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Red John Pumped Storage Hydro Scheme

Volume 5, Appendix 15.2: Swept Path Analysis Report

ILI (Highlands PSH) Ltd.

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Quality information

Prepared by	Checked by	Verified by	Approved by
Ben Muirhead	Jon Hassel	Catherine Anderson	Catherine Anderson
Graduate Consultant	Principal Consultant	Associate Director	Associate Director

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Distribution List

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Appendix 15.2 Swept Path Analysis Report

15.1 Introduction

15.1.1 To supplement the Traffic and Transport chapter of the EIA (Chapter 15, Volume 2), Swept Path Analysis (SPA) has been carried out to assess the suitability of the local road network to accommodate the transportation of Abnormal Indivisible Loads (AILs) and to demonstrate the suitability of the main construction traffic route.

15.1.2 This appendix details the methodology and results of the SPA assessment that was undertaken AIL construction plant vehicles for the Development.

Background Information

15.1.3 The construction of the Development involves a significant amount of earthworks to create the Headpond and excavate the various underground tunnels that will be used to channel the flow of water and provide access for construction and operation. Due to the scale of these construction activities, there is a requirement for a significant amount of large plant vehicles and components to be delivered to the Development Site.

15.1.4 Police Scotland define AILs as a load which cannot be broken down into smaller loads for transport without undue expense or risk of damage that exceeds the following dimensions:

- Width: 2.9 metre (m) / 9'6";
- Weight: 44,000 kilograms (kg) / 44 tonnes (t); or
- Length: 18.65 m / 60'0" rigid or 25.9 m / 85'0" overall.

15.1.5 It is anticipated that there will be approximately 816 trips associated with the delivery and removal of AILs during the construction phase of the Development. The majority of the AILs that are required to be delivered to the Development Site are plant vehicles which exceed the width and / or weight limits stated above. Examples of the plant vehicles which exceed these limits include 90 t crushers, 73 t excavators and 52 t dumpers.

Route Overview and Identified Constraints

15.1.6 It is anticipated that AIL deliveries will approach The Development from two points on the local road network; either the B862 / Holm Road roundabout or the A9(T) / B851 junction. From these points, deliveries will then terminate at either Compound 2 at the Tailpond Inlet / Outlet on the B852 or at the main site entrance on the C1064.

15.1.7 For the purpose of the SPA assessment, the two proposed routes are as follows:

- **Route 1** – B862 / Holm Road roundabout to Compound 2 on B852 via B862 through Dores; and
- **Route 2** – A9(T) / B851 to main site entrance on C1064 via B862.

Route 1 Constraints

15.1.8 Route 1 represents the shortest and most suitable route to site for AILs as the geometry of the B862 is favourable for wider loads due to it comprising of single carriageway until the village of Dores and the predominantly straight alignment. At approximately 11 km in length,

this route is comprised of long straights and bends which would allow long vehicles to be used in the transportation of AILs.

15.1.9 The B862 has a significantly higher baseline daily volume of traffic compared to other roads in the local area and acts as the primary access route to the east shore of Loch Ness; a popular tourist area. This makes it unsuitable for the delivery of all AIL deliveries as the traffic impact would likely be too significant.

15.1.10 Along this route, there are several villages and minor settlements in addition to roadside walls and verges that limit the maximum possible width of vehicles and components that can be transported. The route is also heavily forested in many areas which would likely require trimming and / or removal to accommodate larger loads.

15.1.11 Load width is therefore considered the most significant constraint on this route.

Route 2 Constraints

15.1.12 Route 2 is a significantly longer route to site – at approximately 35 km in length – and is primarily comprised of single track road with passing places. This route also has many narrow and tight bends with high roadside verges in addition to third party land boundaries which limits the maximum width of transporting vehicles and their loads significantly.

15.1.13 The villages of Inverarnie, Farr and Croachy as well as many other smaller settlements and farms are present on this route and the presence of utilities, street furniture and property fences or walls further limits the maximum vehicle or load width. It is likely that permission would have to be sought from land owners affected by any loads which oversail on to their property and compensation would have to be paid in many cases.

