Eden Project International

EDEN PROJECT NORTH

Transport Assessment



70083611-TA
AUGUST 2021

PUBLIC

Eden Project International

EDEN PROJECT NORTH

Transport Assessment

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70083611

OUR REF. NO. 70083611-TA

DATE: AUGUST 2021

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	1st Draft	Final		
Date	30/07/2021	24/08/2021		
Prepared by	Alberto Poltz Faggiani	Alberto Poltz Faggiani		
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Project number	70083611	70083611		
Report number	70083611-TA	70083611-TA		
File reference	70083611-TAv0	70083611-TAv1		

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1 INTRODUCTION

1.1 OVERVIEW

1.1.1. WSP have been instructed by Eden Project International Ltd (EPIL) to provide transport and highways advice in support of a planning application for the proposed development of Eden Project North (EPN) in Morecambe, Lancaster.

1.1.2. The red line boundary of the site extends to circa 4.58 hectares and comprises land situated to the north and west of Morecambe Town Centre as shown in Figure 1-1.

Figure 1-1 - Site Location



1.1.1. The planning application will seek full planning permission for the following development:

"Demolition of existing buildings and proposed construction of major mixed leisure development in association with Eden Project (including use classes E, F1 and F2 and Sui Generis) comprising the erection of 4 connecting buildings, public realm and landscaping works, and associated infrastructure and engineering operations"

1.1.2. The following maximum development parameters have been set for the development and the Environmental Impact Assessment (EIA) will be prepared on this basis:

- Maximum building height of 37.3m AOD;
- Maximum building footprint of 18,000sqm (GEA);
- Maximum visitor numbers of 1 million per annum with an estimated average of 760,000 per annum. There will be timed ticketing to control visitor flows. The proposed development has

been designed to accommodate a maximum of 4,000 visitors per day. Feasibility studies indicate an estimated average of 100 days per annum of up to 3,750 visitors; 200 days per annum of up to 2,500 visitors; and 60 days per annum of up to 1,250 visitors. There will be a maximum of 750 visitors per hour accessing the site.

- Maximum core hours of operation (main site):
  - Daily: 09:00 – 21:00
- Maximum hours of operation (main site – summer time):
  - Daily: 09:00 – 00:00
- Maximum 6,000-person capacity outdoor arena to host up to 8 late evening events per calendar year (summer months only) during the following hours:
  - 18:00 – 00:00 (music finishing at 23:00)
- A canopy-like structure primarily to provide weather protection for visitors plus flexible spaces that can potentially accommodate Class E food and beverage and retail outlets, house renewable energy technologies and/or provide sheltered cycle parking.

1.1.3. Within these maximum parameters, the proposed development will comprise development within Use Classes E, F1 and F2 and Sui Generis.

1.1.4. The apportionment of the floorspace per Use Class is set out in the submitted Schedule of Accommodation.

1.1.5. A copy of the Site Layout Plan has been included at Appendix A.

1.1.6. No development will take place outside the site's red line boundary (Figure 1-1) as part of these proposals with the exception of highway works on Marine Road Central as described later in this Transport Assessment (TA); works which would be subject to separate approval under s278 of the Highways Act 1980. EPIL will work with Lancaster City Council (Lancaster CC) and Lancashire County Council (Lancashire CC) to secure future enhancements as part of the wider transformation of the local area.

1.1.7. An indicative opening year for the development has been given as spring 2024. The site is anticipated to be built over approximately a 2-year period.

1.2 BACKGROUND

1.2.1. The Eden Trust was established in 1994 as an educational charity and social enterprise. Eden Project's mission is to connect people with each other and the living world, exploring our dependence on it and highlighting the threats that it faces in an exciting and engaging way.

1.2.2. The Eden Project in Cornwall stands as a global beacon of regeneration, transforming a former china clay quarry into a world class, unique and awe-inspiring visitor destination.

1.2.3. Twenty years on, Eden Project is creating new beacons of hope and transformation around the world and aiming to set a new precedents for what a visitor destination should be.

1.2.4. The proposed development site is identified by Lancaster CC as a Development Opportunity Site. The site is known as the Seafront Headland, Central Promenade.

1.2.5. The site falls within the Morecambe Conversation Area and close to a number of designated heritage assets.

1.2.6. WSP have provided pre-application transport and highways advice to EPIL over the last two years. This has included support in preparation of the Outline Business Case (OBC) submitted to HM Government in September 2020.

1.3 EDEN PROJECT (CORNWALL)

1.3.1. The proposed development is built upon the EPIL experience of successfully running Eden Project (Cornwall) for over 20 years. The extensive knowledge and experience gained from this has been applied to the design of the proposed development.

1.3.2. However, it should be noted that whilst Eden Project (Cornwall) is the most similar major leisure attraction to the proposed development, using it as the sole benchmark is not considered to be appropriate. This is because Eden Project (Cornwall) sits within a low population density region and benefits from significant adjacent land to continue developing and incorporating new solutions, whereas the proposed development is to be located in a town centre location, within an urban environment and a clearly defined site area.

1.3.3. Therefore, the Eden Project (Cornwall) has been carefully used as a benchmark, alongside many other leisure attractions across the UK to inform the Transport Strategy of the proposed development as set out in more detail in the following chapters.

1.4 SCOPE AND METHODOLOGY

1.4.1. A comprehensive process of statutory and non-statutory stakeholder engagement has been undertaken by WSP over the last 28 months, including:

- Lancashire County Council (Highways, Traffic, Infrastructure, Parking and Public Transport teams);
- Lancaster City Council (Parking, Economic Growth and Regeneration and Planning teams);
- Highways England;
- Sustrans;
- Network Rail;
- Northern Railway;
- Avanti West Coast;
- SLC Rail (Lancaster CC rail consultants);
- Stagecoach;
- The Long Distance Walkers Association;
- Genecon (authors of the Outline Business Case);
- Planning Solutions Consulting Limited (Leisure Consultant);
- Trivandi (Project Manager);
- Grimshaw (Architect),
- TEP (Landscape Architect);
- Buro Happold (Civil Engineering); and
- WSP (multiple disciplines).

1.4.2. Since April 2019 WSP has undertaken a series of key documents and milestones that have helped in the production of this Transport Assessment (TA) as set out below:

- Environmental Impact Assessment Transport Scope;
- Initial Visitor and Employees Trip Generation and Distribution Technical Note (August 2019);
- Transport Group Meeting where the proposed methodology was presented. This was held on 12/09/2019 and the following stakeholders attended:
  - Lancashire County Council (Highways, Traffic, Infrastructure, Parking and Public Transport teams);
  - Lancaster City Council (Parking, Economic Growth and Regeneration and Planning teams);
  - Highways England;
  - Atkins (Highways England consultant)
  - Network Rail;
  - Northern Railway (invited, did not attend this first meeting);
  - SLC Rail (Lancaster CC rail consultants);
  - Stagecoach;
- Engagement with Lancashire CC (Highways, Traffic, Infrastructure, Parking and Public Transport teams);
- Engagement with Lancaster CC (Parking, Economic Growth and Regeneration and Planning teams);
- Two-day site visit to Eden Cornwall to understand existing transport strategy and logistic operations (February 2020);
- Engagement with multiple stakeholders as summarised above;
- Support to the Outline Business Case;
- Transport Assessment Scope (April 2021);
- Developed the EPN Transport Strategy; and
- Developed the EPN Parking Strategy;

1.4.3. A summary of the relevant minutes is included at Appendix B.

1.5 DOCUMENT PURPOSE

1.5.1. The purpose of this TA is to fully assess the transport impact of the proposed development on the surrounding transport network. It should be read in conjunction with the Travel Plan (TP) and the Environmental Statement (ES) that is being submitted alongside this TA.

1.5.2. The TA includes a study of the proposed development focusing on the ways and extent to which the proposed development reduces the overall need to travel by car.

1.5.3. This TA adheres to local, regional and national policy guidance. It has been produced in accordance with the Department for Transport *'Guidance on Transport Assessment'* (2007). Although withdrawn, this document remains relevant in the preparation of transport assessments.

1.5.4. The structure of the report will continue as follows:

- Chapter 2: Existing conditions at the proposed development site;
- Chapter 3: Description of the proposed development;
- Chapter 4: A review of national, regional and local policy;
- Chapter 5: Description of the proposed transport principles and strategy of the proposed development;
- Chapter 6: Technical description of the proposed trip generation and distribution methodology;

- Chapter 7: Description of the proposed active travel and sustainable transport strategy;
- Chapter 8: Description of the proposed parking strategy;
- Chapter 9: Description of the proposed visitor groups strategy;
- Chapter 10: Description of the proposed servicing and refuse strategy;
- Chapter 11: Technical description of the proposed traffic capacity assessment methodology;
- Chapter 12: Description of existing and proposed Traffic Regulation Orders;
- Chapter 13: Summary of the proposed construction traffic management plan;
- Chapter 14: Description of the proposed net zero strategy and aspirations; and
- Chapter 15: A summary of this Transport Assessment.

2 EXISTING CONDITIONS

2.1 SITE LOCATION AND EXISTING USE

2.1.1. The proposed development comprises land situated to the north and west of Morecambe Town Centre.

2.1.2. The development site is bound to the north, east and west by the promenade which extends east-west along the Bay of Morecambe. The Royal National Lifeboat Institution (RNLI) station lies immediately north of the site adjoining the promenade. The stone jetty extends out from the promenade to the north west of the site.

2.1.3. Immediately to the south west lies the Grade II* listed Midland Hotel and the Bay of Morecambe.

2.1.4. The site is bound to the south by Marine Road Central beyond which lies the Grade II* listed Winter Gardens, amusements arcades, shops, public realm and car parks serving Morecambe Town Centre.

2.1.5. Other designated heritage assets in close proximity to the site boundary include the Grade II listed station building and lighthouse at the northern tip of the stone jetty, the Grade II listed wall and entrance piers enclosing the car park and the Grade II listed War Memorial.

2.1.6. There are no adopted highways nor Public Rights of Way within the proposed development red line boundary. However, both the Sustrans National Cycle Route 69 and 700 runs through the site as described in Chapter 2.

2.1.7. The Bay Arena Car Park (78 parking spaces) is located on the eastern corner of the site red line boundary and provides 24-hour parking to general public via a private road controlled by Lancaster CC.

2.2 ACTIVE TRAVEL

Walking Infrastructure

2.2.1. The proposed development is located at the heart of the Morecambe promenade, a well-patronised traffic free corridor connecting Heysham and Hest Bank. This corridor forms part of the Lancashire Coastal Way, a long-distance footpath following the coast of Lancashire and the Morecambe Bay.

2.2.2. Vehicular movements within the site are only allowed for emergency vehicles, RNLI access, the Stone Jetty (servicing) and the Bay Arena Car Park.

2.2.3. The promenade around the proposed development benefits form a traffic free, ample width, levelled and well-designed footway that is lit at night as shown in Figure 2-1.

Figure 2-1 - Morecambe promenade





2.2.4. The footway to the south of the proposed development runs parallel to the Promenade and has a generous width of 3+ metres. The footway to the south of Marine Road Central also provides a 3+ metres wide provision with additional space for outdoor sitting and activities of the multiple retail, food and beverage units in the area.

2.2.5. Three different signal-controlled pedestrian crossings over Marine Road Central throughout the extents of the proposed development provide key connectivity between the site, Morecambe Town Centre, Central Drive, Northumberland Street and Morecambe Railway Station.

2.2.6. Central Drive provides four different staggered zebra crossings on raised tables between the railway station and the Promenade. Northumberland Street is also connected with the railway station with two additional identical crossings.

2.2.7. All pedestrian crossings in the area provide dropped kerbs and tactile pavement.

2.2.8. No Public Rights of Way are present in the area.

Figure 2-2 - Pedestrian crossings on Marine Road Central (left) and Central Drive (right)





2.2.9. Additionally, the *Flock of Words* acts as the key pedestrian gateway from the railway station to the Promenade as seen in Figure 2-3. This provides a modern, wide, level and lit pedestrian corridor into the site across the Festival Market car park.

Figure 2-3 - Flock of Words

(figure extracted from whynotassociates.com)



Cycling Infrastructure

2.2.10. The traffic free environment of the site also includes cycling, a key activity along the Promenade. In fact, the Sustrans Route 69 (Way of the Roses) and 700 travel across the site as shown in Figure 2-4. These routes connect Morecambe with Lancaster via a segregated traffic free route along the River Lune.

2.2.11. The Way of the Roses provides key connectivity between Morecambe and Lancaster. This enables mixed modal share trips from the Lancaster railway station and from the Caton Road Park and Ride, featuring key sites such as the Millennium Bridge and the Lune Aqueduct.

Figure 2-4 - Existing cycling routes: Sustrans routes plan (top left), Promenade (bottom left), Way of the Roses (top right) and Millennium Bridge (bottom right)









2.3 PUBLIC TRANSPORT

Rail

2.3.1. Morecambe Railway Station is located just 300 metres to the south of the proposed development. It provides regular services to Lancaster, Leeds and Heysham, where wider regional services are available.

2.3.2. Both Morecambe and Lancaster Railway Stations provide key walking and cycling connectivity with the proposed development with traffic free and segregated walking and cycling routes.

Figure 2-5 - Morecambe Railway Station (left) and Lancaster Railway Station (right)





Bus

2.3.3. Morecambe Bus Station is located on Central Drive next to the railway station, effectively forming a transport hub in the town centre. Local services connect Morecambe with Kendal, Lancaster, Preston and multiple local and regional destinations.

2.3.4. Furthermore, a series of bus stops for local services are located across Marine Road Central. All of these bus stops provide sheltered waiting facilities.

Figure 2-6 - Morecambe Bus Station and Bus Stop on Marine Road Central





Caton Road Park and Ride

2.3.5. The Caton Road Park and Ride located at the M6 Junction 34 provides 650 car spaces for Park and Ride into Lancaster City Centre. Lancashire CC data suggests that this location does not only cater for Park and Ride users, as it also acts as a facility for car sharing into / out of Lancaster.

2.3.6. It can act as the key site that intercepts motorised trips into Morecambe and Lancaster thanks to its modern bus facilities and signalised toucan crossing points connecting the facility with the Way of the Roses for both pedestrians and cyclists.

Figure 2-7 - Caton Road Park and Ride Facilities





2.4 LOCAL HIGHWAY NETWORK

2.4.1. The site is located immediately north of Marine Road Central, the local north-south traffic corridor along the Morecambe Bay. Traffic is separated by a central island between Central Drive to the west and Northumberland Street to the east. It provides on street parking and a series of on street bus stops, effectively reducing the traffic movements to a single lane per direction. To the east of Northumberland Street, Marine Road Central continues as a one traffic lane per direction with occasional on street parking, bus stops and loading bays.

2.4.2. Marine Road Central connects with Marine Road West to the southwest, and Marine Road East to the northeast. Both Marine Road West and East provide a very similar highway infrastructure to Marine Road Central with a single traffic lane per direction, on street parking and a series of bus stops and loading bays.

2.4.3. Northumberland Street is a quiet street connecting Marine Road Central with Central Drive. It forms a signalised junction with Marine Road Central and the Promenade. Despite being a pedestrian area, the Promenade currently also acts as the access road to the Bay Arena Car Park.

2.4.4. Central Drive is a dual carriageway road connecting Marine Road Central and Marine Road West via a three-arm roundabout. It is the key highways corridor from Lancaster into Morecambe Town Centre. A series of roundabouts give access to side roads (Northumberland Street), developments and car parks. To the east, Central Drive becomes a single carriageway road with a single traffic lane per direction.

2.4.5. Central Drive connects with Euston Road and Queen Street, forming a clockwise *'gyratory junction'* around a series of residential dwellings and the Morecambe Job Centre.

Figure 2-8 - Marine Road Central (top left), Central Drive (bottom left), Northumberland Street (top right) and Broadway (bottom left)









2.4.6. Queen Street and Euston Road connect with Lancaster Road. All three are the lineal continuity of Central Drive towards Lancaster. They provide access to side roads, on street parking and bus stops up to the dual roundabout junction.

2.4.7. The dual roundabout junction is formed by a mini-roundabout to the west (Lancaster Road and Broadway), and a 5-arm roundabout to the east (Hall Drive, Lancaster Road, Morecambe Road, Westgate and access to the mini-roundabout).

2.4.8. Broadway consists of an ample and green boulevard that prioritises traffic movements from Lancaster to the promenade, where it forms a priority junction with Marine Road East.

2.4.9. Morecambe Road connects with Lancaster and the Bay Gateway via a signalised junction. Two traffic lanes per direction are present, with an additional 3 short lanes on the approach to the junction.

2.4.10. The Bay Gateway is a recently constructed 40mph dual carriageway road connecting Morecambe and Heysham with the M6 bypassing Lancaster City Centre.

Figure 2-9 - Morecambe Road (left) and the Bay Gateway (right)





2.4.11. As part of the Bay Gateway construction, the Caton Road Park and Ride (650 spaces) was also constructed at the M6 Junction 34. This is the most direct access to Morecambe and Lancaster from the Strategic Road Network (SRN). The M6 is the longest motorway in the United Kingdom, running for circa 230 miles from the Midlands to the border with Scotland on the west coast of England. In the vicinity of Junction 34, the M6 is formed by a dual carriageway with three lanes per direction and has two on-slip and two off-slip roads at Junction 34, allowing for all possible movements to and from the M6.

2.4.12. To the north, the Shefferlands Roundabout connects the northbound on slip road with the Bay Gateway. To the south, a recently constructed signalised junction connects the southbound off slip road (up to six lanes), Caton Road (direct access into Lancaster City Centre), the Shefferlands Roundabout (three northbound lanes, up to four southbound lanes) and the A683 (up to five westbound lanes and two eastbound lanes). The southbound off-slip and on-slip roads form a signalised junction to the southeast of the M6 J34, with two lanes per direction.

Figure 2-10 - M6 Junction 34



2.5 HIGHWAY SAFETY

2.5.1. Personal Injury Accident (PIA) data has been obtained from the DfT using CrashMap for the period 1st January 2016 to 30th June 2020 (latest 5-year period available) and is included in Appendix C. The study area includes the following locations:

Table 2-1 - Morecambe Town Centre PIA Locations

Location	Slight	Serious	Fatal	Total
Marine Road Central / Central Drive	9	1	0	10
Marine Road Central	2	1	0	3
Marine Road Central / Northumberland Street	1	1	0	2
Central Drive / Hilmore Way	1	0	0	1
Central Drive	2	0	0	2
Edward Street	1	0	0	1
Market Street	1	0	0	1
Central Drive / Northumberland St	4	1	0	5
Total	**21**	**4**	**0**	**25**

Table 2-2 – M6 Junction 34 PIA Locations

Location	Slight	Serious	Fatal	Total
M6 J34 NB Off Slip Road	4	1	0	5
M6 J34 NB On Slip Road	0	0	0	0
M6 J34 SB Off Slip Road	0	0	0	0
M6 J34 SB On Slip Road	0	0	0	0
M6 J34 Western Signals	4	1	1	6
M6 J34 Eastern Signals	1	0	0	1
M6 J34 Shefferlands Roundabout	6	0	0	6
Caton Road	7	0	0	7
A683 (East)	0	0	0	0
Bay Gateway	1	0	0	1
Total	**23**	**2**	**1**	**26**

Table 2-3 - Cyclist and Pedestrian PIAs Summary

Type	Slight	Serious	Fatal	Total
Pedestrian	4	0	0	4
Cyclist	5	3	0	8
Total	**9**	**3**	**0**	**12**

2.5.2. There have been a total of one fatal, six serious and 44 slight accidents in the study area between 2016 and 2020. This give a total of 51 accidents over a 5-year period, which equates to 10 accidents per year. However, when segregating the local highways PIAs and the SRN PIAs, over a 5-year period there have been five accidents per year on the urban environment adjacent to the proposed development, and five accidents per year on the highways environment of the M6 Junction 34.

2.5.3. A detailed analysis of the six serious and the one fatal accidents has been undertaken as follows:

Table 2-4 - PIA Detailed Analysis

Location	Severity	Brief Description / Main Contributory Factors
Marine Road Central / Northumberland Street	Serious	On a Saturday dry and well-lit night, a cyclist on the carriageway collided with a permanent carriageway lamp post or other permanent object on the pavement.
Central Drive / Northumberland Street	Serious	A cyclist started to cross the road as the car driver turned left into the cyclist. Collision occurred as the car exited the junction while the cyclist proceeded to cross the carriageway.
Marine Road Central	Serious	A car driver was engaged in a rear end collision with another car driver who was parked in the carriageway.
Marine Road Central / Central Drive	Serious	Data Not Available
M6 J34 Western Signals	Fatal	Oncoming car collides with a motorcycle on daylight.
M6 J34 Western Signals	Serious	Eight vehicles involved in a chain rear end accident along junction slip road during icy/frost weather conditions.
M6 J34 NB Off Slip Road	Serious	A car accident involving a car driver and passenger during wet weather conditions.

2.5.4. Given the high proportion of slight accidents (86%), the low number of accidents at any given specific location over the five-year period and the high level of traffic flows across the study area, it is considered that there is no unusual pre-existing road safety issue in the vicinity of the proposed development nor at the M6 J34.

2.5.5. In summary, no significant correlations have been identified to suggest that highway condition, layout or design were significant contributory factors in any of the collisions within the study area. Furthermore, the frequency and severity of the accidents is not considered to be unusual for a town centre and motorway junction location.

3 PROPOSED DEVELOPMENT

3.1 PROPOSED DEVELOPMENT

3.1.1. Eden Project North represents once in a lifetime opportunity for a major leisure development that will have a significant regeneration impact in Morecambe and Lancaster, Lancashire and the wider North-West region.

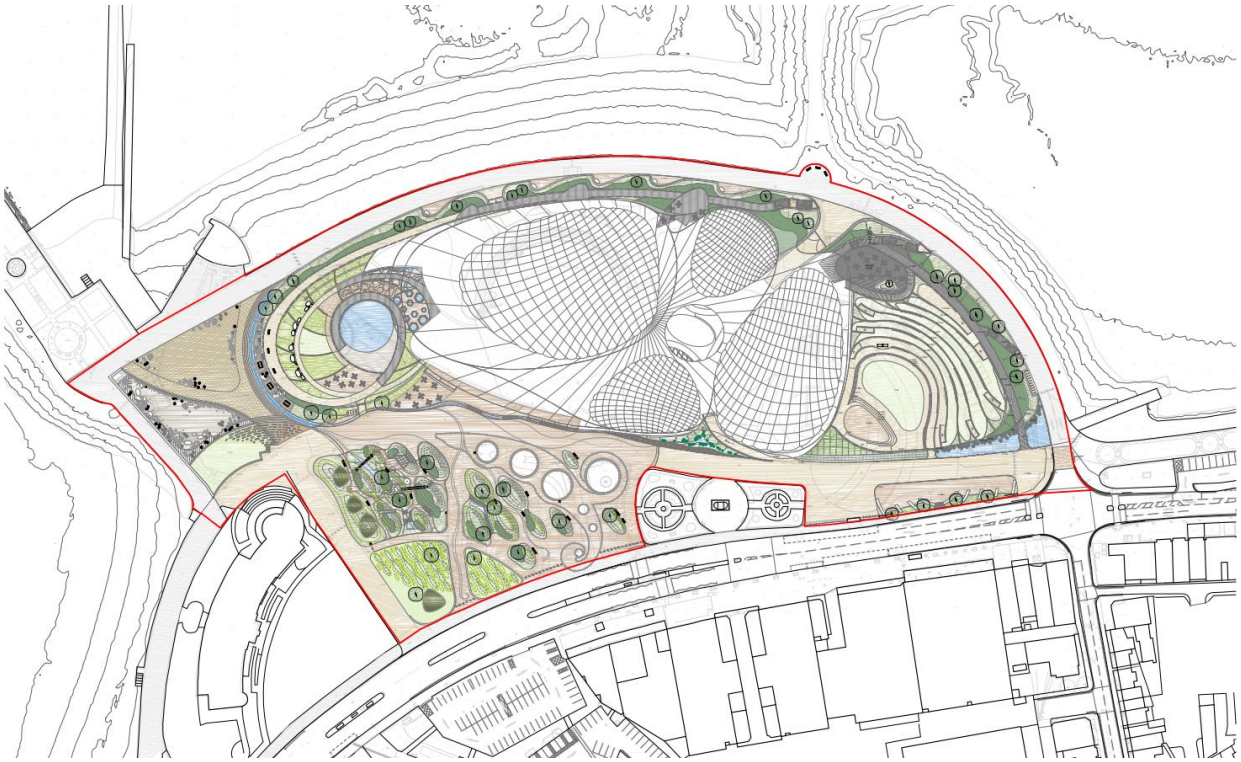
3.1.2. The proposed development (Figure 3-1 and Appendix A) will comprise development within Use Classes E, F1 and F2 and Sui Generis;

3.1.3. The following maximum development parameters have been set for the development and the Environmental Impact Assessment (EIA) has been prepared on this basis:

- Maximum building height of 37.3m AOD;
- Maximum building footprint of 18,000sqm (GEA);
- Maximum visitor numbers of 1 million per annum with an estimated average of 760,000 per annum. There will be timed ticketing to control visitor flows. The proposed development has been designed to accommodate a maximum of 4,000 visitors per day. Feasibility studies indicate an estimated average of 100 days per annum of up to 3,750 visitors; 200 days per annum of up to 2,500 visitors; and 60 days per annum of up to 1,250 visitors. There will be a maximum of 750 visitors per hour accessing the site.
- Maximum core hours of operation (main site):
  - Daily: 09:00 – 21:00
- Maximum hours of operation (main site – summer time):
  - Daily: 09:00 – 00:00
- Maximum 6,000-person capacity outdoor arena to host up to 8 late evening events per calendar year (summer months only) during the following hours:
  - 18:00 – 00:00 (music finishing at 23:00)
- A canopy-like structure primarily to provide weather protection for visitors plus flexible spaces that can potentially accommodate Class E food and beverage and retail outlets, house renewable energy technologies and/or provide sheltered cycle parking.

3.1.4. Within these maximum parameters, the proposed development will comprise development within Use Class E, F1 and F2 and Sui Generis.

Figure 3-1 - Proposed development



3.2 SEASONALITY AND VISITORS

3.2.1. EPN will be a time controlled and advance booking major leisure attraction where the number of visitors per day and hour will be limited as set out in Table 3-1. These figures have been reported after numerous feasibility studies carried out by EPIL and the appointed leisure consultant Planning Solutions Consulting Limited (PSCL).

Table 3-1 – Seasonality and visitors

Season	Maximum Days / Year	Maximum Visitors / Day	Absolute Maximum Visitors / Hour	Predicted maximum Visitors / Hour
Peak	100	3,750	750	~600
Inter Peak	200	2,500	750	~500
Off Peak	60	1,250	750	~400

3.2.2. The predicted maximum visitors per hour is the optimum number of visitors entering the proposed development to ensure the optimum visitor experience. Although the building has been designed to accommodate a maximum entry flow of 750 visitors per hour, the visitor experience would be enhanced when the predicted maximum is not exceeded.

3.2.3. Figure 3-2 below represents a typical year seasonal calendar. It shows where peak, inter peak and off peak days are likely to occur, based upon experience from Eden Project (Cornwall).

3.2.4. As it can be seen, the 100 peak days will occur on summer holidays, school holidays, bank holidays, summer weekends, school holiday weekends and bank holiday weekends. It is important to note that for two thirds of the year, a maximum of 1,250 to 2,500 visitors per day will be attracted by the development proposals.

3.2.5. It should be noted that not all 100 peak days are likely to attract 3,750 daily visitors. There will be *'super peak days'* within the peak season which attract up to 3,750 daily visitors, but many of the 100 peak season days will attract much less than 3,750 daily visitors.

Figure 3-2 - Typical year seasonal calendar

January

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1*	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Feburary

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19*	20	21
22*	23	24	25	26	27	28
29	30					

May

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6*	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27*	28	29	30	31		

June

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26*	27	28	29	30	31	

September

Mon	Tue	Wed	Thu	Fri	Sat	Sun
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						/ 1

October

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December

Mon	Tue	Wed	Thu	Fri	Sat	Sun
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25*	26*	27	28	29
30	31					/ 1

Notes:

1) Typical calendar showing predicted peak, inter peak and off peak days.
2) Based (to certain extent) on existing visitor numbers to Eden Cornwall.

Key:

25	PEAK DAY
25*	BANK HOLIDAY
25	INTER PEAK DAY
25	SCHOOL HOLIDAYS
25	OFF PEAK DAY

3.3 EMPLOYEES

3.3.1. The proposed development will directly employ circa 417 full time equivalent employees. It is expected that the maximum number of employees on site at any given time would be circa 280.

3.3.2. A clear aim of EPN is to provide local employment opportunities wherever possible, and as such the large majority of employees are expected to live locally in Morecambe and Lancaster. Including directorate. Chapter 5 and the Travel Plan explore their travel patterns.

4 POLICY REVIEW

4.1 INTRODUCTION

4.1.1. The following section of the report sets out the key national, regional and local traffic and transport policies that are relevant to the proposed development. Later sections of the report demonstrate how the proposals accord with these policies.

4.2 NATIONAL POLICY

National Planning Policy Framework, July 2021

4.2.1. The National Planning Policy Framework (NPPF) has a core focus on streamlining the overall development process. It maintains that plans and decisions should apply a presumption in favour of sustainable development.

4.2.2. The NPPF states (para 110) that *"In assessing sites that may be allocated for development in plans, or specific applications for development it should be ensured that:*

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users;

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Mode Design Code; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."

4.2.3. The NPPF states that development *"should only be prevented or refused on transport grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts of development are severe."* (para 111).

4.2.4. The NPPF states (para 112) that applications for new development should:

"a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."

4.2.5. In the assessment of development proposals, it should be ensured that:

"a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users; and

c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."

4.2.6. Furthermore, the NPPF states:

> *"All developments that will generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."* (para 113)

Planning Practice Guidance

4.2.7. The Government's Planning Practice Guidance (PPG) supplements the NPPF. There is a section clarifying the over-arching principles on Travel Plans, Transport Assessments and Transport Statements. There are also sections advising further on each of these three documents.

4.2.8. The guidance on Transport Assessments and Statements re-iterates the circumstances in which either document would usually be required. It is clear that a development of the size and nature of this development requires a full Transport Assessment. It also clarifies the process for establishing a scope for the assessment, and what the document should contain. The PPG has been considered in the production of this TA.

4.3 REGIONAL POLICY

Local Transport Plan 2011 – 2021

4.3.1. The Local Transport Plan recognises that *"by 2021 particular problems of traffic congestion and road capacity that have previously limited economic growth in key areas will have been resolved or mitigated."* And *"work with public transport operators will have provided better connections and links with areas inside and outside Lancashire. This work will support regeneration efforts across Lancashire including in our coastal resorts"*.

4.3.2. To achieve this, the following seven transport priorities were set out:

- *"Improving access into areas of economic growth and regeneration;*
- *Providing better access to education and employment;*
- *Improving people's quality of life and wellbeing;*
- *Improving safety of our streets for our most vulnerable residents;*
- *Providing safe, reliable, convenient and affordable transport alternatives to the car;*
- *Maintaining our assets; and*
- *Reducing carbon emissions and its effects."*

Lancaster District Highways and Transport Masterplan (2016)

4.3.3. The Lancaster District Highways and Transport Masterplan outlines ambitious new plans to see and transform Lancaster District travel patterns. The plan contains a range of eye-catching improvements of how Lancaster District could look by 2031. These are;

- *"Position Caton Road as the main gateway into the city from the M6, from both north and south;*
- *Reconfigure M6 Junction 33 to support the development of South Lancaster around Lancaster University;*
- *Develop the 'Lancaster Reach' bus rapid network, incorporating the Park and Ride service from M6 Junction 34 to Lancaster city centre to create a 'Y'-shaped network of two routes, one linking*

Heysham and Morecambe to South Lancaster via the city centre, the other linking M6 Junction 34 to Lancaster University;

- *Work with Lancaster City Council to put in place the transport elements needed to make the Morecambe Area Action Plan a reality;*
- *Carry out a Morecambe Bay Connectivity Study to explore the business case for better connection around the whole bay area for all modes of transport; and*
- *A comprehensive plan to develop an integrated multi-use/cycling network for the district, which will support the wider Cycling and Walking Strategy for Lancashire."*

4.3.4. Paragraph 3.9 recognises that *"There are a number of key sectors that are important to Lancashire as target sectors for future development which will require better mans of travel, both strategic connectivity from the rest of the UK and local travel opportunities."* This includes *"a greater role for tourism and Lancashire's significant visitor economy based around increasing the attractiveness of the traditional seaside resort of Blackpool and Morecambe and developing rural tourism."*

Lancashire Climate Change Strategy 2009 - 2020

4.3.5. The Lancashire Climate Change Strategy 2009-2020 recognises that road transport in Lancashire accounts for 24% of carbon dioxide emissions (compared with 26% across the UK). However, road transport also affects quality of life in other ways. Therefore, three objectives are set out:

- *"Develop and maintain an integrated, efficient and sustainable transport system;*
- *Increase the use of public transport, walking and cycling; and*
- *Promote the use of more efficient vehicles and alternative transport fuels, including sustainable bio-fuels."*

4.4 LOCAL POLICY

Lancaster District Local Plan 2011 - 2031

4.4.1. The Local Plan for Lancaster District 2011 – 2031 provides a new planning framework for the area adopted in July 2008.

4.4.2. Policy NPPF1: Presumption in Favour of Sustainable Development states that *"the council will take a positive approach that reflects the presumption in favour of sustainable development contained within the NPPF. It will always work proactively with applicants to jointly find solutions which means that proposals can be approved wherever possible, and secure development that improves the economic, social and environmental conditions in the area."*

4.4.3. Policy SP10: Improving Transport Connectivity acknowledges that *"New development will be expected to be sited in sustainable locations that ensure a range of transport options and seek to reduce the need to travel."*

4.4.4. Policy TC4: Central Morecambe states that *"The Council is committed to achieving the Morecambe Area Action Plan aims through supporting new development that positively contributes to the town centre and seeks to regenerate derelict and underused land within the Central Morecambe area.*

4.4.5. In transport terms, Policy T1: Lancaster Park and Ride identifies *"two sites that will be protected for the purposes of Park and Ride".* These being the existing M6 Junction 34 Caton Road Park and Ride, and the land at M6 Junction 33 proposals.

4.4.6. Policy T2: Cycling and Walking Network acknowledges that *"The Council are committed to supporting and promoting the role of cycling and walking in the district, building on previous*

successes of Lancaster's role as a Cycling Demonstration Town providing safe and secure facilities."

4.4.7. Policy T4: Public Transport Corridors states that the Council has identified the *"Lancaster Road / Morecambe Road between Lancaster city and Morecambe town centre as a key public transport corridor within the district where frequent and regular public transport services will be provided."*

Morecambe Area Action Plan

4.4.8. The Morecambe Area Action Plan (MAAP) is a spatial plan for central Morecambe, the priority area for regeneration within Lancaster District. The MAAP was adopted in 2014 as a Development Plan Document, part of the new Local Plan for Lancaster District. The MAAP provides a framework for the investment, development and change required to regenerate the central Morecambe.

4.4.9. Spatial Policy 3 (SP3). Morecambe Main Seafront and Promenade identifies this area as *"open space for peoples' informal recreation and enjoyment. The Council will protect this main seafront and promenade from development other than that which will demonstrably enhance the open character or is reasonably required to provide or improve opportunities for appropriate informal recreation and enjoyment and will not otherwise harm the open character."*

4.4.10. Development Opportunity Policy DO2 Strategic Leisure – Seafront Headland, Central Promenade identifies the proposed site for the Eden Project North as a *"strategic opportunity for leisure investment and development. The Council will support development proposals for a visitor / education centre."* The Council will further require that any development:

- *"Contributes to improving public realm within the Main Seafront and Promenade; and*
- *Provides for vehicle access, servicing and parking in ways not adverse to public amenity and pedestrian circulation on the Main Seafront, and improves public amenity and safety for pedestrian crossings and reduce the perceived and real severance effect of the highway with the town landward."*

4.4.11. In relation to Marine Road Central, Action Set 5 of the MAAP mentions the Central Seafront and Main Beach and the intention *to "Introduce shared surfaces on Marine Road Central via phased works over time."* The focus is on improving connectivity between the Seafront and the town centre, with safe and convenient crossings of Marine Road Central.

Lancaster Climate Emergency Declaration (2019)

4.4.12. In 2019 the Council declared a Climate Emergency which set out a commitment to becoming net zero by 2030 and undertaking a Climate Emergency Local Plan Review, *"carefully considering the Local Plan and how we can best develop the District and address climate adaption, mitigation and resilience."*

4.4.13. The Climate Emergency Local Plan Review is one of the areas of the adopted Local Plan that will be reviewed. The Review will focus on modal shift opportunities, particularly on urban areas. It will also focus on an update to parking standards in new developments to encourage low car ownership and electric vehicles.

4.5 SUMMARY

4.5.1. In summary, the proposed development is located in a sustainable and accessible town centre location and accords with the principles of national, regional and local planning policy, in which all modes of accessibility have been considered during the design and priority given to active travel and

public transport. The theme of sustainability is considered further in Chapter 7. Chapter 13 focuses on the Net Zero Strategy and how the proposed development will become a net zero development.

5 TRANSPORT PRINCIPLES

5.1 INTRODUCTION

5.1.1. It is important to highlight that this TA covers a multi-modal transport strategy for the proposed development. This multi-modal strategy is *'live'* and will continue to evolve as EPIL has demonstrated at Eden Project (Cornwall), where over the past 20 years the site and transport strategy has continued to adapt to latest trends and technologies. This is further described in detail over the coming chapters and Chapter 13 in particular.

5.1.2. The Eden Transport Strategy has been developed based upon the Eden Transport Vision. Collaboration with statutory and non-statutory stakeholders has been key to develop a transport strategy that aligns with the proposed development's ethos and sustainability aspirations whilst providing a realistic Opening Year solution that complies with planning policy.

5.1.3. However, it needs to be acknowledged that a series of internal and external interventions (e.g. regeneration of the Festival Market area, better rail services between Lancaster and Morecambe and/or public transport integrated ticketing options) are anticipated to be brought forward by a range of parties, with full support from EPIL, following the submission of this planning application as set out in Chapter 13.

5.2 EDEN TRANSPORT VISION

5.2.1. In April 2019, EPN released an ambitious long term transport vision.

5.2.2. The focus of EPN is to develop a Transport Strategy that reduces car borne trips both to the wider area and in particular to Morecambe Town Centre, thus reducing impact upon the highway network and the wider environment. The core principles set out in the Transport Vision (Appendix D) are:

1. Eden Project North aims to work with the existing transport infrastructure where possible.
2. Eden Project North aims to support future transport developments where multiple schemes can create an argument for larger scale improvements.
3. Eden Project North aims to positively create circulation routes in and around the town of Morecambe, encouraging pedestrianisation and inspiring people to spend more time in different areas.
4. Public transport is the priority method.
5. The baseline for the planning horizon is 2025+, with a vision towards 2030/2035.
6. Last two miles – no fossil fuel vehicles around the site.
7. Pedestrianisation of the Prom.
8. The journey should be joyful.
9. Visitors that make a special effort to travel to the destination sustainably will be rewarded by reduced entry prices and other incentives.
10. Eden Project North's transport vision extends as far as the perimeter of the project site, but aims to be flexible enough to allow for collaboration in parallel with neighbouring infrastructure.

5.3 TRANSPORT STRATEGY

5.3.1. The Eden Transport Strategy, based on the time controlled and advance booking system, aims to position EPN as a leading example for progressive and healthy transport methods in the UK. It aims to provide clean, smooth, accessible, fun and active alternatives to the traditional transport strategies of reliance upon the private car.

5.3.2. With the Way of the Roses, the West Coast Mainline, the M6, the A6, the A683 Bay Gateway and the recently upgraded M6 J34, the extensive regional transport network already handles millions of annual visitors to the region and the nearby Lake District. Morecambe itself enjoys a direct rail link with Lancaster and a robust, generally uncongested, local road network, including the A589. It hosts a number of annual large-scale events such as the Vintage Festival and the Morecambe Carnival, with up to 55,000 weekend visitors per event[1]. The City Council is highly experienced at dealing with large peaks on the local transport network in terms of both traffic flow and parking demand in *'major event mode'*.

5.3.3. This TA shows how visitor and employee numbers translate into demand for transport and how we intend to address such demand. The EPN Team have worked alongside both Lancaster CC and Lancashire CC to ensure the existing transport network is optimised and aligned with the anticipated growth of the wider region and the Eden Transport Vision.

5.3.4. Whilst not an essential component of this development, the proposed development will also benefit from enhanced capacity in the area created by recent local transport investments in infrastructure improvements through the Housing Infrastructure Fund (HIF) scheme at the M6 Junction 33 and possible future regeneration schemes from the next generation of regional town deals.

5.3.5. From a transport perspective, the OBC submitted to HM Government demonstrated that the use of existing assets means that the proposed development can be developed without extensive transport infrastructure or operations costs, and that amenities needed can be overwhelmingly be supplied in a cost neutral manner by the partners involved (Appendix E). It demonstrates how any off site costs are therefore minimal and focused on relatively low cost items such as signing and wayfinding, and local upgrades to cycle or waking infrastructure as opposed to costly junction upgrades, new car parks or public transport schemes. This will be again demonstrated in this TA.

5.3.6. Whilst the key principle of the EPN Transport Strategy is to encourage people to arrive by non-car modes, particularly for their last mile element of the journey, there is also a practical reality that in the Opening Year many visitors will still seek to travel by car, as the rail industry will take time to be able to provide more frequent services between Lancaster and Morecambe to respond to increased demand created by the proposed development and the wider uplift it will bring. While Morecambe is not congested with a large proportion of visitors arriving by car, the aim is to intercept many car trips as they leave the Motorway at the M6 Junction 34, where there is an underused and recently built Park and Ride amenity. Others would use readily available underutilised existing parking in the town

[1] Figure provided by Lancaster City Council Economic Development team on 10th January 2020.

centre, with these two amenities being linked through ticketing to allow a dynamic and flexible response according to demands.

