Council, NZTA or considered necessary to do so by the STMS or NZ Police to maintain the safe operation of the road network. Any such changes will be reported to Council.

9 Communication and Monitoring

Throughout the construction stage, a hazard sign and contact details for the site manager will be provided at site. The details for the site manager will be confirmed once a contractor is appointed.

The site manager will consult with designated contacts at NZTA and Council on a regular basis at a frequency to be agreed through the detailed CTMP to discuss any concerns or issues arising, inform of expected over dimension loads or any variation in traffic demands and conditions associated with the construction of the solar farm.

Consultation with any properties along SH29 and SH27 likely to be affected by a change in access arrangements will be contacted at least two weeks before any such change. Access to these properties will be always kept available.

Role	Name	Contact number
Project Manager	TBC	TBC
Public Complaints	TBC	TBC

Any complaints received from members of the public, Council or NZTA in relation to driver behaviour during construction will be investigated within 24 hours and appropriate action taken in accordance with Harmony Energy and / or the EPC Contractor's health and safety policies and disciplinary processes. All complainants will receive a response from Harmony Energy confirming that the matter has been addressed. Council and NZTA will also be kept informed of all complaints raised in relation to this CTMP.

All heavy vehicles related to the site will be fitted with GPS units. All truck routes and times will be monitored and any trucks not complying with this CTMP will be able to be identified. Non-complying drivers will be identified through the daily Health and Safety briefings and disciplinary action taken as required for repeat offenders.

A communications protocol will be developed and implemented including but not limited to the following matters:

- *Names and contact details of key staff and/or contractors responsible for implementing the CTMP;*
- *Contact details of key staff within MPDC, NZTA, and/or any other third party who have operational interests in the surrounding road network;*
- *Contact details and location of the main site office and any satellite offices;*
- *Details of signage to be established, including content and locations;*
- *Location of all relevant consents, managements plans, health and safety plans, and other key project documentation;*
- *A process for receiving and responding to complaints, including a register for recording all complaints and actions taken;*
- *A process for scheduling planned heavy haulage and over-sized load vehicle trips such that this can be communicated to the public and road controlling authorities a process for managing construction traffic during any major events. Communications with key event organisers will be required; and*
- *A list of people and organisations that the CTMP will be distributed to. All amendments and updates to the CTMP will then be forwarded to those named on the list.*

CKL