15.1.14 Load width and length are therefore considered to be the most significant constraints on this route.

Assessment Limitations

15.1.15 The purpose of this SPA assessment is to determine the maximum dimensions of construction plant vehicles which can be accommodated on the two identified routes and to provide an indication of the scale of any remedial works which would be required. The vehicles used in this SPA assessment have been chosen as they represent the worst case scenario e.g. the largest dump truck that could potentially be used was identified to be the Volvo R100E rigid hauler. Should the results of the SPA assessment reveal that this and any other vehicles cannot be transported along the two identified routes without significant and unfeasible remedial works, then smaller plant vehicles would be used which are suitable.

15.1.16 It should be noted that the vehicles used in this SPA assessment do not represent the make or model of the vehicles that will be used in practice. Reference to specific vehicle models has been made to validate the dimensions and weights of the type of vehicles that were selected.

15.1.17 This SPA assessment does not include an assessment of the tunnel boring machine (TBM) and other components such as generators as the Autodesk Vehicle Tracking software does not have the capability to accurately model the bespoke heavy haul transporters which are required to move these components. A separate assessment will be required to assess the transportation of the components and the scale of any works which will be required to provide access. The separate assessment should also investigate the feasibility of using the Caledonian Canal to transport components which are unsuitable for road transport.

15.1.18 Additionally, the vehicles used in this SPA assessment are subject to change as it will be the responsibility of the Principal Contractor to select the construction plant vehicles that align with their construction programme and available for use. Once the construction programme has been finalised and the plant vehicles chosen, then the finalised Construction Traffic Management Plan (CTMP) (an outline is included in Appendix 15.1) will include a second SPA assessment of the vehicles that will be used during the construction of the Development.

15.2 Methodology

15.2.1 The following methodology was used to carry out this SPA assessment:

1. Identification of major constraints through a desktop study prior to an on-site visual survey of the proposed routes;
2. On-site visual survey of the proposed routes using a dash cam to record the route for future reference;
3. Creation of vehicle models for SPA using dimensions obtained from vehicle and component manufacturers;
4. Confirmation of areas of the routes which may limit the maximum dimensions of vehicles or loads that are to use them using Ordnance Survey maps and cross-referencing with the recorded footage;
5. Completion of SPA using Autodesk Vehicle Tracking software to model the movement of nine plant vehicles and their transporters where applicable; and
6. Creation of this appendix to supplement the Chapter 15: Traffic and Transport (Volume 2), which summarises the results of the SPA assessment.

15.2.2 The routes which are under assessment and the areas of constraint are shown in drawings 60570241-SKE-C-0001, 60570241-SKE-C-0101 and 60570241-SKE-C-0201 in Appendix 15.3: Swept Path Analysis Drawings.

15.3 Vehicles

15.3.1 As mentioned previously, some of the vehicles used in this assessment represent the worst case scenario in order to determine the maximum possible vehicle dimensions that can be accommodated on the identified routes to site. Should it be determined that a vehicle cannot gain access to the Development without unfeasible remediation works being required, then - where possible - a smaller vehicle would be used.

15.3.2 The vehicles selected for SPA assessment are representative examples of the type and models of vehicles that may be used during construction of the Development. As before, they are subject to change once the Construction Contractor has been appointed however the results of this SPA assessment will demonstrate the maximum vehicle dimensions which can be transported to the Development Site.

15.3.3 A summary of the plant vehicles and components which were selected for SPA modelling is shown in Table 15.1:SPA Assessment Plant Vehicles.

Table 15.1: SPA Assessment Plant Vehicles

Type	Model	Length (m)	Width (m)	Height (m)	Weight (t)	Comments
Mobile Crane	Liebherr 1750	19.26	3.00	4.00	96.00	Crane carrier is the largest section
Excavator	CAT 374F L	13.43	3.65	5.99	57.123	Transported on low loader with bucket removed. Total length of transporter + plant: 16.63 m
Bulldozer	CAT D11T	10.53	4.38	4.72	37.49	Transported on low loader without blade and tracks. Total length of transporter + plant: 16.63 m
Dump Truck	Bell B50E 6x6	11.27	4.03	4.15	35.68	Transported on low loader. Total length of transporter + plant: 16.63 m
	Volvo R100E	10.92	6.99	5.07	69.55	Transported on low loader with wheels removed. Total length of transporter + plant: 16.63 m
	Volvo R70D	9.91	5.29	4.57	36.19	Transported on low loader with wheels removed. Total length of transporter + plant: 16.63 m
Crusher	Lokotrack LT550GP	17.30	3.50	3.80	42.00	Transported on low loader. Total length of transporter + plant: 23.12 m
Standard HGV	Articulated HGV	16.50	2.55	3.68	N/A	Maximum legal length in UK
	Large Tipper	10.20	2.50	3.50	N/A	Conventional 20 t capacity tipper truck