5.3.7. The travel methods considered in the multi-modal strategy are shown in Figure 5-1 and Figure 5-2.

Figure 5-1 - Multi-modal Strategy, Travel Methods

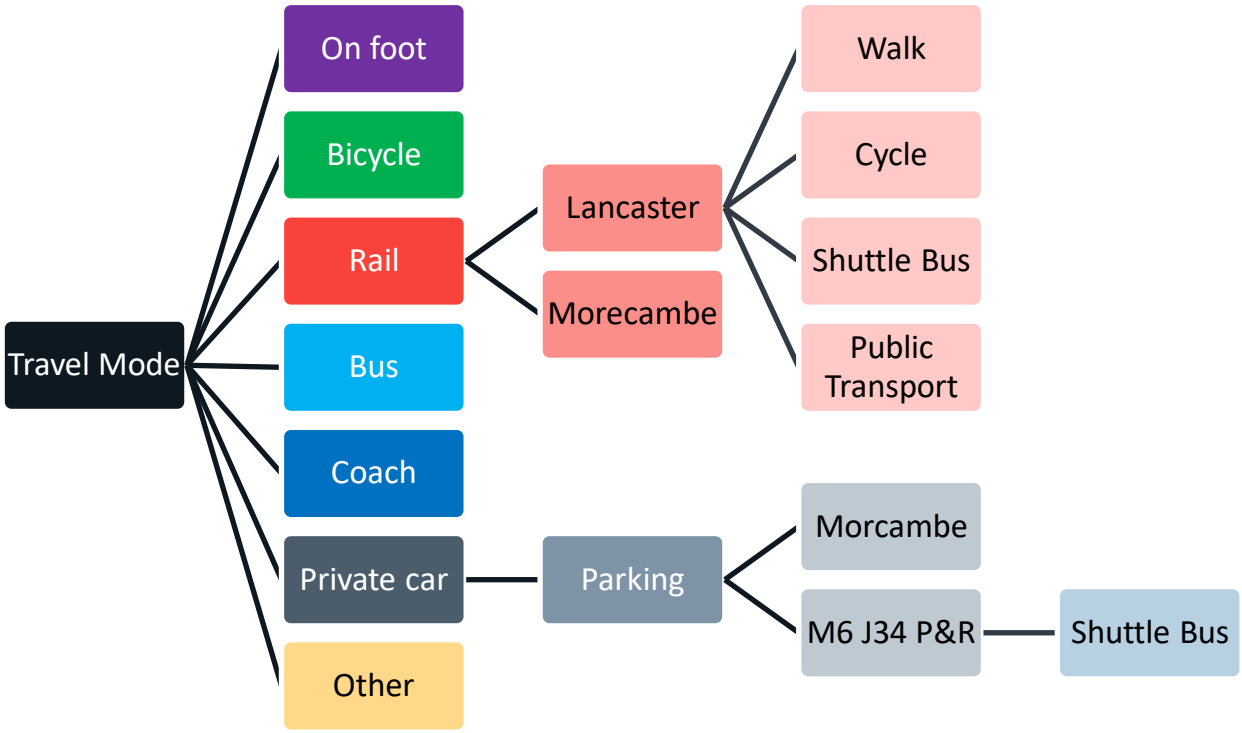
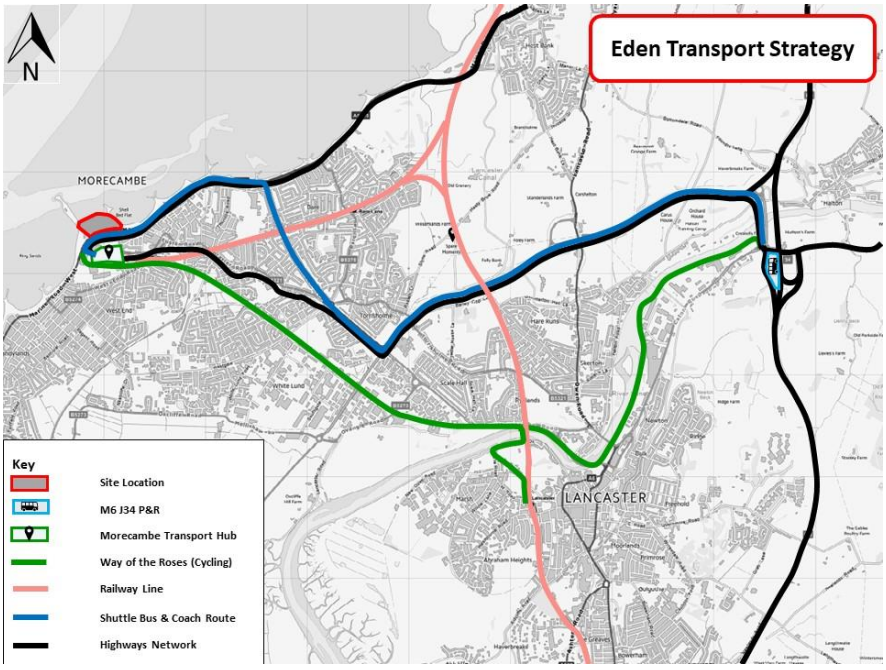


Figure 5-2 - Multi-modal Strategy Plan



5.4 BOOKING SYSTEM

5.4.1. A time controlled and advance booking system will allocate visitors a specific time slot to arrive and enter the site. This will allow EPIL to control, manage and influence the visitors demand throughout the day and year, smoothing out traditionally large peak demand in terms of both days and hours. This will enhance the visitor experience by providing a smooth access to the proposed development, as well as effectively limiting the number of generated trips to the site.

5.4.2. As with all time controlled and advance booking systems, there will be some degree of flexibility to recognise visitors experiencing unexpected events on their journey to the proposed development (e.g. booked rail service delayed so visitor would arrive late to their booked time slot). However, visitors will be strongly encouraged to visit the proposed development at their booked time slot.

5.4.3. The time controlled and advance booking system is a way of spreading visitor numbers throughout the day to avoid any large peaks, enhancing the overall visitor experience.

5.4.4. This system was an innovative vision developed by EPIL in 2019 which was not commonly used amongst major leisure attractions at that time. However, the COVID pandemic and associated visitor limits have resulted in most leisure developments introducing time controlled and advance booking systems. Some examples[2] include the Lancaster Castle and all Museums run by Lancashire CC[3], the recently opened RHS Bridgewater Garden, Chester Zoo, Alton Towers, Blackpool Pleasure Beach, The Forbidden Corner, Fell Foot Park and the Eden Project (Cornwall) itself. In Cornwall the EPIL team has learnt invaluable lessons on how to manage a time controlled and advance booking system, and how it can enhance the visitor experience to Eden Project (Cornwall) as visitors have been spread out across the day effectively removing the large arrivals peaks that used to occur in the early morning hours.

5.4.5. Whilst this pre-booked time controlled booking system was for many sites forcibly introduced in light of COVID Government guidelines, many sites have reported a positive experience and are likely to continue encouraging visitors to book their tickets in advance. Eden Project (Cornwall) will definitely be amongst those sites that will continue to do so, aligning with what was originally proposed in 2019 for EPN in Morecambe.

5.4.6. Subject to the selected method of travel, the entry ticket to the proposed development will vary to recognise the environmental impact of the travel method as per Eden Project (Cornwall). This could consist of direct discounts on active travel and sustainable transport tickets, or vouchers to redeem part of the expenditure at the proposed development (e.g. food and beverage, gift shop etc).

5.4.7. Figure 5-3 provides a flowchart overview of how the time controlled and advance booking system will operate. Visitors will have to book their ticket in advance on the EPN website, where they will be presented with a series of generic questions so EPIL can better understand where they will be

[2] The listed sites provide pre-booked time controlled booking systems as per July 2021.
[3] Museums run by Lancashire CC requiring pre-booked tickets include Clitheroe Castle, Gawthorpe Hall, Helmshore Mills Textile Museum, Judges' Lodgings Lancaster and Queen Street Mill Museum.

travelling from (day vs. overnight visitors), how many people are in their party and when they would be planning to visit the proposed development.

5.4.8. Visitors will have the opportunity at this stage of the booking process to raise any accessibility requirements such as assistance dogs, accompanying carers or blue badge parking.

5.4.9. After these generic questions, the website will present the most sustainable travel option as the preferred method of travel to the proposed development. Visitors staying overnight in Lancashire and its immediate vicinity will be presented with walking, cycling and public transport tickets. Whilst visitors travelling from further afield will be presented with rail and public transport integrated ticketing options as the most sustainable travel options. However, visitors will be able to select alternative travel methods.

5.4.10. Subject to the selected method of travel, travel routes and integrated ticketing options will be presented. For example, overnight visitors staying to the north of Morecambe and travelling by car may be presented with a preferred journey route to the site, directing them through the coastal A6 instead of the M6.

5.4.11. If the visitor has selected the private car as their method of travel, the parking strategy (Chapter 8) describes in detail how this will be managed. But again, the general questions will play a key role in understanding origin, party size and vehicle details. EPIL may direct visitors to a specific car park based on the answers to those questions. A series of examples are included below:

- High occupancy cars, Electric Vehicles (EVs) and blue badge holders may be directed to Morecambe instead of the M6 J34 Caton Road Park and Ride;
- Visitors from the local area may be presented with an option to choose where to park, as they may be familiar with the area. Whilst visitors from further afield may be directed to the M6 J34 Caton Road Park and Ride.

5.4.12. Each method of travel ticket will be accompanied by a sustainability accreditation, showcasing what is the environmental impact generated by that method of travel. This will encourage visitors to align with EPIL's sustainability ethos and giving them an option to reconsider their method of travel.

5.4.13. Carbon offsetting would also be considered during the ticket purchase option, allowing visitors to offset their carbon impact.

5.4.14. This system will enable EPIL to control, manage and influence/incentivise how visitors travel to the proposed development. EPIL will know in advance how visitors will be travelling, how many rail visitors will be using Lancaster Railway Station or how many parking spaces will be required at each parking location on any given day, and this will allow EPIL to control, manage and influence the multi-modal transport demand in collaboration with both Councils and transport operators. The combination of a comprehensive and resilient transport network with capacity, combined advanced and dynamic ticketing plus limits on daily attendance allows EPIL to make use of existing underused resources in a sustainable manner.

5.4.15. As different travel method tickets will have different pricing costs, a series of policies will be in place to ensure that these will be enforced. A series of possible policy examples are presented below:

- Visitors travelling by rail without an integrated ticketing will have to show a valid rail ticket upon entrance to the proposed development. Failure to do so may result in losing the associated benefits of a sustainable ticket.

- Visitors travelling by bus without an integrated ticketing will have to show a valid bus ticket upon entrance to the proposed development. Failure to do so may result in losing the associated benefits of a sustainable ticket.
- Visitors travelling by coach will be part of an organised tour or group. Therefore, integrated ticketing will be available when booking their visit;
- Visitors travelling by car will have to park at one of the following locations and follow the enforcement rules:
    - Visitors parking at the M6 Junction 34 Caton Road Park and Ride will have to validate their ticket when boarding the shuttle bus. Failure to do so may result in losing the associated benefits of a sustainable discounted ticket;
    - Visitors parking in Morecambe will have to validate their ticket at the entrance of the allocated car park (see Chapter 8);

5.4.16. The time controlled and advance booking system is not only a way to enhance visitor experience by limiting the number of visitors per hour a day. It is a realistic and modern sustainable solution to make best use of existing resources. Understanding in advance number of visitors, method of travel and origin will enable EPIL to collaborate with both Councils and relevant transport bodies to ensure that transport demand is accommodated accordingly. For example, EPIL would collaborate with Avanti West Coast if on a particular day large groups of visitors are expected to travel to Lancaster and Morecambe by train, as either additional rail/EPN staff may be required at Lancaster Railway Station.

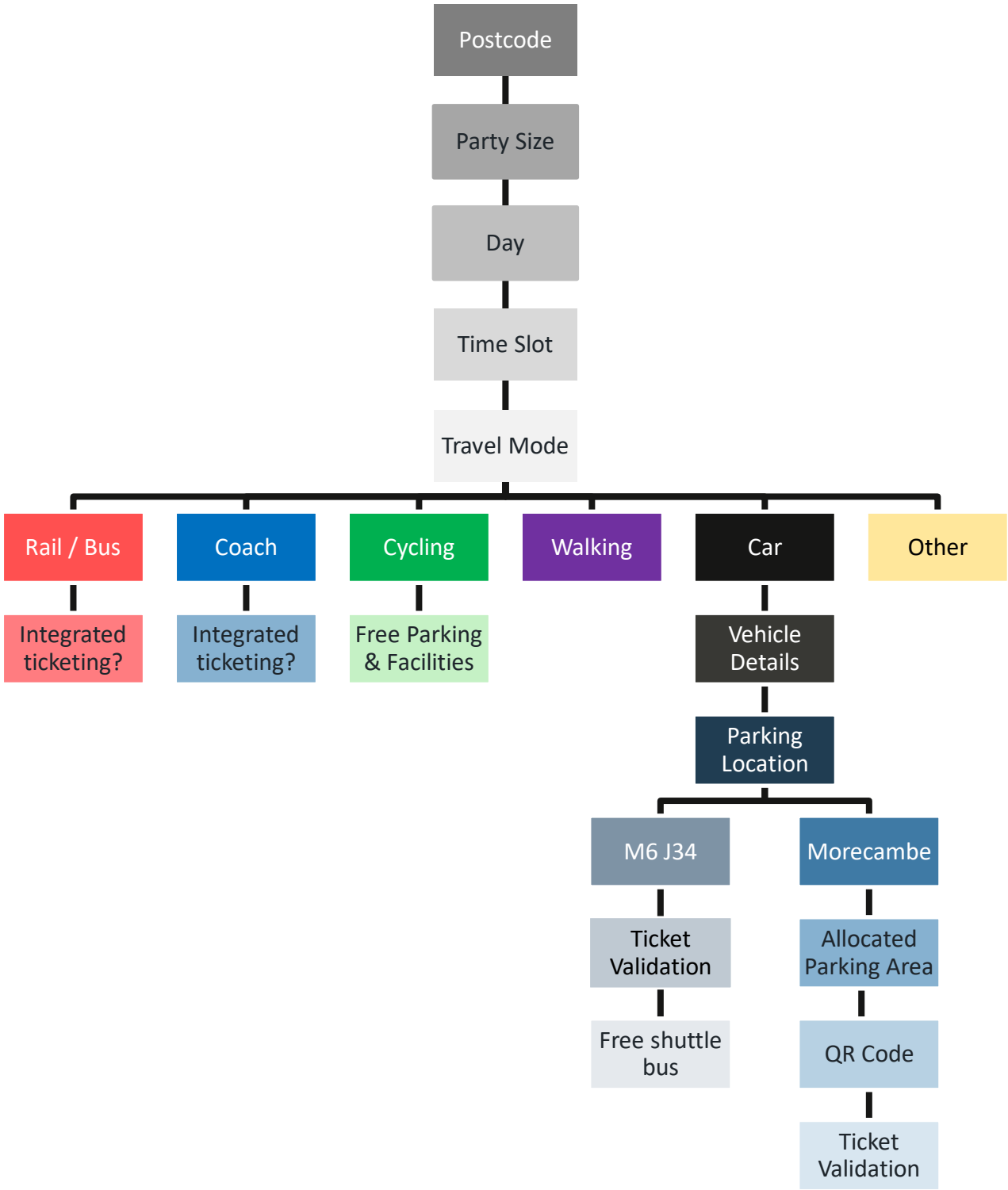
5.4.17. This system is not only about transport and will enable EPIL to plan ahead regarding how many employees are required on site, how many meals they need to prepare or how much waste it will be generated on any given day. These are just some examples of how controlling the visitor demand to a major leisure attraction enables to achieve a site-wide sustainable strategy.

5.4.18. Interestingly, Eden Project (Cornwall) has also introduced the option to pre-book lunch orders, which enables them to plan in advance more accurately kitchen employees and meals required for each day.

5.4.19. Historically, all these aspects were based on experience and historical data. However, time controlled and advance booking systems allows for a more accurate and sustainable planning and management, allowing EPIL to make use of resources in the most sustainable manner.

5.4.20. Alternative accessible arrangements will be put in place (e.g. book via phone call).

Figure 5-3 - Booking System Flowchart



6 TRIP GENERATION AND DISTRIBUTION

6.1 INTRODUCTION

6.1.1. WSP prepared a *Visitor and Employee Trip Generation and Distribution Technical Note* that was presented at the *Transport Group Meeting* at Morecambe Town Hall in September 2019. This Note represented the initial methodology proposed to derive the generated trips by the proposed development.

6.1.2. After thorough consultation with Lancashire CC and Highways England over the last two years, this has been refined to reflect comments made by statutory consultees.

6.1.3. This chapter represents the latest version of the visitor and employee trip generation and distribution model.

6.1.4. The maximum number of visitors per season set out in this document have been used as a worst case scenario. It is not expected that the absolute maximum number of visitors per day will visit the proposed development on all days. Therefore, for robustness, only the *'super peak days'* within each season are presented in this chapter. These *'super peak days'* are likely to be:

- Weekends during the peak season;
- Weekends during the interpeak season; and
- Weekdays during the peak season.

6.1.5. All tables presented in this chapter have been derived from an Excel model. Figures reported are therefore rounded and totals may not exactly add up.

6.1.6. It should be noted that all numbers reported on this chapter may be rounded for presentation purposes. And therefore they may not add up to the exact total quoted.

6.2 EMPLOYEES

Introduction

6.2.1. EPIL has anticipated 417 jobs annually created directly by the proposed development. Of these, 28 are expected to be working remotely and in Cornwall, as a central services team will be established to managed the different worldwide *Edens*. Therefore, a maximum of 389 employees are expected to be based in Morecambe.

6.2.2. Considering the 09:00-21:00 opening hours previously described, and that some employees will need to be on site before and after opening times, WSP has categorised the jobs in two different groups. Table 6-1 below summarises the number of jobs per employees' group:

- Group 1 (Admissions, Catering, Event, Interpretation and seasonal, and Retail) will start working between 08:00 and 13:00, and will end working between 17:00 and 22:00.
- Group 2 (Estates, Marketing, Horticulture, Directorate, Finance, IT, Reception and HR) will work on standard working hours from 08:00 to 17:00.

Table 6-1 – Employees Number per Group

Group	Employee Numbers	Proportion
1	283	68%
2	134	32%

Trip Distribution

6.2.3. Analysis of Lancaster 006, 008 and 009 Middle Layer Super Output Area (Morecambe Town Centre) using ONS data (WF01BEW – Location of usual residence and place of work), indicates that 5,698 people work in Morecambe Town Centre. Table 6-2 below shows the location of usual residence and its origin travel zone as per the visitors' trip distribution exercise.

Table 6-2 – Location of Usual Residence for People Working in Morecambe

Region	Lancaster	Lancaster 001	South Lakeland	Wyre	Lancaster 005	Lancaster 002	Lancaster 019	Ribble Valley
People	4437	177	127	76	69	68	64	31
Zone	-	C	C	A	B	B	A	A
Region	**Fylde**	**Preston**	**Blackpool**	**Blackburn**	**Craven**	**Rochdale**	**South Ribble**	**Other**
People	30	30	28	24	20	15	12	335
Zone	A	A	A	A	B	A	A	-

6.2.4. Those locations of usual residence that have less than ten working population were grouped in *Other* and not considered in this exercise.

6.2.5. Due to the nature and ethos of EPIL, it has been assumed that the majority of employees will be based locally and will use sustainable modes of transport, including directorate. This will be reinforced via the Travel Plan also submitted as part of this planning application.

6.2.6. Those living within the urban environment of Lancaster have been grouped under *Lancaster*.

6.2.7. Lancaster 001, 002, 005 and 019 are the '*outskirts*' regions of Lancaster and have been treated separately to *Lancaster*.

6.2.8. Table 6-3 below summarises the total working population per zone and its modal split calculation methodology.

Table 6-3 – Working Population per Zone and Modal Split Methodology

Location of Usual Residence Zone	Working Population	Proportion	Modal Split Methodology
Zone A – South	310	6.0%	WU03UK
Zone B – East	157	3.0%	WU03UK
Zone C – North	304	5.8%	WU03UK

Lancaster	4437	85.2%	Assumed all will use sustainable transport modes
Total	5208	100%	-

6.2.9. As can be seen, the vast majority (85.2%) of the working population of Morecambe Town Centre live in the urban region of Lancaster. Therefore, it can be assumed that the vast majority of employees living in this area will use sustainable transport modes for commuting (walking, cycling and public transport).

Modal Split

6.2.10. The modal split has been calculated using 2011 journey to work census data.

6.2.11. Analysis of Lancaster 006, 008 and 009 Middle Layer Super Output Area (Morecambe Town Centre) using ONS data (WU03UK – Location of usual residence and place of work by method of travel to work) is shown in Table 6-4 below.

Table 6-4 – Employees Modal Split

Work from Home	Train	Bus	Taxi	Motorcycle	Car Driver	Car Passenger	Bicycle	On Foot	Other
0%	1%	8%	1%	1%	57%	7%	4%	21%	0%

6.2.12. It can be seen that the working population with usual residence in the region that commute to Morecambe do so by car (64%), on foot (21%), by public transport (9%), cycling (4%), rail (1%) and other (1%).

6.2.13. It is envisaged that those driving to work will have to justify their requirement to do so. Very limited employee parking will be provided as explained in Chapter 8. However, this is likely to occur at both the M6 Junction 34 Caton Road Park and Ride and at the Billy Hill car park in Morecambe.

6.2.14. Employees car park requirements will be based on justified necessity and car sharing. Employees will be presented with multiple sustainable travel benefits as described in the Travel Plan.

6.2.15. It should also be noted that Eden Project (Cornwall) has an important presence of volunteers on a daily basis, particularly around the holiday season. Whilst these have not been yet quantified for the proposed development, volunteers tend to be local and therefore use both public and active transport to travel to and from home. As such, no vehicular trips are envisaged to be made by volunteers.

Trip Generation

6.2.16. Once the employee's numbers, their origin and modal split are known, the trip generation exercise can be undertaken as described in this section.

6.2.17. It has been assumed that all employees will work five days per week. Therefore, a 0.71 (5/7) factor has been applied to the number of employees.

6.2.18. Employees from Group 1 will arrive and depart across the starting and ending working hours described above. Hence, a 0.20 (1/5) factor has been applied to Group 1 employees for each arrival and departure hour.

6.2.19. Table 6-5 below shows the total number of person trips generated by employees. A maximum of 278 employees is expected to be working on site at any given time.

Table 6-5 – Employees Person Trip Generation

Time	Arrivals	Departures	Total
07:00			
08:00	127		127
09:00	38		38
10:00	38		38
11:00	38		38
12:00	38		38
13:00			
14:00			
15:00			
16:00			
17:00		127	127
18:00		38	38
19:00		38	38
20:00		38	38
21:00			
22:00			
23:00			

6.2.20. Considering the number of employees arriving and departing per hour, their trip distribution and modal split, the total trip generation by mode has been calculated as follows.

6.2.21. All Employees Trip Generation tables can be found in Appendix F.

6.2.22. Table 6-6 below shows the number of active travel and public transport trips generated by employees and zone. Most of them will occur from the urban area of Lancaster, where circa 85% of employees are expected to live. A total of 251 employees are expected to commute by active travel and sustainable transport to the proposed development.

Table 6-6 – Employees Active Travel and Sustainable Transport Trip Generation

Time	Zone A – South	Zone B – East	Zone C – North	Lancaster	Total
07:00					
08:00	3	1	3	108	115
09:00	1	0	1	32	34

Time	Zone A – South	Zone B – East	Zone C – North	Lancaster	Total
10:00	1	0	1	32	34
11:00	1	0	1	32	34
12:00	1	0	1	32	34
13:00					
14:00					
15:00					
16:00					
17:00	3	1	3	108	115
18:00	1	0	1	32	34
19:00	1	0	1	32	34
20:00	1	0	1	32	34
21:00	1	0	1	32	34
22:00					
23:00					

6.2.23. Table 6-7 below shows the number of employees' cars trips generated by origin.

6.2.24. Whilst it is possible to calculate the car occupancy rate by dividing the number of people travelling by car (car driver and car passenger) by the number of cars (car driver), it has been decided to assume as a worst case that each employee car will be occupied by a single employee member. However, the Travel Plan will describe how car sharing will be promoted to achieve a much higher car occupancy rate than 1.0 or 1.13 (2011 Census Data).

6.2.25. An absolute maximum of 28 commuting vehicles are expected to be generated by the proposed development.

Table 6-7 – Employees Cars Trip Generation

Time	Zone A – South	Zone B – East	Zone C – North	Lancaster	Total
07:00					
08:00	5	2	5		12
09:00	1	1	1		4
10:00	1	1	1		4
11:00	1	1	1		4
12:00	1	1	1		4
13:00					
14:00					
15:00					
16:00					
17:00	5	2	5		12

Time	Zone A – South	Zone B – East	Zone C – North	Lancaster	Total
18:00	1	1	1		4
19:00	1	1	1		4
20:00	1	1	1		4
21:00	1	1	1		4
22:00					
23:00					

Summary

6.2.26. Census Data indicates that circa 85% of the 390 employees are expected to live within the urban area of Lancaster. Because of the sustainable nature of the proposed development, and thanks to the Travel Plan, it is expected that all employees living within the urban area of Lancaster will commute by active travel and sustainable modes. This equates to 236 one-way commuters per day.

6.2.27. Those living outside the urban area of Lancaster are expected to travel as per 2011 Census modal share. The total employee trips generated are therefore 251 sustainable and 28 car trips. However, the Travel Plan will set out in detail a series of green targets to incentivise active travel, public transport and car sharing amongst employees.

6.3 VISITORS

Introduction

6.3.1. In a 'typical' development, trip generation needs to be calculated before distributing the generated trips across the network. However, the proposed time controlled and advance booking system will limit the maximum number of visitors to 750 per hour and 3,750 per day (peak season). Therefore, the maximum number of generated visitor trips per hour and day are already known, and calculating these is not necessary.

6.3.2. Instead, this TA follows a bespoke approach based on the uniqueness of the proposed development. Initially, it looks in detail at the different types of visitors and how they are most likely to visit the proposed development. These visitors are then distributed across different origins followed by applying the predicted modal share, which will convert already known visitor trips to predicted mode trips.

Arrivals and Departures Profile

6.3.3. The Transport Principles chapter has described in detail how and why visitors per day and hour will be capped at a certain maximum.

6.3.4. The design team of the proposed development has derived an arrivals and departures profile to the building to understand visitors flow throughout the building, and maximum number of visitors at any given time within the building. EPIL provided the data shown in Table 6-8.

6.3.5. This has a maximum of 509 arrivals per hour, in comparison to the maximum limit of 750 per hour.

Table 6-8 – EPIL Building Arrivals and Departures Own Profile

Time	Peak Season		Inter Peak Season		Off Peak Season	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
06:00	30		17			
07:00	34	1	21	1	10	
08:00	38	6	24	4	12	1
09:00	382	17	244	10	124	2
10:00	382	46	279	28	134	12
11:00	424	104	279	68	144	32
12:00	509	229	334	151	173	76
13:00	509	343	334	233	173	116
14:00	509	422	334	284	173	144
15:00	306	465	223	309	115	159
16:00	115	486	84	320	43	166
17:00	76	459	49	305	27	158
18:00	76	357	49	243	25	126
19:00	153	223	97	156	45	81
20:00	115	126	73	88	31	46
21:00	76	95	49	63	21	32
22:00	15	109	10	69		33
23:00		115		71		22
00:00		107		68		29
01:00		38		27		17

6.3.6. For the robustness of this TA, the arrivals and departures have been manually adjusted to reflect the maximum number of visitors per hour capable of visiting the proposed development: 750.

Table 6-9 – Adjusted Building Arrivals and Departures Profile

Time	Peak Season		Inter Peak Season		Off Peak Season	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
06:00						
07:00						
08:00						
09:00	375		250		63	
10:00	563	19	375	13	250	3
11:00	750	84	750	56	438	22
12:00	750	253	375	181	188	81
13:00	563	459	375	338	188	181

Time	Peak Season		Inter Peak Season		Off Peak Season	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
14:00	563	628	250	488	63	275
15:00	188	684	125	481	63	266
16:00		628		400		200
17:00		506		275		116
18:00		319		175		69
19:00		141		75		28
20:00		28		19		9
21:00						
22:00						
23:00						

6.3.7. However, this adjusted building arrivals and departures profile does not capture the time spent in Morecambe after their visit to the proposed development.

6.3.8. The OBC clearly captured that the success of the proposed development relies heavily on regenerating the local economy of the region, and encouraging EPN visitors to spend time around Morecambe Town Centre is essential. Not capturing this on the trip generation would not be correct, as it would not align with the OBC submitted to HM Government or the likely eventual reality. Even though the likely time spent by visitors in Morecambe after their visit to the proposed development cannot be verified until opening of the site, certain assumptions are required to capture this. Failing to do so would provide a non-realistic trip generation profile.

6.3.9. Therefore, the following additional time spent in Morecambe after the visit to the proposed development has been used:

Table 6-10 – Additional Time Spent in Morecambe

Additional time	0 – 1 hour	1 – 2 hours	2+ hours
Proportion of Visitors	50%	25%	25%

6.3.10. Whilst the desirable additional time spent in Morecambe is greater than two hours, for the robustness of this TA, the additional time and proportion of visitors indicated in Table 6-10 have been assumed. These would provide a much greater peak of trips at late afternoon and early evening hours, in comparison to smaller proportion of visitors staying for more time periods, which would result on a lower number of trips on these hours.

6.3.11. The arrivals and departures profile shown in Table 6-11 assumes that all visitors staying “2+ hours” depart from Morecambe after three hours for the same reasons stated above.

6.3.12. In recognition of off peak days occurring on winter days only, the departures profile has been manually adjusted to reflect the most likely pattern of departures, as visitors leaving the proposed

development in the afternoon are not likely to spend significant time around Morecambe. This is also in recognition of the likely visitor type on an off peak day: a local resident.

Table 6-11 - Adjusted Arrivals and Departures Profile

Time	Peak Season		Inter Peak Season		Off Peak Season	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
06:00						
07:00						
08:00						
09:00	375		250		63	
10:00	563	5	375	3	250	2
11:00	750	26	750	17	438	12
12:00	750	89	375	63	188	47
13:00	563	202	375	145	188	116
14:00	563	348	250	260	63	203
15:00	188	485	125	356	63	247
16:00		574		407		235
17:00		591		392		174
18:00		527		334		113
19:00		405		241		91
20:00		264		152		9
21:00		145		80		
22:00		64		36		
23:00		21		12		
00:00		4		2		

Visitor Split

EPIL and PSCL

6.3.13. Originally, EPIL assumed that 80% of the visitors will be overnight visitors[4], whilst the remaining 20% will be day visitors[5] attracted from the residential market, groups and education trips.

6.3.14. In the OBC, EPIL and PSCL (their leisure consultants) envisaged 921,906 annual visitors with the following visitor split.

Table 6-12 – PSCL Visitor Type

	Day Visitor	Overnight Domestic (75%)	Overnight International (25%)	Groups	Education	Additional, incl. events	Total
Proportion	50%	22%	2%	4%	7%	14%	100%
Annual	458,376	207,240	21,273	38,550	66,003	130,465	921,906

6.3.15. PSCL analysis for the OBC indicated that 24% of visitors would be overnight visitors, and the remaining 76% would be day visitors.

Table 6-13 – EPIL and PSCL Proportion of Day Visitor and Overnight Visitor Trips[6]

	Day Trip	Overnight Trip	Total
<1h Distance	25%	*	*
>1h Distance	51%	*	*
Total	76%	24%	100.0%

WSP

6.3.16. The EPIL and PSCL analysis does not look into the details needed for a robust trip generation and distribution exercise. Consequently, WSP has developed their own analysis, which is set out below.

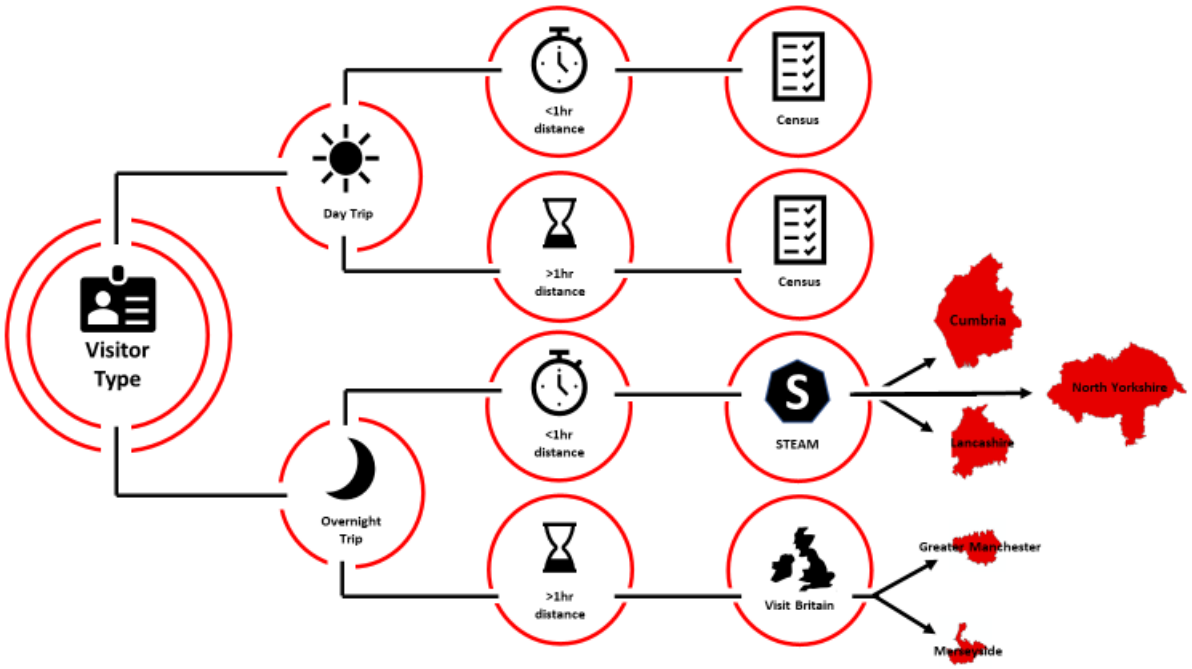
6.3.17. The WSP visitor split methodology described in full in the following sections is summarised in Figure 6-1.

[4] Overnight visitor is defined as the visitor which trip origin to the proposed development does not start and end at their usual place of residence (e.g. national tourist in the Lake District visiting the proposed development as part of their visit to the Lake District. Or an international tourist in a nearby big city visiting the proposed development as part of their tour across the UK).

[5] Day visitor is defined as the visitor which trip origin to the proposed development starts and ends at their usual place of residence.

[6] Planning Solutions scope of work did not include full details required for a transport trip generation and distribution exercise. WSP has done some analysis with the expected number of visitors per year reported in Table 6-12 to obtain, where possible, the number of visitors from different travel origin distances.

Figure 6-1 - WSP Visitor Split Methodology



Day Trip

6.3.18. A gravity model based on census data has been effectively created using ArcGIS software. This has been used to calculate a two-hour distance catchment area assuming a 70mph driving speed on the road network (motorways, A-roads and primary roads), with the M6 J34 Caton Road P&R as a starting point. The catchment area has then been broken down into 30-minute sections.

6.3.19. This population catchment area has been purely used to understand likely origins based on a gravity model, not journey times. The 30-minute sections have been created for the same purpose, and they do not represent a 30-minute journey time.

6.3.20. In fact, the perception of Morecambe being closer in driving time to Glasgow and Edinburgh than to Birmingham (included in the two-hour distance catchment area) is a robust assumption to include both cities, and its immediate region, as a 120+ minute distance catchment area. This does not represent a 120+ minute journey time.

6.3.21. The M6 Junction 34 Caton Road Park & Ride can be accessed from the north (M6), the east (A683) and the south (M6). Hence three different zones were created, as shown on the plan included in Appendix F, to provide an understanding of where visitors will travel from. The zones were then divided into subzones to facilitate data analysis:

- Zone A – South — A1 – Merseyside — A2 – Greater Manchester
- Zone B – East — B1 – Leeds — B2 – North Yorkshire
- Zone C – North — C1 – North East — C2 - Scotland

6.3.22. Population data (KS101EW – Usual resident population) has been extracted using census data from Nomis (a web-based database of labour market statistics of the Office for National Statistics).

6.3.23. Middle Layer Super Output Area (MSOA) boundaries have been downloaded from ArcGIS and then matched with population figures from Nomis to calculate the proportion of population living within each subzone catchment area as shown in Table 6-14.

6.3.24. If the trip distribution exercise was solely based on population, 69% would travel from beyond one-hour driving distance and 31% from within one-hour driving distance.

Table 6-14 - Percentage (%) of Population Living Within Each Zone

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1	3.3	***3.4***	0.1	0.0	***0.1***	0.0	0.5	***0.5***	**4.1**
30-60	8.3	10.5	***18.9***	5.8	0.5	***6.3***	0.4	1.4	***1.7***	**26.9**
60-90	3.6	4.2	***7.9***	7.4	1.2	***8.6***	8.2	1.0	***9.2***	**25.7**
90-120	2.3	19.9	***22.1***	3.6	1.3	***5.0***	2.5	0.9	***3.4***	**30.5**
120+	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	12.8	***12.8***	**12.8**
Total	**14.4**	**37.9**	***52.3***	**17.0**	**3.0**	***20.0***	**11.1**	**16.6**	***27.7***	**100.0**

Overnight Trip

6.3.25. We understand that the overnight trips to the site need to be categorised in two different classes for transport purposes.

6.3.26. A large proportion of overnight trips from nearby destinations (Lancashire, Cumbria and North Yorkshire Dales) are likely to be made by car. Whilst overnight trips from further afield such as Merseyside, Greater Manchester, Yorkshire, London and Scotland are more likely to be made by international visitors, public transport and organised tours.

6.3.27. Tourism data has been obtained from STEAM[7] for each immediate area. STEAM is a tourism impact modelling process which approaches the measurement of tourism.

6.3.28. Table 6-15 below shows the key data for the region analysed.

[7] More information on STEAM can be found at https://www.globaltourismsolutions.co.uk/steam-model/

Table 6-15 - STEAM Data (2017)

	Lancashire	Cumbria	North Yorkshire Dales	TOTAL
Tourism Visits (M)	67.63	47.30	4.70	119.63
Day Visitors (M / %)	59.29 / 88%	40.70 / 86%	4.08 / 87%	104.07 / 87%
Overnight Visitors (M / %)	8.33 / 12%	6.60 / 14%	0.61 / 13%	15.54 / 13%
Total Nights (M)	25.99	22.00	2.14	50.13
Average Nights per Overnight Visitor	3.1	3.3	3.5	3.2

6.3.29. The tourism data suggests that a maximum of 13% of overnight trips will be generated by the development nearby destinations. These trips are segregated into zones as shown in Table 6-16. As a worst-case scenario from a transport point of view[8], and following PSCL advice, it has been assumed that circa half of the 13% overnight visitors to the region (~6.5%) will be visiting the development during their stay.

Table 6-16 - Overnight Visitors within one-hour distance

Region	Total Overnight Visitors (M)	Total Overnight Visitors (%)	6.5% Weighted Proportion of Overnight Visitors from each Zone
Lancashire (Zone A)	8.33	54%	3.5%
North Yorkshire Dales (Zone B)	0.61	4%	0.3%
Cumbria (Zone C)	6.60	42%	2.8%

6.3.30. Regarding overnight visitors from further afield, it has been assumed that the proportion of domestic (75%) and international (25%) visitors provided by EPIL and PSCL is acceptable.

6.3.31. The domestic overnight population has been categorised as a day trip, since the location of Morecambe has ten times the population catchment of the site in Cornwall.

6.3.32. It has been assumed that the majority of international visitors will travel from Zone A (Merseyside and Greater Manchester area). A small proportion of these would travel from the Lake District and Yorkshire. However, for simplicity, and as a worst case scenario, it has been assumed that 100% of these overnight visitors will travel from the south (Zone A), creating additional pressure on the

[8] Domestic overnight visitors are more likely to be travelling by private car than international overnight visitors, who only have access to a rental car and are more likely to travel by public transport as seen in the following sections. Similarly, assuming that all overnight domestic visitors to the three regions will be visiting the proposed development is not feasible. Therefore, assuming that 50% of domestic overnight visitors to all three regions will be visiting the proposed development is a worst case scenario, as more car trips will be generated.

transport network. 2018 Visit Britain data show that 1.6M people visited Greater Manchester (66%) and 0.8M visited Merseyside (34%).

6.3.33. Therefore, it has been assumed that 6 out of 24 overnight trips will start from nearby destination. The remaining 17 out of 76 trips originating outside the one-hour drive band will be overnight trips (17.3%).

Summary

6.3.34. Table 6-17 below provides the overall day and overnight trips summary, which has taken into account the above analysis.

Table 6-17 - WSP Proportion of Day Visitor and Overnight Visitor Trips

	Day Trip	Overnight Trip	Total
<1h Distance	24.5%	6.5%	31.0%
>1h Distance	51.8%	17.3%	69.0%
Total	76.3%	23.7%	100.0%

6.3.35. It is important to highlight that that two independent exercises, with two different methodologies and scopes have forecasted a very similar proportion of day and overnight visitor trips to the proposed development as shown in Table 6-18.

6.3.36. Therefore, it can be stated that circa 76% of the visitors to the proposed development will be day visitors, with the remaining 24% being overnight visitors.

Table 6-18 – WSP, EPIL and PSCL Proportion of Day Visitor and Overnight Visitor Trips

	WSP			EPIL and PSCL (OBC)		
	Day Trip	**Overnight Trip**	**Total**	**Day Trip**	**Overnight Trip**	**Total**
<1h Distance	24.5%	6.5%	31.0%	25%	*	*
>1h Distance	51.8%	17.3%	69.0%	51%	*	*
Total	76.3%	23.7%	100.0%	76%	24%	100.0%

Trip Distribution

6.3.37. This section summarises the calculated day and overnight visitor distribution from each zone using the methodology explained above. The different zones used are:

- Zone A – South — A1 – Merseyside — A2 – Greater Manchester
- Zone B – East — B1 – Leeds — B2 – North Yorkshire
- Zone C – North — C1 – North East — C2 - Scotland

Day Visitor

6.3.38. Table 6-19 shows the total day visitor distribution. 40% of the day visitors will travel from the south, 15% from the east and 21% from the north.

Table 6-19 - Day Trip Distribution (%)

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1	2.6	*2.7*	0.1	0	*0.1*	0.0	0.4	*0.4*	**3.3**
30-60	6.6	8.3	*14.9*	4.6	0.4	*5.0*	0.3	1.1	*1.4*	**21.2**
60-90	2.7	3.2	*5.9*	5.6	0.9	*6.5*	6.2	0.8	*6.9*	**19.3**
90-120	1.7	14.9	*16.6*	2.7	1.0	*3.7*	1.9	0.6	*2.5*	**22.9**
120+	0.0	0.0	*0.0*	0.0	0.0	*0.0.*	0.0	9.6	*9.6*	**9.6**
Total	**11.1**	**29.0**	***40.1***	**13.0**	**2.3**	***15.3***	**8.4**	**12.5**	***20.9***	**76.3**

Overnight Visitor

6.3.39. Table 6-20 shows the total overnight visitor distribution. 21% of the overnight visitors will travel from the south, 1% from the east and 3% from the north.

Table 6-20 - Overnight Trip Distribution (%)

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0	0	*0*	0	0	*0*	0	0	*0*	**0**
30-60	0	3.5	*3.5*	0.1	0.1	*0.3*	0	2.8	*2.8*	**6.5**
60-90	5.9	11.3	*17.3*	0	0	*0*	0	0	*0*	**17.3**
90-120	0	0	*0*	0	0	*0*	0	0	*0*	**0**
120+	0	0	*0*	0	0	*0*	0	0	*0*	**0**
Total	**5.**	**14.8**	***20.7***	**0.1**	**0.1**	***0.3***	**0**	**2.8**	***2.8***	**23.7**

Summary

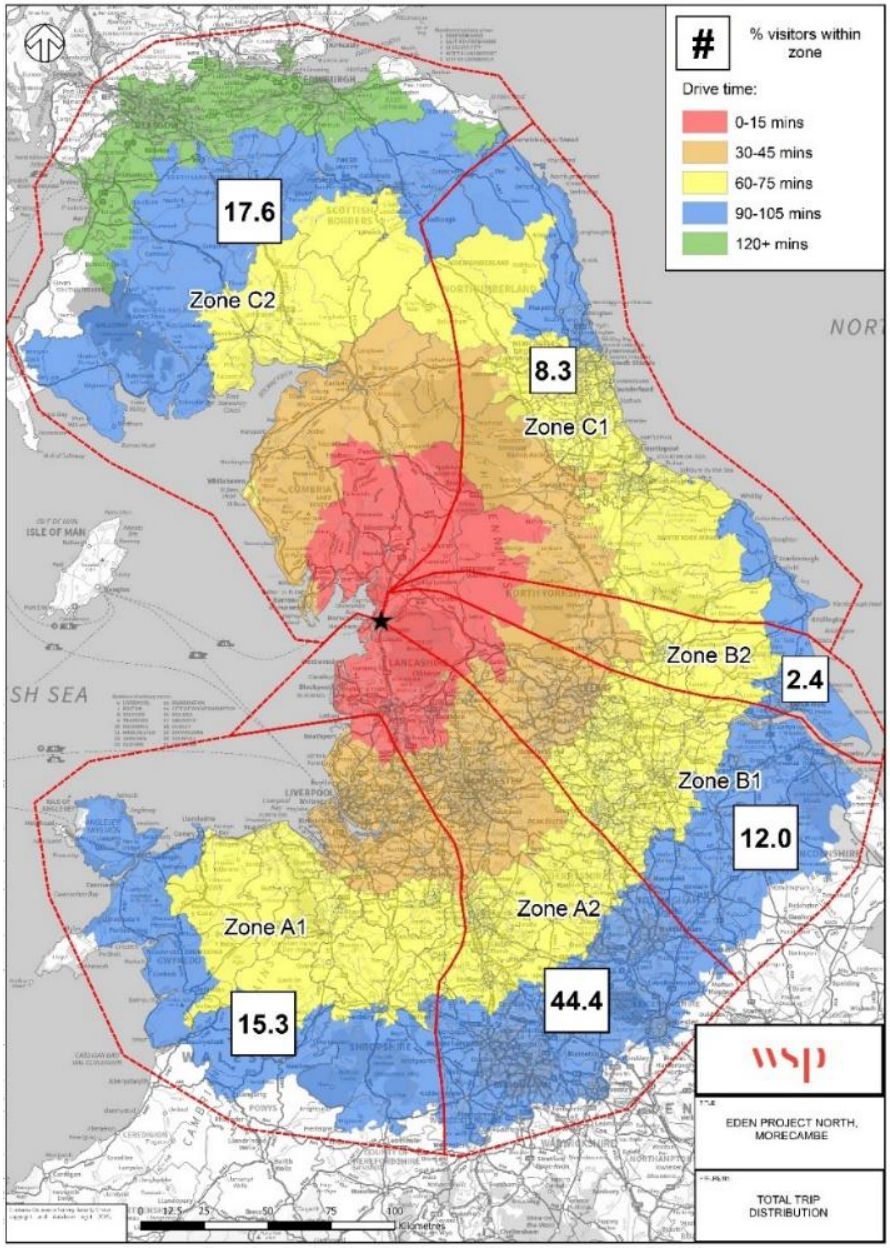
6.3.40. Table 6-21 shows the total visitor distribution. 60% of the visitors will travel from the south, 14% from the east and 26% from the north.

Table 6-21 - Total Trip Distribution (%)

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1	1.9	*2.0*	0.1	0.0	*0.1*	0.0	0.3	*0.3*	**2.4**
30-60	4.8	13.1	*17.9*	3.6	0.5	*4.2*	0.2	0.8	*6.5*	**28.6**
60-90	8.6	14.5	*23.1*	5.6	0.9	*6.5*	6.2	0.8	*6.9*	**36.5**
90-120	1.7	14.9	*16.6*	2.7	1.0	*3.7*	1.9	0.6	*2.5*	**22.9**
120+	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	9.6	*9.6*	**9.6**
Total	**15.3**	**44.4**	***59.7***	**12.0**	**2.4**	***14.4***	**8.3**	**17.6**	***25.9***	**100.0**

6.3.41. Figure 6-3 included in Appendix F illustrates the total trip distribution on a gravity model style plan.

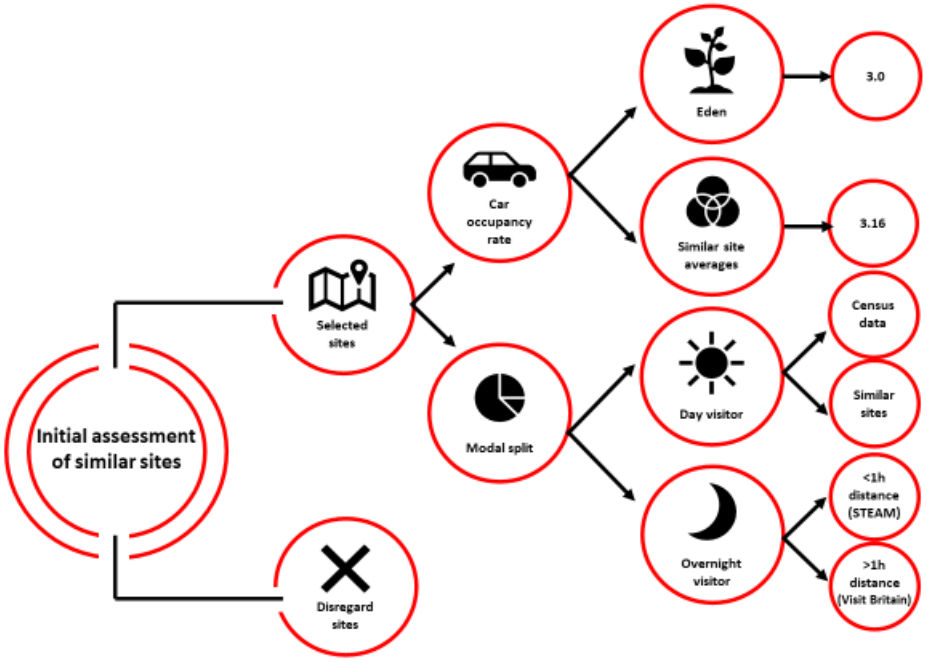
Figure 6-2 - Visitor Trip Distribution (%) Plan



Modal Split and Car Occupancy Rate

6.3.42. Figure 6-3 below summarises the visitor modal split and car occupancy rate methodology, which is fully described in this section.

Figure 6-3 - Visitor Modal Split and Car Occupancy Rate Methodology



6.3.43. In order to calculate the trip generation, an initial assessment of circa 30 potential similar sites (theme parks, zoos, aquariums, visitor attractions, etc) across the UK has been undertaken. However, not all the sites identified have the same characteristics as the proposed development. For example, Eden Project (Cornwall) is not considered a suitable comparator as previously described.

6.3.44. Therefore, after disregarding those sites where visitor type, location or transport connectivity was not considered similar from a transport perspective, a thorough review of Alton Towers, Chester Zoo, Thorpe Park and Warner Bros Studio was undertaken. These sites were selected based on similar socio-economic and demographic visitor type.

6.3.45. Following this, it was further decided that both Thorpe Park and Warner Bros Studio were not a representative site either and it was decided not to include them in the visitor modal split analysis as their modal share was significantly biased towards the public transport provision of Greater London. And despite being the aspiration of the proposed development as set out in Chapter 13, this would not represent a worst case scenario for the Opening Year.

Day Visitor

6.3.46. A combination of similar sites and census data has been undertaken in order to obtain the modal share for day visitors.

6.3.47. It can be argued that Alton Towers and Chester Zoo have a very high proportion of car trips considering the nature and ethos of EPIL.

6.3.48. However, following the Eden Transport Strategy approach, and as a worst case scenario, this was taken forward as a robust assumption. In reality, as set out in the Eden Transport Strategy and the Eden Net Zero Strategy, the ultimate aspiration is to reduce to an absolute minimum the number of vehicular trips to the proposed development. Using these two sites with a high private vehicle modal share would generate an absolute maximum worst case scenario with a high private car modal

share for the Opening Year, which will dictate the highways network impact and the parking strategy.

6.3.49. Existing modal split in the region was decided to be used as well in recognition of Morecambe Railway Station being just 300 metres away from the proposed development.

6.3.50. Census data (WU03UK – Location of usual residence and place of work by method of travel to work) was averaged with Alton Towers and Chester Zoo modal split. Table 6-22 below summarises the modal split for each site and the weighted average modal split used.

Table 6-22 - Day Visitor Modal Split

	Alton Towers (2012)	Chester Zoo (2009)	WU03UK (2011)	Average[9]	Weighted Average	Adjusted Average
Car (%)	88	89	65	81	68	68
Rail (%)	3	0	1	1	1	26
Bus (%)	0	3	8	3	3	6
Coach (%)	8	6		7	6	
Other (%)	1	1	2	1	1	-
Walking and Cycling (%)	-	-	25	25	20	-

6.3.51. The 26% rail modal split has been obtained by assuming that walking, cycling, bus (public transport) and other modes of transport will be using the existing rail infrastructure, which stops immediately next to the proposed development.

6.3.52. Whilst it is true that local residents will be walking and cycling to the site, local residents are expected to visit the day during the off peak and inter peak season, rather than on a peak day of the peak season (bank holiday weekend or summer weekend). Therefore, for the robustness of this TA, this worst case scenario has been assumed, which would generate greater additional trips and parking demand on the existing infrastructure.

6.3.53. In summary, approximately 68% of the day visitors are forecast to travel by car, 26% by train and 6% by coach.

6.3.54. However, for the OBC and as a sensitivity test, we created a series of 18 different modal split and visitors per hour and day scenarios. In these scenarios any car share increase represented an equivalent decrease on rail share.

6.3.55. The three most optimum scenarios presented in the OBC are summarised in Table 6-23.

[9] This is the average of the columns to the left. And as such, it does not provide a 100% total. Hence why the weighted average is used.

Table 6-23 – Modal Share Scenarios Presented on the OBC

	Scenario 004	Scenario 005	Scenario 006
Car (%)	68	73	78
Rail (%)	26	21	16
Bus (%)	6	6	6

Overnight Visitor

6.3.56. Visit Britain published in 2014 the *Types of transport used while visiting Britain* report, which summarises all transport modes used by tourists whilst visiting UK.

6.3.57. Table 6-24 below shows the weighted average for the three main transport modes assumed to be used by overnight international visitors to the site.

Table 6-24 - Visit Britain (Weighted) Modal Split

Train	Bus / Coach	Car
58.3%	25.0%	16.7%

6.3.58. It can be seen that the majority of visitors to the UK prefer to use public transport. However, a difference needs to be made between international and domestic visitors.

6.3.59. It has been assumed that domestic overnight visitors will be those staying within nearby destinations (Lancashire, Cumbria and North Yorkshire Dales). Due to the nature and tourism offer of the region, it can be assumed that the majority will travel by car. It has been assumed that 90% will travel by car, and 10% by public transport proportionally to Visit Britain figures indicated above.

6.3.60. International overnight visitors are assumed to travel from Merseyside and Greater Manchester. Therefore, the Visit Britain modal split has been used.

6.3.61. Table 6-25 below summarises the modal split for overnight visitors.

Table 6-25 - Overnight Visitor Modal Split

	Train	Bus / Coach	Car
Domestic Visitor (<1h)	7%	3%	90%
International Visitor (>1h)	58.3%	25.0%	16.7%

Car Occupancy Rate

6.3.62. EPIL has envisaged a car occupancy rate of 3 occupants per vehicle.

6.3.63. Notwithstanding the above, a review or car occupancy rates for different sites across the UK has been undertaken.

6.3.64. Sites previously disregarded for the modal share have been used for the car occupancy rate Sites located in London have a greater public transport modal share than those located remotely. However, the car occupancy rate is consistent across all of them as shown in Table 6-26, which shows the different datasets used and its average.

6.3.65. The car occupancy rates for similar sites presented in Table 6-26 have been obtained through a review of historical Transport Assessments and Statements available from each local authority planning portal for the last ten years.

Table 6-26 - Car Occupancy Rate

DfT Holiday / Day Trip	Eden Cornwall	Eden Project North	Thorpe Park	Thorpe Park[10]	Alton Towers	Gulliver's Park	Chester Zoo	Average
1.92	2.3	3	3.33	3.45	3.6	3.8	3.9	3.16

6.3.66. The Department for Transport Holiday / Day trip car occupancy rate (Table NTS0905) is 1.92. This is the average car / van occupancy based on stages where the model of travel was car/van driver and the number of people in the party was known.

6.3.67. The Eden Project (Cornwall) is 2.3. However, Cornwall and Morecambe are very different regions. In fact, Cornwall attracts 80% of overnight visitors, whereas Morecambe is expected to attract 76% of day visitors. Therefore, the higher number of day trips is likely to attract higher car occupancy rates, as groups of friends and families would travel together for a day trip.

6.3.68. A major leisure attraction such as Chester Zoo, with a Park and Ride bus from the railway station has a car occupancy rate of 3.9.

6.3.69. The average of all the sites indicated above, including lower and higher rates, is 3.16. However, for robustness of this TA and as a worst case scenario, a car occupancy rate of 3.0 has been used.

6.3.70. This rate has been confirmed during pre-app scoping with Highways England as a *"reasonable assumption"*.

6.3.71. The car occupancy rate will change throughout the year. Off peak winter weekdays are likely to have a car occupancy rate closer to 2, whilst peak summer weekends are likely to have a car occupancy rate closer to 4[11].

6.3.72. In recognition of 250 days a year falling under the 100 peak days and the circa 150 inter peak weekdays and holidays, it is recognised that for two thirds of the year the car occupancy rate is likely to be higher than 3.0.

[10] Two car occupancy rates for Thorpe Park are presented. These have been obtained from different planning applications for the last 10 years.
[11] Family tickets will include two adults and two children (four in total). Two adults and one children, or one adult and two children tickets will be cheaper than family tickets.

6.3.73. This is because both families and groups not only families are more likely to visit the proposed development on the 250 days described above, for which undertaking a day trip (76% of total trips) will be easier during those days than at the remaining circa 120 winter, spring and autumn weekdays.

6.3.74. Therefore, using a car occupancy rate lower than 3.0 does not seem appropriate. Not only would the average occupancy rate across the year be higher than this, but it can be expected that due to the nature of the visitors (76% of total trips will be day trips) and the seasonality of the site, for two thirds of the year the car occupancy rate will be higher than 3.0.

6.3.75. This approach will accommodate both cases: a higher car occupancy rate during the peak season with a higher number of visitors; and a lower car occupancy rate during the off peak season with a much lower number of visitors. It is key to provide enough infrastructure and parking for the peak season, but to not to overdesign it and build certain infrastructure that would not be required in a few years' time as set out in the Net Zero Strategy.

6.3.76. This represents a worst case scenario, as using a lower car occupancy rate that the one expected for two thirds of the year will provide a greater number of vehicular trips being generated by the proposed development, and hence a greater parking demand. However, for robustness of this TA, a car occupancy rate of 3.0 is proposed to be used.

6.3.77. Notwithstanding this, the booking system will allow EPIL to understand the car occupancy rate for all days of the year. This will ensure that no more cars than parking spaces available are allowed to visit the proposed development as further described in the Parking Strategy.

6.3.78. The private bus / coach capacity rate is assumed to be 50 passengers per coach.

Trip Generation

6.3.79. After a fully comprehensive review of the trip distribution, modal split and car occupancy rate, the visitor trip generation has been calculated as follows.

6.3.80. The time controlled and advance booking system proposed has been crucial in order to calculate the trips generated by transport mode as set out at the beginning of this section. In fact, the predicted arrivals and departures profile has been manually adjusted to reflect a worst case scenario of 750 visitors per hour on both the peak and inter peak session, in comparison to the expected 600 and 500 set out in Table 3-1.

6.3.81. The OBC analysed and presented 18 different trip generation scenarios, however only three were taken forward. These had a maximum of 750 visitors per hour and a car modal share for day trips between 68% and 78% as set out in Table 6-23.

6.3.82. For robustness of the work being presented, all three scenarios are reported in this chapter. All tables with further details can be found in Appendix F.

Person Trips

6.3.83. Table 6-27 indicates the predicted number of person trips generated by the proposed development for each scenario.

Table 6-27 – Visitor Person Trip Generation

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
07:00										
08:00										
09:00	375		375		375		250		63	
10:00	563	5	563	5	563	5	375	3	250	2
11:00	750	26	750	26	750	26	750	17	438	12
12:00	750	89	750	89	750	89	375	63	188	47
13:00	563	202	563	202	563	202	375	145	188	116
14:00	563	348	563	348	563	348	250	260	63	203
15:00	188	485	188	485	188	485	125	356	63	247
16:00		574		574		574		407		235
17:00		591		591		591		392		174
18:00		527		527		527		334		113
19:00		405		405		405		241		91
20:00		264		264		264		152		9
21:00		145		145		145		80		
22:00		64		64		64		36		
23:00		21		21		21		12		
00:00		4		4		4		2		

Car Trips

6.3.84. Table 6-28 indicates the predicted number of vehicular trips generated by the proposed development for each scenario.

6.3.85. A maximum of 184 to 207 two-way vehicular movements will be generated by the proposed development at 14:00-15:00 on a peak day, with a maximum of 104 and 63 on an inter peak and off peak day.

Table 6-28 – Visitor Cars Trip Generation

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
07:00										
08:00										
09:00	76		81		85		51		13	
10:00	114	1	121	1	128	1	76	1	51	
11:00	152	5	161	6	171	6	152	3	89	2

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
12:00	152	18	161	19	171	20	76	13	38	9
13:00	114	41	121	43	128	46	76	29	38	24
14:00	114	70	121	75	128	79	51	53	13	41
15:00	38	98	40	104	43	111	25	72	13	50
16:00		116		124		131		82		48
17:00		120		127		135		79		35
18:00		107		113		120		68		23
19:00		82		87		92		49		18
20:00		53		57		60		31		2
21:00		29		31		33		16		
22:00		13		14		15		7		
23:00		4		5		5		2		
00:00		1		1		1				

Rail Trips

6.3.86. Table 6-29 indicates the predicted number of rail passenger trips generated by the proposed development for each scenario.

6.3.87. It should be noted that depending on the origin of the visitors, it may be difficult to arrive in the early morning hours and leave in the late night hours. However, the arrivals and departures profile has already been manually adjusted to represent a worst case scenario. Similarly, the modal share has also been amended to include two further peak scenarios that represent a worst case scenario. Therefore, adjusting manually the rail passengers' arrivals and departure would have an impact on the assumptions described above, which already are a worst case scenario.

6.3.88. Therefore, and despite recognising that some visitors travelling by train may not be able to arrive to Morecambe at 9am nor depart at 11pm, it needs to be acknowledged that applying further manual adjustments would represent a cyclic worst case scenario which does not align with the Transport Principles set out in this document.

6.3.89. The modal share by visitor type and zone has been thoroughly described. This is the general modal share across the day, not at any particular hour for each day. And in light that the maximum number of visitors occur at hours where rail passengers are likely to arrive and depart from Morecambe, it is not deemed necessary to further adjust manually the trip generation and distribution.

Table 6-29 - Visitor Rail Passengers Trip Generation

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
	Arr.	**Dep.**	**Arr.**	**Dep.**	**Arr.**	**Dep.**	**Arr.**	**Dep.**	**Arr.**	**Dep.**
07:00										
08:00										
09:00	112		98		83		75		19	

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
10:00	169	1	146	1	125	1	112	1	75	4
11:00	225	8	195	7	167	6	225	5	131	14
12:00	225	27	195	23	167	20	112	19	56	35
13:00	169	60	146	52	125	45	112	44	56	61
14:00	169	104	146	91	125	77	75	78	19	74
15:00	56	145	49	126	42	108	37	107	19	70
16:00		172		149		128		122		52
17:00		177		154		131		118		34
18:00		158		137		117		100		27
19:00		122		106		90		72		3
20:00		79		69		59		45		
21:00		44		38		32		24		
22:00		19		17		14		11		
23:00		6		5		5		4		
00:00		1		1		4		1		

Private Bus / Coach Visitors

6.3.90. Table 6-30 indicates the predicted number of rail passenger trips generated by the proposed development for each scenario.

6.3.91. The same comments made in regards of rail passengers trip generation applies for private bus / coach visitors trip generation.

Table 6-30 - Visitor Private Bus / Coach Passengers Trip Generation

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
	Arr.	**Dep.**	**Arr.**	**Dep.**	**Arr.**	**Dep.**	**Arr.**	**Dep.**	**Arr.**	**Dep.**
07:00										
08:00										
09:00	35		35		35		23		6	
10:00	52		52		52		35		23	
11:00	70	2	70	2	70	2	70	2	41	1
12:00	70	8	70	8	70	8	35	6	17	4
13:00	52	19	52	19	52	19	35	14	17	11
14:00	52	32	52	32	52	32	23	24	6	19
15:00	17	45	17	45	17	45	12	33	6	23
16:00		54		54		54		38		22
17:00		55		55		55		37		16

	Scenario 004		Scenario 005		Scenario 006		Inter Peak		Off Peak	
18:00		49		49		49		31		11
19:00		38		38		38		22		9
20:00		25		25		25		14		1
21:00		14		14		14		7		
22:00		6		6		6		3		
23:00		2		2		2		1		
00:00										

Summary

6.3.92. This section has described the methodology that has been followed to calculate the visitor trip generation and distribution.

6.3.93. EPIL and their leisure consultants, PSCL have provided the split of day and overnight visitors. However, this does not include all the details needed for a typical trip generation and distribution exercise. Consequently, WSP has developed their own methodology which has concluded with the same 76%-24% day and overnight visitor split approach.

6.3.94. WSP have developed a trip generation and distribution model. This has been informed by multiple datasets, including benchmarking of similar sites, 2011 census data, Visit Britain, STEAM, as well as knowledge and experience from the Eden Project (Cornwall) site. Assumptions have been based on industry best practice and discussed and agreed with multiple stakeholders, including Lancaster City Council and Lancashire County Council.

6.3.95. A *gravity model* based on census data has been effectively created using ArcGIS software.

6.3.96. Tourism data has been obtained from STEAM for each immediate area.

6.3.97. In order to calculate the trip generation, an initial assessment of circa 30 potential similar sites (theme parks, zoos, aquariums, visitor attractions, etc) across the UK was done. However, not all the sites identified had the same characteristics as the proposed development.

6.3.98. A combination of similar sites data, census data and tourism data has been used to calculate the modal split for the different visitor types.

6.3.99. Similarly, the reasoning for the use of a car occupancy rate of 3.0 has been thoroughly explained, including likely changes to seasonality and how for two thirds of the year the rate is expected to be greater than 3.0.

6.3.100. 18 different trip generation and distribution scenarios were undertaken to support the OBC. The selected three on the OBC have been reviewed with latest arrivals and departures profile.

6.3.101. The profile has been manually adjusted to reflect a worst case scenario of 750 visitors per hour.

6.3.102. The modal share has also been manually adjusted to reflect a worst case scenario, as well as the car occupancy rate.

6.3.103. Therefore, multiple worst case scenario assumptions have been undertaken when developing the proposed development trip generation and distribution. All of these would report a higher number of private cars on the highways network than is expected in reality.

7 ACTIVE TRAVEL AND PUBLIC TRANSPORT STRATEGY

7.1 INTRODUCTION

7.1.1. This section of the TA assesses the accessibility of the site by sustainable modes of travel and reviews how the site location lends itself to sustainable travel. Ultimately the transport vision and strategy of the proposed development is to reduce reliance on the private car and encourage the use of sustainable modes such as walking, cycling and public transport for visitors and employees.

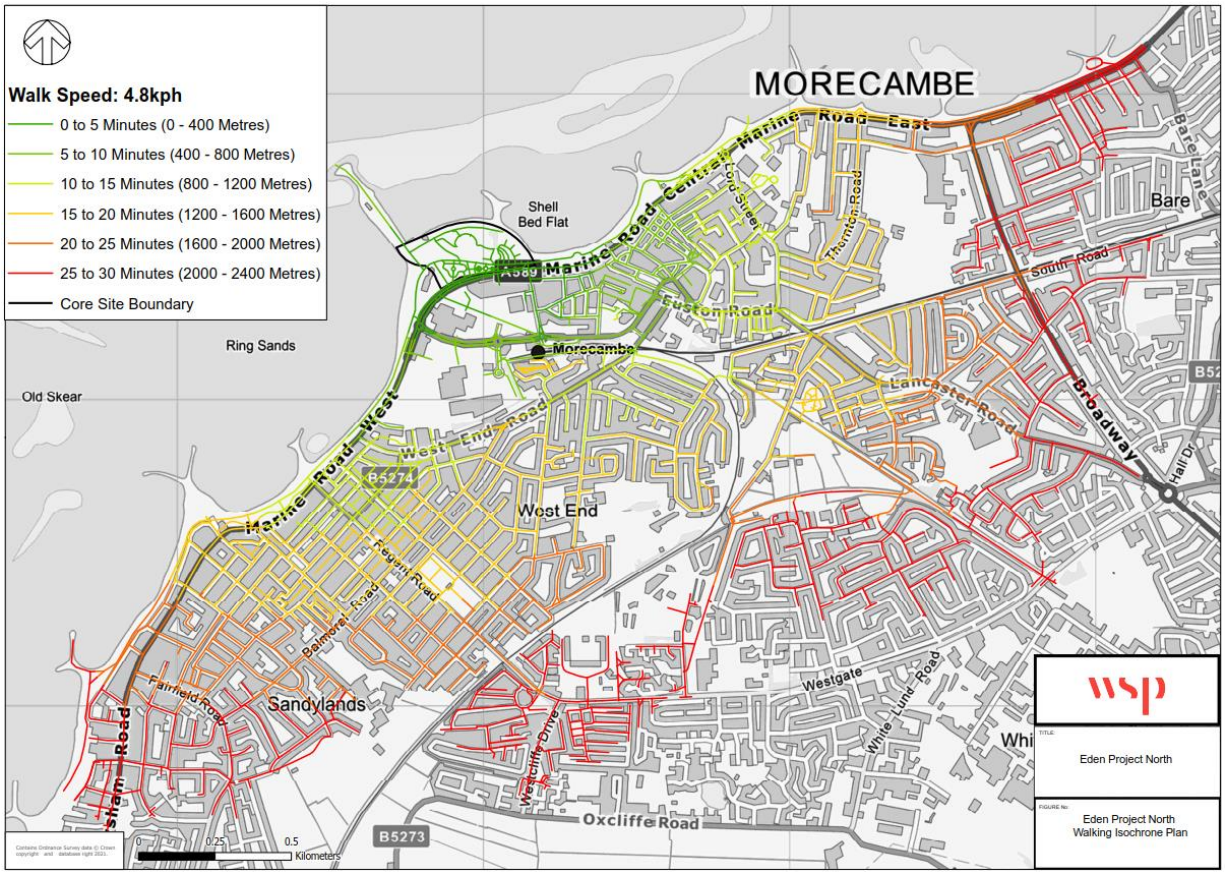
7.2 ACTIVE TRAVEL

Pedestrian Accessibility

7.2.1. The Institution of Highways & Transportation (IHT) publication 'Guidelines for Providing for Journeys on Foot' outlines the preferred maximum walking distance for commuting from an origin point, by persons without a mobility impairment, as 2,000 metres. This assumes an average walking speed of 1.4m/s, 2,000m constitutes a 24-minute walk.

7.2.2. The pedestrian accessibility shown in Figure 7-1 have been modelled using Geographical Information System (GIS) software and illustrates the area surrounding the site which is within a 2,000m / 24-minute walk from the proposed development. This figure is also presented in Appendix G.

Figure 7-1 - Pedestrian Accessibility Isochrones



7.2.3. The pedestrian isochrones show that the site is well connected to local and regional transport networks, including several bus stops, Morecambe Bus Station and Morecambe Railway Station, as well as the entirety of Morecambe Town Centre and key assets within it, including:

- The Morecambe promenade;
- The Stone Jetty;
- Festival Market;
- Winter Gardens; and
- Morecambe Town Hall Gardens.

7.2.4. The site is also within reasonable walking distance to all neighbourhood wards (residential areas) identified within the Morecambe Neighbourhood Area. This enables walking trips to the proposed development to all employees living in Morecambe, as well as visitors to the proposed development staying overnight in the local area. These residential areas are:

- Heysham Ward;
- Harbour Ward;
- Poulton Ward;
- Bare Ward;
- Torrisholme Ward; and
- Westgate Ward.

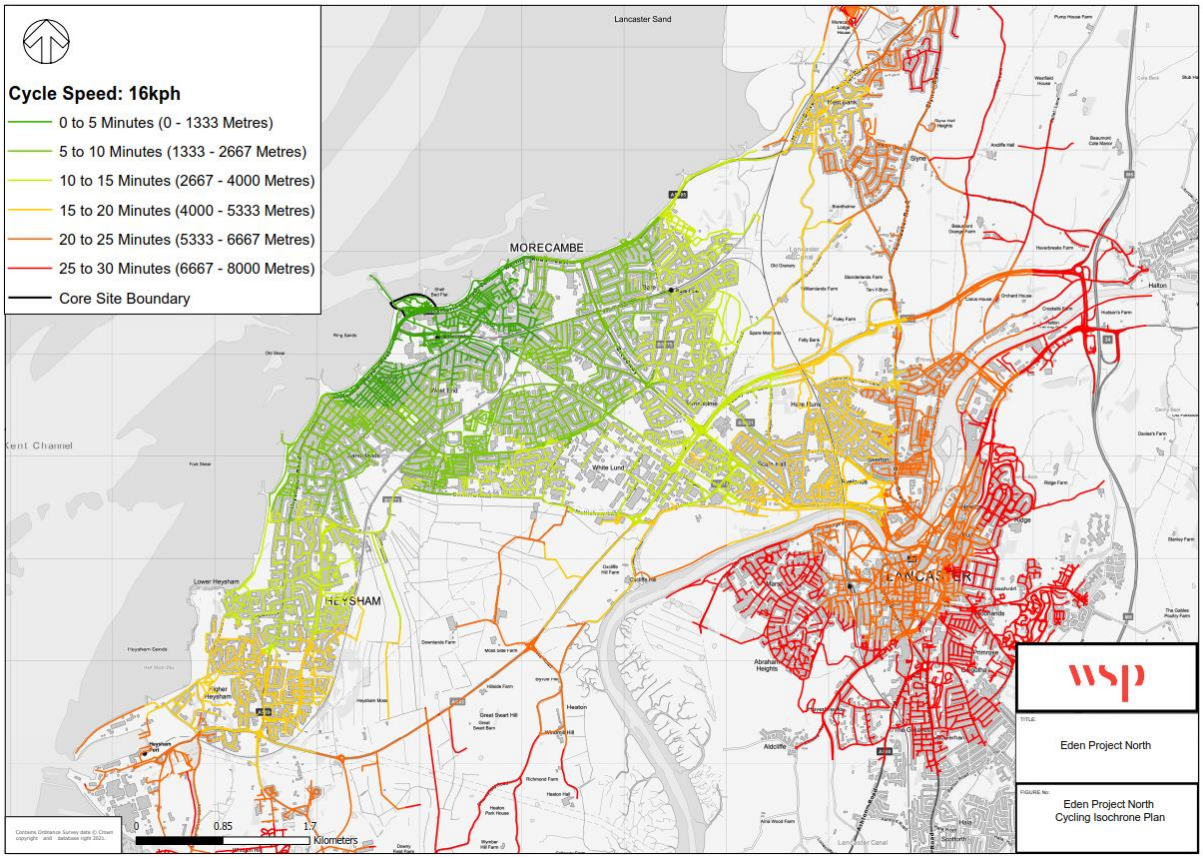
Cycling Accessibility

7.2.5. Planning Policy Guidance 13 – Transport (PPG13) states that *"Cycling also has potential to substitute for short car trips, particularly those less than 5km and to form part of a longer journey by public transport."*

7.2.6. Whilst the PPG13 has been superseded by the NPPF, the identified acceptable 5km cycling distance is still considered applicable in the absence of any updated guidance.

7.2.7. The cycling isochrones shown in Figure 7-2 illustrates the area surrounding the site and the existing cycling provision. This figure is also presented in Appendix G.

Figure 7-2 - Cycling Accessibility Isochrones



7.2.8. The cycling isochrones show that the site is well connected to local and regional transport networks, including Morecambe Bus Station and Morecambe Railway Station, as well as the entirety of Morecambe Town Centre and key residential areas as indicated below. This enables cycling trips to the proposed development to all employees living in Morecambe. As well as visitors to the proposed development staying overnight in the region.

- Morecambe;
- Heysham;
- Hest Bank;
- Bolton le Sands; and
- West, north and centre of Lancaster city;

Active Travel Strategy

7.2.9. As highlighted in the Transport Vision and the Transport Strategy, visitors arriving to the site by active travel modes will have certain benefits over car visitors (e.g. ticket discounts, Eden vouchers etc). In addition, visitors will have certain facilities such as:

- Cycle parking (see Chapter 8);
- Changing room;
- Drying facilities;
- Locker facilities; and
- Free e-bike battery charging whilst visiting the proposed development.

7.2.10. The Active Travel Strategy will focus on the immediate vicinity of the proposed development (the site and Marine Road Central). However, it will also focus on capturing potential walking and cycling trips to the proposed development from the Caton Road Park and Ride, the Lancaster Railway Station and from overnight visitors staying in the vicinity of the site.

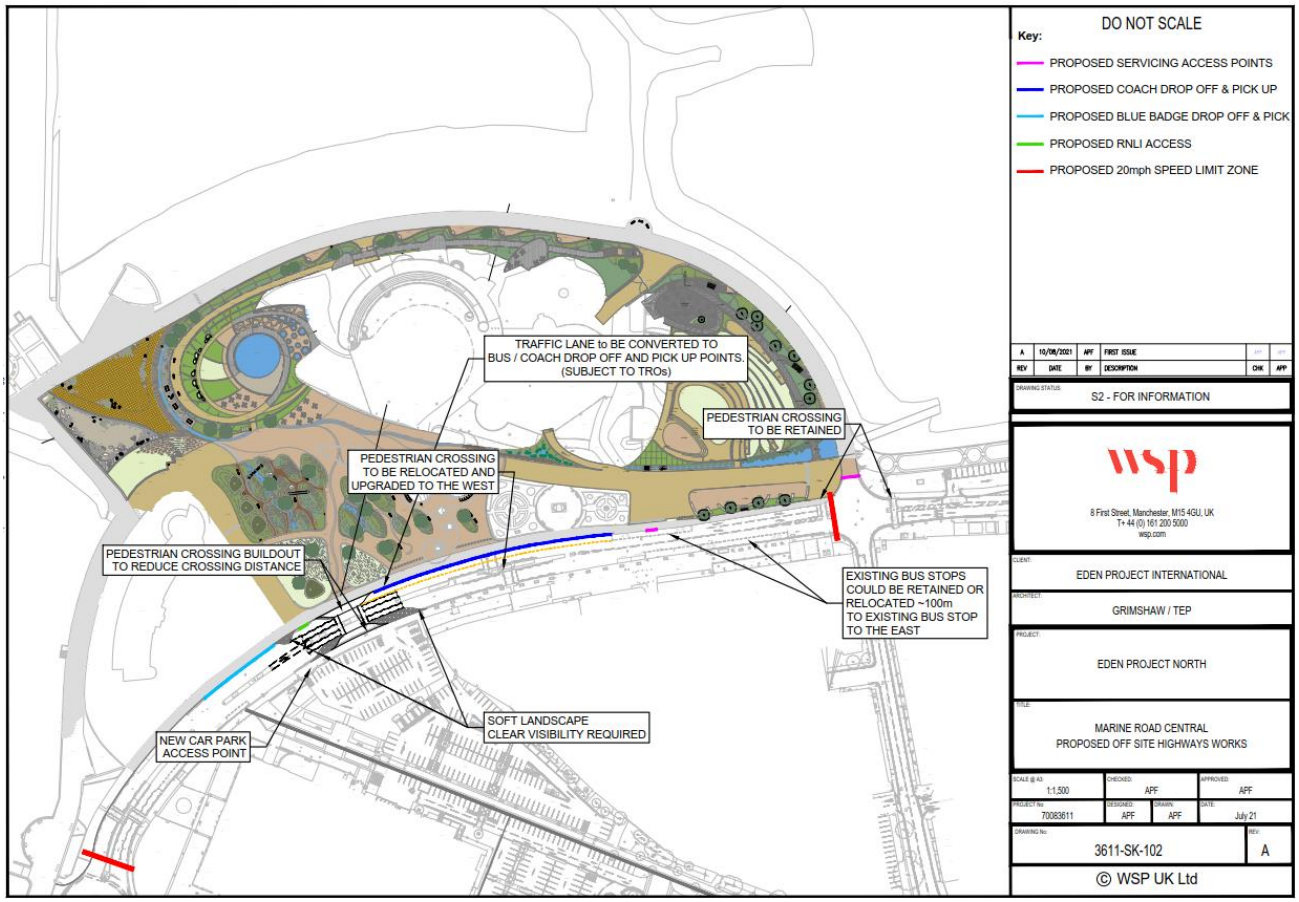
7.2.11. As such, the existing staggered signalised pedestrian crossing in front of the Winter Gardens is proposed to be relocated circa 70 metres to the west to:

- Ensure EPN and Morecambe visitors have crossing facilities at the desire line from the Promenade and the Railway Station, Bus Station and several car parks in the town centre;
- Align with wider town centre regeneration aspirations, where the *Flock of Words* may be slightly reconfigured to provide a more direct route between the Promenade and the Railway Station, Bus Station and several car parks in the town centre; and
- Provide space for safe drop off as highlighted in Section 7.3.

7.2.12. Figure 7-3 below shows a high level indicative plan of the proposed relocated pedestrian crossing on Marine Road Central. Works which would be subject to separate approval under s278 of the Highways Act 1980. This can also be found in Appendix H.

7.2.13. The proposed relocation is accompanied by the introduction of a drop off point (see Section 7.3 below) and a build out to reduce the crossing distance between footways, removing the need for a staggered crossing. This is possible as on street parking on both sides of Marine Road Central is currently permitted as highlighted in Section 2.4.

Figure 7-3 - Proposed Relocated Pedestrian Crossing on Marine Road Central



7.2.14. All existing pedestrian and cycling movements around the site will be retained as shown in Figure 7-4 below. The area shown in green will be available for permissive access all year to all users, regardless of being a ticket holder, a local resident or a Morecambe visitor. This plan is also presented in Appendix A.