15.3.5 It is anticipated that a wide range of vehicles and construction plant will be required throughout the duration of the construction of the Development; the majority of which have not been included in this assessment. At present, it is assumed all other plant vehicles and equipment will be equal or smaller in size compared to the plant vehicles that have been assessed. However, this does not include the TBM or other components such as the generators which will require an individual assessment to determine their method of transport and the most suitable route.

15.4 Results of SPA Assessment

15.4.1 This section summarises the results of the SPA assessment by highlighting the most significant constraints that were found that could impact the transportation of the selected plant vehicle and concluding if they are feasible for use on-site.

Liebherr 1750 Mobile Crane

15.4.2 The Liebherr 1750 is a mobile lattice boom crane which has a lifting capacity of 750 t and is transported in three separate sections; the crane carrier, crane superstructure and boom system. The specifications for the crane carrier section are listed below in Table 15.2 Liebherr 1750 Specifications.

Table 15.2 Liebherr 1750 Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
19.26	3.00	4.00	96.00	Crane carrier has been modelled as it the largest section

15.4.3 The Liebherr 1750 mobile lattice crane was assessed using Route 1 as it was determined that the length of the crane's rigid body would be unsuitable for traversing the narrow and challenging roads of Route 2. The crane was found to be able to travel along Route 1 without any conflicts and would not require any engineering remedial works to be carried out prior to transportation. However, given the height of the crane at 4 m, it is likely that roadside trees in some areas will be required to be trimmed to prevent damaging the vehicle or the trees.

15.4.4 Due to the width of the crane, it was found that vehicles would be unable to pass the crane and its escort during transportation without exiting the carriageway surface in some areas. It is recommended that the finalised CTMP designate areas where the carriageway width will allow vehicles to pass as the areas in which the escorting convoy will pause to enable impacted traffic to pass. This would also benefit other AILs which require transportation on this route during daytime hours. However, transportation at night is recommended wherever possible as traffic levels are likely to be minimal which would negate the need for any widening works to allow vehicles to pass.

15.4.5 A trial run should be carried out with an indicative vehicle profile to determine the scale of any tree trimming and to establish whether any utility cables will require relocation.

15.4.6 To conclude, the SPA has determined that the Liebherr 1750 mobile lattice crane is suitable for transportation using Route 1 with minor remedial work including tree trimming and the construction of additional passing places.

15.4.7 Drawings 60570241-SKE-C-0020 to 60570241-SKE-C-0037 and 60570241-SKE-C-0112 to 60570241-SKE-C-0121 detail the SPA that was carried out for the Liebherr 1750 mobile crane.

CAT 374F L Excavator

15.4.8 The CAT 374F L is a 71.5 t excavator that is primarily used for large scale earthworks due to its ability to use high volume buckets for material removal. The specifications for the excavator are shown in Table 15.2: CAT 374F L Specifications below.

Table 15.2: CAT 374F L Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
13.43	3.65	4.99	57.123	Assumed that the minimum operating weight is the transport weight

15.4.9 The CAT 374F L excavator was assessed using Route 2 on the B852 as it was determined there is sufficient horizontal clearance along the route to enable the 3.65 m wide load to access the Development Site. There are several small bridges on this route which would have investigated to determine if they can accommodate the 57 t load in addition to its transporter and the level of any remedial works which may be required.

15.4.10 However, it was found that the CAT 374F L and its transporter remained within the carriageway boundary for the majority of the route and it is anticipated that there is sufficient vertical clearance to avoid conflicting with bridge parapets. Roadside tree trimming would likely be required at several areas along the route due to the 4.99 m height of the load in addition to the approximately 1.0 m height of the low loader transporter.

15.4.11 Due to transportation by conventional low loader, it is anticipated that no carriageway widening works would be required to accommodate the CAT 374F L and its transporter on Route 2.