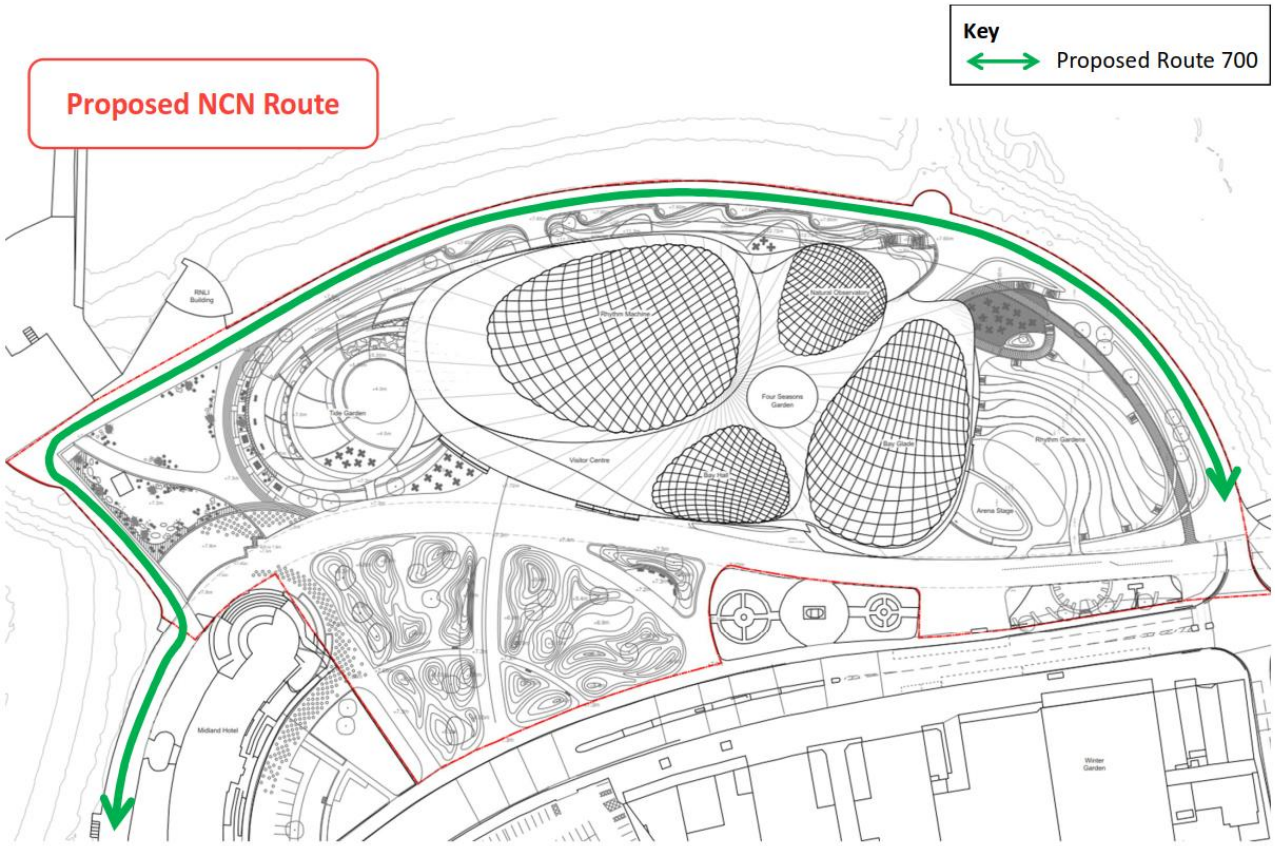
Figure 7-4 - Proposed Development Area Available for Permissive Access All Year



7.2.15. Sustrans has been engaged in relation to the existing NCN Routes 69 and 700 (see Appendix B). After discussions, it has been agreed that Sustrans would like to introduce changes to both routes passing through the site to avoid duplication and confusion of cyclists. This would result in the NCN Route 69 (Way of the Roses) being realigned to start / finish by the existing Way of the Roses start / finish point to the southwest of the Midland Hotel. The NCN Route 700 will be slightly extended to connect with this point via the Promenade to the north of the Midland Hotel and the proposed development.

7.2.16. However, cycling through the former NCN Route 69 would still be possible as shown in Figure 7-4.

Figure 7-5 - Proposed Sustrans NCN Route 69 and 700



7.2.17. As part of the wayfinding and signage budget allocation, a series of wayfinding posts will be included around Morecambe Town Centre, the Promenade and the Way of the Roses indicating active travel directions to the proposed development.

7.2.18. Additionally, EPIL will continue to work with relevant stakeholders to introduce further active travel enhancements such as a bike hire scheme and bike taxi services for EPN visitors, local residents and Morecambe visitors.

7.3 PUBLIC TRANSPORT

Public Transport Accessibility: Rail

7.3.1. The proposed development location can provide a key role in enabling multi-modal journeys thanks to the Morecambe Railway Station being located just 300 metres away. This will help in promoting linked rail journeys to both Morecambe and Lancaster and enabling the last portion of the trip to be undertaken on foot or bike.

7.3.2. The rail services across the north west, Lake District and wider big cities such as Edinburgh, Manchester, Birmingham and London robustly underpins the multi-modal transport strategy for visitors arriving to Morecambe from their homes and overnight locations, as shown in Table 7-1 and Table 7-2.

Table 7-1 – Morecambe Rail Services[12]

Destination	Route	Frequency
Heysham	Morecambe – Heysham Port	1 / day
Lancaster	Morecambe – Lancaster	2 / hour
Leeds	Morecambe – Lancaster – Carnforth – Skipton – Leeds	7 / day

Table 7-2 – Lancaster Rail Services[13]

Destination	Route	Frequency (AM / PM)
Barrow-in-Furness	Lancaster – Carnforth – Grange-over-Sands – Ulverston – Barrow-in-Furness	1 / hour
Carlisle	Lancaster – Barrown-in-Furness – Kirkby-in-Furness – Bootle – Whitehaven – Maryport - Carlisle	1 / hour
Edinburgh	Lancaster – Penrith – Carlisle – Haymarket - Edinburgh	1 / hour
Glasgow	Lancaster – Oxenholme – Carlisle – Glasgow Central	1 / hour
Leeds	Lancaster – Carnforth – Clapham – Skipton – Leeds	7 / day
Liverpool	Lancaster – Preston – Wigan – Liverpool Lime Street	2 / hour
London	Lancaster – Preston – Wigan – Warrington – Birmingham – London Euston	2 / hour
Manchester	Lancaster – Preston – Bolton – Manchester – Manchester Airport	2 / hour
Windermere	Lancaster – Oxenholme – Kendal - Windermere	1 / hour

Public Transport Accessibility: Bus

7.3.3. As seen in Section 2.3, the Morecambe Bus Station is located just a few metres away from the proposed development, creating a transport hub immediately to the south of the site.

7.3.4. Additionally, a series of bus stops used by local services are also located on Marine Road Central.

7.3.5. Table 7-3 below shows the different local services using the different bus stops in the vicinity of the proposed development.

7.3.6. The multitude of buses passing by and near the site and its frequency show that bus travel robustly underpins the multi-modal transport strategy for employees and visitors starting their trip from Morecambe and Lancaster.

[12] Timetables were retrieved in July 2021. Service routes and frequencies may change in the future.
[13] Timetables were retrieved in July 2021. Service routes and frequencies may change in the future.

Table 7-3 – Bus Services[14]

Bus No.	Route	Frequency
1	Lancaster University – Lancaster – Morecambe – Heysham – Overton	3 / hour
1A	Lancaster University – Lancaster – Morecambe – Heysham – Overton	3 / hour
2X	Morecambe – Heysham – Lancaster – Lancaster University	3 / hour
5	Sandylands – Heysham – Morecambe – Hest Bank – Carnforth	1 / hour
6	Morecambe – Westgate	2 / hour
6A	Morecambe – Westgate – White Lund – Salt Ayre – Lancaster	2 / hour
33	Morecambe – Branksome – Bare – Morecambe	1 / hour
40/41	Lancaster – Morecambe – Lancaster University – Preston	1 / hour
100	Lancaster University – Lancaster – Bare – Morecambe	2 / hour
502	Heysham – Morecambe – Lancaster	1 / day
504	Sandylans – Morecambe – Lancaster	1 / hour
755	Heysham – Morecambe – Carnforth – Kendal – Windermere	1 / day
935	Morecambe – Torrisholme – Skerton – Lancaster	1 / day

Public Transport Strategy

7.3.7. As highlighted in the Transport Vision and the Transport Strategy, visitors arriving to the site by public transport will have certain benefits over car visitors (e.g. ticket discounts, vouchers etc).

7.3.8. Visitors using public transport will have the possibility of having integrated ticketing (which will continue to be investigated further after the submission of this planning application).

7.3.9. Both bus and rail operators have been consulted over the last two years, including:

- Stagecoach;
- Northern rail;
- Avanti West Coast;
- Network Rail; and
- SLC Rail (Lancaster CC rail consultant).

7.3.10. It is likely that local buses will mainly be used by employees and overnight visitors staying in the area, with visitor trips originating further afield making use of the existing rail services instead.

7.3.11. The current rail services between Lancaster and Morecambe have the capacity to accommodate the predicted number of visitors. However, the rail services are not as frequent and attractive as the EPN Net Zero Strategy is targeting.

[14] Timetables were retrieved in July 2021. Service routes and frequencies may change in the future.

7.3.12. Providing frequent and attractive rail services from Lancaster to Morecambe is one of the many long term solutions to achieve the Transport Vision and reduce the car modal share to an absolute minimum. SLC Rail (on behalf of Lancaster CC) is working in this regard to introduce regular services every 30-minutes, making use of existing infrastructure.

7.3.13. In order to do so, EPN will continue to work with both Lancaster CC and Lancashire CC, as well as with relevant public transport operators. Some of the initiatives to consolidate rail as the main transport mode to the proposed development may include an EPN welcome centre at Lancaster Railway Station, where EPN employees could welcome and entertain rail visitors whilst waiting for the train to Morecambe. This would not only provide a welcome point to visitors, but will reinforce the idea that rail is a viable solution to travel to the proposed development, as the visitor experience to EPN would start at Lancaster Railway Station.

7.3.14. Finally, it is important to highlight that the visitor centre within the proposed development will have a series of real time information transport screens informing EPN visitors of the time of the next rail, bus and shuttle bus departures.

8 PARKING STRATEGY

8.1 INTRODUCTION

8.1.1. The Parking Strategy for the proposed development has been in discussion with stakeholders since the early stages of the preparation of the OBC in spring 2020. Several meetings have been held between EPIL, WSP, Lancaster CC and Lancashire CC. Relevant minutes are included in Appendix B.

8.1.2. The Parking Strategy agreed and submitted in the OBC recognised 50%-50% parking split between the M6 Junction 34 Caton Road Park and Ride and a series of Lancaster CC owned car parks in Morecambe Town Centre.

8.1.3. The Parking Strategy presented in this chapter is built on that principle. However, further details, including financial agreements will continue to be further discussed after the submission of this planning application.

8.1.4. An initial financial model is included in the Shuttle Bus section, highlighting how the whole parking strategy and provision of the shuttle bus can be provided by EPIL on a cost neutral basis.

8.2 CYCLE PARKING

8.2.1. In regards of employees' modal share, it has been assumed that a total of 251 employees are expected to commute by active travel and public transport modes on a peak day.

8.2.2. In recognition of the nature of the development and EPIL, a minimum cycle parking ratio of 1:3 is suggested. 100 cycle parking spaces are proposed for the 278 maximum employees expected to be working on site at any given time (a 1:2.78 ratio).

8.2.3. In regards of visitor cycle parking, the visitor trip generation and distribution section has clarified that the likely number of visitors travelling by bike cannot be considered significant. Therefore, for the robustness and as a worst case scenario, it has been assumed for the trip generation exercise only that no visitors would be travelling by bike to the proposed development.

8.2.4. However, this is not the intention of EPIL. In light of this, a series of interventions to promote visitors to travel by bike are described in the Travel Plan.

8.2.5. Aligning with the Net Zero Strategy, up to 152 cycle parking spaces for visitors and general public are proposed as part of the public realm proposals. This is the proposed cycle parking provision for the Opening Year, with land identified within the public realm design for future expansions.

8.2.6. The 152 cycle parking spaces will be allocated across four locations as follows:

- 116 covered spaces under the sea foam shelter in front of the building entrance;
- 20 uncovered spaces off the northern promenade at the edge of the Rhythm Garden;
- 8 uncovered spaces off the southern promenade at the southern edge of the Tide Garden; and
- 8 uncovered spaces at the western corner off the Shingle Plaza (by the Stone Jetty).

Figure 8-1 - Cycle Parking



8.2.7. The 116 covered cycle spaces will be located on the Energy Field public realm frontage of the building facing Marine Road Central. A series of four energy pods (Figure 8-1) will provide cycle parking at ground floor level. These will provide a secure space to park a bicycle and will benefit from natural surveillance thanks to the uplift in footfall in the area that will be generated by the proposed development.

8.2.8. The energy pods will be an integral part of the landscape and multi-use. Bicycle storage will be provided at the base of the energy pods where the visitors can view the heat pump arrangement.

8.2.9. Changing rooms, showers and lockers will be available for employees. Visitors will be able to charge their e-bike batteries and leave any cycling equipment on a safe space during their visit. Similarly, they will be able to use the changing facilities provided within the development.

8.3 CAR PARKING

8.3.1. The Car Parking Strategy has been developed in conjunction with Lancaster CC (Parking, Economic Growth and Regeneration and Planning teams) and Lancashire CC (Infrastructure, Parking and Public Transport teams). This is a work in progress strategy that has been agreed in principle by all parties. Further engagement and clarification is required, which will occur post planning submission.

8.3.2. The key principle of the Eden Transport Strategy is to encourage people to arrive by non-car modes, particularly for their last mile element of the journey. Notwithstanding this, there is also a practical reality that on the Opening Year many visitors will still seek to travel by car, particularly as external bodies such as the rail industry will take time to be able to provide more frequent services between Lancaster and Morecambe to respond to increased demand created by the proposed development and the wider uplift it will bring.

8.3.3. Consequently, the focus of the Eden Parking Strategy submitted in the OBC is to intercept a significant proportion of vehicles travelling to EPN using M6 Junction 34 Caton Road Park and Ride, where an underutilised recently constructed Park and Ride (P&R) site provides parking capacity for 650 vehicles.

8.3.4. Notwithstanding this, it needs to be acknowledged that one of the key aims of EPIL is to revitalise Morecambe Town Centre and its economy; a fact that has been recognised in the OBC submitted to HM Government. Therefore, an element of parking in the town centre is required not only for some

specific visitors (e.g. disabled parking etc) but also to actively encourage visitors to spend time in Morecambe before and/or after their visit to the attraction.

8.3.5. The Eden Parking Strategy sets out how the M6 J34 Caton Road Park and Ride and Morecambe Town Centre parking would be used by EPN visitors and how these two amenities can be linked through ticketing to allow a dynamic and flexible parking response according to demands.

8.3.6. The OBC looked at 324 different parking scenarios (quantum, split and cost) and presented a working solution based an optimum quantum, split and cost.

M6 Junction 34 Caton Road Park and Ride

8.3.7. The recently constructed M6 J34 Caton Road Park and Ride provides 650 parking spaces immediately off the motorway. This is a high quality Park and Ride facility that enables EPIL to capture a significant number of vehicular trips from the M6 to Lancaster and Morecambe.

8.3.8. The site is currently open 24 hours a day, 7 days a week. However, the bus service does only operate Monday to Saturday with a 30-minute frequency.

8.3.9. Parking on this location is currently free, with bus fares shown in Table 8-1.

Table 8-1 - M6 Junction 34 Caton Road Park and Ride Current Bus Fares

Ticket	Adult Return	Adult Weekly	Child Return	Family Return	Group Return	Concessions	Disabled
Fare	£1.60	£6.50	£0.80	£3.20	£4.30	Free after 9.30 am	

8.3.10. Currently, buses travel between the site and Lancaster city centre stopping at George Street, China Street and the bus station, just short walks from the Hospital, railway station and the city centre respectively.

8.3.11. The site does not just cater for park and ride. It is also the perfect place to meet up for car sharing thanks to the CCTV cameras and its ideal location, with being located right next to the M6 with easy access onto the motorway.

8.3.12. Discussions with Lancashire CC have concluded that the site is currently used by an average of circa 150+ vehicles per weekday, which provides a spare capacity of circa 500 spaces on a weekday.

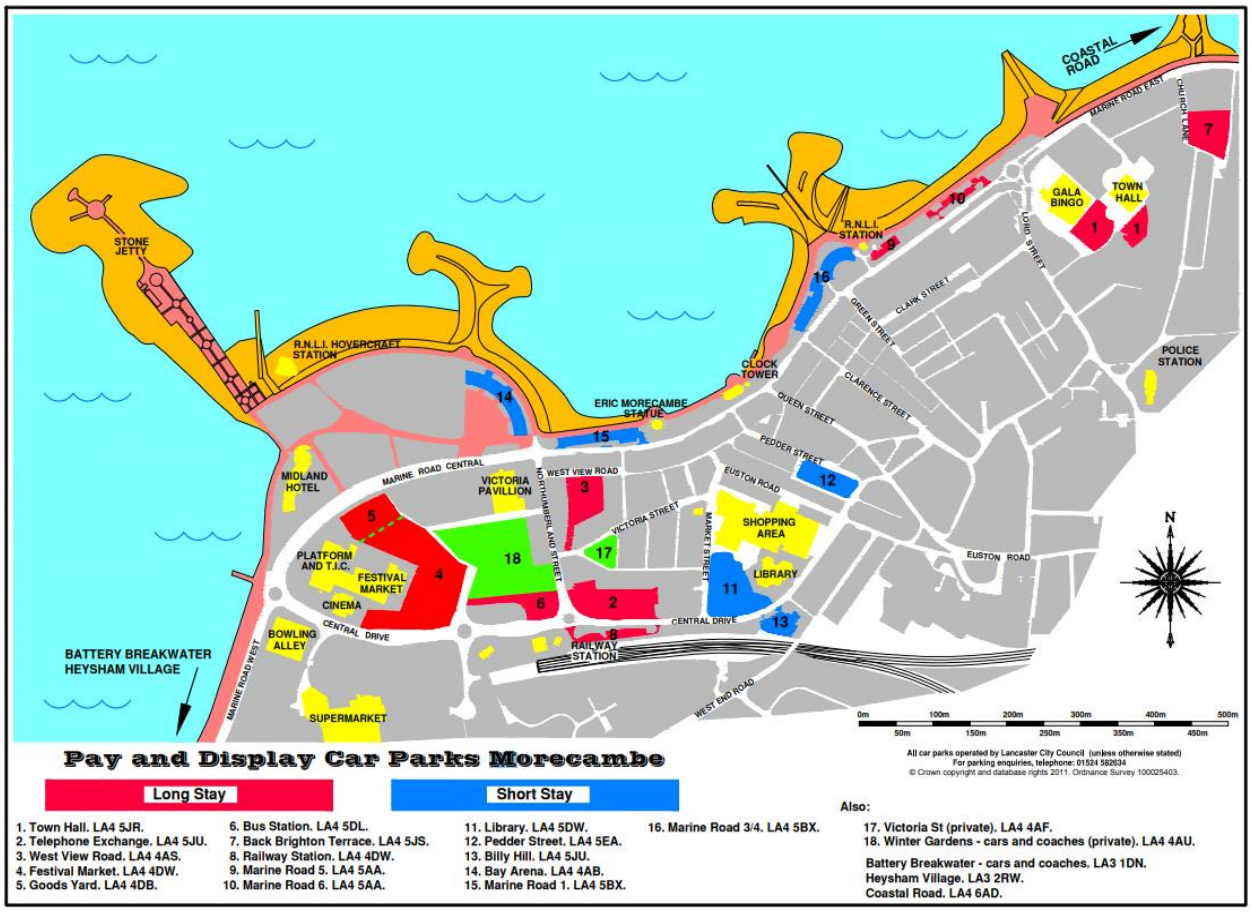
8.3.13. This aligns with the bus patronage data provided by Lancashire CC.

Morecambe Town Centre

8.3.14. Lancaster CC currently owns and operates circa 1,800 surface Pay and Display parking spaces across Morecambe town centre on a series of different parking locations as shown in Figure 8-2. On street parking is not included in this figure as it is widely permitted free of charge.

8.3.15. Notably, within 500 metres of the site there are circa 2,000 surface parking spaces distributed across Lancaster CC and private car parks.

Figure 8-2 - Morecambe Town Centre Parking Plan (Lancaster City Council)



8.3.16. Table 8-2 below summarises the current costs for parking on street and in both short stay (blue) and long stay (red) parking locations in Morecambe. Parking is charged daily from 8am to 6pm, including bank holidays.

Table 8-2 - Morecambe Town Centre Current Parking Costs

Time (h)	0.5	1	2	3	4	10	24
On Street	£0.70	£1.50	£2.60				
Short Stay		£1.50	£2.50	£3.00	£3.80	£9.00	£11.00
Long Stay		£1.30		£2.50		£3.40	

8.3.17. Lancaster CC has confirmed an average parking utilisation of 39% across Morecambe, with an average peak parking demand in August *"across the last few years suggested demand was in the region of 70-80%, hence the proposal to reduce parking capacity in the region of 25%"*.

8.3.18. This surplus of approximately 25% at peak times represents 450 parking spaces of the 1,800 surface Pay and Display parking spaces in control of Lancaster CC.

Parking Demand

8.3.19. Table 8-3 below shows the predicted vehicles travelling to the proposed development for each period across the year. As a worst case scenario, it has been assumed that each vehicle will require a parking space for the full day.

8.3.20. Whilst the proposed development wants to encourage visitors to stay in Morecambe after their visit to EPN, assuming that all visitors will stay for the full day is not realistic. In fact, from a traffic analysis worst case scenario point of view, Table 6-10 indicated the assumptions made in regards of additional time spend in Morecambe by visitors.

8.3.21. Therefore, the parking demand presented below shows the maximum number of vehicles travelling to the proposed development. It does not assume any parking rotation (a parking space being used by more than one vehicle per day), thus adding another layer of robustness. In reality, the total parking demand is likely to fall below the total number of vehicles.

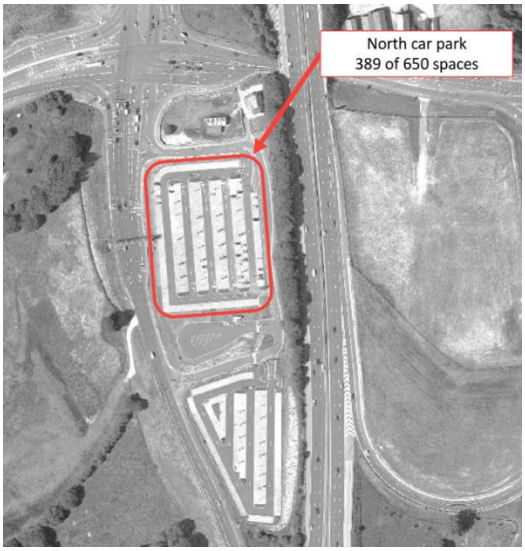
8.3.22. The working assumption presented in the OBC is based on splitting the parking demand across Morecambe Town Centre and the M6 Junction 34 Caton Road Park and Ride by circa 50%-50%.

Table 8-3 - Parking Demand

Period	Days / Year	Visitors / Day	Parking Demand
Peak	100	3,750	759 – 854
Inter Peak	200	2,500	506
Off Peak	60	1,250	253

8.3.23. Lancashire CC has offered EPIL the use of the northern section of the facility as shown in Figure 8-3. This would provide 389 parking spaces for the proposed development.

Figure 8-3 - M6 Junction 34 Park and Ride, Parking Plan



8.3.24. Lancaster CC has offered EPIL the use of Billy Hill (44), Telephone Exchange (176), Central Drive (44), Goods Yard (69) and Town Hall (100) car parks[15] as shown in Figure 8-4. This would provide 433 parking spaces for the proposed development.

Figure 8-4 - Morecambe Town Centre, Parking Plan



8.3.25. In total, 822 parking spaces have been identified by both Councils and offered to EPIL.

8.3.26. The 822 figure falls between the maximum parking demand identified in Table 8-3.

8.3.27. As stated above, the parking demand presented in Table 8-3 is the maximum number of vehicles travelling to the proposed development. It does not assume any parking rotation for robustness.

8.3.28. As a worst case scenario again, the maximum number of vehicles travelling to the proposed development is likely to occur on a day with a higher occupancy rate (3+ passengers per vehicle), which would reduce the number of vehicles. However, it has been previously described in detail why a rate of 3.0 has been used as a worst case scenario.

8.3.29. Additionally, a maximum of 28 employees are predicted to commute by car. These have been assumed to travel on their own vehicle. However, the Travel Plan will not only look into ways of reducing the employees parking demand, but to promote car sharing, which should reduce the need to travel by car and the parking demand.

[15] Figures in brackets represent parking spaces available at each location.

8.3.30. Therefore, the absolute maximum number of vehicles travelling to the proposed development on a peak day would be 850 vehicles, which as described above, does not equate to 850 parking spaces for the full day.

8.3.31. In reality, the maximum parking demand is very likely to fall below that figure. A series of worst case scenario assumptions have been taken into account for robustness including manually adjusted arrivals and departures profile, higher modal share, lower car occupancy rate and no parking rotation.

8.3.32. Assuming a car park rotation based on the manually adjusted arrivals and departures profile for a peak day, and using the predicted modal share would reduce the total number of visitor parking to 586. Using a car occupancy rate of 3.3 would further reduce the total number of visitor parking to 532.

8.3.33. Therefore, it can be clearly stated that the proposed development parking demand will be below the absolute maximum number of 850 vehicles travelling to the site.

Dynamic Parking Strategy

8.3.34. The time controlled and advance booking system will allow EPIL to know in advance a series of visitor details (origin, party size, vehicle details etc). This information will allow EPIL to predict, manage and influence the parking demand within Morecambe Town Centre and the M6 Junction 34 Caton Road Park and Ride. EPIL would work with both Councils on a daily basis to communicate their parking requirements. Depending on these and other parameters (e.g. a festival taking place in Morecambe), the system will allow EPIL to allocate parking spaces accordingly at a specific location.

8.3.35. This will not only allow EPIL to meet their Net Zero Strategy by the Opening Year by prioritising parking in Morecambe for the most sustainable vehicles (e.g. EVs, low CO2 emissions, high occupancy cars etc), but also to allocate parking based on vehicle details, party size and origin among other parameters.

8.3.36. It is important to recognise that the parking demand will not only vary across the year, but also on each day, with a weekday before a bank holiday requiring a much lower parking demand than on the bank holiday weekend a few days later.

8.3.37. Arrivals and departures profile, time spent in Morecambe after the visit to the proposed development, parking rotation, modal share and car occupancy rate have a direct influence in the overall parking demand.

8.3.38. Therefore, not all the identified car parks in Morecambe Town Centre may be required by the proposed development throughout the year.

8.3.39. This dynamic parking strategy aligns with a key principle of EPIL, making use of existing underutilised infrastructure by the opening year rather than investing in infrastructure that will not be used in the future.

8.3.40. Offering dedicated parking spaces to EPN visitors, and allowing them to book their parking space in advance would allow EPIL to reduce the traffic impact on the network and distribute evenly the parking demand across a series of car parks.

8.3.41. This will also provide a level of security and comfort to visitors, who will have a guaranteed parking space in advance without having to worry about parking costs and locations.

M6 Junction 34 Park and Ride

8.3.42. The M6 Junction 34 Park and Ride northern portion offered to EPIL will be exclusively used by the proposed development. Further details need to be agreed with Lancashire CC, but it is expected that EPIL employees will welcome visitors on arrival. Signage could be introduced in the area to direct EPN visitors and general public to the right car parks.

8.3.43. Visitors parking at this location will have certain benefits as indicated in the Transport Principles. They will have to show their ticket upon arrival to the car park. Similarly, they will have to validate their ticket when boarding the shuttle bus.

Morecambe Town Centre

8.3.44. The management of the different car parks across Morecambe Town Centre offered to EPIL requires further engagement. However, some of them will be exclusively used by the proposed development, whilst others may be open to EPN visitors and general public.

8.3.45. This can be achieved with low cost strategies. If one of the identified car parks was to be shared between general public and EPN visitors, EPIL would know in advance how many parking spaces they would require. Therefore, EPIL could ring fence the required parking spaces with traffic management barriers, monitored by stewards, allowing only EPN visitors with a valid ticket to park in those parking spaces. The remaining parking spaces would be available to general public as normal Pay and Display parking spaces.

8.3.46. EPN visitors will have to validate their ticket on arrival to the car park before entering the proposed development.

8.4 SHUTTLE BUS

8.4.1. In order to encourage visitors to park at the M6 Junction 34 Park and Ride, a shuttle bus travelling to and from Morecambe is proposed. This will be directly managed and operated by EPIL or an appointed supplier on behalf of EPIL. It will be a different service to the existing Park and Ride bus travelling to Lancaster.

8.4.2. The shuttle bus will be part of the EPN experience, as it will provide a of welcoming atmosphere to all visitors.

8.4.3. The proposed shuttle bus route through Broadway has been carefully considered. It will provide visitors a magnificent Morecambe Bay experience as they travel through this *'ceremonial route'*, where a boulevard style linear, greenery and ample route (Broadway) gives way to the Morecambe Bay before turning left into Marine Road overlooking the proposed development building shell forms by the Midland Hotel.

8.4.4. A series of additional bus stops across Morecambe, and the Promenade in particular, will be considered to encourage EPN visitors to spend time around the town centre.

Figure 8-5 - Proposed Shuttle Bus Route



8.4.5. The shuttle bus is proposed to operate daily. However, in recognition of the low number of visitors travelling to the proposed development on the 60 off peak days, it may not be necessary to run this service on off peak days.

8.4.6. An indicative timetable has been developed based on the predicted arrivals and departures profile. However, this will be carefully amended almost on a daily basis thanks to the time controlled and advance booking system, which will allow EPIL to know in advance how many EPN visitors will be parking at the M6 Junction 34 Caton Road Park and Ride facility.

8.4.7. The frequency of the shuttle bus will vary between 10 and 20 minutes.

8.4.8. Figure 8-6 presents a portion of the proposed shuttle bus timetable for a peak day. All details can be found in Appendix I.

Figure 8-6 - Proposed Shuttle Bus Timetable

PEAK DAY TIMETABLE

	Pull Out ↓	*Pull Out* ↓		*Pull Out* ↓					*Pull Out* ↓												
Bus Working	**S1**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**
Trip No	**1**	**3**	**5**	**7**	**9**	**11**	**13**	**15**	**17**	**19**	**21**	**23**	**25**	**27**	**29**	**31**	**33**	**35**	**37**	**39**
Park & Ride M6 J34	0830	0900	0915	0930	0945	1000	1012	1024	1036	1048	1100	1112	1124	1136	1148	1200	1212	1224	1236	1248
Eden Project North	0845	0915	0930	0945	1000	1015	1027	1039	1051	1103	1115	1127	1139	1151	1203	1215	1227	1239	1251	1303
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*
Bus Working	**S1**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**
Trip No	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**	**32**	**34**	**36**	**38**	**40**
Eden Project North	0850	0920	0935	0950	1005	1020	1032	1044	1056	1108	1120	1132	1144	1156	1208	1220	1232	1244	1256	1308
Park & Ride M6 J34	0905	0935	0950	1005	1020	1035	1047	1059	1111	1123	1135	1147	1159	1211	1223	1235	1247	1259	1311	1323
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*
Bus Working	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**
Trip No	**41**	**43**	**45**	**47**	**49**	**51**	**53**	**55**	**57**	**59**	**61**	**63**	**65**	**67**	**69**	**71**	**73**	**75**	**77**	**79**
Park & Ride M6 J34	1300	1312	1324	1336	1348	1400	1412	1424	1436	1448	1500	1515	1530	1545	1600	1615	1630	1645	1700	1715
Eden Project North	1315	1327	1339	1351	1403	1415	1427	1439	1451	1503	1515	1530	1545	1600	1615	1630	1645	1700	1715	1730
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*
Bus Working	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**
Trip No	**42**	**44**	**46**	**48**	**50**	**52**	**54**	**56**	**58**	**60**	**62**	**64**	**66**	**68**	**70**	**72**	**74**	**76**	**78**	**80**
Eden Project North	1320	1332	1344	1356	1408	1420	1432	1444	1456	1508	1520	1535	1550	1605	1620	1635	1650	1705	1720	1735
Park & Ride M6 J34	1335	1347	1359	1411	1423	1435	1447	1459	1511	1523	1535	1550	1605	1620	1635	1650	1705	1720	1735	1750
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*
									↓ *Pull In*												

8.4.9. The indicative timetable is based on a full size single deck bus of circa 40-seat capacity. Four vehicles are required for all inter peak and peak days, with an additional fifth service during some evening hours of peak days.

8.4.10. However, EPIL will continue engaging with bus and private coach operators to better understand how this could be operated. For example, the fifth vehicle required at certain hours of peak days could be one of the various University buses which would not be providing a service during peak weekends and summer holidays.

Financial Model

8.4.11. Details of the financial model for the shuttle bus and associated parking are enclosed under a separate Technical Note for confidentiality reasons.

8.5 ACCESSIBLE AND EV PARKING STRATEGY

8.5.1. As stated on several occasions, this TA presents a realistic transport strategy for the Opening Year that complies with planning policy. A series of interventions will be brought forward under separate planning applications, and both accessible parking and EV parking are some of them.

Accessible Parking

8.5.2. The Design and Access Statement that accompanies this planning application covers in detail the multiple accessibility aspects that the proposed development has considered and incorporated into the design and transport strategy.

8.5.3. Accessible parking is ideally to occur at the Goods Yard car park. This could consist of a reconfiguration of the existing parking spaces to provide accessible parking spaces across its entirety. However, for the purposes of this application, the proposed development is not proposing to do this, as all car parks being used by EPN are consented car parks that already provide a level of accessible parking.

8.5.4. Therefore, the Opening Year transport strategy that complies with planning policy does not require to provide any additional accessible parking. However, there is a clear intention and desire to provide accessible parking before the opening of the proposed development. This would be through separated negotiation with the local authority and would fall under a separate planning application.

8.5.5. Additionally, a drop off and pick up zone is proposed on Marine Road Central as described in Chapter 12. However, this is an opening year strategy with a final aspiration to locate this within the conversion of the Goods Yard car park.

EV Parking

8.5.6. The M6 Junction 34 Park and Ride currently provides 12no. 7kW and 12no. 50kW charging points for electric vehicles.

8.5.7. No charging points are currently provided across the different car parks identified in Morecambe Town Centre.

8.5.8. The same principles and approach to accessible parking applies to EV parking. The proposed development is not proposing any new EV parking spaces across any of the identified car parks as part of this planning application, as all car parks being used by EPN are consented car parks.

8.5.9. Therefore, the Opening Year transport strategy that complies with planning policy does not require to provide any additional EV parking. However, there is a clear intention and desire to provide EV parking before the opening of the proposed development, particularly at Morecambe Town Centre. Again, this would fall under a separate planning application.

9 VISITOR GROUP STRATEGY

9.1 INTRODUCTION

9.1.1. The Visitor Group Strategy covers all visitors arriving to the proposed development as a group. This could take various forms, including:

- School and higher educational groups; and
- Organised tours.

9.2 VISITOR GROUP STRATEGY

School and Higher Education Groups

9.2.1. Within 25 miles of the proposed development there are 427 educational institutions. The proposed development expects to attract over 70,000 students annually. It is expected that all of them will be travelling to the site by private bus / coach, with the single exception of Morecambe local schools within walking distance to the proposed development.

9.2.2. In accordance with the Transport Strategy and the booking system, school and higher education group visits will be distributed evenly across the year. Similarly, their arrival times will also be spread out throughout the morning to ensure that arrival times are appropriate subject to their origin. This will:

- Enhance their visitor experience;
- Enhance the non-educational visitors experience;
- Ensure appropriate levels of educational employees on site; and
- Ensure that the proposed drop off area is carefully used;

9.2.3. Students are expected to visit the proposed development on inter peak weekdays (circa 150 days a year). This results on circa 470 students a day, equivalent to an average of 10+ private buses / coaches per day.

Organised Tours

9.2.4. Organised tours to the proposed development will include different visitors' types and origins. Including:

- International overnight visitors from big cities such as Manchester, Liverpool and Edinburgh;
- Organised overnight visitors from the touristic regions such as the Lake District;
- Organised senior group day trip visits from different locations; and
- Organised group day trips visits from different locations amongst many other possibilities.

9.2.5. Organised tours are expected to travel mainly by private bus / coach. However, there is also the possibility to have organised tours travelling by rail.

Coach Group Strategy

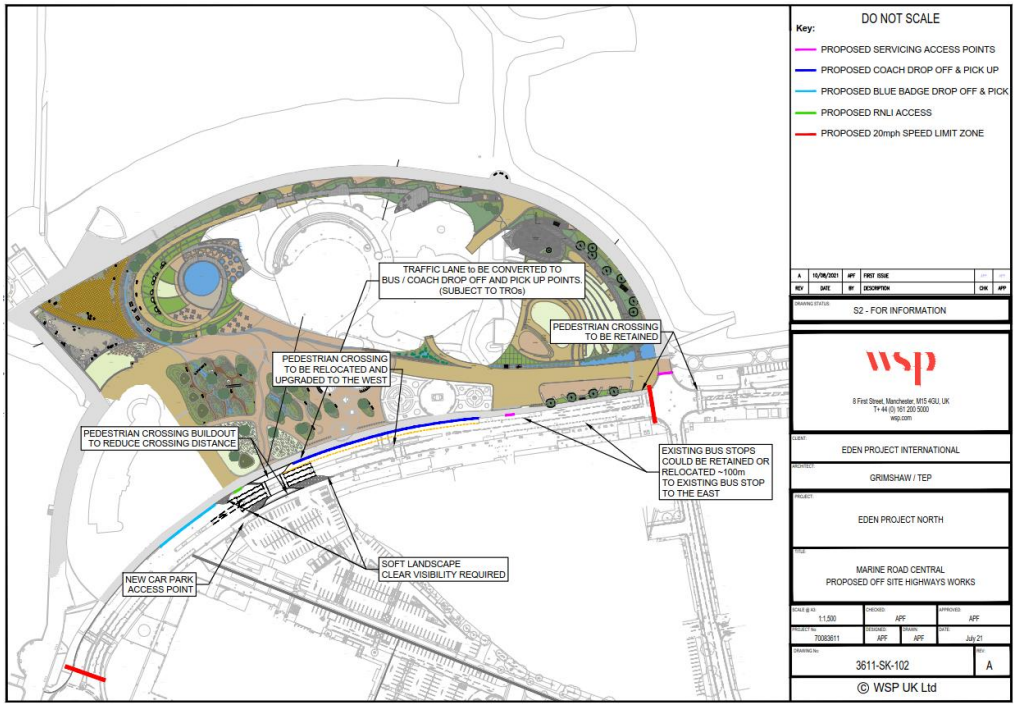
9.2.6. As per general visitors, group visits will be offered with the most appropriate route into the proposed development according to their origin. This route could include the 'ceremonial route' described in the Shuttle Bus section, where a boulevard style linear, greenery and ample route (Broadway) gives way to the Morecambe Bay before turning left into Marine Road overlooking the proposed development building shell forms by the Midland Hotel.

9.2.7. Private buses and coaches are proposed to have the possibility to drop off group visitors on the northern section of Marine Road Central as shown in Figure 9-1 (Appendix J).

9.2.8. This area will be subject to a Traffic Regulation Order as described in detail in Chapter 12. And is expected to only allow private buses and coaches to drop off and pick up passengers, with a time restriction of 15 minutes with no return within 30 minutes.

9.2.9. The landscape design incorporates multiple walking routes from this area to the visitor centre of the proposed development. This allows for EPN visitors and general public to interact with the various landscaped areas.

Figure 9-1 - Proposed Drop Off Area on Marine Road Central



9.2.10. As with any visitor group strategy, the aspect that needs a more careful management is the departures. Whilst on arrival most passengers are expected to directly access the proposed development as this is the main purpose of their visit, on departure further considerations are required.

9.2.11. The visitor centre will have a series of real time information transport screens that will inform EPN visitors for next rail, bus and shuttle bus departures. These screens could also incorporate group information departure times to inform certain visitor groups on when their private bus / coach is expected to depart from the pick up area.

9.2.12. Different visitor groups will have different departure requirements. For instance, educational groups are likely to visit the proposed development accompanied by EPN employees on a tour style visit. Therefore, the departure process can be easily coordinated.

9.2.13. However, private groups may visit EPN on individual sub groups, having to implement careful management procedures to ensure that all visitors are on time at the right departure location. The

proposed real time information transport screens will help this process. The landscape design incorporates multiple public realm spaces where private groups may meet up prior walking to the pick up area for departure.

9.2.14. In addition to this, it is important to recognise that certain visitor groups will spend time around Morecambe after their visit to the proposed development. As such, EPIL will continue to work with both Lancaster CC and Lancashire CC to explore the possibility of having a series of pick up points across Marine Road Central and East so visitor groups could be picked up at different locations across the Promenade. This will encourage visitors to explore Morecambe after their visit to EPN.

9.2.15. Finally, it should be noted that the proposed drop off area is partially located in front of the Grade Listed II War Memorial. However, this is not considered to have a negative impact. In fact, on street parking is currently permitted 24-hours a day (including private buses, coaches and campervans). The EPN proposals would replace the 24-hour on street parking with time limited drop off and pick up.

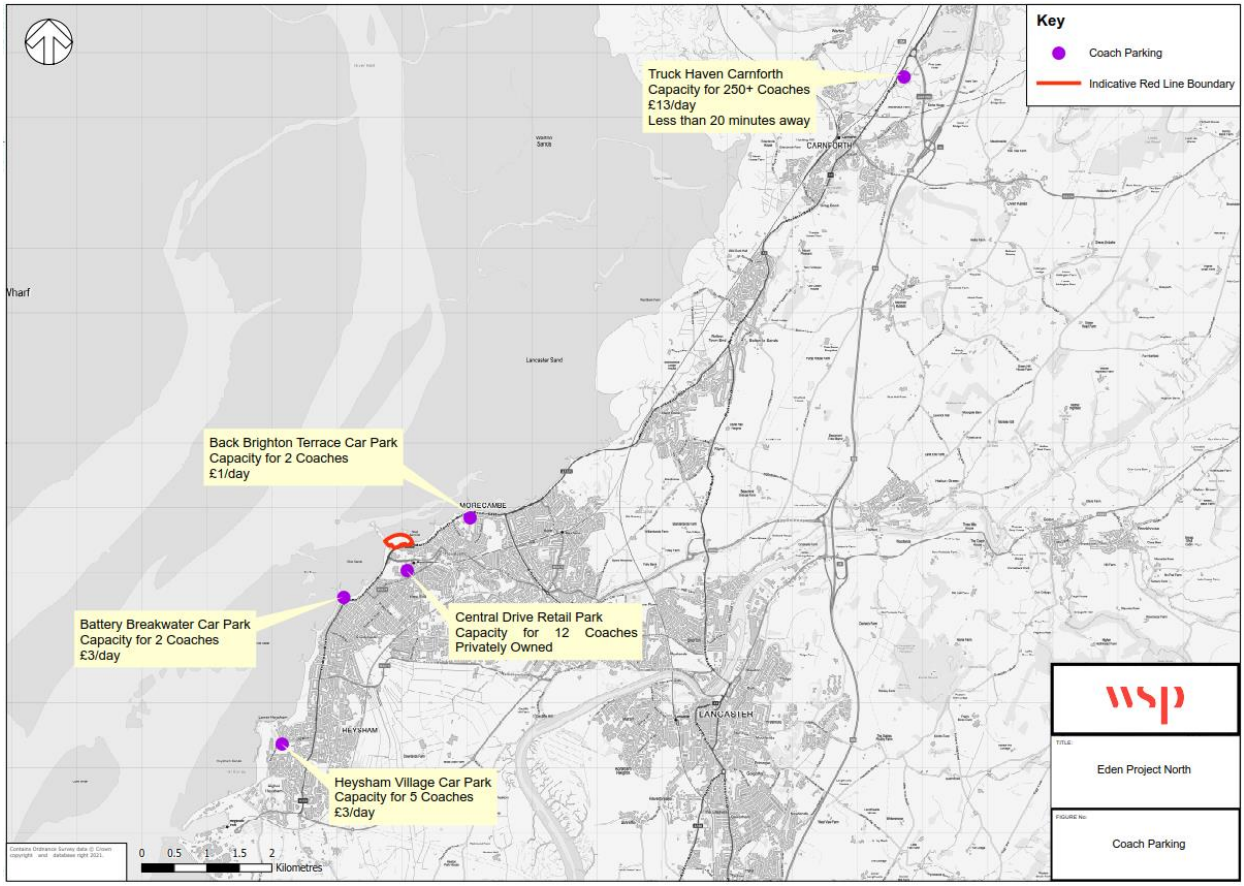
9.2.16. It should be noted that visitor group private buses and coaches are a private transport service. And as such, operators may have designated waiting facilities in the region or even other services booked whilst the visit to the proposed development. Therefore, Table 9-1 and Figure 9-2 (Appendix J) show the different existing bus and coach parking facilities in Morecambe and its immediate vicinity.

9.2.17. Private buses and coaches will be provided with this information for their consideration on where to layover during their passengers visit to the proposed development.

Table 9-1 – Existing Bus and Coach Parking Facilities

Location	Capacity (coaches)
Heysham Village Car Park	5
Battery Breakwater Car Park	2
Central Drive Retail Park	12
Back Brighton Terrace Car Park	2
Truck Heaven Carnforth	250+

Figure 9-2 - Existing Coach Parking Locations



10 SERVICING AND REFUSE STRATEGY

10.1 SERVICING STRATEGY

10.1.1. EPN has a minimum local supplier target of 80%. In Eden Project (Cornwall) the local supplier proportion is even greater. This would result in reducing the need for servicing the site by large vehicles. Instead, a series of small vans are expected to be the main vehicle type servicing the site.

10.1.2. All servicing manoeuvres will be subject to different TROs and access restrictions as set out in Chapter 12.

10.1.3. The proposed development has four servicing requirements as set out in this strategy. All swept path drawings presented below can also be found in Appendix K.

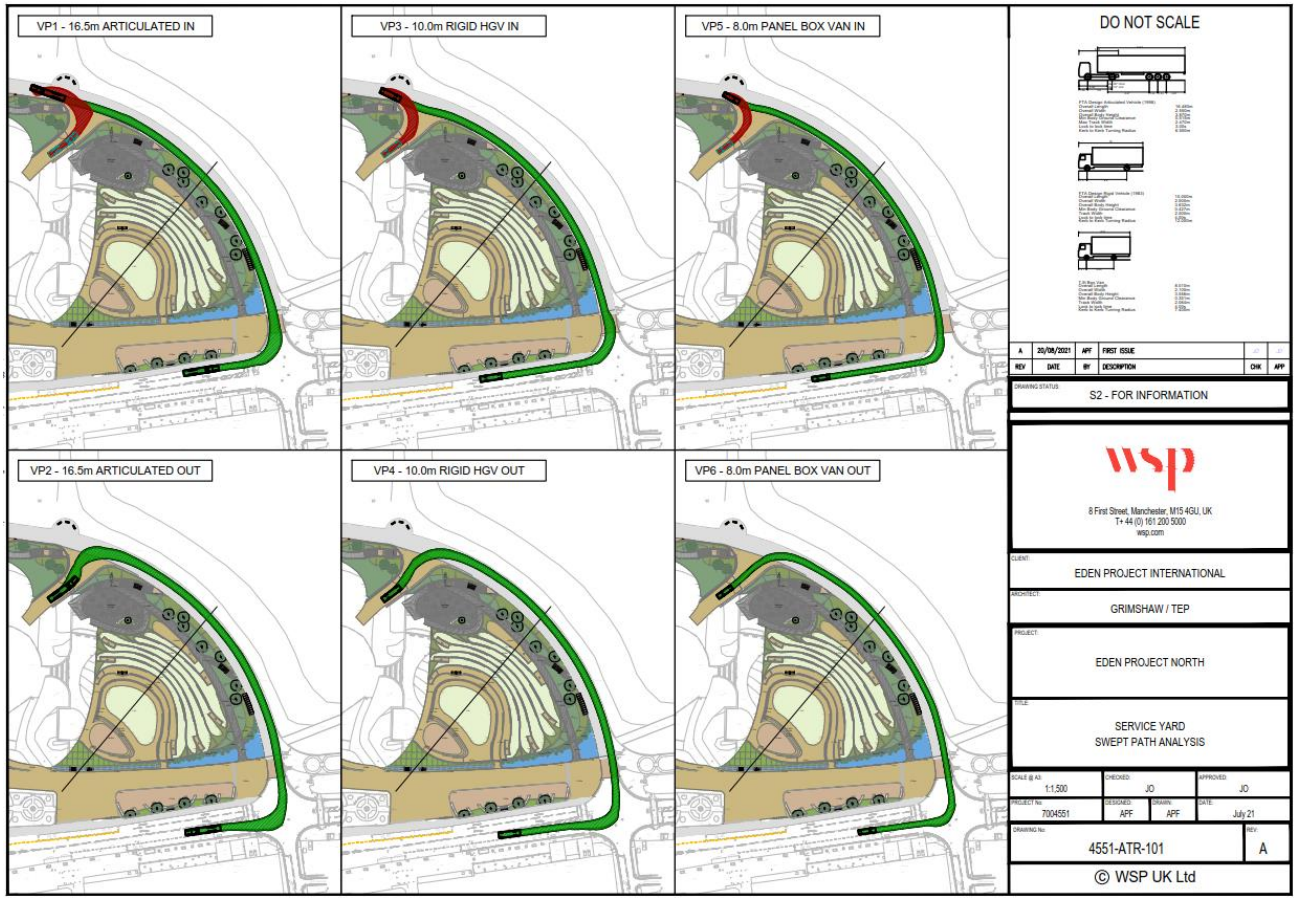
Service Yard

10.1.4. The service yard is located to the northeast of the proposed development. Vehicular access is proposed to take place from the Marine Road Central / Northumberland Street junction via the Promenade.

10.1.5. Despite this route not being an adopted highway, it is proposed that servicing vehicles only would access the site from evening hours to early morning hours throughout the night.

10.1.6. Limited number of vans and small HGVs are expected to service the proposed development on a daily basis. There will also be occasional needs for large articulated HGVs to access the service yard. Refuse vehicles will also use the service yard as their main waste removal point.

Figure 10-1 - Service Yard Swept Path



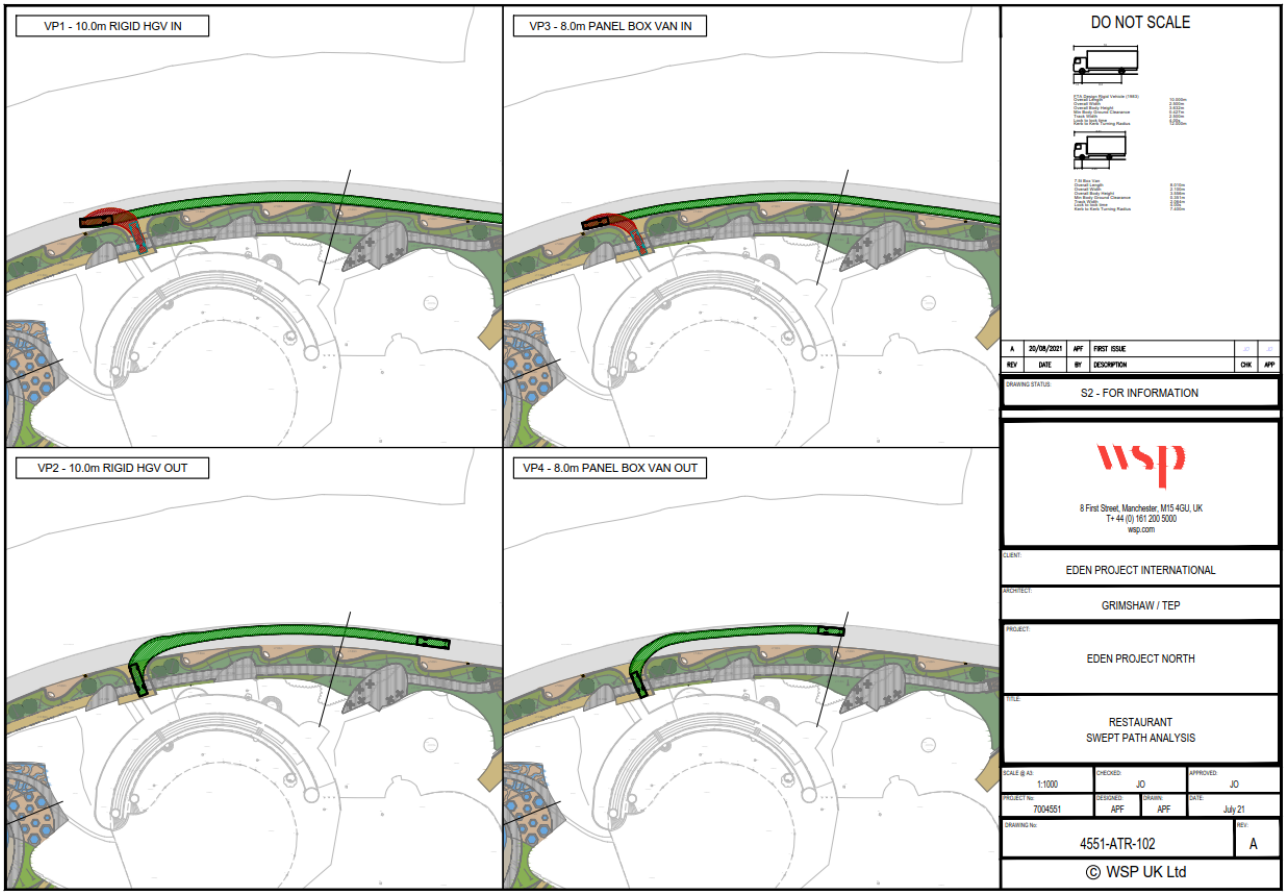
10.1.7. It is important to highlight that this vehicular access is currently used by the Bay Arena Car Park. A 24-hour surface car park with 78 parking spaces. Therefore, the development proposals would provide a positive improvement to the area by significantly limiting the quantum of vehicular movements and the times of the day of these.

Restaurant

10.1.8. The restaurant is located to the northwest of the proposed development. It will be serviced via the service yard. But on limited occasions, small vans and rigid HGVs may have to access a secondary servicing point located underneath the restaurant as shown in Figure 10-2.

10.1.9. Vehicles will access this location by the Promenade. Therefore, the same service yard access restrictions will apply to this location.

Figure 10-2 - Restaurant Swept Path



Visitor Centre

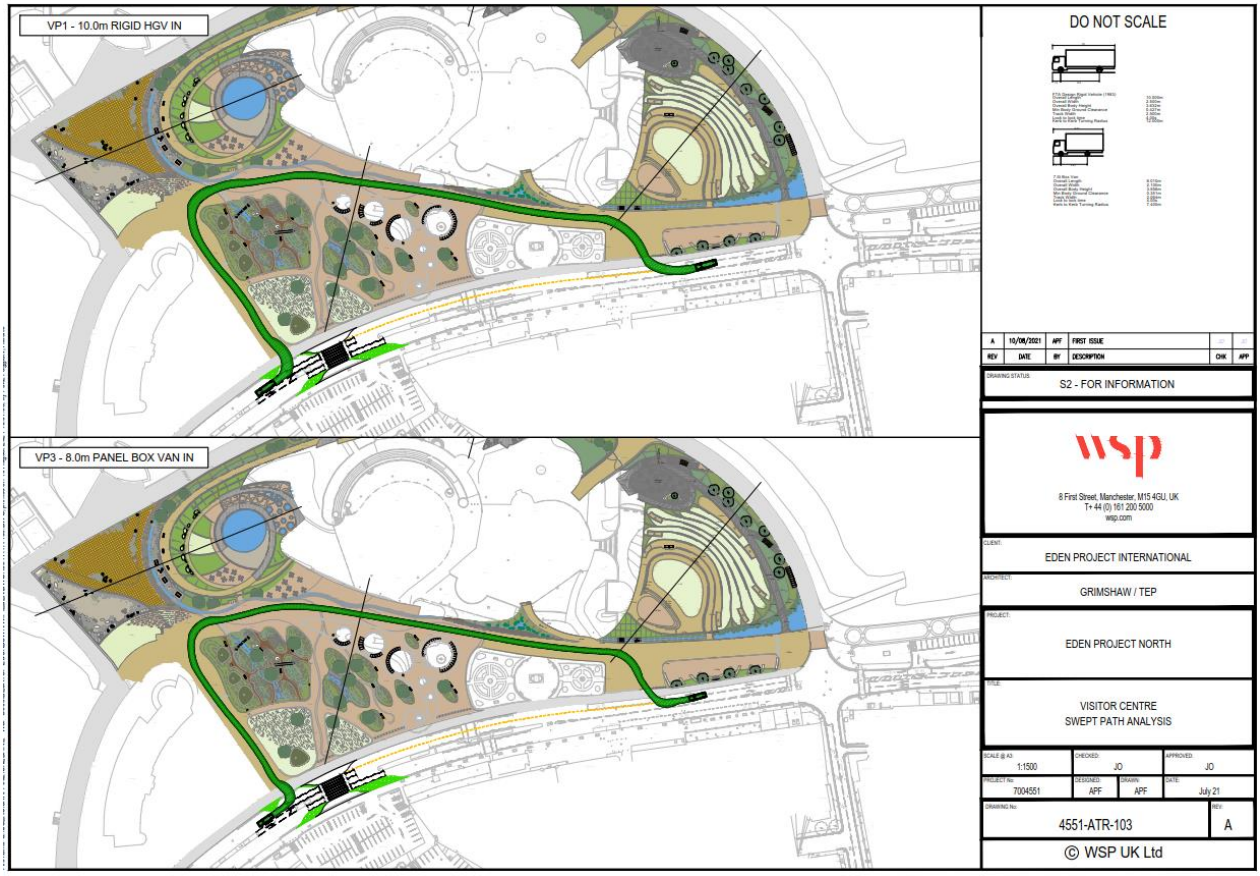
10.1.10. The visitor centre is the access and egress point for visitors. It will include food and beverage options as well as the gift shop.

10.1.11. All these units are proposed to be serviced by the main service yard. However, occasional and very limited access may be required at certain times of the year. Figure 10-3 shows how these manoeuvres could be undertaken.

10.1.12. It is proposed that these manoeuvres are undertaken via the existing dropped kerb on Marine Road Central (Figure 2-6), a well-used amenity currently used by multiple maintenance vehicles on a daily basis.

10.1.13. Certain access restrictions will be applied for these occasional vehicles.

Figure 10-3 – Visitor Centre Swept Path



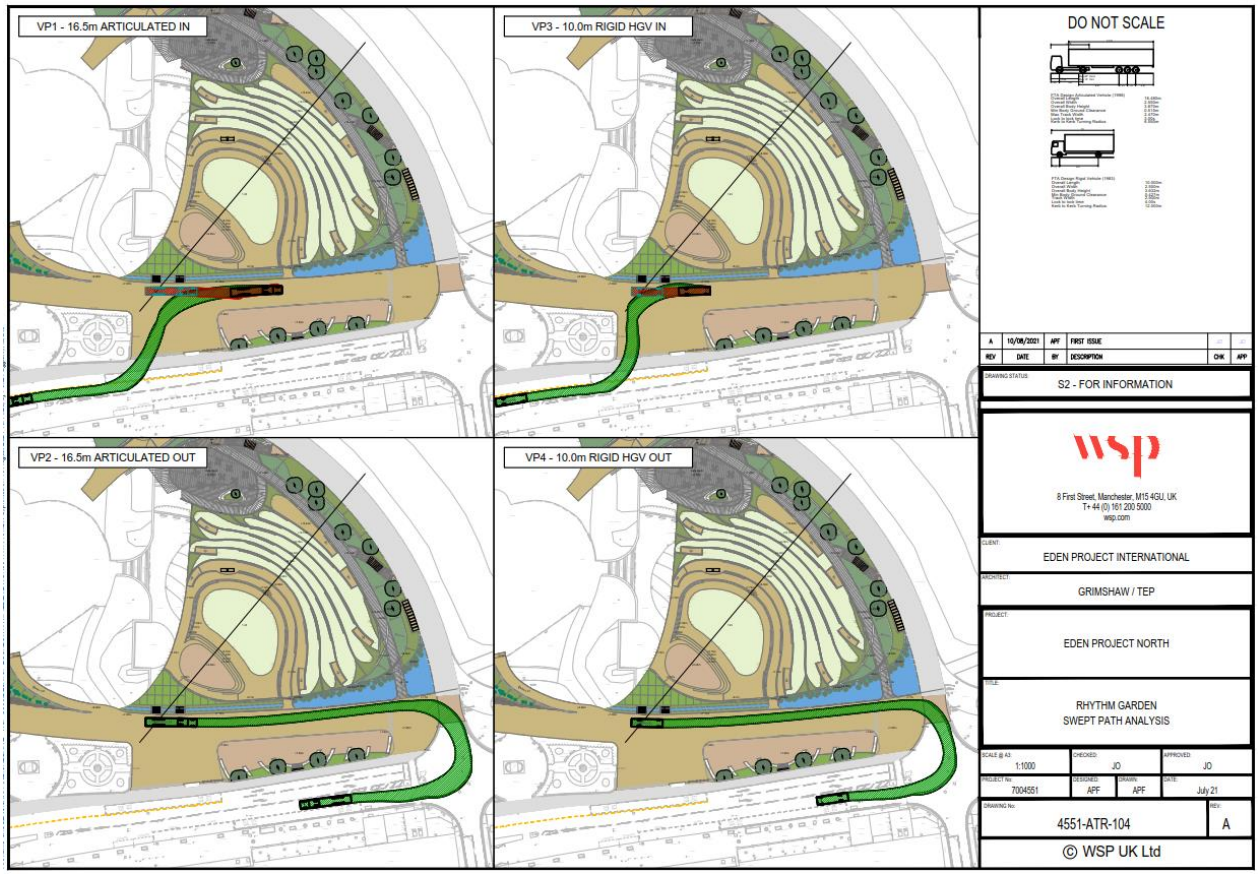
Rhythm Garden

10.1.14. The Eden sessions (music events) are proposed to take place at this location to the east of the site. These will be limited to eight a year and during summer months only.

10.1.15. Whilst a separate planning application with traffic management plans will be submitted for each of the events, Figure 10-4 shows the proposed vehicular route that HGVs would undertake to set up the different events taking place.

10.1.16. Vehicles would access the site by an existing and well utilised dropped kerb on Marine Road Central.

Figure 10-4 – Rhythm Garden Swept Path



RNLI and Emergency Vehicles

10.1.17. The EPIL and Design Team have undertaken regular engagement with the RNLI to understand their access requirements and future aspiration to incorporate these into the proposed development.

10.1.18. The RNLI requires access to their station for a particular vehicle shown in Figure 10-5, with the rescue hovercraft vehicle on top of an HGV.

10.1.19. Access to the RNLI building is proposed to use the most direct route from Marine Road Central as shown in Figure 10-6.

Figure 10-5 - RNLI Hovercraft Vehicle

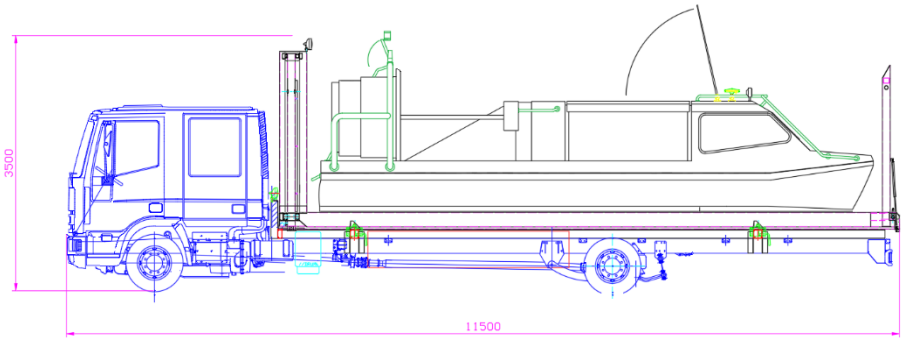
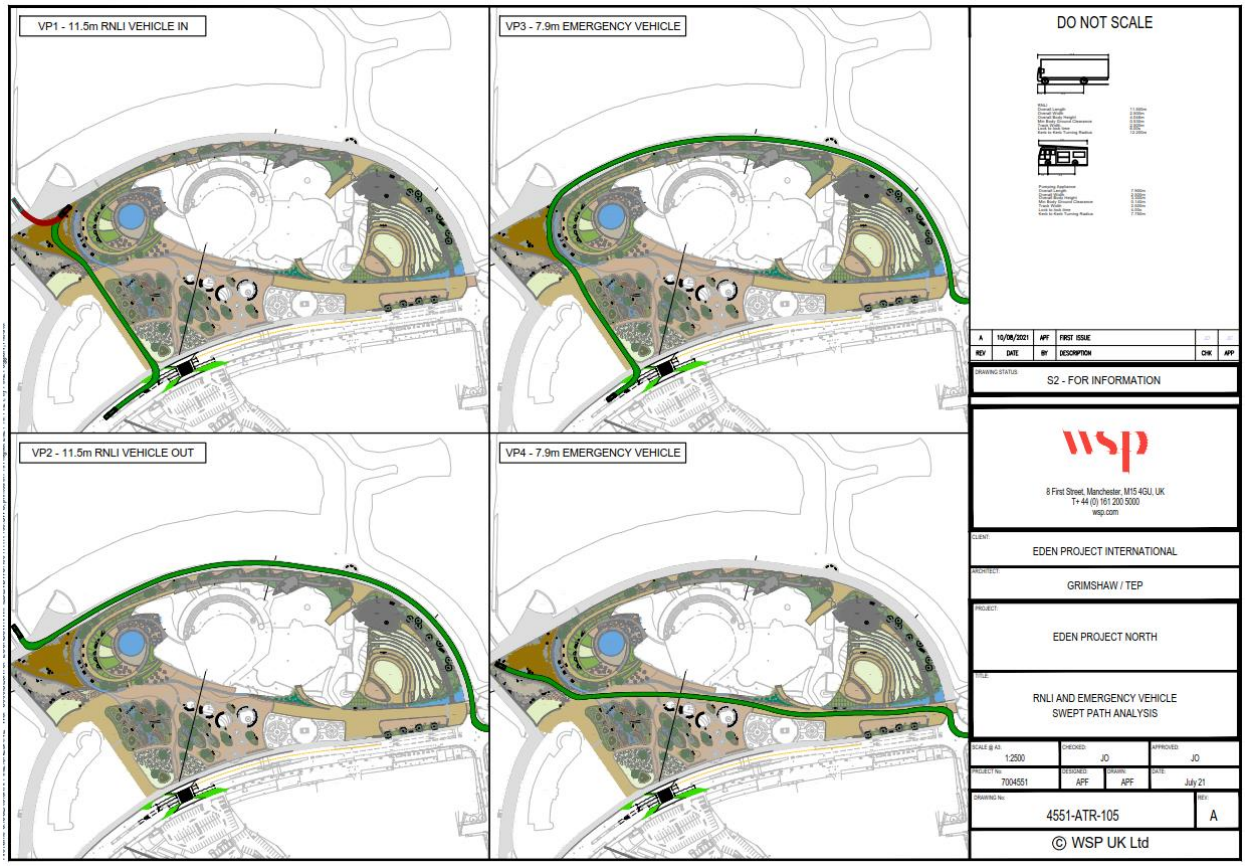


Figure 10-6 – RNLI and Emergency Vehicles Swept Path



10.2 REFUSE STRATEGY

10.2.1. Similarly, the Refuse Strategy is based on a waste hierarchy as set out in Figure 10-7, where the following five steps will be followed in order to minimise to an absolute minimum the requirement to transport waste outside of the proposed development. Further details can be found on the Waste Strategy being submitted as part of this planning application.

- 1. Prevent;
- 2. Re-use;
- 3. Recycle;
- 4. Recover; and
- 5. Dispose.

Figure 10-7 - Waste Hierarchy



11 TRAFFIC CAPACITY ASSESSMENT

11.1 INTRODUCTION

11.1.1. This chapter presents the traffic capacity assessment methodology undertaken. This follows the principles presented in the OBC submitted to HM Government.

11.2 TRAFFIC CAPACITY ASSESSMENT

11.2.1. The Eden Transport Vision shared on April 2019 presented the ten core principles of the transport strategy. The very first point stated that “Eden Project North aims to work with the existing infrastructure where possible.”

11.2.2. EPIL has identified three different visitor seasons (Peak, Inter Peak and Off Peak), as different visitors per day are predicted for each season. This principle underpins the financial model which has been based and shared with HM Government.

- The Peak season comprises 100 days: bank holidays, some weekends, school and summer holidays;
- The Inter Peak season comprises 200 days: most weekdays and some weekends;
- The Off Peak season comprises 60 days: most January and November weekdays, with some early February and early December weekdays.

11.2.3. The Transport Principles outline the importance of the time controlled and advance booking system. For this visitors would be allocated an arrival slot based on their origin and method of travel (amongst other parameters). This allows EPN to understand, manage and influence how visitors would travel to EPN on any given hour of any given day.

11.2.4. The latest EPN arrivals and departures profile suggests a predicted maximum of 600 visitors per hour on a peak day, and 500 on an inter peak day. However, as a worst case scenario, the number of visitors per hour used on the trip generation and distribution model has been dictated by the maximum building capacity (750).

11.2.5. Similarly, the arrivals and departures profile has been manually adjusted to reflect a more condensed profile, with more trips per hour than the predicted by EPN.

11.2.6. A different modal share, based on multiple datasets, has been applied to each visitor type. However, as a worst case scenario again, this modal share has been uplifted by five and ten points in favour of private car, and in detriment of rail visitors. This would generate more vehicular trips than originally predicted.

11.2.7. The assumed car occupancy rate for EPN is 3.0. This has been derived upon leisure consultant market experience, EPN feedback and a thorough review of most major leisure attractions in the UK. Indeed, this is one of the lowest car occupancy rate for a major leisure attraction. It includes sites within the Greater London area. (e.g. Chester Zoo 3.9, Gulliver’s Park 3.8, Alton Towers 3.7, Thorpe Park 3.45, London Resort 3.0), and it is lower than the 3.16 average that includes the DfT rate.

11.2.8. It should be noted that this rate has been confirmed during pre-app scoping with Highways England as a *“reasonable assumption”*.

11.2.9. The car occupancy rate will change throughout the year. Off peak winter weekdays are likely to have a car occupancy rate closer to 2, whilst peak summer weekends are likely to have a car occupancy rate closer to 4.

11.2.10. In recognition of 250 days a year falling under the 100 peak days and circa 150 inter peak weekdays and holidays, it is recognised that for two thirds of the year the car occupancy rate is likely to be higher than 3.0.

11.2.11. In recognition of 250 days a year falling under the 100 peak days and the circa 150 inter peak weekdays and holidays, it is recognised that for two thirds of the year the car occupancy rate is likely to be higher than 3.0.

11.2.12. Therefore, using a car occupancy rate lower than 3.0 does not seem appropriate. Not only would the average occupancy rate be higher than this, but it can be expected that due to the nature of the visitors (76% of total trips will be day trips) and the seasonality of the site, for two thirds of the year the car occupancy rate will be higher than 3.0.

11.2.13. This approach will accommodate both cases: a higher car occupancy rate during the peak season with a higher number of visitors; and a lower car occupancy rate during the off peak season with a much lower number of visitors. It is key to provide enough infrastructure and parking for the peak season, but to not to overdesign it and build certain infrastructures that would not be required in a few years' time as set out in the Net Zero Strategy.

11.2.14. This represents a worst case scenario, as using a lower car occupancy rate that the one expected for two thirds of the year will provide a greater number of vehicular trips being generated by the proposed development, and a greater parking demand. However, for robustness of this TA, a car occupancy rate of 3.0 is proposed to be used.

11.2.15. Notwithstanding this, the booking system will allow EPN to understand the car occupancy rate for all days of the year. This will ensure that no more cars than parking spaces available are allowed to visit the proposed development as further described in the Parking Strategy.

11.2.16. Again, this is a worst case scenario assumption that generates a higher volume of vehicular trips.

11.2.17. Lancashire CC commissioned Atkins to develop a Saturn model and traffic forecasting and economic appraisal report to support the 'South Lancaster Growth Catalyst Housing Infrastructure Funding' (also known as 'Junction 33 HIF'). A series of traffic surveys were undertaken in October and November 2018 to support this commission. The highway assessment model included the three single hour time periods representing the busiest peak hours of the highways network (weekday AM 08.00, PM 17.00-18.00 and average IP (10.00-16.00)). The Saturn model was accordingly calibrated and validated through a series of steps to ensure it was replicating traffic flows and journey times.

11.2.18. WSP understands that LCC position in regards of the peak hour of the highway network is the one used to support the Junction 33 HIF works during 2018 and 2019. That is weekday 08.00-09.00 in the AM and weekday 17.00-18.00 in the PM.

11.2.19. It can be stated, and it is commonly agreed, that the EPN peak day would fall outside the highways network peak day (weekends and holiday weekdays vs. weekdays) as highlighted in the seasonal calendar.

11.2.20. Similarly, the EPN peak hour would fall outside the highways peak hour (11.00 to 16.00 vs 08.00-09.00 and 17.00-18.00). This is valid for both the original and manually adjusted arrivals and departures profile.

11.2.21. Both Councils have offered to EPIL the use existing underutilised car parks (both the M6 Junction 34 Caton Road Park and Ride, and Morecambe Town Centre sites). These are all car parks that have been consented through valid planning processes.

11.2.22. It can be stated that theoretically those car parks could generate trips in the network without causing significant impact at any given junction, as highways provision was made in the past to accommodate that demand. However, as these car parks are underutilised, EPN would fill that theoretical capacity throughout the day. This is significantly clear at the recently upgraded highways links and junctions, such as the M6 J34 and the Bay Gateway, where additional capacity has been recently provided to accommodate for the 650 spaces of the Park and Ride.

11.2.23. Thanks to the time controlled and advance booking system, no more car tickets than parking spaces available will be sold at any given day.

11.2.24. Therefore, the number of vehicular trips will not only be limited by the maximum number of visitors per hour and day limits, but by the parking capacity provided.

11.2.25. EPN would generate a maximum of 184 to 207 two-way vehicular movements at 14:00-15:00 on a peak day. With a maximum of 104 and 63 on an inter peak and off peak day.

11.2.26. This represents one vehicle every circa 20 seconds at the M6 J34. Whereas only about half of them would be travelling into Morecambe, representing one vehicle every circa 40 seconds.

11.2.27. This represents a worst case scenario that includes several worst case scenario assumptions. But more importantly, it is not considered to be a significant number of new vehicular trips on the highways network. All of them will be using existing underutilised and consented car parks for which highways provision was made.

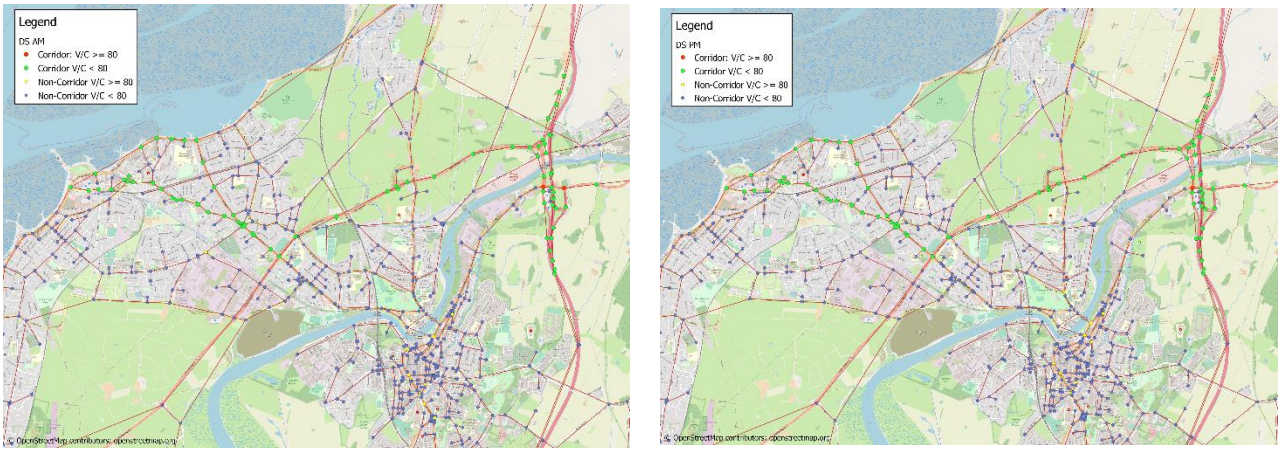
11.3 M6 J34 ASSESSMENT

Junction 34

11.3.1. When observing the 2025 Base Volume over Capacity (VoC) for each junction (Figure 11-1), the M6 Junction 34 is the only junction that provides a VoC higher than 80%.

11.3.2. The western set of signals operating above 80% in both the AM and the PM, whilst the eastern set of signals only operate above 80% in the AM.

Figure 11-1 - Highways Network, VoC Corridor Analysis (2025 Base AM and PM)



11.3.3. All plans can be found in Appendix L.

11.3.4. More detailed analysis has looked at each turning movement at the M6 J34 Junction. This shows that no baseline vehicular movement reaches the 85% during the IP and PM time periods. Whereas in the AM, only the A683 southbound left turn and the A683 eastbound right turn report a VoC greater than 85%. This route is to leave Lancaster and join the M6 southbound. EPN would not be generating any additional trips taking this route during the AM peak period. Therefore, EPN would not have a direct impact on the performance of the junction.

11.3.5. More importantly, Highways England has raised some initial concerns about potential queueing on the A683 westbound under the M6, as the infrastructure constraints currently provide a single westbound traffic lane. However, the analysis shows that this section of the road operates well within capacity in all scenarios, with a maximum VoC below 60% in the AM, and below 50% in the IP and PM peak hours.

11.3.6. Appendix L also shows the proportional impact of vehicular trips generated by EPN, which are not considered significant.

Figure 11-2 - M6 J34 2025 AM Base VoC Turning Movements

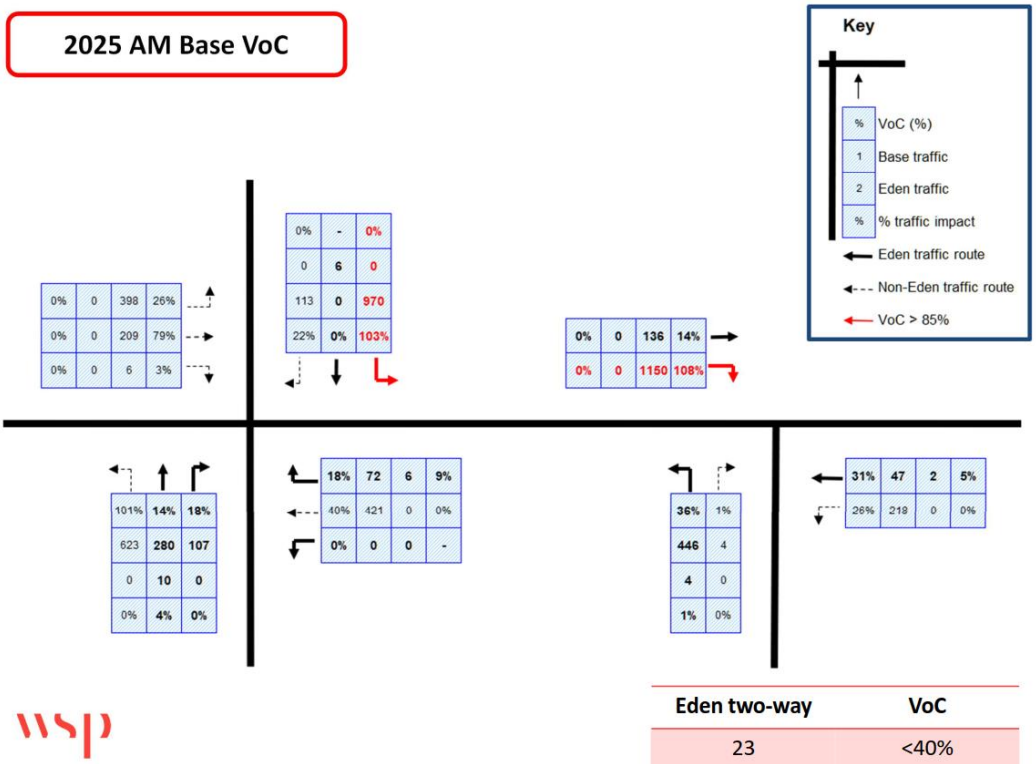


Figure 11-3 - M6 J34 2025 IP Base VoC Turning Movements

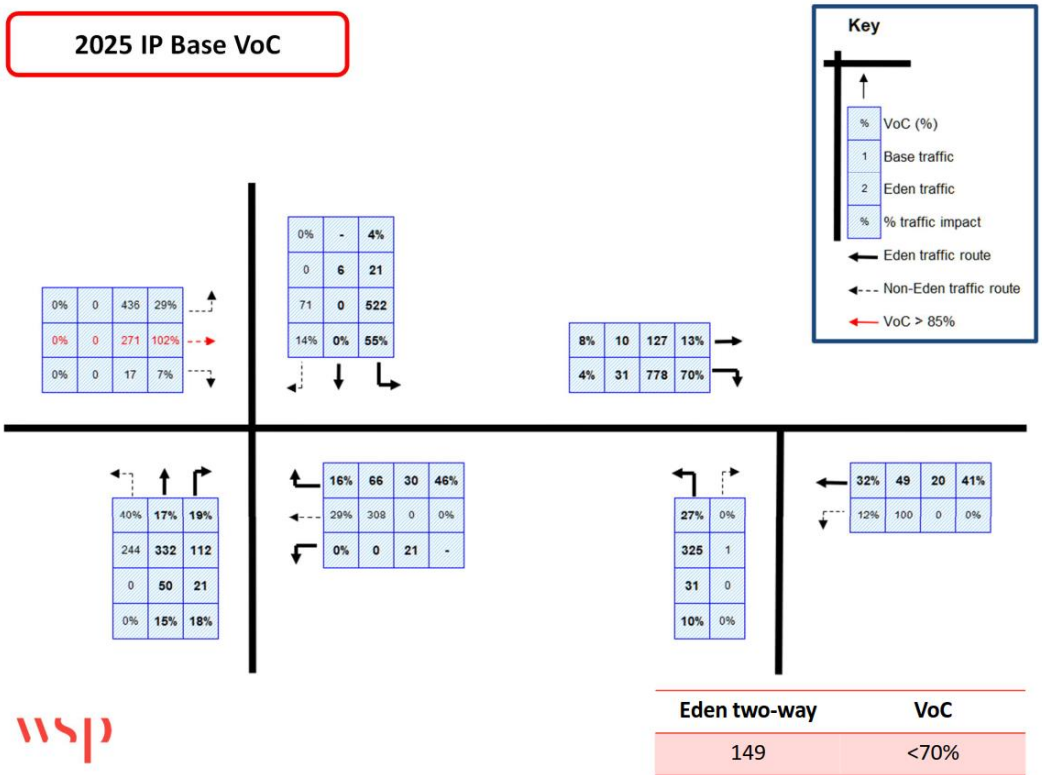
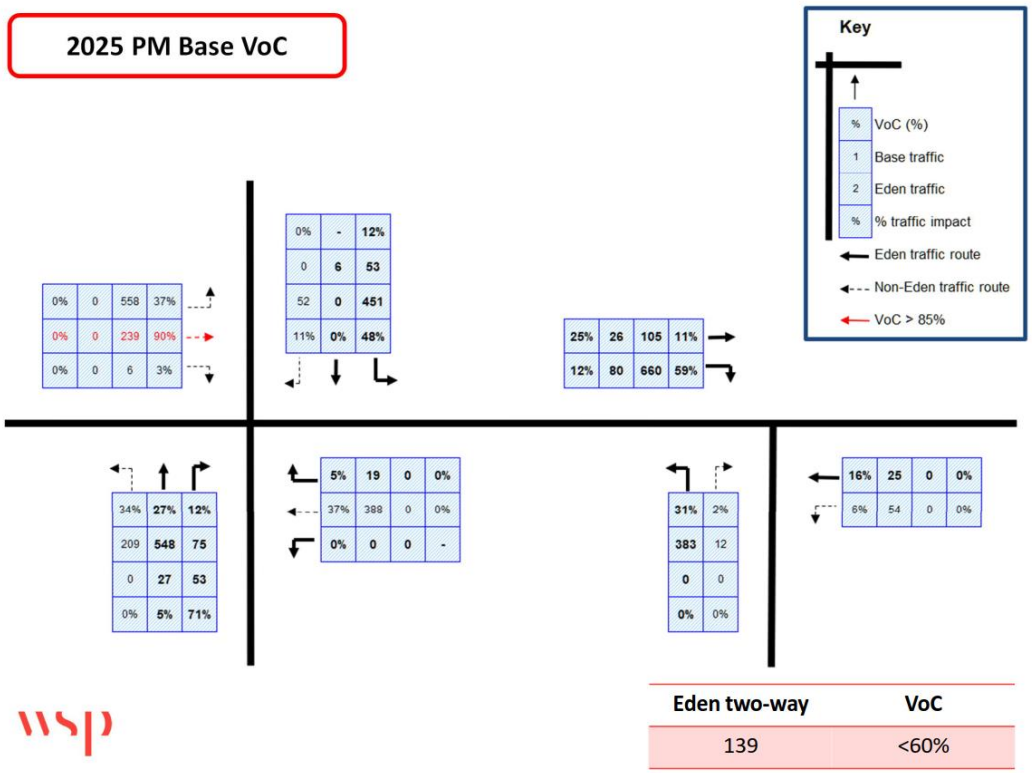


Figure 11-4 - M6 J34 2025 PM Base VoC Turning Movements



Slip Roads Merge/Diverge Assessment

11.3.7. This section considers the impact of the development proposals on the merge/diverge provision at the M6J34 slip roads. The traffic flows adopted can be found in Appendix L**.**

Existing Provision

11.3.8. Merge/diverge provision has been assessed using the approach outlined in the Design Manual for Road and Bridges (DMRB) CD 122 Revision 1 geometric design of grade separated junctions.