15.4.12 Subject to an investigation into the capacity of any bridges on this route, the CAT 374F L excavator is suitable for transportation to the Development Site using Route 2 after the trimming of roadside trees. A trial run should be carried out with an indicative load to determine the scale of any tree trimming and to establish whether any utility cables will require relocation.

15.4.13 Drawings 60570241-SKE-C-0219 to 60570241-SKE-C-0235 detail the SPA that was carried out for the CAT 375F L excavator.

CAT D11T Bulldozer

15.4.14 The CAT D11T is a 105 t bulldozer (when in operational configuration) that can accommodate high capacity blades for use on large sites; making it suitable for use during the construction of the Development. The specifications for the CAT D11T bulldozer are listed in Table 15.3: CAT D11T Bulldozer Specifications.

Table 15.3: CAT D11T Bulldozer Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
10.53	4.38	4.72	37.49	Shipping weight includes base machine chassis with cab and pivot shaft

15.4.15 The CAT D11T bulldozer was assessed using Route 2 in order to determine the maximum width of load which can be accommodated on this route without significant remedial works. It was found that due to the larger width of the load compared to other plant vehicles which may potentially be used, a greater number of roadside trees would have to be trimmed or removed to accommodate the bulldozer. However, due to its ability to be transported via a conventional low loader, it was found that no carriageway widening works would be required as the route is currently trafficked by vehicles of a similar size.

15.4.16 Although not as heavy as other plant vehicles, the suitability of Route 2 for the CAT D11T bulldozer is also dependent on the results of a bridge capacity investigation to conclude whether the bridges on the route can support the weight of the load and its transporter. A trial run should be carried out with an indicative load to determine the scale of any tree trimming and to establish whether any utility cables will require relocation.

15.4.17 To conclude, the CAT D11T bulldozer could potentially be transported on Route 2 subject to a bridge capacity investigation and the trimming of a large number of trees along the route.

15.4.18 Drawings 60570236-SKE-C-0236 to 60570241-SKE-C-0252 detail the SPA that was carried out for the CAT D11T bulldozer.

Volvo R100E Rigid Hauler

15.4.19 The Volvo R100E is a rigid frame dump truck that has the ability to transport up to 95 t of material across challenging site conditions. The high capacity of the dump truck results in fewer vehicles being required for use which results in fewer vehicle movements to, from and on site. The specifications for the Volvo R100E are shown below in Table 15.4: Volvo R100E Rigid Hauler Specifications.

Table 15.4: Volvo R100E Rigid Hauler Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
10.92	6.99	5.07	52.35	Assumed to be transported with wheels removed

15.4.20 The Volvo R110E was assessed using Route 1 due to its width which was deemed too substantial for Route 2 which has many areas with high roadside verges, property boundaries and roadside trees. It was found that the Volvo R100E was also unsuitable for transportation on Route 1 as the amount of tree removal or trimming that would be necessary to provide suitable access would be too great and would likely not be approved. Furthermore, there was found to be a significant amount of oversail on to third party land in some areas which would require the approval of the land owner(s).

15.4.21 The removal of street furniture including road signs and streetlights in addition to overhead utility wires would also be required which further add to the unsuitability of the Volvo R100E's transportation on Route 1 and subsequently Route 2.

15.4.22 To conclude, the Volvo R100E is unsuitable for use and an alternative should be used.

15.4.23 Drawings 60570236-SKE-C-0074 to 60570241-SKE-C-0091 detail the SPA that was carried out for the Volvo R100E.

Volvo R70D Rigid Hauler

15.4.24 The Volvo R70D is a similar rigid hauler to the Volvo R100E but is shorter and narrower; making it more suitable for locations where access may be restricted to large vehicles. Despite its compact size compared to the R100E, it has a capacity of 65 t which remains suitable for large scale earthworks projects. Table 15. 5: Volvo R70D Specifications lists the vehicle's specifications.

Table 15. 5: Volvo R70D Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
9.91	5.29	4.57	36.19	Assumed to be transported with wheels removed

15.4.25 The Volvo R70D was also assessed using Route 1 as it was determined that the CAT D11T's 4.38 m width was the maximum suitable width for transportation on Route 2 without a significant amount of remedial work. It was found that the Volvo R70D oversails beyond the carriageway surface in many areas along Route 1; with some areas likely requiring trees to be removed due the narrow road width. However it is anticipated that this would only be required in a limited amount of areas as there are large sections of the route which are open.

15.4.26 Furthermore, due to the height of the vehicle and the transporter, trees which cover the carriageway may have to be trimmed to prevent damage to the plant or to large sections of

the tree. A trial run should be carried out with an indicative load to determine the scale of any tree trimming and to establish whether any utility cables will require relocation.

15.4.27 To conclude, the Volvo R70D may potentially be suitable for transportation on Route 1, however an extensive amount of tree trimming and / or removal would likely be required in some areas along the route due to the vehicle's height and width.

15.4.28 Drawings 60570236-SKE-C-0056 to 60570241-SKE-C-0073 detail the SPA that was carried out for the Volvo R70D.

Bell B50E 6x6 Rigid Hauler

15.4.29 The Bell B50E 6x6 rigid hauler is a similar vehicle to the Volvo R70D but due to its narrower width, it is better suited to access sites which have restricted access options. Despite its narrower width, the Bell B50E has a capacity of 45 t which is still suitable for large scale earthworks. Table 15.6: Bell B50E 6x6 Specifications details the Bell B50E's specifications.

Table 15.6: Bell B50E 6x6 Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
11.27	4.03	4.15	35.68	Assumed to be transported with wheels removed

15.4.30 The Bell B50E was assessed using Route 1 to determine if an articulated low loader could traverse the route, particularly between Dores and the Development on the B862. It was previously established that the CAT D11T could be transported on Route 2 with minor roadside tree trimming, hence it has also been determined that the Bell B50E could be transported on Route 2 after the completion of roadside tree trimming.

15.4.31 It was found that the Bell B50E could easily be transported on Route 1; with roadside tree trimming only being required in a few areas where the B862 and B852 narrows near the village of Dores. A trial run should be carried out with an indicative load to determine the scale of any tree trimming and to establish whether any utility cables will require relocation.

15.4.32 Despite being suitable for transportation on Route 1, it is recommended that the Bell B50E or equivalent is transported on Route 2 to minimise traffic impacts on Route 1. This will aid in reducing the traffic impact associated with the delivery of construction plant vehicles as Route 2 has a significantly lower baseline traffic volume compared to Route 1.

15.4.33 Drawings 60570236-SKE-C-0020 to 60570241-SKE-C-0037 and 60570236-SKE-C-0102 to 60570241-SKE-C-0111 detail the SPA that was carried out for the Bell B50E.

Lokotrack LT550GP Crusher

15.4.34 The Lokotrack LT500GP is a secondary crusher plant which is typically attached to the Lokotrack LT125 primary jaw crushing plant to efficiently crush large volumes of material for easier removal. The transport specifications of the Lokotrack LT550GP are shown in

15.4.35 Table 15.7: Lokotrack LT550GP Specifications.

Table 15.7: Lokotrack LT550GP Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Comments
17.30	3.50	3.80	90.00	Transport dimensions and weight have been used

15.4.36 The Lokotrack LT550GP crusher was assessed using Route 1 as it was determined the weight of the load and its transporter would be unsuitable for transportation on Route 2 despite its relatively narrow width and acceptable length.

15.4.37 It was found that the Lokotrack LT550GP can be transported to site via Route 1 without requiring any remedial works. However, due to the weight of the load and its transporter, it is recommended that an investigation into the load bearing capacity of any structures on the route is carried out to ensure that the route is suitable. A trial run should be carried out with an indicative load to determine the scale of any tree trimming and to establish whether any utility cables will require relocation.

15.4.38 Drawings 60570236-SKE-C-0038 to 60570241-SKE-C-0055 and 60570236-SKE-C-0122 to 60570241-SKE-C-0131 detail the SPA that was carried out for the Lokotrack LT550GP.

Standard HGVs

15.4.39 Two HGVs have been assessed using SPA to demonstrate the capability of the identified routes to site to accommodate the vehicles which are anticipated to travel to and from the site most often. Although these types of vehicles currently use the local road network surrounding the Development, it is important to demonstrate that any increase in traffic associated with these vehicles will not result in a deterioration in road safety or conditions as there will be sufficient carriageway width to accommodate them and to let other road users pass. The two vehicles which have been assessed are a standard large tipper truck and a maximum legal length articulated HGV. Their specifications are shown below in Table 15.8: Standard HGV Specifications.