11.3.9. The M6 motorway has three lanes on the mainline both upstream and downstream of M6 J34. The slips are as follows:

- The northbound merge, northbound diverge and southbound merge all have two connector lanes whereas the southbound diverge has one connector lane.

11.3.10. The existing and future provision has been compared to the theoretical requirement, derived using DMRB CD 122 Revision 1 for the following scenarios:

- 2018 Base year
- 2018 Base year Do Something (DS)
- 2018 Base year DS + Development
- 2025 Base year
- 2025 Base year DS
- 2025 Base year DS + Development

- 2031 (growthed using TEMPro factors from 2025-2031)
- 2031 DS
- 2031 DS + Development

11.3.11. The 2018 and 2025 flows have been extracted from the Lancashire CC Saturn Model described above.

11.3.12. The future provision at each slip has been considered using the traffic flows included in Appendix L**.**

Northbound Diverge

11.3.13. The northbound diverge is currently a type B option 1 ghost island diverge with two lanes on the slip road and three lanes on the mainline in both an upstream and downstream direction The highest existing flows on the slip road are in the AM peak and those on the mainline are highest in the IP peak. CD122 indicates that the theoretical position should be a type A layout with one connector lane and two lanes on the upstream mainline and also on the downstream mainline. This indicates that the current provision is an over provision.

11.3.14. The summary results from the CD122 analysis are outlined in Table 11-1 for the northbound diverge for all the traffic scenarios considered. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

Table 11-1 – M6 J34 Northbound Diverge

Scenario	Merge Type			No. of connector lanes			Upstream Mainline Lanes			Downstream Mainline Lanes		
	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak
Existing Layout	B			2			3			3		
2018	A	A	A	1	1	1	2	2	2	2	2	2
2025	A	A	A	1	1	1	2	2	2	2	2	2
2025 DS	A	A	A	1	1	1	2	2	2	2	2	2
2025 DS + Dev	A	A	A	1	1	1	2	2	2	2	2	2
2031	A	A	A	1	1	1	2	2	2	2	2	2
2031 DS	A	A	A	1	1	1	2	2	2	2	2	2
2031 DS + Dev	A	A	A	1	1	1	2	2	2	2	2	2

11.3.15. The highest flow on the mainline is during the IP for all scenarios, with the highest flows on the slip road during the AM peak for all scenarios. Across all scenarios the theoretical requirement is for a type A diverge with one connector lane, two lanes upstream on the mainline and two lanes downstream on the mainline.

11.3.16. Table 11-1 alongside the CD122 merge diagrams enclosed within Appendix L indicate that the proposed development will have no material impact on the diverge provision. The plots in Appendix L show the forecast demand in the context of the existing provision, confirming that the forecast demand is within the current level of provision.

11.3.17. It is therefore concluded that improvements to this slip are not required as a result of the proposed development.

Northbound Merge

11.3.18. The northbound merge is currently a type C ghost island merge with two connector lanes and three lanes on the mainline in both an upstream and downstream direction. The highest existing flows on the slip road are in the AM peak and those on the mainline are highest in the IP peak. CD122 indicates that the theoretical position should be a type A layout with one connector lane and with two lanes on the upstream mainline and also on the downstream mainline.

11.3.19. The summary results from the CD122 analysis are outlined in Table 11-2 for the northbound merge for all the traffic scenarios considered. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

Table 11-2 – M6 J34 Northbound Merge

Scenario	Merge Type			No. of connector lanes			Upstream Mainline Lanes			Downstream Mainline Lanes		
	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak
Existing Layout	C			2			3			3		
2018	A	A	A	1	1	1	2	2	2	2	2	2
2025	A	A	A	1	1	1	2	2	2	2	2	2
2025 DS	A	A	A	1	1	1	2	2	2	2	2	2
2025 DS + Dev	A	A	A	1	1	1	2	2	2	2	2	2
2031	A	A	A	1	1	1	2	2	2	2	2	2
2031 DS	A	A	A	1	1	1	2	2	2	2	2	2
2031 DS + Dev	A	A	A	1	1	1	2	2	2	2	2	2

11.3.20. The highest flow on the mainline is during the IP for all scenarios, with the highest flows on the slip road during the PM peak for all scenarios. Across all scenarios the theoretical requirement is for a type A merge with one connector lane, two lanes upstream on the mainline and two lanes downstream on the mainline. Table 11-2 alongside the CD122 merge diagrams enclosed within Appendix L indicate that the proposed development will have no material impact on the merge provision. The plots in Appendix L show the forecast demand in the context of the existing provision, confirming that the forecast demand is within the current level of provision.

11.3.21. It is therefore concluded that improvements to this slip are not required as a result of the proposed development.

Southbound Diverge

11.3.22. The southbound diverge is currently a type A.2 diverge with one connector lane and three upstream and three downstream mainline lanes. The highest existing flows on the slip roads are in the AM peak and those on the mainline are highest in the PM peak. CD122 indicates that the theoretical position should be a type A layout with one connector lane and two upstream and two downstream mainline lanes.

11.3.23. The summary results from the CD122 analysis are outlined in Table 11-3 for the southbound diverge for all the traffic scenarios considered. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

Table 11-3 – M6 J34 Southbound Diverge

Scenario	Merge Type			No. of connector lanes			Upstream Mainline Lanes			Downstream Mainline Lanes		
	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak
Existing Layout	A.2			1			3			3		
2018	A	A	A	1	1	1	2	2	2	2	2	2
2025	A	A	A	1	1	1	2	2	2	2	2	2
2025 DS	A	A	A	1	1	1	2	2	2	2	2	2
2025 DS + Dev	A	A	A	1	1	1	2	2	2	2	2	2
2031	A	A	A	1	1	1	2	2	2	2	2	2
2031 DS	A	A	A	1	1	1	2	2	2	2	2	2
2031 DS + Dev	A	A	A	1	1	1	2	2	2	2	2	2

11.3.24. The highest flow on the mainline is during the PM for all scenarios, with the highest flows on the slip road during the AM peak for all scenarios. Across all scenarios the theoretical requirement is for a type A diverge with one connector lane, two lanes upstream on the mainline and two lanes downstream on the mainline. Table 11-3 alongside the CD122 merge diagrams enclosed within Appendix L indicate that the proposed development will have no material impact on the merge provision. The plots in Appendix L show the forecast demand in the context of the existing provision, confirming that the forecast demand is within the current level of provision.

11.3.25. It is therefore concluded that improvements to this slip are not required as a result of the proposed development.

Southbound Merge

11.3.26. The southbound merge is currently a type C ghost island merge with two connector lanes and three upstream and three downstream mainline lanes. The highest existing flows on the slip roads is during the AM peak and those on the mainline are highest in the PM peak. CD122 indicates that the theoretical position should be a type B layout with one connector lane and two lanes on the mainline in both an upstream and downstream direction.

11.3.27. The summary results from the CD122 analysis are outlined in Table 11-4 for the southbound merge for all the traffic scenarios considered. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

Table 11-4 – M6 J34 Southbound Merge

Scenario	Merge Type			No. of connector lanes			Upstream Mainline Lanes			Downstream Mainline Lanes		
	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak	AM Peak	IP Peak	PM Peak
Existing Layout	C			2			3			3		
2018	B	A	A	1	1	1	2	2	2	2	2	2
2025	B	B	A	1	1	1	2	2	2	2	2	2
2025 DS	#	B	B	2	1	1	2	2	2	2	2	2
2025 DS + Dev	#	B	B	2	1	1	2	2	2	2	2	2
2031	#	B	B	2	1	1	2	2	2	2	2	2
2031 DS	#	B	B	2	1	1	2	2	2	2	2	2
2031 DS + Dev	#	B	B	2	1	1	2	2	2	2	2	2

11.3.28. The highest flow on the mainline is during the PM for all scenarios, with the highest flows on the slip road during the AM peak for all scenarios. Across all scenarios the highest theoretical requirement is for a type # merge with two connector lane, two lanes upstream on the mainline and two lanes downstream on the mainline. As outlined in CD122, a # symbol indicates areas of uncertainty where choice of provision depends on the upstream and downstream provision alongside the ability of mainline to accept the flows from the merge. Table 11-4 alongside the CD122 merge diagrams enclosed within Appendix L indicate that the proposed development will have no material impact on the merge provision. The plots in Appendix L show the forecast demand in the context of the existing provision, confirming that the forecast demand is within the current level of provision.

11.3.29. It is therefore concluded that improvements to this slip are not required as a result of the proposed development.

Summary

11.3.30. It is concluded that the existing provision at the M6 J34 meets the theoretical position set out in CD122 for all of the future scenarios. The analysis shows that the proposed development does not impact upon the theoretical position and therefore the impacts of the development at all four slips roads are not severe and no improvements or mitigation are required.

11.3.31. Furthermore, it should be noted that the baseline car trips generated by the proposed development are envisaged to decrease over time in favour of public transport trips as highlighted across this TA and Chapter 5 and 13 in particular.

12 TRAFFIC REGULATION ORDERS

12.1 INTRODUCTION

12.1.1. Traffic Regulation Orders (TROs) are legal documents that restrict or prohibit the use of the highway network, in line with The Road Traffic Regulation Act 1984. These are usually implemented for various reasons, including:

- For avoiding danger to persons or other traffic using the road or any other road or preventing the likelihood of any such danger arising;
- For facilitating the passage on the road or any other road of any class of traffic (including pedestrians);
- For preventing the use of the road by vehicular traffic of a kind which, or its use by vehicular traffic in a manner which, is unsuitable having regard to the existing character of the road or adjoining property; or
- For preserving or improving the amenities of the area through which the road runs.

12.2 EXISTING TRAFFIC REGULATION ORDERS

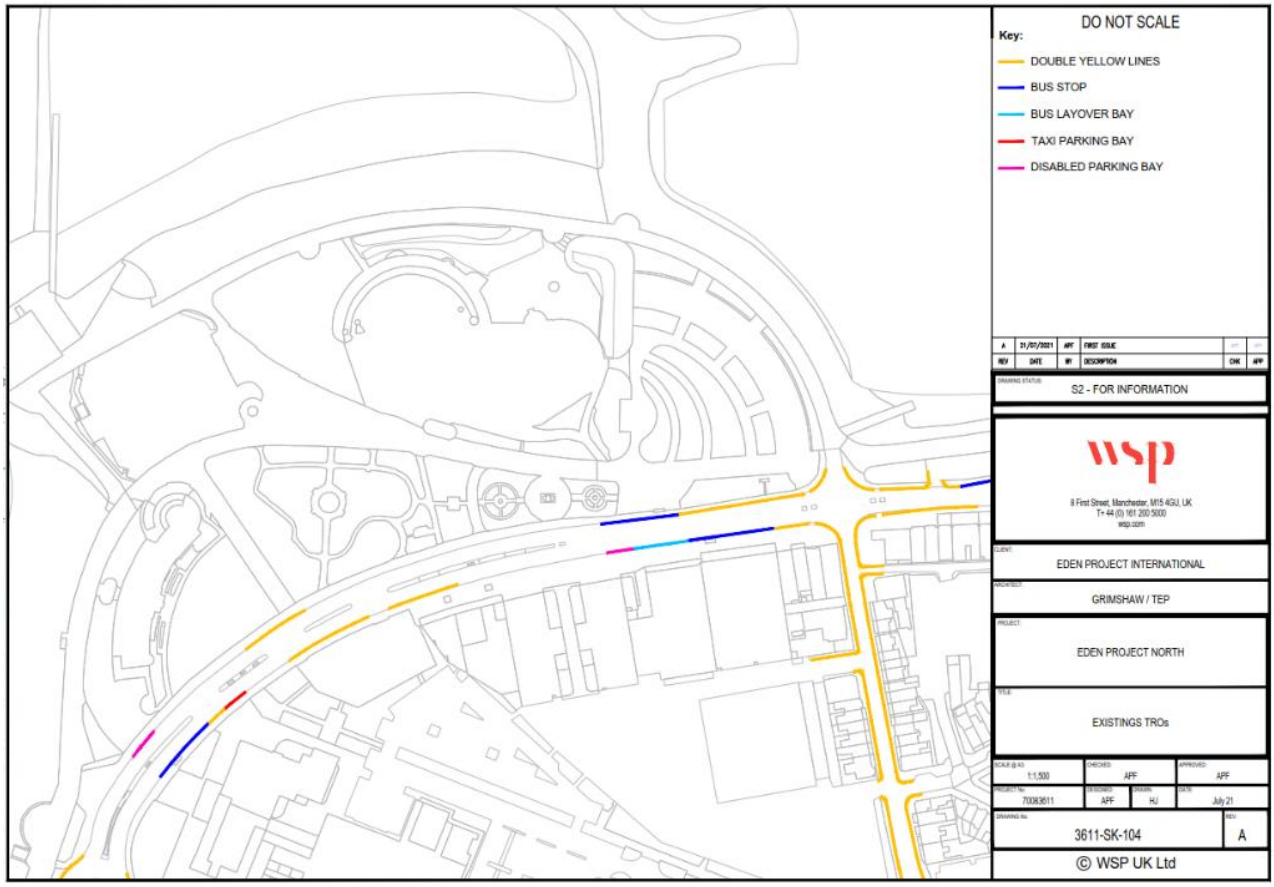
12.2.1. Figure 12-1 shows the existing TROs in the immediate vicinity of the site.

12.2.2. Marine Road Central has a combination of TROs, including:

- Double yellow lines;
- Bus stops;
- Bus layover bays;
- Taxi bays; and
- On street disabled parking bays.

12.2.3. On street parking is permitted between the gaps of the different TROs on both sides of Marine Road Central.

Figure 12-1 - Existing TROs

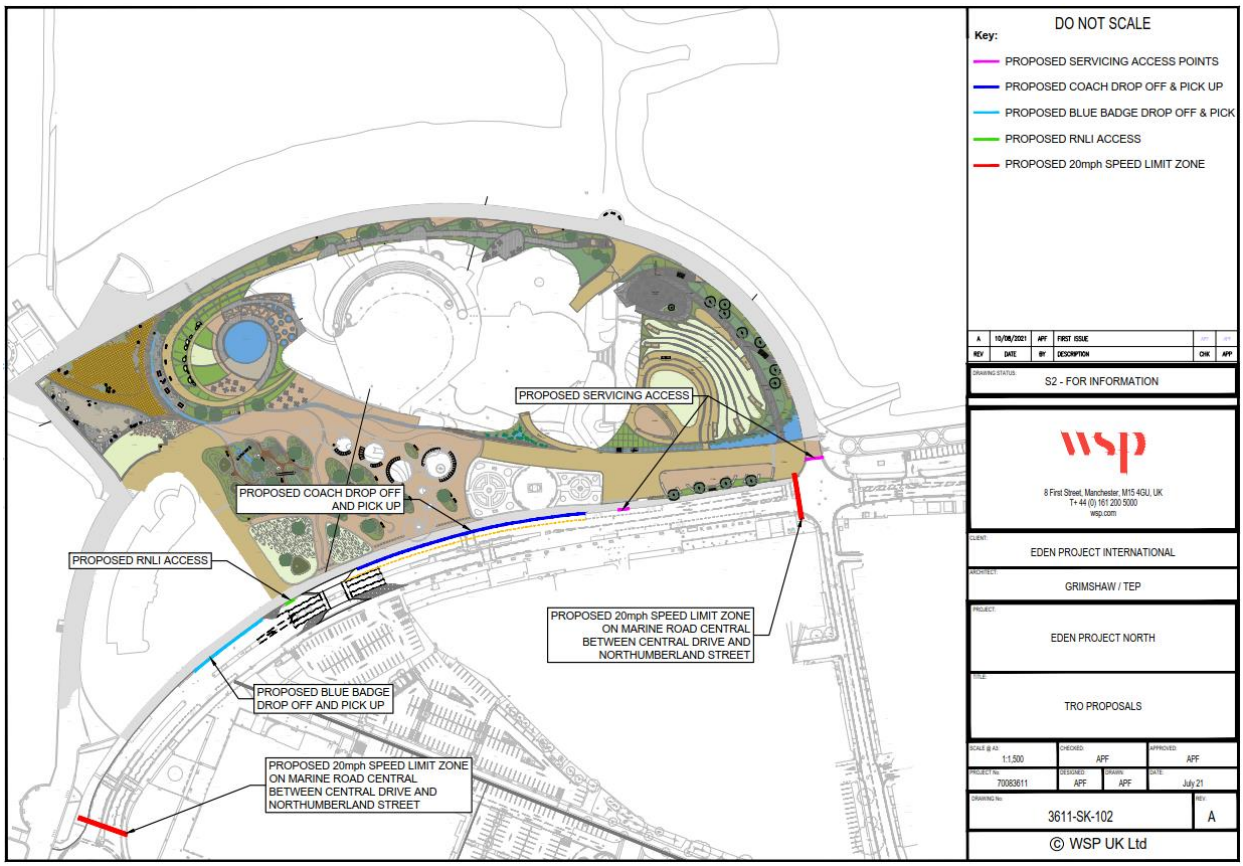


12.3 PROPOSED TRAFFIC REGULATION ORDERS

12.3.1. Engagement with Lancashire CC suggests that a series of TROs will be required for the operation of the proposed development. These are not only welcomed by EPN, but also encouraged to be implemented by the opening day (subject to appropriate consultation). As the proposed TROs would minimise the vehicular impacts around the site.

12.3.2. Figure 12-2 (Appendix M) shows in green the proposed main access to the RNLI, in blue the proposed coach drop off and pick up and in pink the proposed servicing accesses.

Figure 12-2 - Proposed Traffic Regulation Orders



12.3.3. The proposed access to the RNLI would be subject to a TRO access order to allow RNLI vehicles access only. This could be accompanied by a series of bollards.

12.3.4. The proposed coach drop off and pick up zone would be subject to a “Bus only limited waiting parking place – 15 minutes no return within 30 minutes” or similar order.

12.3.5. The proposed blue badge drop off and pick up zone would be subject to a time restriction order similar to the coach drop off and pick up zone.

12.3.6. Finally, the proposed servicing access on Marine Road Central would be subject to a servicing access only order, with the possibility of being accompanied by a series of bollards. Servicing access to the north of the building would be undertaken via a non-adopted road. Therefore, this could directly be controlled by bollards instead of a TRO.

12.3.7. However, it should be noted that the TROs and access restrictions described above are a reflection of the working principles. We will continue to work collaboratively with Lancashire CC to ensure that the appropriate TROs and access restrictions follow all legal mechanisms and are put in place in due course.

12.3.8. As highlighted in the Servicing Strategy (Chapter 10), the proposed access restrictions to the promenade would see an improvement to existing vehicular movements. As currently, this section of the Promenade provides 24-hour access to the 78 parking spaces of the Bay Arena Car Park. The

proposed development would only require limited servicing vehicular access throughout very limited time periods.

12.3.9. Similarly, as highlighted in the Visitor Groups Strategy (Chapter 9) and Shuttle Bus (Section 8.4), the proposed TRO on the northern section of Marine Road Central would also see a positive improvement to the existing environment in regards of the Grade II listed War Memorial. Currently on street parking is permitted 24 hours a day. The proposed development would reduce the number of vehicles using this facility and limit the waiting time to 15 minutes.

12.4 EDEN SESSIONS

12.4.1. A series of events (eight a year) are proposed to take place on the proposed development each summer. These events would consist on music concerts style events taking place on the Rhythm Garden, the outdoor arena / garden on the most eastern point of the site.

12.4.2. These events are expected to occur at evening times with a finish time by 23.00.

12.4.3. The events are likely to attract up to 6,000 visitors. In comparison to the 55,000 weekend visitors attracted by Morecambe Festival.

12.4.4. A separate planning application, with traffic management strategies will be submitted ahead of each event. Describing in detail the requirements, potential impacts and mitigations proposed.

13 NET ZERO TRANSPORT STRATEGY

13.1 INTRODUCTION

13.1.1. The Eden Transport Strategy has been developed upon the Eden Transport Vision. Collaboration with statutory and non-statutory stakeholders has been key to develop a transport strategy that aligns with the proposed development ethos and sustainability aspirations whilst providing a realistic Opening Year solution that complies with planning policy.

13.1.2. Furthermore, 3Adapt (appointed sustainability consultant for the proposed development) has played a key role on developing a collaborative a Net Zero Strategy for each of the design elements of the proposed development.

13.2 BREEAM

13.2.1. The proposed development is aiming to achieve a series of regenerative sustainability certifications, including:

- Net Zero Carbon Building;
- Truly Net Zero;
- BREEAM 'Excellent'; and
- Resource Strategies.

13.2.2. Within the BREEAM accreditation, the proposed development is targeting an 'Excellent' rating whilst exploring opportunities for targeting 'Outstanding' rating in later design stages.

13.2.3. In regards of Transport, the BREEAM target is a perfect score, achieving the maximum number of Transport scores possible. Further information can be found on the BREEAM documentation being submitted as part of this planning application.

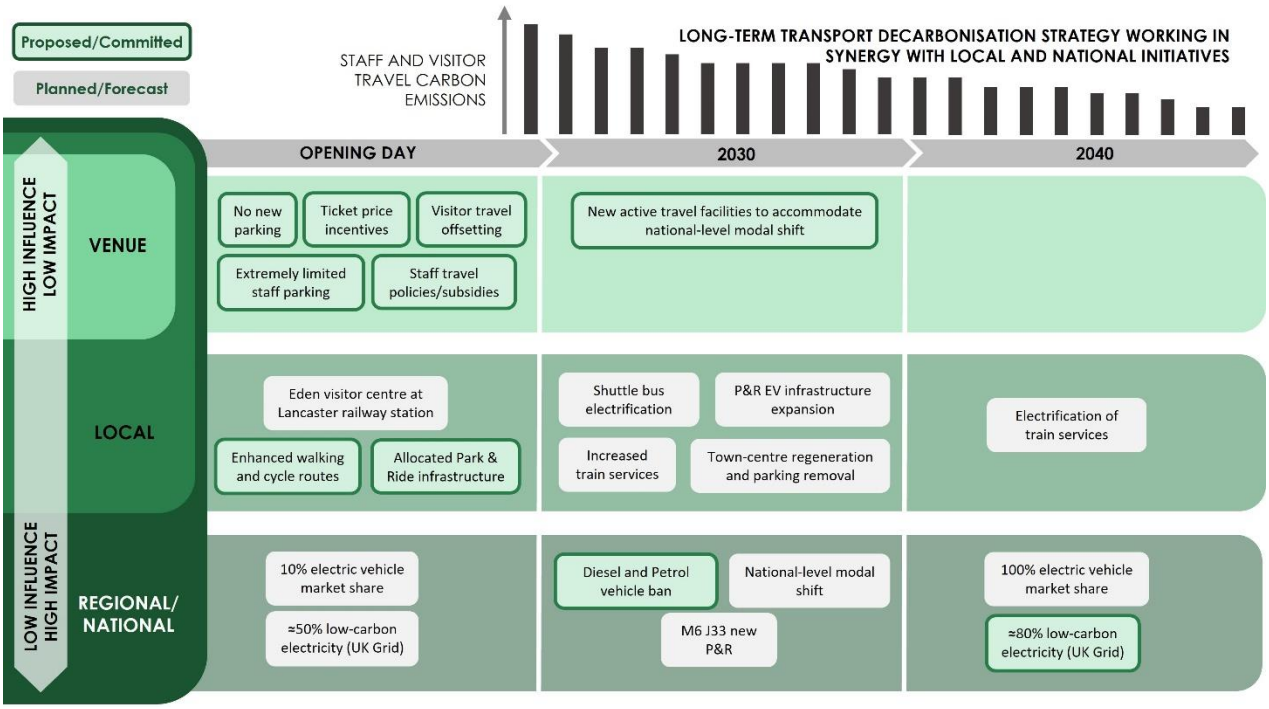
13.3 NET ZERO TRANSPORT STRATEGY

Introduction

13.3.1. The Eden Transport Strategy is a live Strategy that not only sets out the transport solution for the Opening Year. It also sets out a roadmap of Net Zero initiatives that will come forward in order to deliver a Net Zero Transport Strategy and fully carbon neutral transport solution for the proposed development as set out in this Chapter.

13.3.2. Figure 13-1 below shows the Net Zero Transport Strategy Roadmap covered in this section. This describes the internal and external initiatives described above that will come forward over the coming years.

Figure 13-1 - Net Zero Transport Strategy Roadmap



Ticketing Incentives

13.3.3. Subject to the selected method of travel, the entry ticket to the proposed development will vary to recognise the environmental impact of the travel method as per Eden Project (Cornwall). This could consist of direct discounts on active travel and sustainable transport tickets, or vouchers to redeem part of the expenditure at the proposed development (e.g. food and beverage, gift shop etc).

13.3.4. This would promote active travel and sustainable transport. For those travelling by car, it will promote the usage of the M6 Junction 34 Park and Ride car park instead of driving into Morecambe.

Local, Regional and National Policy

13.3.5. A series of local, regional and national policies will play a key role in enabling the proposed development to achieve a Net Zero Transport Strategy.

13.3.6. At a local level, the Lancaster Climate Emergency Declaration in 2019 has set out a commitment to becoming net zero by 2030 and undertaking a Climate Emergency Local Plan Review, *"carefully considering the Local Plan and how we can best develop the District and address climate adaption, mitigation and resilience."* This Review will focus on modal shift opportunities, particularly on urban areas.

13.3.7. This will promote active travel and public transport trips, enhancing the modal share of the proposed development visitors. Particularly on the last mile of their journey, aligning the with Eden Transport Vision.

13.3.8. At a national level, the UK Government has approved a two-phased approach to ending the sale of new petrol, diesel and hybrid cars and vans. Step 1 will see the phase-out date for the sale of new

petrol and diesel cars and vans brought forward to 2030. Step 2 will see all new cars and vans be fully zero emissions at the tailpipe from 2035.

13.3.9. As a result, it can be assumed that private vehicle trends will experience a significant decrease in fossil fuels in the next 10 years as manufactures start to prepare and adapt to this policy ban. This will reduce the amount of fossil fuel vehicles travelling to the proposed development year after year.

13.3.10. Other local, regional and national documents such as the *'Decarbonising Transport, Setting the Challenge'* and the recently published *'Transport Decarbonisation Plan'* set out the details for any future policies and technologies uptake, allowing for a decarbonisation of the wider transport network.

13.3.11. This will contribute to achieve the Net Zero Transport Strategy described in this chapter.

Rail

13.3.12. The existing rail services between Lancaster and Morecambe are not regular. Through engagement, SLC Rail (Lancaster CC rail consultants) have identified the possibility of introducing a 30-minute frequency timetable between Lancaster and Morecambe that could be implemented without the need for any development nor infrastructure costs, just making use of the existing infrastructure. This would attract even more rail visitors to the proposed development.

13.3.13. Furthermore, the existing railway between Lancaster and Morecambe is not electrified. Therefore, despite visitors using a public transport service, this would not be carbon neutral. However, there is an aspiration amongst many stakeholders and EPN itself to provide electrified trains on this service. Whether this is undertaken by battery powered trains or through electrification of the railway line, this would still reduce the carbon emission of the rail services to and from Morecambe.

Buses and Coaches

13.3.14. The proposed shuttle bus will be directly managed by EPIL (or an appointed operator). There is a clear aspiration for this to use non fossil fuels. The EPIL team will continue to engage with relevant stakeholders, operators and manufactures to ensure that a non-fossil fuel shuttle bus is provided for the proposed development.

13.3.15. Whilst EPN would have very little control over private buses and coaches visiting the proposed development, it could be assumed that these would become more sustainable vehicles as time passes by.

13.3.16. However, as set out in the Visitor Groups Strategy, the booking system will recommend the most appropriate route for private buses and coaches depending on a series of factors, including their origin.

Parking

13.3.17. The Eden Parking Strategy sets out in detail how the parking solution for the proposed development would operate on the Opening Year and in the future. Whilst making use of the existing infrastructure is essential, it also recognises that EPIL and the Council would not only be able to control and manage who can park on the town centre (e.g. low emissions vehicles), but that there is an aspiration to reduce the parking demand in the town centre that aligns with the points set out in the Transport Vision, Transport Strategy and Net Zero Transport Strategy.

13.3.18. The M6 J33 HIF proposals would see the construction of a new Park and Ride by the M6 J33, which could shift some of the existing parking demand at J34 to J33. Potentially increasing the EPN parking availability at the J34 P&R. Further details are set out within the Eden Parking Strategy.

13.3.19. Notwithstanding this, the rail industry would also improve their services to Morecambe in the future as set out in this section. This would lead to a lower car trips to the proposed development, also reducing the need for parking.

13.3.20. One of the most important parking topics, which could potentially damage the proposed development engagement across local residents and the general public is the provision of employee parking. In fact, this has been recognised by the planning authority on other aspects of the scheme ("aspiring to and delivering highly sustainable development (zero to low carbon) would no doubt positively reflect the general ethos of Eden too."). It is assumed that EPN would recruit locally, and as a result, there is no reason why it could not be expected for the majority of the employees to commute by active and public transport modes. Therefore, the typical parking demand exercise of using existing census data would not be valid. Instead, a very low parking provision for those who rely on a private vehicle to commute, and have no alternative option, would be made. This has the effect of decreasing the employees parking demand from 120+ spaces to just a few spaces. The Travel Plan does cover the different measures and initiatives that will be put in place to achieve this.

Use of existing underutilised infrastructure

13.3.21. The first core principle of the Eden Transport Vision recognises the need of using existing underutilised infrastructure. This is widely embedded in the Eden Transport Strategy, and the Eden Parking Strategy in particular.

13.3.22. In order to achieve the Net Zero Transport Strategy from the Opening Day, it is essential to use existing underutilised infrastructure that will no longer be used by the proposed development in the future. In this regard, using existing underutilised car parks is the most optimum and sustainable solution. Building new car parks for the Opening Year when there is parking capacity at existing car parks is not appropriate. More importantly, building new car parks for the Opening Year is not appropriate neither in light of the Net Zero Transport Strategy, as the Opening Day modal share will significantly change over the coming years. This will significantly reduce the reliance upon private cars to travel to the proposed development.

Development Proposals

13.3.23. The proposed development would act as a major regeneration catalyst for Morecambe and the wider region. Through exhaustive engagement with stakeholders and the local community, it is evident that infinite partnership opportunities have arisen and will continue do so. These partnerships will help to bring forward multiple regeneration and public realm proposals across the region.

13.3.24. For example, the regeneration of the Festival Market area into a modern and large public realm space that welcomes visitors to Morecambe and creates opportunities to host different events. This will be followed by changes to limit traffic levels across the town centre and the promenade.

13.3.25. EPIL would offer their help to Lancaster CC, Lancashire CC and all other stakeholders and neighbours to work collaboratively on all development proposals that would provide a wider positive benefit to the region.

Summary

13.3.26. The Net Zero Transport Strategy covered in this section describes some of the multiple internal and external initiatives that will come forward over the coming years. This has been based on the experience gained for over 20 years at Eden Project Cornwall, where the development acted as a significant wider catalyst for the sustainability agenda of the region.

14 CONSTRUCTION TRAFFIC MANAGEMENT PLAN

14.1.1. EPIL anticipates the opening of the proposed development in 2024, with initial on site construction works starting in early 2022. Therefore, a 2+ year construction period is expected.

14.1.2. A Construction Traffic Management Plan will be produced and submitted by the appointed contractor before starting any construction works. This will include:

- Traffic strategy management;
- Construction vehicle routes;
- Temporary footway and highway closures with associated diversion routes, traffic impact, temporary traffic signals etc;
- Access retention to nearby buildings and facilities for users, emergency, servicing and refuse vehicles; and
- Air and noise quality around the construction site and vehicular routes.

14.1.3. SRM has provided some initial construction management plan to the wider team. A summary of the key transport implications are summarised below.

14.1.4. A temporary closure of the northern Promenade will be required for the full duration of the construction stage, as this would provide the optimum access for the contractor and safest solution, removing all public from being in close proximity to the construction works. The structural elements of the proposed development are located on the northern edge of the red line boundary.

14.1.5. This will also provide certainty of the public access for the full construction duration, and a better construction access that will assist with site logistics and ultimately provide cost and programme benefits.

14.1.6. The footpath at the southern boundary of the site, to the north of Marine Road Central will be operational throughout the construction stage.

14.1.7. It is essential to maintain vehicular access during all construction stages to the Midland Hotel, the Stone Jetty and the RNLI. This will occur via the existing route to the northwest of the Midland Hotel.

14.1.8. It is proposed that there will be a single vehicular access gate for all incoming and outgoing construction vehicles located at the east boundary of the site, using the existing access to the Bay Arena Car Park. This forms a signalised crossroad junction with Marine Road Central and Northumberland Street.

14.1.9. This will be separate from the construction pedestrian access into the site which will be provided at the west of the site.

14.1.10. Construction vehicular access into the site from the highway will be controlled via the existing traffic light system. Careful management of the construction vehicle access will include:

- Ensure contractors operate the CLOCS (Construction Logistics and Community Safety) standard;
- Contractor to produce comprehensive construction logistics plan (CLP);
- Delivery management carried out by Gate control operative who will be present at all times whilst the site is open;
- The surface condition and cleanliness of the entry gate will be maintained and checked at the start and completion of every working day;

- Pull off area provided within the site boundary for checking vehicles into site, removing the potential for vehicles to block the pedestrian crossing;
- Contractor to implement a booking in system for deliveries ensuring that all deliveries are planned and spread out during the working day to avoid any backing up on the highway;
- Potential to utilise an off-site logistics hub for storing materials which could be delivered into site out of peak public movement periods;
- Delivery instructions to suppliers and sub-contractors to reinforce the need for caution at the site entry position;
- On entering the site, delivery driver inductions will be given which will reinforce rules for accessing and exiting the site;
- Strict zero tolerance towards any driver / supplier seen as not operating to the required standard; and
- White lining on the existing crossing to be re-painted and supplemented with contractor signage leading up to and at the public crossing point.

14.1.11. An off site logistics hub is proposed 400 metres to the south of the proposed development, on an existing vacated plot of land located on Marine Road West, and immediately south to the Aldi Supermarket.

14.1.12. This site could also act as construction staff car parking. However, further analysis is required. Alternatively, existing car parks across Morecambe Town Centre are underutilised and provide enough capacity throughout the year. However, the contractor will be encouraged to explore shuttle bus alternatives, with off site parking provision. This could be at the M6 Junction 34 Caton Road Park and Ride.

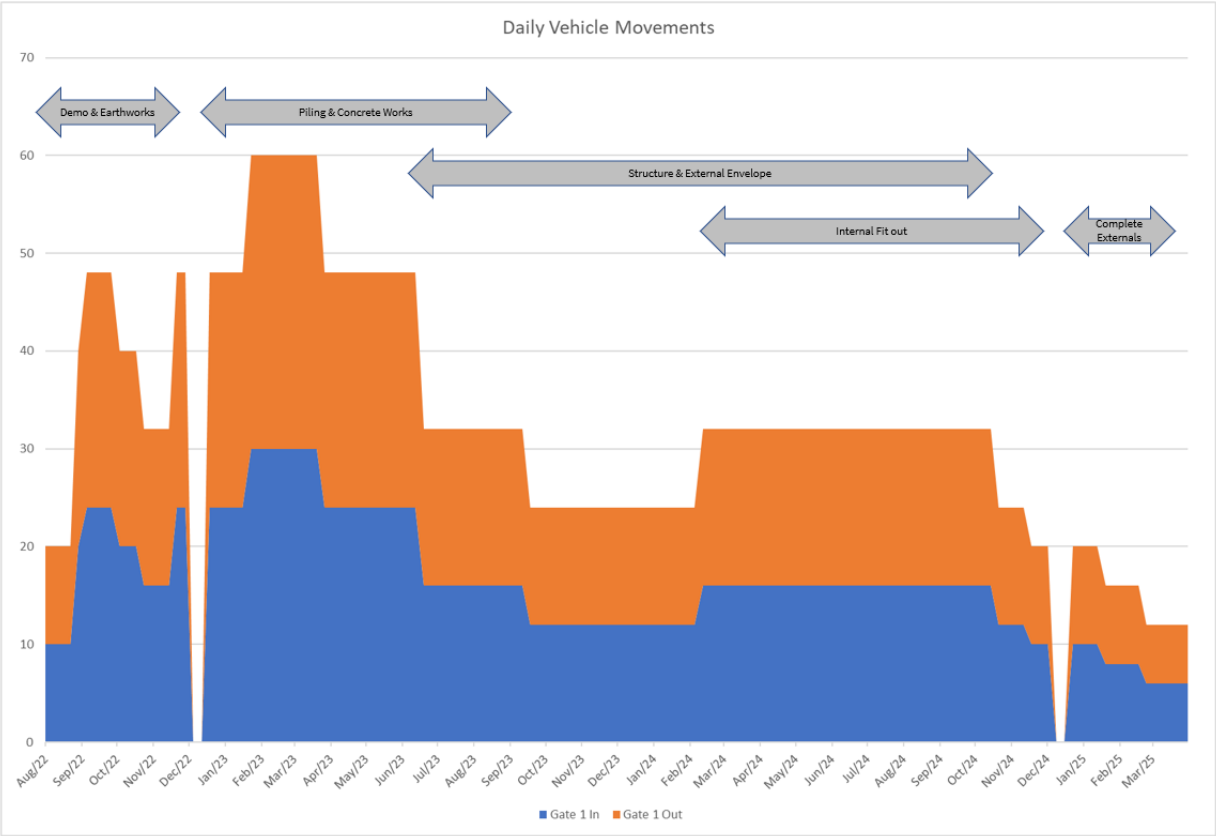
14.1.13. The number of construction vehicle movements will vary across the project depending on the activities taking place. Figure 14-1 represents the approximate number of daily movements at each key stage of the project.

14.1.14. The most severe stage of the project in terms of frequency of deliveries will be during the Piling, Groundworks & Concrete frame activities which will require large numbers of daily concrete deliveries over a period of seven months with at the peak in the region of 30 deliveries in a given day during large concrete pours. This number will drop to 16 once the bulk of the concrete work is complete and the timber frame commences.

14.1.15. Although infrequent, during the timber frame erection this period will see the largest sized articulated vehicles allowed on the local roads being delivered into site. The frequency of deliveries will increase again once the internal fit out works commence whilst the roof and envelope works are still in progress.

14.1.16. As the main build reaches completion the numbers will drop to less than 12 per day until project completion.

Figure 14-1 - Indicative Construction Vehicle Movements Over the Duration of the Project



14.1.17. Construction vehicles routes will be via Central Drive, Northumberland Street and Marine Road Central. The Construction Traffic Management Plan will cover these in detail.

15 SUMMARY

Introduction

15.1.1. WSP have been instructed by Eden Project International Ltd to provide transport and highways advice in support of a planning application for the proposed development of Eden Project North in Morecambe, Lancaster.