Table 15.8: Standard HGV Specifications

Length (m)	Width (m)	Height (m)	Weight (t)	Vehicle Type
10.20	2.50	3.50	Varies	Standard large tipper truck
16.50	2.55	3.68	Varies	Standard articulated HGV

15.4.40 As expected, both of these vehicles were found to be suitable for use on Route 2 and subsequently Route 1 without requiring any addition remedial works to provide access.

15.4.41 Drawings 60570236-SKE-C-0253 to 60570241-SKE-C-0269 detail the SPA for the standard large tipper and 60570236-SKE-C-0202 to 60570241-SKE-C-0218 detail the SPA that was carried out for the standard articulated HGV.

15.5 Summary of Assessment

15.5.1 The SPA assessment has concluded that of the nine vehicles which were subject to SPA, only one was found to be unfeasible for use on site during the construction of The Development due to the scale of the remedial works which would be required to provide access.

15.5.2 The Volvo R100E rigid hauler has been deemed unfeasible for use due to its approximately 7.0 m width which would require a substantial amount of trees to be cleared and for utilities to be diverted or relocated. In its place, the Volvo R70D rigid hauler may be suitable due to its smaller size, however a trial run would have to be carried out to determine the scale of any remedial works which would be required as roadside verge overrun was observed throughout the route. Should the Volvo R70D prove unfeasible, then a smaller material

hauler such as the Bell B50E 6x6 hauler is recommended as it is anticipated that it would only require a limited amount of roadside tree trimming.

15.5.3 It has been determined that the maximum width of vehicle which can use Route 2 without significant remedial works to widen the carriageway, clear trees and relocate utilities is approximately 4.40 m. Vehicles or loads which are wider than this are recommended for transportation via the B862 due to the favourable road geometry and the shorter journey which would reduce the cost and disruption of any remedial work which is required. A trial run is required on Route 1 to determine the largest load or vehicle which can be transported without the need for extensive and disruptive remedial works however, for the purpose of this assessment, a maximum width of 5.0 m – when transported on a low loader – is advised. This is due to the narrow road width on the B852 south of Dores and the proximity of large areas of roadside trees on the B862 north of Dores.

15.5.4 The remaining six vehicles which were modelling using SPA were found be able to access the Development via either Route 1 or Route 2 with minimal remedial works required. Through the SPA of the seven vehicles which were found to be able to access The Development with minimal remedial works, it can be assumed that AILs which are smaller than those modelled can also be accommodated on the two routes depending on their dimensions and weight.

15.5.5 However, it is advised that a trial run is carried out on these routes to confirm the vertical and horizontal clearance from roadside trees and verges. Furthermore, an investigation into the load bearing capacities of any highway structures is required to determine the scale of any strengthening works which may be required to provide safe crossing.

15.5.6 Table 15.9: Assessment Summary provides a concise summary of nine vehicles which were submitted to SPA.

Table 15.9: SPA Assessment Summary

Vehicle Type	Vehicle Model	Assessed Route to Site	Required Remedial Work	Further Assessment / Investigation Required
Mobile Crane	Liebherr 1750	Route 1	Tree trimming and possible creation of passing places to alleviate traffic congestion	Highway structure load bearing capacity investigation Trial run to accurately determine the scale of any tree trimming or utility diversions
Excavator	CAT 374F L	Route 2	Tree trimming and possible utility diversion	
Bulldozer	CAT D11T	Route 2	Tree trimming and possible utility diversion	Trial run to accurately determine the scale of any tree trimming or utility diversions
Dump Truck	Volvo R100E (Rigid)	Route 1	Unsuitable for transportation via Route 1 or Route 2	
	Volvo R70D (Rigid)	Route 1	Extensive tree trimming and possible utility diversions	Trial run to accurately determine the scale of any tree trimming or utility diversions
	Bell B50E 6x6 (Rigid)	Route 1	Tree trimming and possible utility diversion	Trial run to accurately determine the scale of any tree trimming or utility diversions
Crusher	Lokotrack LT550GP	Route 1	Tree trimming and possible utility diversion	Trial run to accurately determine the scale of any tree trimming or utility diversions
Standard HGV	Articulated HGV	Route 2	None	None
	Large Tipper	Route 2	None	None

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