15.1.2. The planning application will seek full planning permission for the following development:

"Demolition of existing buildings and proposed construction of major mixed leisure development in association with Eden Project (including use classes E, F1 and F2 and Sui Generis), public realm, landscaping, car parking and associated infrastructure and engineering works"

15.1.3. The following maximum development parameters have been set for the development and the Environmental Impact Assessment (EIA) will be prepared on this basis:

- Maximum building height of 37.3m AOD;
- Maximum building footprint of 18,000sqm (GEA);
- Maximum visitor numbers of 1 million per annum with an estimated average of 760,000 per annum. There will be timed ticketing to control visitor flows. The proposed development has been designed to accommodate a maximum of 4,000 visitors per day. Feasibility studies indicate an estimated average of 100 days per annum of up to 3,750 visitors; 200 days per annum of up to 2,500 visitors; and 60 days per annum of up to 1,250 visitors. There will be a maximum of 750 visitors per hour accessing the site.
- Maximum core hours of operation (main site):
  - Daily: 09:00 – 21:00
- Maximum hours of operation (main site – summer time):
  - Daily: 09:00 – 00:00
- Maximum 6,000-person capacity outdoor arena to host up to 8 late evening events per calendar year (summer months only) during the following hours:
  - 18:00 – 00:00 (music finishing at 23:00)
- A canopy-like structure primarily to provide weather protection for visitors plus flexible spaces that can potentially accommodate Class E food and beverage and retail outlets, house renewable energy technologies and/or provide sheltered cycle parking.

15.1.4. No development will take place outside the site's red line boundary as part of these proposals with the exception of highway works on Marine Road Central as described later in this Transport Assessment (TA); works which would be subject to separate approval under s278 of the Highways Act 1980. EPIL will work with Lancaster City Council and Lancashire County Council to secure future enhancements as part of the wider transformation of the local area.

15.1.5. An indicative opening year for the development has been given as spring 2024. The site is anticipated to be built over approximately a 2-year period.

15.1.6. The proposed development is built upon the EPIL experience of successfully running Eden Project (Cornwall) for over 20 years. The extensive knowledge and experience gained from this has been applied to the design of the proposed development.

15.1.7. However, it should be noted that whilst Eden Project (Cornwall) is the most similar major leisure attraction to the proposed development, using it as the sole benchmark is not considered to be appropriate. This is because Eden Project (Cornwall) sits within a low population density region and benefits from significant adjacent land to continue developing and incorporating new solutions, whereas the proposed development is to be located in a town centre location, within an urban environment and a clearly defined site area.

15.1.8. A comprehensive process of statutory and non-statutory stakeholder engagement has been undertaken by WSP over the last 28 months, including:

- Lancashire County Council (Highways, Traffic, Infrastructure, Parking and Public Transport teams);
- Lancaster City Council (Parking, Economic Growth and Regeneration and Planning teams);
- Highways England;
- Sustrans;
- Network Rail;
- Northern Railway;
- Avanti West Coast;
- SLC Rail (Lancaster CC rail consultants);
- Stagecoach;
- The Long Distance Walkers Association;
- Genecon (authors of the Outline Business Case);
- Planning Solutions Consulting Limited (Leisure Consultant);
- Trivandi (Project Manager);
- Grimshaw (Architect),
- TEP (Landscape Architect);
- Buro Happold (Civil Engineering); and
- WSP (multiple disciplines).

15.1.9. Since April 2019 WSP has undertaken a series of key documents and milestones that have helped in the production of this Transport Assessment (TA) as set out below:

- Environmental Impact Assessment Transport Scope;
- Initial Visitor and Employees Trip Generation and Distribution Technical Note (August 2019);
- Transport Group Meeting where the proposed methodology was presented. This was held on 12/09/2019 and the following stakeholders attended:
  - Lancashire County Council (Highways, Traffic, Infrastructure, Parking and Public Transport teams);
  - Lancaster City Council (Parking, Economic Growth and Regeneration and Planning teams);
  - Highways England;
  - Atkins (Highways England consultant)
  - Network Rail;
  - Northern Railway (invited, did not attend this first meeting);
  - SLC Rail (Lancaster CC rail consultants);
  - Stagecoach;
- Engagement with Lancashire CC (Highways, Traffic, Infrastructure, Parking and Public Transport teams);

- Engagement with Lancaster CC (Parking, Economic Growth and Regeneration and Planning teams);
- Two-day site visit to Eden Cornwall to understand existing transport strategy and logistic operations (February 2020);
- Engagement with multiple stakeholders as summarised above;
- Support to the Outline Business Case;
- Transport Assessment Scope (April 2021);
- Developed the EPN Transport Strategy; and
- Developed the EPN Parking Strategy;

15.1.10. The purpose of this TA is to fully assess the transport impact of the proposed development on the surrounding transport network. It should be read in conjunction with the Travel Plan and the Environmental Statement that is being submitted alongside this TA.

Existing Conditions

15.1.11. The proposed development is located at the heart of the Morecambe promenade, a well-patronised traffic free corridor connecting Heysham and Hest Bank. This corridor forms part of the Lancashire Coastal Way, a long-distance footpath following the coast of Lancashire and the Morecambe Bay.

15.1.12. The traffic free environment of the site also includes cycling, a key activity along the Promenade. In fact, the Sustrans Route 69 (Way of the Roses) and 700 travel across the site. These routes connect Morecambe with Lancaster via a segregated traffic free route along the River Lune.

15.1.13. Morecambe Railway Station is located just 300 metres to the south of the proposed development. It provides regular services to Lancaster, Leeds and Heysham, where wider regional services are available.

15.1.14. Morecambe Bus Station is located on Central Drive next to the railway station, effectively forming a transport hub in the town centre. Local services connect Morecambe with Kendal, Lancaster, Preston and multiple local and regional destinations.

15.1.15. The Caton Road Park and Ride located at the M6 Junction 34 provides 650 car spaces for Park and Ride into Lancaster City Centre. Lancashire CC data suggests that this location does not only cater for Park and Ride users, as it also acts as a facility for car sharing into / out of Lancaster.

15.1.16. It can act as the key site that intercepts motorised trips into Morecambe and Lancaster thanks to its modern bus facilities and signalised toucan crossing points connecting the facility with the Way of the Roses for both pedestrians and cyclists.

15.1.17. Personal Injury Accident (PIA) data has been obtained from the DfT using CrashMap for the period 1st January 2016 to 30th June 2020 (latest 5-year period available).

15.1.18. There have been a total of one fatal, six serious and 44 slight accidents in the study area between 2016 and 2020. This give a total of 51 accidents over a 5-year period, which equates to 10 accidents per year. However, when segregating the local highways PIAs and the SRN PIAs, over a 5-year period there have been five accidents per year on the urban environment adjacent to the proposed development, and five accidents per year on the highways environment of the M6 Junction 34.

15.1.19. Given the high proportion of slight accidents (86%), the low number of accidents at any given specific location over the five-year period and the high level of traffic flows across the study area, it

is considered that there is no unusual pre-existing road safety issue in the vicinity of the proposed development nor at the M6 J34.

15.1.20. No significant correlations have been identified to suggest that highway condition, layout or design were significant contributory factors in any of the collisions within the study area. Furthermore, the frequency and severity of the accidents is not considered to be unusual for a town centre and motorway junction location.

Proposed Development

15.1.21. EPN will be a time controlled and advance booking major leisure attraction where the number of visitors per day and hour will be limited. These figures have been reported after numerous feasibility studies carried out by EPIL and the appointed leisure consultant Planning Solutions Consulting Limited (PSCL).

15.1.22. The predicted maximum visitors per hour is the optimum number of visitors entering the proposed development to ensure the optimum visitor experience. Although the building has been designed to accommodate a maximum entry flow of 750 visitors per hour, the visitor experience would be enhanced when the predicted maximum is not exceeded.

15.1.23. The 100 peak days will occur on summer holidays, school holidays, bank holidays, summer weekends, school holiday weekends and bank holiday weekends. It is important to note that for two thirds of the year, a maximum of 1,250 to 2,500 visitors per day will be attracted by the development proposals.

15.1.24. It should be noted that not all 100 peak days are likely to attract 3,750 daily visitors. There will be *'super peak days'* within the peak season which attract up to 3,750 daily visitors, but many of the 100 peak season days will attract much less than 3,750 daily visitors.

15.1.25. The proposed development will directly employ circa 417 full time equivalent employees. It is expected that the maximum number of employees on site at any given time would be circa 280.

15.1.26. A clear aim of EPN is to provide local employment opportunities wherever possible, and as such the large majority of employees are expected to live locally in Morecambe and Lancaster. Including directorate.

Policy Review

15.1.27. The proposed development is located in a sustainable and accessible town centre location and accords with the principles of national, regional and local planning policy, in which all modes of accessibility have been considered during the design and priority given to active travel and public transport.

Transport Principles

15.1.28. It is important to highlight that this TA covers a multi-modal transport strategy for the proposed development. This multi-modal strategy is *'live'* and will continue to evolve as EPIL has demonstrated at Eden Project (Cornwall), where over the past 20 years the site and transport strategy has continued to adapt to latest trends and technologies.

15.1.29. The Eden Transport Strategy has been developed based upon the Eden Transport Vision. Collaboration with statutory and non-statutory stakeholders has been key to develop a transport

strategy that aligns with the proposed development's ethos and sustainability aspirations whilst providing a realistic Opening Year solution that complies with planning policy.

15.1.30. However, it needs to be acknowledged that a series of internal and external interventions (e.g. regeneration of the Festival Market area, better rail services between Lancaster and Morecambe and/or public transport integrated ticketing options) are anticipated to be brought forward by a range of parties, with full support from EPIL, following the submission of this planning application.

15.1.31. The Eden Transport Strategy, based on the time controlled and advance booking system, aims to position EPN as a leading example for progressive and healthy transport methods in the UK. It aims to provide clean, smooth, accessible, fun and active alternatives to the traditional transport strategies of reliance upon the private car.

15.1.32. This TA shows how visitor and employee numbers translate into demand for transport and how we intend to address such demand. The EPN Team have worked alongside both Lancaster CC and Lancashire CC to ensure the existing transport network is optimised and aligned with the anticipated growth of the wider region and the Eden Transport Vision.

15.1.33. The proposed development will also benefit from enhanced capacity in the area created by recent local transport investments in infrastructure improvements through the Housing Infrastructure Fund (HIF) scheme at the M6 Junction 33 and possible future regeneration schemes from the next generation of regional town deals.

15.1.34. From a transport perspective, the OBC submitted to HM Government demonstrated that the use of existing assets means that the proposed development can be developed without extensive transport infrastructure or operations costs, and that amenities needed can be overwhelmingly be supplied in a cost neutral manner by the partners involved. It demonstrates how any off site costs are therefore minimal and focused on relatively low cost items such as signing and wayfinding, and local upgrades to cycle or waking infrastructure as opposed to costly junction upgrades, new car parks or public transport schemes. This will be again demonstrated in this TA.

15.1.35. The key principle of the EPN Transport Strategy is to encourage people to arrive by non-car modes, particularly for their last mile element of the journey, there is also a practical reality that in the Opening Year many visitors will still seek to travel by car, as the rail industry will take time to be able to provide more frequent services between Lancaster and Morecambe to respond to increased demand created by the proposed development and the wider uplift it will bring. While Morecambe is not congested with a large proportion of visitors arriving by car, the aim is to intercept many car trips as they leave the Motorway at the M6 Junction 34, where there is an underused and recently built Park and Ride amenity. Others would use readily available underutilised existing parking in the town centre, with these two amenities being linked through ticketing to allow a dynamic and flexible response according to demands.

15.1.36. A time controlled and advance booking system will allocate visitors a specific time slot to arrive and enter the site. This will allow EPIL to control, manage and influence the visitors demand throughout the day and year, smoothing out traditionally large peak demand in terms of both days and hours. This will enhance the visitor experience by providing a smooth access to the proposed development, as well as effectively limiting the number of generated trips to the site.

15.1.37. As with all time controlled and advance booking systems, there will be some degree of flexibility to recognise visitors experiencing unexpected events on their journey to the proposed development

(e.g. booked rail service delayed so visitor would arrive late to their booked time slot). However, visitors will be strongly encouraged to visit the proposed development at their booked time slot.

15.1.38. The time controlled and advance booking system is a way of spreading visitor numbers throughout the day to avoid any large peaks, enhancing the overall visitor experience.

15.1.39. This system was an innovative vision developed by EPIL in 2019 which was not commonly used amongst major leisure attractions at that time. However, the COVID pandemic and associated visitor limits have resulted in most leisure developments introducing time controlled and advance booking systems. Some examples[16] include the Lancaster Castle and all Museums run by Lancashire CC[17], the recently opened RHS Bridgewater Garden, Chester Zoo, Alton Towers, Blackpool Pleasure Beach, The Forbidden Corner, Fell Foot Park and the Eden Project (Cornwall) itself. In Cornwall the EPIL team has learnt invaluable lessons on how to manage a time controlled and advance booking system, and how it can enhance the visitor experience to Eden Project (Cornwall) as visitors have been spread out across the day effectively removing the large arrivals peaks that used to occur in the early morning hours.

15.1.40. Whilst this pre-booked time controlled booking system was for many sites forcibly introduced in light of COVID Government guidelines, many sites have reported a positive experience and are likely to continue encouraging visitors to book their tickets in advance. Eden Project (Cornwall) will definitely be amongst those sites that will continue to do so, aligning with what was originally proposed in 2019 for EPN in Morecambe.

15.1.41. Subject to the selected method of travel, the entry ticket to the proposed development will vary to recognise the environmental impact of the travel method as per Eden Project (Cornwall). This could consist of direct discounts on active travel and sustainable transport tickets, or vouchers to redeem part of the expenditure at the proposed development (e.g. food and beverage, gift shop etc).

15.1.42. Visitors will have the opportunity at this stage of the booking process to raise any accessibility requirements such as assistance dogs, accompanying carers or blue badge parking.

15.1.43. This system will enable EPIL to control, manage and influence/incentivise how visitors travel to the proposed development. EPIL will know in advance how visitors will be travelling, how many rail visitors will be using Lancaster Railway Station or how many parking spaces will be required at each parking location on any given day, and this will allow EPIL to control, manage and influence the multi-modal transport demand in collaboration with both Councils and transport operators. The combination of a comprehensive and resilient transport network with capacity, combined advanced and dynamic ticketing plus limits on daily attendance allows EPIL to make use of existing underused resources in a sustainable manner.

15.1.44. The time controlled and advance booking system is not only a way to enhance visitor experience by limiting the number of visitors per hour a day. It is a realistic and modern sustainable solution to make best use of existing resources. Understanding in advance number of visitors, method of travel

[16] The listed sites provide pre-booked time controlled booking systems as per July 2021.
[17] Museums run by Lancashire CC requiring pre-booked tickets include Clitheroe Castle, Gawthorpe Hall, Helmshore Mills Textile Museum, Judges' Lodgings Lancaster and Queen Street Mill Museum.

and origin will enable EPIL to collaborate with both Councils and relevant transport bodies to ensure that transport demand is accommodated accordingly. For example, EPIL would collaborate with Avanti West Coast if on a particular day large groups of visitors are expected to travel to Lancaster and Morecambe by train, as either additional rail/EPN staff may be required at Lancaster Railway Station.

15.1.45. This system is not only about transport and will enable EPIL to plan ahead regarding how many employees are required on site, how many meals they need to prepare or how much waste it will be generated on any given day. These are just some examples of how controlling the visitor demand to a major leisure attraction enables to achieve a site-wide sustainable strategy.

15.1.46. Interestingly, Eden Project (Cornwall) has also introduced the option to pre-book lunch orders, which enables them to plan in advance more accurately kitchen employees and meals required for each day.

15.1.47. Historically, all these aspects were based on experience and historical data. However, time controlled and advance booking systems allows for a more accurate and sustainable planning and management, allowing EPIL to make use of resources in the most sustainable manner.

Trip Generation and Distribution

15.1.48. WSP prepared a *Visitor and Employee Trip Generation and Distribution Technical Note* that was presented at the *Transport Group Meeting* at Morecambe Town Hall in September 2019. This Note represented the initial methodology proposed to derive the generated trips by the proposed development.

15.1.49. After thorough consultation with Lancashire CC and Highways England over the last two years, this has been refined to reflect comments made by statutory consultees.

15.1.50. The maximum number of visitors per season set out in this document have been used as a worst case scenario. It is not expected that the absolute maximum number of visitors per day will visit the proposed development on all days. Therefore, for robustness, only the *'super peak days'* within each season are presented in this chapter. These *'super peak days'* are likely to be:

- Weekends during the peak season;
- Weekends during the interpeak season; and
- Weekdays during the peak season.

15.1.51. EPIL has anticipated 417 jobs annually created directly by the proposed development. Of these, 28 are expected to be working remotely and in Cornwall, as a central services team will be established to managed the different worldwide *Edens*. Therefore, a maximum of 389 employees are expected to be based in Morecambe.

15.1.52. Census Data indicates that circa 85% of the 389 employees are expected to live within the urban area of Lancaster. Because of the sustainable nature of the proposed development, and thanks to the Travel Plan, it is expected that all employees living within the urban area of Lancaster will commute by active travel and sustainable modes.

15.1.53. Those living outside the urban area of Lancaster are expected to travel as per 2011 Census modal share. The total employee trips generated are therefore 251 sustainable and 28 car trips. However, the Travel Plan will set out in detail a series of green targets to incentivise active travel, public transport and car sharing amongst employees.

15.1.54. EPIL and their leisure consultants, PSCL have provided the split of day and overnight visitors. However, this does not include all the details needed for a typical trip generation and distribution exercise. Consequently, WSP has developed their own methodology which has concluded with the same 76%-24% day and overnight visitor split approach.

15.1.55. WSP have developed a trip generation and distribution model. This has been informed by multiple datasets, including benchmarking of similar sites, 2011 census data, Visit Britain, STEAM, as well as knowledge and experience from the Eden Project (Cornwall) site. Assumptions have been based on industry best practice and discussed and agreed with multiple stakeholders, including Lancaster City Council and Lancashire County Council.

15.1.56. A *gravity model* based on census data has been effectively created using ArcGIS software.

15.1.57. Tourism data has been obtained from STEAM for each immediate area.

15.1.58. In order to calculate the trip generation, an initial assessment of circa 30 potential similar sites (theme parks, zoos, aquariums, visitor attractions, etc) across the UK was done. However, not all the sites identified had the same characteristics as the proposed development.

15.1.59. A combination of similar sites data, census data and tourism data has been used to calculate the modal split for the different visitor types.

15.1.60. Similarly, the reasoning for the use of a car occupancy rate of 3.0 has been thoroughly explained, including likely changes to seasonality and how for two thirds of the year the rate is expected to be greater than 3.0.

15.1.61. 18 different trip generation and distribution scenarios were undertaken to support the OBC. The selected three on the OBC have been reviewed with latest arrivals and departures profile.

15.1.62. The profile has been manually adjusted to reflect a worst case scenario of 750 visitors per hour.

15.1.63. The modal share has also been manually adjusted to reflect a worst case scenario, as well as the car occupancy rate.

15.1.64. Therefore, multiple worst case scenario assumptions have been undertaken when developing the proposed development trip generation and distribution. All of these would report a higher number of private cars on the highways network than is expected in reality.

Active Travel and Public Transport Strategy

15.1.65. The pedestrian isochrones show that the site is well connected to local and regional transport networks, including several bus stops, Morecambe Bus Station and Morecambe Railway Station, as well as the entirety of Morecambe Town Centre and key assets within it.

15.1.66. The cycling isochrones show that the site is well connected to local and regional transport networks, including Morecambe Bus Station and Morecambe Railway Station, as well as the entirety of Morecambe Town Centre and key residential areas as indicated below. This enables cycling trips to the proposed development to all employees living in Morecambe. As well as visitors to the proposed development staying overnight in the region.

15.1.67. As highlighted in the Transport Vision and the Transport Strategy, visitors arriving to the site by active travel modes will have certain benefits over car visitors (e.g. ticket discounts, Eden vouchers etc). In addition, visitors will have certain facilities such as:

- Cycle parking;

- Changing room;
- Drying facilities;
- Locker facilities; and
- Free e-bike battery charging whilst visiting the proposed development.

15.1.68. The Active Travel Strategy will focus on the immediate vicinity of the proposed development (the site and Marine Road Central). However, it will also focus on capturing potential walking and cycling trips to the proposed development from the Caton Road Park and Ride, the Lancaster Railway Station and from overnight visitors staying in the vicinity of the site.

15.1.69. As such, the existing staggered signalised pedestrian crossing in front of the Winter Gardens is proposed to be relocated circa 70 metres to the west to:

- Ensure EPN and Morecambe visitors have crossing facilities at the desire line from the Promenade and the Railway Station, Bus Station and several car parks in the town centre;
- Align with wider town centre regeneration aspirations, where the *Flock of Words* may be slightly reconfigured to provide a more direct route between the Promenade and the Railway Station, Bus Station and several car parks in the town centre; and
- Provide space for safe drop off.

15.1.70. The proposed relocation is accompanied by the introduction of a drop off point and a build out to reduce the crossing distance between footways, removing the need for a staggered crossing. This is possible as on street parking on both sides of Marine Road Central is currently permitted.

15.1.71. All existing pedestrian and cycling movements around the site will be retained. The area shown in green will be available for permissive access all year to all users, regardless of being a ticket holder, a local resident or a Morecambe visitor.

15.1.72. Sustrans has been engaged in relation to the existing NCN Routes 69 and 700 (see Appendix B). After discussions, it has been agreed that Sustrans would like to introduce changes to both routes passing through the site to avoid duplication and confusion of cyclists. This would result in the NCN Route 69 (Way of the Roses) being realigned to start / finish by the existing Way of the Roses start / finish point to the southwest of the Midland Hotel. The NCN Route 700 will be slightly extended to connect with this point via the Promenade to the north of the Midland Hotel and the proposed development.

15.1.73. As part of the wayfinding and signage budget allocation, a series of wayfinding posts will be included around Morecambe Town Centre, the Promenade and the Way of the Roses indicating active travel directions to the proposed development.

15.1.74. Additionally, EPIL will continue to work with relevant stakeholders to introduce further active travel enhancements such as a bike hire scheme and bike taxi services for EPN visitors, local residents and Morecambe visitors.

15.1.75. The proposed development location can provide a key role in enabling multi-modal journeys thanks to the Morecambe Railway Station being located just 300 metres away. This will help in promoting linked rail journeys to both Morecambe and Lancaster and enabling the last portion of the trip to be undertaken on foot or bike.

15.1.76. The rail services across the north west, Lake District and wider big cities such as Edinburgh, Manchester, Birmingham and London robustly underpins the multi-modal transport strategy for visitors arriving to Morecambe from their homes and overnight locations.

15.1.77. The multitude of buses passing by and near the site and its frequency show that bus travel robustly underpins the multi-modal transport strategy for employees and visitors starting their trip from Morecambe and Lancaster.

15.1.78. Visitors using public transport will have the possibility of having integrated ticketing (which will continue to be investigated further after the submission of this planning application).

15.1.79. It is likely that local buses will mainly be used by employees and overnight visitors staying in the area, with visitor trips originating further afield making use of the existing rail services instead.

15.1.80. The current rail services between Lancaster and Morecambe have the capacity to accommodate the predicted number of visitors. However, the rail services are not as frequent and attractive as the EPN Net Zero Strategy is targeting.

15.1.81. Providing frequent and attractive rail services from Lancaster to Morecambe is one of the many long term solutions to achieve the Transport Vision and reduce the car modal share to an absolute minimum. SLC Rail (on behalf of Lancaster CC) is working in this regard to introduce regular services every 30-minutes, making use of existing infrastructure.

15.1.82. In order to do so, EPN will continue to work with both Lancaster CC and Lancashire CC, as well as with relevant public transport operators. Some of the initiatives to consolidate rail as the main transport mode to the proposed development may include an EPN welcome centre at Lancaster Railway Station, where EPN employees could welcome and entertain rail visitors whilst waiting for the train to Morecambe. This would not only provide a welcome point to visitors, but will reinforce the idea that rail is a viable solution to travel to the proposed development, as the visitor experience to EPN would start at Lancaster Railway Station.

Parking Strategy

15.1.83. The Parking Strategy for the proposed development has been in discussion with stakeholders since the early stages of the preparation of the OBC in spring 2020. Several meetings have been held between EPIL, WSP, Lancaster CC and Lancashire CC.

15.1.84. The Parking Strategy agreed and submitted in the OBC recognised 50%-50% parking split between the M6 Junction 34 Caton Road Park and Ride and a series of Lancaster CC owned car parks in Morecambe Town Centre.

15.1.85. In regards of employees' modal share, it has been assumed that a total of 251 employees are expected to commute by active travel and public transport modes on a peak day.

15.1.86. In recognition of the nature of the development and EPIL, a minimum cycle parking ratio of 1:3 is suggested. 100 cycle parking spaces are proposed for the 278 maximum employees expected to be working on site at any given time (a 1:2.78 ratio).

15.1.87. In regards of visitor cycle parking, the visitor trip generation and distribution section has clarified that the likely number of visitors travelling by bike cannot be considered significant. Therefore, for the robustness and as a worst case scenario, it has been assumed for the trip generation exercise only that no visitors would be travelling by bike to the proposed development.

15.1.88. However, this is not the intention of EPIL. In light of this, a series of interventions to promote visitors to travel by bike are described in the Travel Plan.

15.1.89. Aligning with the Net Zero Strategy, up to 152 cycle parking spaces for visitors and general public are proposed as part of the public realm proposals. This is the proposed cycle parking provision for the Opening Year, with land identified within the public realm design for future expansions.

15.1.90. The key principle of the Eden Transport Strategy is to encourage people to arrive by non-car modes, particularly for their last mile element of the journey. Notwithstanding this, there is also a practical reality that on the Opening Year many visitors will still seek to travel by car, particularly as external bodies such as the rail industry will take time to be able to provide more frequent services between Lancaster and Morecambe to respond to increased demand created by the proposed development and the wider uplift it will bring.

15.1.91. Consequently, the focus of the Eden Parking Strategy submitted in the OBC is to intercept a significant proportion of vehicles travelling to EPN using M6 Junction 34 Caton Road Park and Ride, where an underutilised recently constructed Park and Ride (P&R) site provides parking capacity for 650 vehicles.

15.1.92. Notwithstanding this, it needs to be acknowledged that one of the key aims of EPIL is to revitalise Morecambe Town Centre and its economy; a fact that has been recognised in the OBC submitted to HM Government. Therefore, an element of parking in the town centre is required not only for some specific visitors (e.g. disabled parking etc) but also to actively encourage visitors to spend time in Morecambe before and/or after their visit to the attraction.

15.1.93. The Eden Parking Strategy sets out how the M6 J34 Caton Road Park and Ride and Morecambe Town Centre parking would be used by EPN visitors and how these two amenities can be linked through ticketing to allow a dynamic and flexible parking response according to demands.

15.1.94. The OBC looked at 324 different parking scenarios (quantum, split and cost) and presented a working solution based an optimum quantum, split and cost.

15.1.95. The recently constructed M6 J34 Caton Road Park and Ride provides 650 parking spaces immediately off the motorway. This is a high quality Park and Ride facility that enables EPIL to capture a significant number of vehicular trips from the M6 to Lancaster and Morecambe.

15.1.96. The site does not just cater for park and ride. It is also the perfect place to meet up for car sharing thanks to the CCTV cameras and its ideal location, with being located right next to the M6 with easy access onto the motorway.

15.1.97. Discussions with Lancashire CC have concluded that the site is currently used by an average of circa 150+ vehicles per weekday, which provides a spare capacity of circa 500 spaces on a weekday.

15.1.98. Lancaster CC currently owns and operates circa 1,800 surface Pay and Display parking spaces across Morecambe town centre on a series of different parking locations. On street parking is not included in this figure as it is widely permitted free of charge.

15.1.99. Notably, within 500 metres of the site there are circa 2,000 surface parking spaces distributed across Lancaster CC and private car parks.

15.1.100. Lancaster CC has confirmed an average parking utilisation of 39% across Morecambe, with an average peak parking demand in August *"across the last few years suggested demand was in the region of 70-80%, hence the proposal to reduce parking capacity in the region of 25%"*.

15.1.101. This surplus of approximately 25% at peak times represents 450 parking spaces of the 1,800 surface Pay and Display parking spaces in control of Lancaster CC.

15.1.102. Whilst the proposed development wants to encourage visitors to stay in Morecambe after their visit to EPN, assuming that all visitors will stay for the full day is not realistic. In fact, from a traffic analysis worst case scenario point of view.

15.1.103. Therefore, the parking demand presented below shows the maximum number of vehicles travelling to the proposed development. It does not assume any parking rotation (a parking space being used by more than one vehicle per day), thus adding another layer of robustness. In reality, the total parking demand is likely to fall below the total number of vehicles.

15.1.104. Lancashire CC has offered EPIL the use of the northern section of the M6 Junction 34 Park and Ride facility. This would provide 389 parking spaces for the proposed development.

15.1.105. Lancaster CC has offered EPIL the use of Billy Hill (44), Telephone Exchange (176), Central Drive (44), Goods Yard (69) and Town Hall (100) car parks. This would provide 433 parking spaces for the proposed development.

15.1.106. In total, 822 parking spaces have been identified by both Councils and offered to EPIL.

15.1.107. The 822 figure falls between the maximum parking demand identified.

15.1.108. As stated above, the parking demand presented is the maximum number of vehicles travelling to the proposed development. It does not assume any parking rotation for robustness.

15.1.109. As a worst case scenario again, the maximum number of vehicles travelling to the proposed development is likely to occur on a day with a higher occupancy rate (3+ passengers per vehicle), which would reduce the number of vehicles. However, it has been previously described in detail why a rate of 3.0 has been used as a worst case scenario.

15.1.110. Additionally, a maximum of 28 employees are predicted to commute by car. These have been assumed to travel on their own vehicle. However, the Travel Plan will not only look into ways of reducing the employees parking demand, but to promote car sharing, which should reduce the need to travel by car and the parking demand.

15.1.111. Therefore, the absolute maximum number of vehicles travelling to the proposed development on a peak day would be 850 vehicles. Which as described above, does not equate to 850 parking spaces for the full day.

15.1.112. In reality, the maximum parking demand is very likely to fall below that figure. A series of worst case scenario assumptions have been taken into account for robustness including manually adjusted arrivals and departures profile, higher modal share, lower car occupancy rate and no parking rotation.

15.1.113. Assuming a car park rotation based on the manually adjusted arrivals and departures profile for a peak day, and using the predicted modal share would reduce the total number of visitor parking to 586. Using a car occupancy rate of 3.3 would further reduce the total number of visitor parking to 532.

15.1.114. Therefore, it can be clearly stated that the proposed development parking demand will be below the absolute maximum number of 850 vehicles travelling to the site.

15.1.115. The time controlled and advance booking system will allow EPIL to know in advance a series of visitor details (origin, party size, vehicle details etc). This information will allow EPIL to predict, manage and influence the parking demand within Morecambe Town Centre and the M6 Junction 34 Caton Road Park and Ride. EPIL would work with both Councils on a daily basis to communicate their parking requirements. Depending on these and other parameters (e.g. a festival taking place in Morecambe), the system will allow EPIL to allocate parking spaces accordingly at a specific location.

15.1.116. This will not only allow EPIL to meet their Net Zero Strategy by the Opening Year by prioritising parking in Morecambe for the most sustainable vehicles (e.g. EVs, low CO2 emissions, high occupancy cars etc), but also to allocate parking based on vehicle details, party size and origin among other parameters.

15.1.117. It is important to recognise that the parking demand will not only vary across the year, but also on each day, with a weekday before a bank holiday requiring a much lower parking demand than on the bank holiday weekend a few days later.

15.1.118. Arrivals and departures profile, time spent in Morecambe after the visit to the proposed development, parking rotation, modal share and car occupancy rate have a direct influence in the overall parking demand.

15.1.119. Therefore, not all the identified car parks in Morecambe Town Centre may be required by the proposed development throughout the year.

15.1.120. This dynamic parking strategy aligns with a key principle of EPIL, making use of existing underutilised infrastructure by the opening year rather than investing in infrastructure that will not be used in the future.

15.1.121. Offering dedicated parking spaces to EPN visitors, and allowing them to book their parking space in advance would allow EPIL to reduce the traffic impact on the network and distribute evenly the parking demand across a series of car parks.

15.1.122. In order to encourage visitors to park at the M6 Junction 34 Park and Ride, a shuttle bus travelling to and from Morecambe is proposed. This will be directly managed and operated by EPIL or an appointed supplier on behalf of EPIL. It will be a different service to the existing Park and Ride bus travelling to Lancaster.

15.1.123. The shuttle bus will be part of the EPN experience, as it will provide a of welcoming atmosphere to all visitors.

15.1.124. The proposed shuttle bus route through Broadway has been carefully considered. It will provide visitors a magnificent Morecambe Bay experience as they travel through this *'ceremonial route'*, where a boulevard style linear, greenery and ample route (Broadway) gives way to the Morecambe Bay before turning left into Marine Road overlooking the proposed development building shell forms by the Midland Hotel.

15.1.125. A series of additional bus stops across Morecambe, and the Promenade in particular, will be considered to encourage EPN visitors to spend time around the town centre.

15.1.126. An indicative timetable has been developed based on the predicted arrivals and departures profile. However, this will be carefully amended almost on a daily basis thanks to the time controlled and advance booking system, which will allow EPIL to know in advance how many EPN visitors will be parking at the M6 Junction 34 Caton Road Park and Ride facility.

15.1.127. The frequency of the shuttle bus will vary between 10 and 20 minutes.

15.1.128. Details of the financial model for the shuttle bus and associated parking are enclosed under a separate Technical Note for confidentiality reasons.

Visitor Group Strategy

15.1.129. The Visitor Group Strategy covers all visitors arriving to the proposed development as a group. This could take various forms, including:

- School and higher educational groups; and
- Organised tours.

15.1.130. Within 25 miles of the proposed development there are 427 educational institutions. The proposed development expects to attract over 70,000 students annually. It is expected that all of them will be travelling to the site by private bus / coach, with the single exception of Morecambe local schools within walking distance to the proposed development.

15.1.131. In accordance with the Transport Strategy and the booking system, school and higher education group visits will be distributed evenly across the year. Similarly, their arrival times will also be spread out throughout the morning to ensure that arrival times are appropriate subject to their origin.

15.1.132. Students are expected to visit the proposed development on inter peak weekdays (circa 150 days a year). This results on circa 470 students a day, equivalent to an average of 10+ private buses / coaches per day.

15.1.133. As per general visitors, group visits will be offered with the most appropriate route into the proposed development according to their origin. This route could include the 'ceremonial route' described in the Shuttle Bus section, where a boulevard style linear, greenery and ample route (Broadway) gives way to the Morecambe Bay before turning left into Marine Road overlooking the proposed development building shell forms by the Midland Hotel.

15.1.134. Private buses and coaches are proposed to have the possibility to drop off group visitors on the northern section of Marine Road Central.

15.1.135. This area will be subject to a Traffic Regulation Order. And is expected to only allow private buses and coaches to drop off and pick up passengers, with a time restriction of 15 minutes with no return within 30 minutes.

15.1.136. The landscape design incorporates multiple walking routes from this area to the visitor centre of the proposed development. This allows for EPN visitors and general public to interact with the various landscaped areas.

15.1.137. As with any visitor group strategy, the aspect that needs a more careful management is the departures. Whilst on arrival most passengers are expected to directly access the proposed development as this is the main purpose of their visit, on departure further considerations are required.

15.1.138. The visitor centre will have a series of real time information transport screens that will inform EPN visitors for next rail, bus and shuttle bus departures. These screens could also incorporate group information departure times to inform certain visitor groups on when their private bus / coach is expected to depart from the pick up area.

15.1.139. In addition to this, it is important to recognise that certain visitor groups will spend time around Morecambe after their visit to the proposed development. As such, EPIL will continue to work with both Lancaster CC and Lancashire CC to explore the possibility of having a series of pick up points across Marine Road Central and East so visitor groups could be picked up at different locations across the Promenade. This will encourage visitors to explore Morecambe after their visit to EPN.

15.1.140. It should be noted that visitor group private buses and coaches are a private transport service. And as such, operators may have designated waiting facilities in the region or even other services booked whilst the visit to the proposed development.

Servicing and Refuse Strategy

15.1.141. EPN has a minimum local supplier target of 80%. In Eden Project (Cornwall) the local supplier proportion is even greater. This would result in reducing the need for servicing the site by large vehicles. Instead, a series of small vans are expected to be the main vehicle type servicing the site.

15.1.142. All servicing manoeuvres will be subject to different TROs and access restrictions.

15.1.143. The proposed development has four servicing requirements as set out in this strategy. All swept path drawings presented.

15.1.144. The service yard is located to the northeast of the proposed development. Vehicular access is proposed to take place from the Marine Road Central / Northumberland Street junction via the Promenade.

15.1.145. The restaurant is located to the northwest of the proposed development. It will be serviced via the service yard. But on limited occasions, small vans and rigid HGVs may have to access a secondary servicing point located underneath the restaurant.

15.1.146. The visitor centre is the access and egress point for visitors. It will include food and beverage options as well as the gift shop. All these units are proposed to be serviced by the main service yard. However, occasional and very limited access may be required at certain times of the year.

15.1.147. The Eden sessions (music events) are proposed to take place at this location to the east of the site. These will be limited to eight a year and during summer months only.

15.1.148. The EPIL and Design Team have undertaken regular engagement with the RNLI to understand their access requirements and future aspiration to incorporate these into the proposed development. Access to the RNLI building is proposed to use the most direct route from Marine Road Central.

Traffic Capacity Assessment

15.1.149. The Eden Transport Vision shared on April 2019 presented the ten core principles of the transport strategy. The very first point stated that “Eden Project North aims to work with the existing infrastructure where possible.”

15.1.150. EPIL has identified three different visitor seasons (Peak, Inter Peak and Off Peak), as different visitors per day are predicted for each season. This principle underpins the financial model which has been based and shared with HM Government.

15.1.151. The Transport Principles outline the importance of the time controlled and advance booking system. For this visitors would be allocated an arrival slot based on their origin and method of travel (amongst other parameters). This allows EPN to understand, manage and influence how visitors would travel to EPN on any given hour of any given day.

15.1.152. The latest EPN arrivals and departures profile suggests a predicted maximum of 600 visitors per hour on a peak day, and 500 on an inter peak day. However, as a worst case scenario, the number of visitors per hour used on the trip generation and distribution model has been dictated by the maximum building capacity (750).

15.1.153. Similarly, the arrivals and departures profile has been manually adjusted to reflect a more condensed profile, with more trips per hour than the predicted by EPN.

15.1.154. A different modal share, based on multiple datasets, has been applied to each visitor type. However, as a worst case scenario again, this modal share has been uplifted by five and ten points in favour of private car, and in detriment of rail visitors. This would generate more vehicular trips than originally predicted.

15.1.155. The assumed car occupancy rate for EPN is 3.0. This has been derived upon leisure consultant market experience, EPN feedback and a thorough review of most major leisure attractions in the UK. Indeed, this is one of the lowest car occupancy rate for a major leisure attraction. It includes sites within the Greater London area. (e.g. Chester Zoo 3.9, Gulliver's Park 3.8, Alton Towers 3.7, Thorpe Park 3.45, London Resort 3.0), and it is lower than the 3.16 average that includes the DfT rate.

15.1.156. It should be noted that this rate has been confirmed during pre-app scoping with Highways England as a *"reasonable assumption"*.

15.1.157. The car occupancy rate will change throughout the year. Off peak winter weekdays are likely to have a car occupancy rate closer to 2, whilst peak summer weekends are likely to have a car occupancy rate closer to 4.

15.1.158. In recognition of 250 days a year falling under the 100 peak days and circa 150 inter peak weekdays and holidays, it is recognised that for two thirds of the year the car occupancy rate is likely to be higher than 3.0.

15.1.159. In recognition of 250 days a year falling under the 100 peak days and the circa 150 inter peak weekdays and holidays, it is recognised that for two thirds of the year the car occupancy rate is likely to be higher than 3.0.

15.1.160. Therefore, using a car occupancy rate lower than 3.0 does not seem appropriate. Not only would the average occupancy rate be higher than this, but it can be expected that due to the nature of the visitors (76% of total trips will be day trips) and the seasonality of the site, for two thirds of the year the car occupancy rate will be higher than 3.0.

15.1.161. This approach will accommodate both cases: a higher car occupancy rate during the peak season with a higher number of visitors; and a lower car occupancy rate during the off peak season with a much lower number of visitors. It is key to provide enough infrastructure and parking for the peak season, but to not to overdesign it and build certain infrastructures that would not be required in a few years' time as set out in the Net Zero Strategy.

15.1.162. This represents a worst case scenario, as using a lower car occupancy rate that the one expected for two thirds of the year will provide a greater number of vehicular trips being generated by the proposed development, and a greater parking demand. However, for robustness of this TA, a car occupancy rate of 3.0 is proposed to be used.

15.1.163. Notwithstanding this, the booking system will allow EPN to understand the car occupancy rate for all days of the year. This will ensure that no more cars than parking spaces available are allowed to visit the proposed development as further described in the Parking Strategy.

15.1.164. Again, this is a worst case scenario assumption that generates a higher volume of vehicular trips.

15.1.165. Lancashire CC commissioned Atkins to develop a Saturn model and traffic forecasting and economic appraisal report to support the 'South Lancaster Growth Catalyst Housing Infrastructure Funding' (also known as 'Junction 33 HIF'). A series of traffic surveys were undertaken in October and November 2018 to support this commission. The highway assessment model included the three single hour time periods representing the busiest peak hours of the highways network (weekday AM 08.00, PM 17.00-18.00 and average IP (10.00-16.00)). The Saturn model was accordingly calibrated and validated through a series of steps to ensure it was replicating traffic flows and journey times.

15.1.166. WSP understands that LCC position in regards of the peak hour of the highway network is the one used to support the Junction 33 HIF works during 2018 and 2019. That is weekday 08.00-09.00 in the AM and weekday 17.00-18.00 in the PM.

15.1.167. It can be stated, and it is commonly agreed, that the EPN peak day would fall outside the highways network peak day (weekends and holiday weekdays vs. weekdays) as highlighted in the seasonal calendar.

15.1.168. Similarly, the EPN peak hour would fall outside the highways peak hour (11.00 to 16.00 vs 08.00-09.00 and 17.00-18.00). This is valid for both the original and manually adjusted arrivals and departures profile.

15.1.169. Both Councils have offered to EPIL the use existing underutilised car parks (both the M6 Junction 34 Caton Road Park and Ride, and Morecambe Town Centre sites). These are all car parks that have been consented through valid planning processes.

15.1.170. It can be stated that theoretically those car parks could generate trips in the network without causing significant impact at any given junction, as highways provision was made in the past to accommodate that demand. However, as these car parks are underutilised, EPN would fill that theoretical capacity throughout the day. This is significantly clear at the recently upgraded highways links and junctions, such as the M6 J34 and the Bay Gateway, where additional capacity has been recently provided to accommodate for the 650 spaces of the Park and Ride.

15.1.171. Thanks to the time controlled and advance booking system, no more car tickets than parking spaces available will be sold at any given day.

15.1.172. Therefore, the number of vehicular trips will not only be limited by the maximum number of visitors per hour and day limits, but by the parking capacity provided.

15.1.173. EPN would generate a maximum of 184 to 207 two-way vehicular movements at 14:00-15:00 on a peak day. With a maximum of 104 and 63 on an inter peak and off peak day.

15.1.174. This represents one vehicle every circa 20 seconds at the M6 J34. Whereas only about half of them would be travelling into Morecambe, representing one vehicle every circa 40 seconds.

15.1.175. This represents a worst case scenario that includes several worst case scenario assumptions. But more importantly, it is not considered to be a significant number of new vehicular trips on the highways network. All of them will be using existing underutilised and consented car parks for which highways provision was made.

15.1.176. When observing the 2025 Base Volume over Capacity (VoC) for each junction, the M6 Junction 34 is the only junction that provides a VoC higher than 80%.

15.1.177. The western set of signals operating above 80% in both the AM and the PM, whilst the eastern set of signals only operate above 80% in the AM.

15.1.178. The northbound diverge is currently a type B option 1 ghost island diverge with two lanes on the slip road and three lanes on the mainline in both an upstream and downstream direction The highest existing flows on the slip road are in the AM peak and those on the mainline are highest in the IP peak. CD122 indicates that the theoretical position should be a type A layout with one connector lane and two lanes on the upstream mainline and also on the downstream mainline. This indicates that the current provision is an over provision. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

15.1.179. The northbound merge is currently a type C ghost island merge with two connector lanes and three lanes on the mainline in both an upstream and downstream direction. The highest existing flows on the slip road are in the AM peak and those on the mainline are highest in the IP peak. CD122 indicates that the theoretical position should be a type A layout with one connector lane and with two lanes on the upstream mainline and also on the downstream mainline. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

15.1.180. The southbound diverge is currently a type A.2 diverge with one connector lane and three upstream and three downstream mainline lanes. The highest existing flows on the slip roads are in the AM peak and those on the mainline are highest in the PM peak. CD122 indicates that the theoretical position should be a type A layout with one connector lane and two upstream and two downstream mainline lanes. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

15.1.181. The southbound merge is currently a type C ghost island merge with two connector lanes and three upstream and three downstream mainline lanes. The highest existing flows on the slip roads is during the AM peak and those on the mainline are highest in the PM peak. CD122 indicates that the theoretical position should be a type B layout with one connector lane and two lanes on the mainline in both an upstream and downstream direction. This shows the current layout and the theoretical requirements based on the forecast traffic flows for each scenario.

Traffic Regulation Orders

15.1.182. Traffic Regulation Orders are legal documents that restrict or prohibit the use of the highway network, in line with The Road Traffic Regulation Act 1984. These are usually implemented for various reasons, including:

- For avoiding danger to persons or other traffic using the road or any other road or preventing the likelihood of any such danger arising;

- For facilitating the passage on the road or any other road of any class of traffic (including pedestrians);
- For preventing the use of the road by vehicular traffic of a kind which, or its use by vehicular traffic in a manner which, is unsuitable having regard to the existing character of the road or adjoining property; or
- For preserving or improving the amenities of the area through which the road runs.

15.1.183. Engagement with Lancashire CC suggests that a series of TROs will be required for the operation of the proposed development. These are not only welcomed by EPN, but also encouraged to be implemented by the opening day (subject to appropriate consultation). As the proposed TROs would minimise the vehicular impacts around the site.

15.1.184. The proposed access to the RNLI would be subject to a TRO access order to allow RNLI vehicles access only. This could be accompanied by a series of bollards.

15.1.185. The proposed coach drop off and pick up zone would be subject to a "Bus only limited waiting parking place – 15 minutes no return within 30 minutes" or similar order.

15.1.186. The proposed blue badge drop off and pick up zone would be subject to a time restriction order similar to the coach drop off and pick up zone.

15.1.187. A series of events (eight a year) are proposed to take place on the proposed development each summer. These events would consist on music concerts style events taking place on the Rhythm Garden, the outdoor arena / garden on the most eastern point of the site.

15.1.188. These events are expected to occur at evening times with a finish time by 23.00.

15.1.189. The events are likely to attract up to 6,000 visitors. In comparison to the 55,000 weekend visitors attracted by Morecambe Festival.

15.1.190. A separate planning application, with traffic management strategies will be submitted ahead of each event. Describing in detail the requirements, potential impacts and mitigations proposed.

Net Zero Transport Strategy

15.1.191. The Eden Transport Strategy has been developed upon the Eden Transport Vision. Collaboration with statutory and non-statutory stakeholders has been key to develop a transport strategy that aligns with the proposed development ethos and sustainability aspirations whilst providing a realistic Opening Year solution that complies with planning policy.

15.1.192. Furthermore, 3Adapt (appointed sustainability consultant for the proposed development) has played a key role on developing a collaborative a Net Zero Strategy for each of the design elements of the proposed development.

15.1.193. The proposed development is aiming to achieve a series of regenerative sustainability certifications, including:

- Net Zero Carbon Building;
- Truly Net Zero;
- BREEAM 'Excellent'; and
- Resource Strategies.

15.1.194. Within the BREEAM accreditation, the proposed development is targeting an 'Excellent' rating whilst exploring opportunities for targeting 'Outstanding' rating in later design stages.

15.1.195. In regards of Transport, the BREEAM target is a perfect score, achieving the maximum number of Transport scores possible. Further information can be found on the BREEAM documentation being submitted as part of this planning application.

15.1.196. The Eden Transport Strategy is a live Strategy that not only sets out the transport solution for the Opening Year. It also sets out a roadmap of Net Zero initiatives that will come forward in order to deliver a Net Zero Transport Strategy and fully carbon neutral transport solution for the proposed development as set out in this Chapter.

15.1.197. Subject to the selected method of travel, the entry ticket to the proposed development will vary to recognise the environmental impact of the travel method as per Eden Project (Cornwall). This could consist of direct discounts on active travel and sustainable transport tickets, or vouchers to redeem part of the expenditure at the proposed development (e.g. food and beverage, gift shop etc).

15.1.198. This would promote active travel and sustainable transport. For those travelling by car, it will promote the usage of the M6 Junction 34 Park and Ride car park instead of driving into Morecambe.

15.1.199. A series of local, regional and national policies will play a key role in enabling the proposed development to achieve a Net Zero Transport Strategy.

15.1.200. The existing rail services between Lancaster and Morecambe are not regular. Through engagement, SLC Rail (Lancaster CC rail consultants) have identified the possibility of introducing a 30-minute frequency timetable between Lancaster and Morecambe that could be implemented without the need for any development nor infrastructure costs, just making use of the existing infrastructure. This would attract even more rail visitors to the proposed development.

15.1.201. Furthermore, the existing railway between Lancaster and Morecambe is not electrified. Therefore, despite visitors using a public transport service, this would not be carbon neutral. However, there is an aspiration amongst many stakeholders and EPN itself to provide electrified trains on this service. Whether this is undertaken by battery powered trains or through electrification of the railway line, this would still reduce the carbon emission of the rail services to and from Morecambe.

15.1.202. The proposed shuttle bus will be directly managed by EPIL (or an appointed operator). There is a clear aspiration for this to use non fossil fuels. The EPIL team will continue to engage with relevant stakeholders, operators and manufactures to ensure that a non-fossil fuel shuttle bus is provided for the proposed development.

15.1.203. Whilst EPN would have very little control over private buses and coaches visiting the proposed development, it could be assumed that these would become more sustainable vehicles as time passes by.

15.1.204. The Eden Parking Strategy sets out in detail how the parking solution for the proposed development would operate on the Opening Year and in the future. Whilst making use of the existing infrastructure is essential, it also recognises that EPIL and the Council would not only be able to control and manage who can park on the town centre (e.g. low emissions vehicles), but that there is an aspiration to reduce the parking demand in the town centre that aligns with the points set out in the Transport Vision, Transport Strategy and Net Zero Transport Strategy.

15.1.205. One of the most important parking topics, which could potentially damage the proposed development engagement across local residents and the general public is the provision of employee

parking. In fact, this has been recognised by the planning authority on other aspects of the scheme ("aspiring to and delivering highly sustainable development (zero to low carbon) would no doubt positively reflect the general ethos of Eden too."). It is assumed that EPN would recruit locally, and as a result, there is no reason why it could not be expected for the majority of the employees to commute by active and public transport modes. Therefore, the typical parking demand exercise of using existing census data would not be valid. Instead, a very low parking provision for those who rely on a private vehicle to commute, and have no alternative option, would be made. This has the effect of decreasing the employees parking demand from 120+ spaces to just a few spaces. The Travel Plan does cover the different measures and initiatives that will be put in place to achieve this.

15.1.206. The first core principle of the Eden Transport Vision recognises the need of using existing underutilised infrastructure. This is widely embedded in the Eden Transport Strategy, and the Eden Parking Strategy in particular.

15.1.207. In order to achieve the Net Zero Transport Strategy from the Opening Day, it is essential to use existing underutilised infrastructure that will no longer be used by the proposed development in the future. In this regard, using existing underutilised car parks is the most optimum and sustainable solution. Building new car parks for the Opening Year when there is parking capacity at existing car parks is not appropriate. More importantly, building new car parks for the Opening Year is not appropriate neither in light of the Net Zero Transport Strategy, as the Opening Day modal share will significantly change over the coming years. This will significantly reduce the reliance upon private cars to travel to the proposed development.

15.1.208. The proposed development would act as a major regeneration catalyst for Morecambe and the wider region. Through exhaustive engagement with stakeholders and the local community, it is evident that infinite partnership opportunities have arisen and will continue do so. These partnerships will help to bring forward multiple regeneration and public realm proposals across the region.

15.1.209. For example, the regeneration of the Festival Market area into a modern and large public realm space that welcomes visitors to Morecambe and creates opportunities to host different events. This will be followed by changes to limit traffic levels across the town centre and the promenade.

15.1.210. EPIL would offer their help to Lancaster CC, Lancashire CC and all other stakeholders and neighbours to work collaboratively on all development proposals that would provide a wider positive benefit to the region.

Construction Traffic Management Plan

15.1.211. EPIL anticipates the opening of the proposed development in 2024, with initial on site construction works starting in early 2022. Therefore, a 2+ year construction period is expected.

15.1.212. A Construction Traffic Management Plan will be produced and submitted by the appointed contractor before starting any construction works. This will include:

- Traffic strategy management;
- Construction vehicle routes;
- Temporary footway and highway closures with associated diversion routes, traffic impact, temporary traffic signals etc;
- Access retention to nearby buildings and facilities for users, emergency, servicing and refuse vehicles; and

- Air and noise quality around the construction site and vehicular routes.

15.1.213. The number of construction vehicle movements will vary across the project depending on the activities taking place.

15.1.214. The most severe stage of the project in terms of frequency of deliveries will be during the Piling, Groundworks & Concrete frame activities which will require large numbers of daily concrete deliveries over a period of seven months with at the peak in the region of 30 deliveries in a given day during large concrete pours. This number will drop to 16 once the bulk of the concrete work is complete and the timber frame commences.

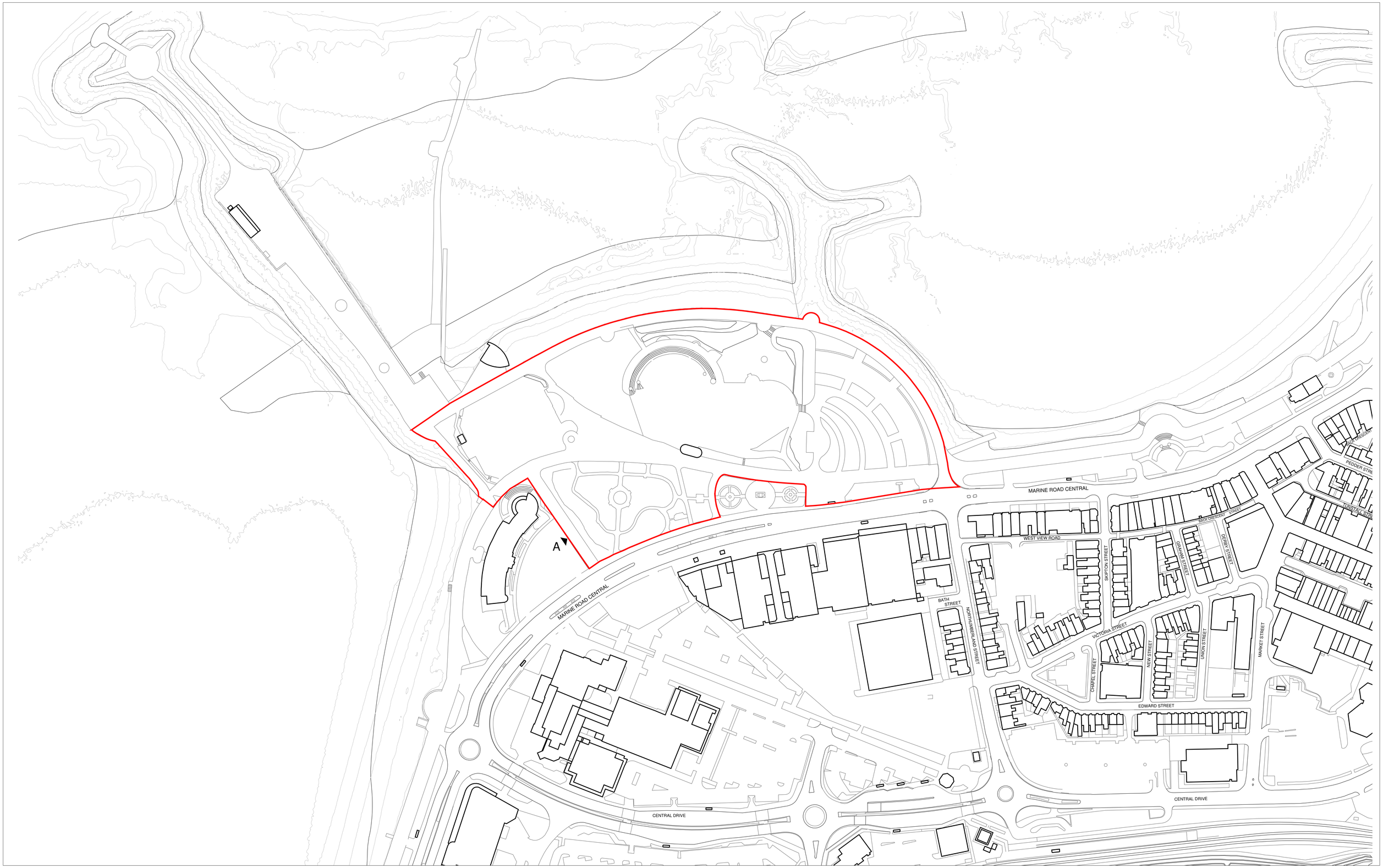
15.1.215. Although infrequent, during the timber frame erection this period will see the largest sized articulated vehicles allowed on the local roads being delivered into site. The frequency of deliveries will increase again once the internal fit out works commence whilst the roof and envelope works are still in progress.

15.1.216. As the main build reaches completion the numbers will drop to less than 12 per day until project completion.

Appendix A

SITE LOCATION AND LAYOUTS

PUBLIC



Proposed Development Boundary

Boundary lines drawn to site survey information.

ARCHITECT

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DRAWING NOTICES

Do not scale - all dimensions to be checked on site. Grimshaw drawings to be read in conjunction with grimshaw and specialist specifications. Drawings to be read in conjunction with m&e, structural, fire and acoustic information.

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CLIENT
Eden Project International Ltd.

CONSULTANTS
(Multiple Disciplines) Engineer
Buro Happold

Landscape Designers
TEP

Structural Engineer
Schlaich Bergermann Partner

Planning Consultants
WSP

PROJECT NAME
Eden Project North

PROJECT NO.
17162

ADDRESS
Marine Road Central
Morecambe
LA4 4BU

REV	BY	DATE	DESCRIPTION
-	OMG	16.04.21	Issue for Information
-	OMG	25.06.21	Draft for Information
0	OMG	30.07.21	Draft 1 for coordination

KEY PLAN

NORTH

0 100m

DRAWING TITLE
Site Location Plan

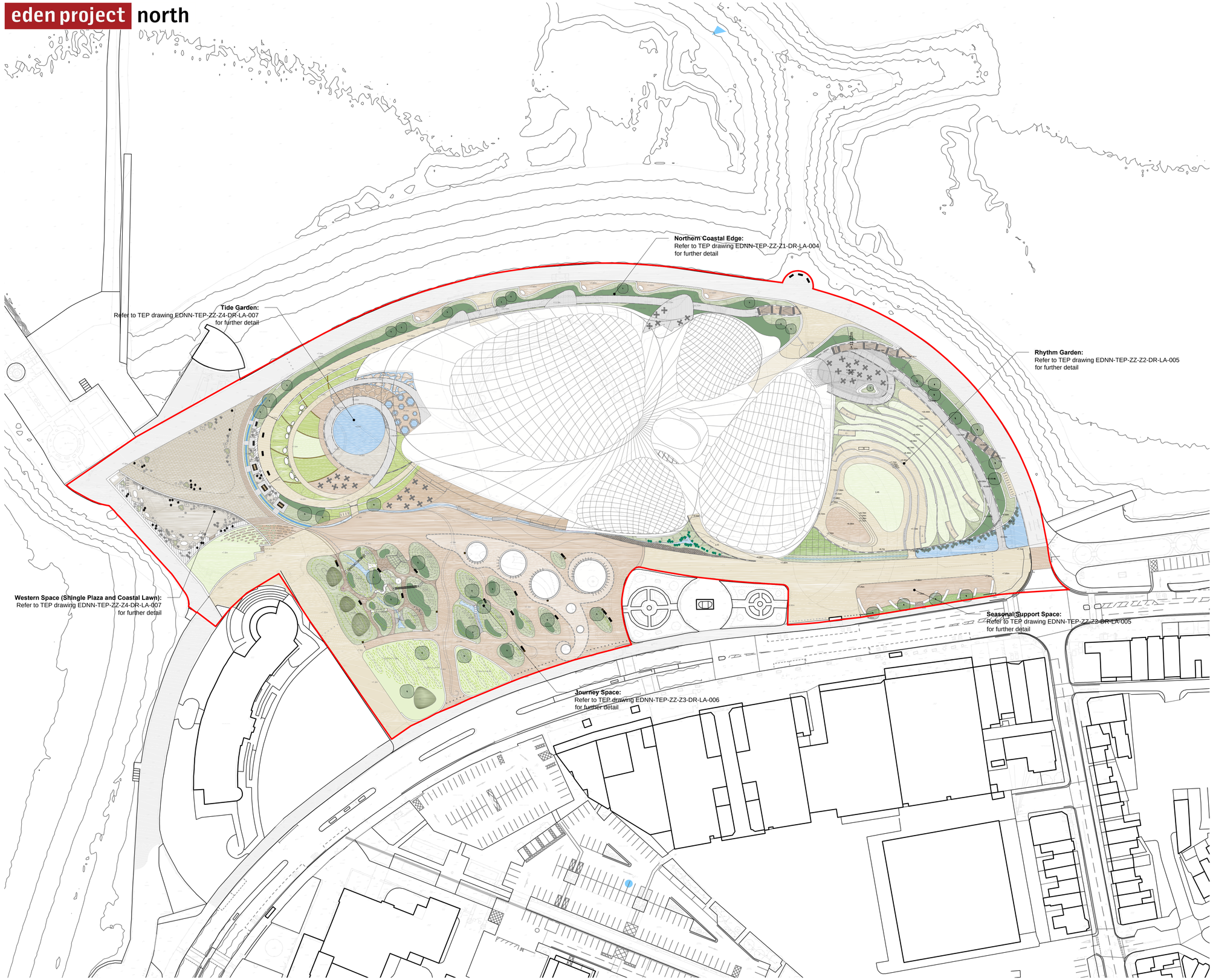
SCALE
1:1250 @A1

STATUS
Draft 1 for Coordination

DRW	CH	APPR	DRW DATE	REV
OMG	AB	JB	30.07.21	0

DRAWING NO.
A01 1001

eden project north



Key

Existing

- Trees to be retained
- Existing surfacing to be retained
- Old sea wall

Proposed

- Mown / low growing grassland
- Tall grassland
- Mixed coastal planting (native and ornamental)
- Shrubs
- Shingle gravel planting
- Rain garden planting
- Tree planting
- Water
- Water with marginal planting
- Natural stone paving
- Buff coloured asphalt
- Buff self-binding gravel
- Hardwood timber decking with bauxite resin strips
- Shingle gravel (10-35mm aggregate size) to match shingle colour mix on the beach
- Recycled plastic mesh reinforcement to shingle gravel surface
- Stacked recycled concrete slab and/or natural stone to create low cliff edge: 0.5-2.0m in height
- Steps
- Indicative landform contours
- Indicative slopes
- Hardwood timber picnic table
- Hardwood timber seat
- Pebble seat in timber or polished stone
- Moveable furniture to terraces
- Cycle stands
- Hardwood timber clad litter bin
- Stainless steel fixed bollards (anti-ram specification)
- Stainless steel automated retractable bollards (anti-ram specification)
- Flood protection gates
- Decorative metal gates (2.0m high)
- Balustrade/railings (for further detail refer to TEP Drawing: EDNN-TEP-ZZ-ZZ-DR-LA-009)
- 3.0m high sea foam canopy shelter
- 5.0m high energy pods with cycle stands integrated into the edge

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Rev	Description	Drawn	App	Date

TEP | THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project no.	Project name
8723	Eden Project North

Status
INFORMATION Draft 13/08/21

Title
Landscape General Arrangement

Drawing no.
EDNN-TEP-ZZ-ZZ-DR-L-001

Scale	Date	Rev
1:750@A1	25/06/2021	P01

Drawn	Checked	Approved
CAH/AJG	GDA	GDA

Appendix B

RELEVANT MEETING MINUTES

PUBLIC

Environmental Statement

The planning application will be accompanied by a single Environmental Statement (ES) which will set out how the proposals can be accommodated in environmental terms and the benefits which are likely to arise as a consequence of the development. The proposed ES was scoped in summer 2019, with both the Local Authority and Highways England being consulted. The ES will set out:

- Step 1 (Baseline assessment): Assessment of the baseline conditions of the site, including any associated zones of influence beyond the site boundaries;
- Step 2 (Impact assessment): Consideration of the impacts of the development proposals, against the baseline conditions identified. This assessment will take into account the potential cumulative effects with existing or approved developments within the local area.

Chapter 14 of the ES will cover Traffic, Transport and Access to the development proposals. The aim of the ES chapter will be to identify, as far as reasonably possible, the nature of the transport changes within the area of the proposed development, to assess significance and to make appropriate recommendations. The assessment will include consideration of traffic impacts during construction as well as impacts during the operation of the proposed development.

The Transport Assessment and the Travel Plan will inform and form part of the ES.

Transport Assessment

The Transport Assessment will be a thorough document comprising the proposed following chapters:

1. **Introduction:** Will set out the required background, scope and methodology information, as well as the document purpose.
2. **Existing Conditions:** This will include existing conditions for active travel, public transport, highway network and traffic congestion issues. We will include a road safety section, which will review local accident records within the local area over the previous five years and identification of any trends, with a description of how the development will mitigate against any road safety impacts.
3. **Proposed Development:** A description of the development, including key figures such as seasonality, visitors a year, staff numbers and particularities of the site.
4. **Transport Principles:** Following the description of the development proposals, the Eden Project North Transport Principles will be described in detail. This will include the control and influence over visitors travel mode choices, origin and times of arrival. This section will set the scene for all transport interventions described across the document.
5. **Policy Review:** National, regional and local policy compliance. A review of all relevant policy and description of how the development complies with these policies.
6. **Trip Generation and Distribution:** This will be based on the work carried out over the last 24 months. It will draw upon the multi-modal gravity trip generation and distribution model work already undertaken to inform the Outline Business Case (OBC) submitted to central government. model described in the documents already produced. This model has been based on a wide range of datasets, including census data, similar sites data, leisure consultant expert market analysis and tourism data (STEAM and Visit Britain). A series of scenarios and assumptions have been produced to understand key figures that will dictate the trip generation and distribution.

- 76% of visitors will be *Day Visitors*, whilst the remaining 24% will be *Overnight Visitors (staying at least one night in the region (e.g. weekend in Morecambe, a holiday week in the Lake District, etc))*;
- A different modal share is applied to each type of visitors and origin. However, on average, the proportion of trips made by cars will range from 68% to 78%;
- The car occupancy rate is 3.0 passengers per car;

A worst case scenario of 100% of visitors travelling by car it is not proposed to be undertaken, as this would not follow the Eden Transport Vision (see Appendix A) and is considered highly unlikely to occur. The control over ticket sales will allow Eden Project North to understand and manage the transport demand in order to not have 100% of visitors travelling by car on any given day, for example by financial incentives to use non-car modes.

7. **Active Travel and Sustainable Transport Strategy:** Based on the Active Travel and Sustainable Transport Strategy document, this chapter will include a description and assessment of existing provision for pedestrians, cyclists and public transport. There will also be an assessment of opportunities for travel to the development by walk, cycle or public transport, and description of how the development will enhance the provision for travel by these modes. We will also describe incentives for staff and visitors to travel by active modes and public transport such as the proposed shuttle bus service and visitor benefits. We will produce annotated site context plans in context of the above.

8. **Parking Strategy:** This chapter will describe the dynamic parking solution agreed with both Lancaster and Lancashire Councils to use their existing underutilised parking facilities at Morecambe town centre and the M6 J34 Park and Ride. A separate Eden Parking Strategy document will be produced and agreed with both Lancaster and Lancashire Councils as car park owners. But at the present time we envisage approximately a 50%/50% split between the town centre and park and ride. Out of the 162 parking scenarios analysed for the OBC, the most optimum three parking scenarios presented are based on:

    - A high BCR to support the OBC to Central Government. This included the recognising and capturing of time and money spent by EPN visitors around Morecambe;
    - An optimum usage of existing underutilised infrastructure (e.g. the P&R) for “Year 1”; and
    - An optimum parking split to offset the cost of the proposed shuttle bus.

9. **Visitor Groups Strategy:** This chapter will describe Including how many private and school coaches are expected per day, where they will travel from, the drop off and pick up points and the identified parking locations and welfare facilities for coach drivers.

10. **Servicing and Refuse Strategy:** This chapter will include the quantum and types of servicing and refuse vehicles, swept path drawings, back of house facilities location and any associated Traffic Regulation Orders.

11. **Traffic Capacity Assessment:** Based on the work undertaken for the OBC (see Appendix B), the *M6 J33 SATURN* model built by Lancashire CC to support their Housing Infrastructure Bid does not suggest that the Eden Project North predicted maximum vehicular trips per hour will be significant when compared against baseline and future traffic data. In fact, it should be noted that since the production of the OBC, the number of visitors per hour have been reduced to reflect the latest maximum building throughput (see Appendix B). Further details explaining how the Eden Project North peak days fall outside the typical highways network peak days and hours will be included in the TA (see Appendix B). In light of the fact that the Eden traffic impact falls outside the current highway peak days and hours, and the likely split of vehicle destinations between the town centre and the P&R, it is not envisaged at this moment in time that specific junction capacity assessments will need to be undertaken. The exception to this will be the production of merge and diverge assessments for all on slip and off slip roads of the M6 J34.

12. **Traffic Regulation Orders:** Existing and proposed Traffic Regulation Orders will be described in detail, including CAD plans showing the extents of these.

13. **Construction Traffic Management Plan:** This will comprise a summary of the Construction Traffic Management Plan, including construction vehicles routes and quantum, as well as construction staff parking requirements.

14. **Net Zero Aspirations:** As part of the Eden Transport Vision, there are 10 clear aspiration that Eden Project North would work to achieve. It is recognised that not all of them will be possible to achieve on *"Year 1"* (i.e. opening day of the site). Based on the Eden Transport Principles, a series of realistic transport interventions and solutions will be presented for the purpose of the planning application. However, the Eden Transport Strategy is a live document that will continue to work towards the Net Zero aspirations of Eden Project North. This chapter will describe a series of interventions that could be brought forward in the future to achieve this.
15. **Summary:** This final chapter will summarise the key points of the Transport Assessment.

Travel Plan

This would be a stand-alone document setting out measures Eden Project North would be willing to implement to encourage sustainable (i.e. non-car) travel to the development by employees and visitors. It will form a framework of potential measures, covering all land uses on the development. A Full Travel Plan would be produced at the time of occupation, based upon the measures within this framework.

APPENDIX A – EDEN TRANSPORT VISION

Eden Project North - Transport Vision

Eden Project North aims to be the leading example for progressive and healthy transport methods in the UK. We want to subvert typical transport expectations (that a journey requires petrol, that it's boring, that it requires lots of planning and forethought) to provide a clean, smooth, accessible, fun and active alternative to arriving at a destination that further endorses these values.

Eden Project North recognises that the experience starts long before the visitor crosses the entrance gates, and that our decisions and commitments to sustainability and human health extend far beyond the duration of their stay. This is why we remain dedicated to establishing a forward-thinking and innovative strategy that can bring new and positive things to the town, the people and the natural environment of Morecambe.

The purpose of this statement is for us to explain to Lancashire County Council and Lancaster City Council our transport vision for Eden Project North.

As a vision it is innovative, forward looking and thought provoking. Its objective is to stimulate discussion and set the principles which will guide the transport strategy and engagement with key consultees. It is the first stage in establishing the detailed transport strategy for the project, which will be developed over the coming months in collaboration with Eden Project North, its highways and planning consultants and the City and County Councils.

Eden's core principles

1. **Eden Project North aims to work with the existing transport infrastructure where possible.**

   We believe the most sustainable and effective method of accessing Eden Project North and integrating a new transport strategy is to use the resources and infrastructure that are already available. We will investigate how we can best use existing infrastructure such as the Park and Ride at M6 Junction 34, the existing local train line from Lancaster to Morecambe, the bus network, footpaths and the existing Way of the Roses cycle path.

2. **Eden Project North aims to support future transport developments where multiple schemes can create an argument for larger-scale improvements.**
   We support many of the principles established in the Lancashire City Council Highways and Transport Masterplan 2016 to help deliver a wide-reaching network of sustainable travel options. We will work with the City and County Councils to try and weave the principles into our transport strategy to help make the Morecambe Area Action Plan a reality. We will consider a range of measures to improve gateways into Morecambe Town Centre and aim to fully integrate the seafront with the town to make it more attractive to spend time in a Morecambe less dominated by cars.

3. **Eden Project North's Transport Strategy aims to positively influence circulation routes in and around the town of Morecambe, encouraging pedestrianisation and inspiring people to spend more time in different areas.**

"At the moment, though the seafront and some of the shopping areas are often busy, this footfall doesn't actually benefit the town centre as much as it might, because many people who come to Morecambe don't spend much time actually in the centre." Highways and Transport Masterplan 2016[1].

We aim to support businesses in the town centre by drawing people through the town and encouraging dwell/stay times through creating attractive routes and public realm. This should assist with people spending leisure time at cafes and in shops or galleries, to assist in economic regeneration of the commercial centre.

4. **Public transport is the priority method.**

Public transport is integral to Eden Project North's Transport Vision, as it not only mitigates fossil fuel emissions per head, but also can encourage interaction through social spaces around waiting rooms, shared carriages and friendly service operators. Encouraging public transport use will also enhance services for residents, workers and all visitors.

5. **The baseline for the planning horizon is 2025+, with a vision towards 2030.**

The vision for transport with Eden North looks as far as possible into the future. The potential for new solutions and technologies to emerge towards 2030 will be taken into consideration, and room for these to be incorporated will be made available in the 2025+ plan. Such technologies could range from advances and improvements to existing vehicles, such as electric methods of transport, to new infrastructures such as a Hyperloop, to new ways of imagining the public's interaction with the built environment, such as kinetic pavements and energy harvesting.

Permeable paving and enhanced rainwater collection methods may also be relevant to the Eden Project North site, as resilience to unreliable weather patterns becomes ever more important.

6. **Last two miles – no fossil fuel vehicles around the site.**

Diesel and petrol vehicles release particulate matter under 2.5microns in diameter (PM2.5). This type of particulate matter is the most directly harmful for human health, as it is absorbed into the respiratory and circulatory systems. Eden Project North's Transport Vision aims to factor in the health benefits of reducing fossil fuel vehicles from not only a physical exercise and social interaction perspective, but also by focusing on the invisible chemical and biological impacts of pollution on both human health and the surrounding environment. This is why a 'last two miles' rule will be in place for most vehicles, meaning the air quality and layout of the town centre will be improved.

The Transport Strategy will, of course, take into consideration and make exceptions for emergency vehicle access and blue badge parking options, with the potential for these spaces to be reserved in advance, and the site will be entirely accessible for those with additional mobility requirements. Eden Project North aims to be wholly inclusive in all aspects of the experience, and especially in its Transport Strategy which will make people feel welcome and supported from the very first stage of their Eden journey.

DEFRA information on PM2.5 https://laqm.defra.gov.uk/public-health/pm25.html

[1] https://www.lancashire.gov.uk/media/899614/final-lancaster-highways-and-transport-master-plan.pdf

7. **Pedestrianisation of the Prom.**
   Pedestrianisation is fundamental to Eden Project North's transport plan, as it results in cleaner air, increased physical activity, more time spent outside and reduced noise pollution. Optimising the use of car parks in the town centre, public transport and walking/cycling means the beautiful landscapes of Morecambe will be able to be much better appreciated by locals and tourists alike, as the heavy traffic on Marine Road Central will be significantly reduced. This means the town will not be cut off from the promenade, and people will have better opportunities to walk and cycle. It also will increase safety from a traffic perspective, as well as safety in terms of 'eyes on the street'.

8. **The journey should be joyful.**
   Eden Project North endeavours to make transport part of the overall experience. This means eliminating and reducing queues, over-crowding, over-priced tickets and introducing a sense of fun into the journey.

   The could mean that the inside and outside of trains, buses and waiting areas are decorated in unexpected ways, and that the method of transport encourages users to engage with Eden Project North's core ideas from before the point of arrival.

9. **Visitors that make a special effort to travel to the destination sustainably will be rewarded by reduced entry prices and other incentives.**
   Eden Project North believes that effort on the public's part should be recognised and rewarded by the venue. Eden Project in Cornwall operates a Green Travel Plan £5 off scheme for visitors arriving either by public transport or on foot or by bike, which has proved popular and effective. https://www.edenproject.com/visit/before-you-visit/directions/by-bus-or-train#greentravel

   An emphasis on sustainability and natural choices will also be applied to the site directly, by transforming the redundant grey spaces (such as disused road) into lawns and wildflower areas.

10. **Eden Project North's transport vision extends as far as the perimeter of the project site, but aims to be flexible enough to allow for collaboration in parallel with neighbouring infrastructure.**

APPENDIX B – OBC TRAFFIC CAPACITY ASSESSMENT

1) Eden Project North Seasonal Calendar
2) Latest two-way vehicular trips (based on maximum building throughput)
3) OBC Highways Impact Chapter

EDEN PROJECT NORTH - SEASONAL CALENDAR

January						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1*	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Feburary						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19*	20	21
22*	23	24	25	26	27	28
29	30					

May						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6*	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27*	28	29	30	31		

June						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26*	27	28	29	30	31	

September						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						/ 1

October						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25*	26*	27	28	29
30	31					/ 1

Notes:

1) Typical calendar showing predicted peak, inter peak and off peak days.

Key:

25*	BANK HOLIDAY
25	SCHOOL HOLIDAYS
25	PEAK DAY
25	INTER PEAK DAY
25	OFF PEAK DAY

Table 1 – Two-way Vehicular Trips

	Peak Day	*Inter Peak*	*Off Peak*
08:00	9	5	2
09:00	102	57	27
10:00	123	77	37
11:00	131	76	39
12:00	157	91	50
13:00	167	98	55
14:00	190	112	64
15:00	167	102	58
16:00	138	83	45
17:00	134	78	40
18:00	126	74	35
19:00	212	128	37
20:00	27	17	9

7 HIGHWAYS IMPACT

7.1 INTRODUCTION

7.1.1 Following the agreement and understanding of where parking will be located, it was possible to identify the route that vehicles would follow to arrive to the different parking locations, but more importantly, to quantify these trips and assess any potential highways impact caused by the development proposals.

7.2 BASE TRAFFIC DATA

7.2.1 A strategic traffic model for the area of Morecambe and Lancaster has been shared by Lancashire County Council with WSP to assess the potential highways impact by Eden Project North.

7.2.2 The *M6 J33 SATURN* model, which covers the area for Eden Project North, has been built and validated as part of an agreement for a total of £116m from the Housing Infrastructure Bid (HIF) for development of the M6 J33 improvement scheme.

7.2.3 The model has been developed in SATURN version 11.4.07H, for a base year of 2018. Forecast models were developed for 2025 and 2040.

7.2.4 Forecast models were developed for the following scenarios:

- The Do Minimum networks are the same as the base network with the exception of new values of time and operating costs.
- The Do Something networks include transport changes to the M6 J33 as part of the associated HIF proposals.

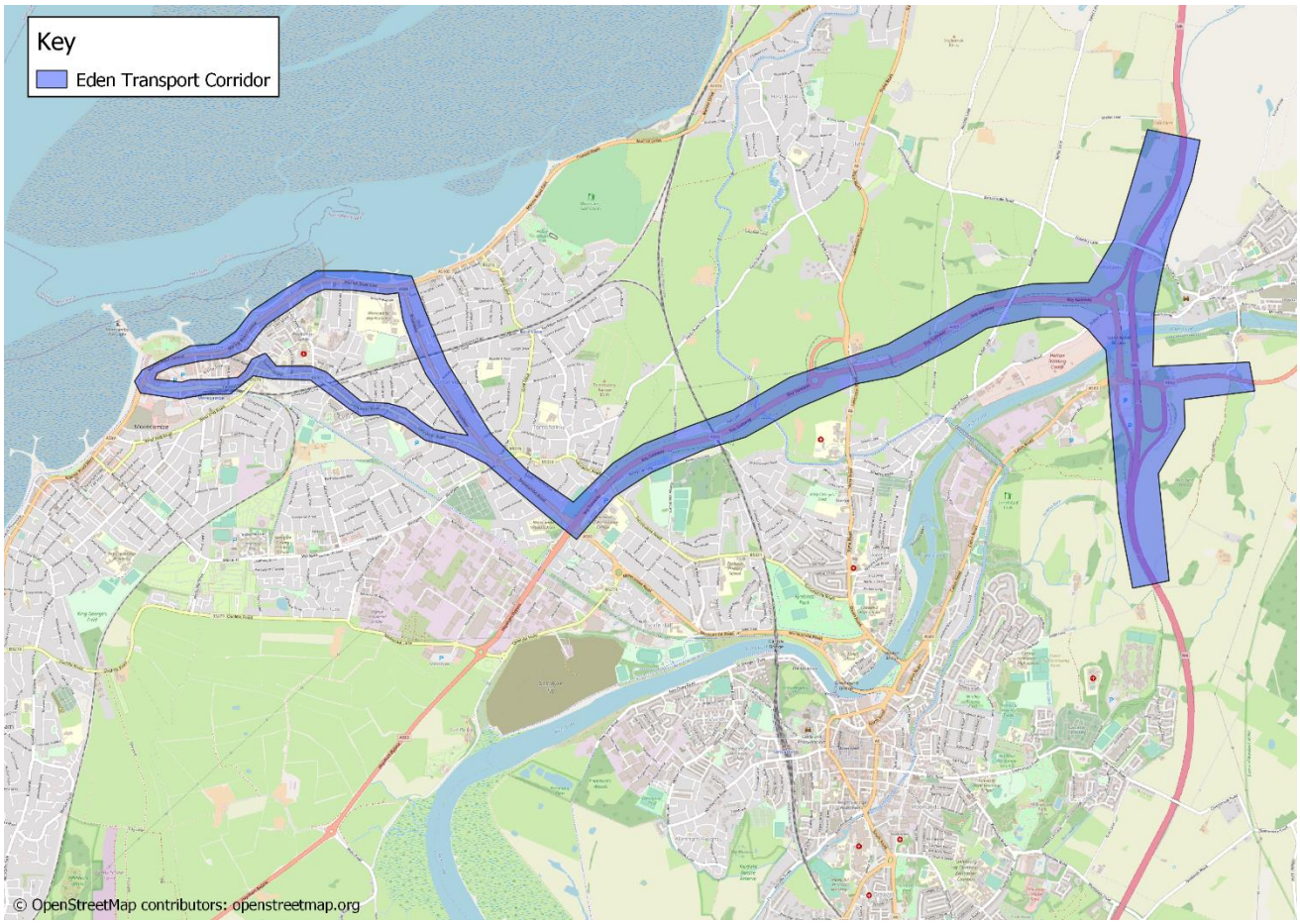
7.2.5 The model has been developed for three average weekday time periods, covering the peak hours and interpeak period as follows:

- AM Peak: 08:00-09:00
- Interpeak: average hour 10:00-16:00
- PM Peak: 17:00-18:00

7.3 INITIAL HIGHWAYS IMPACT

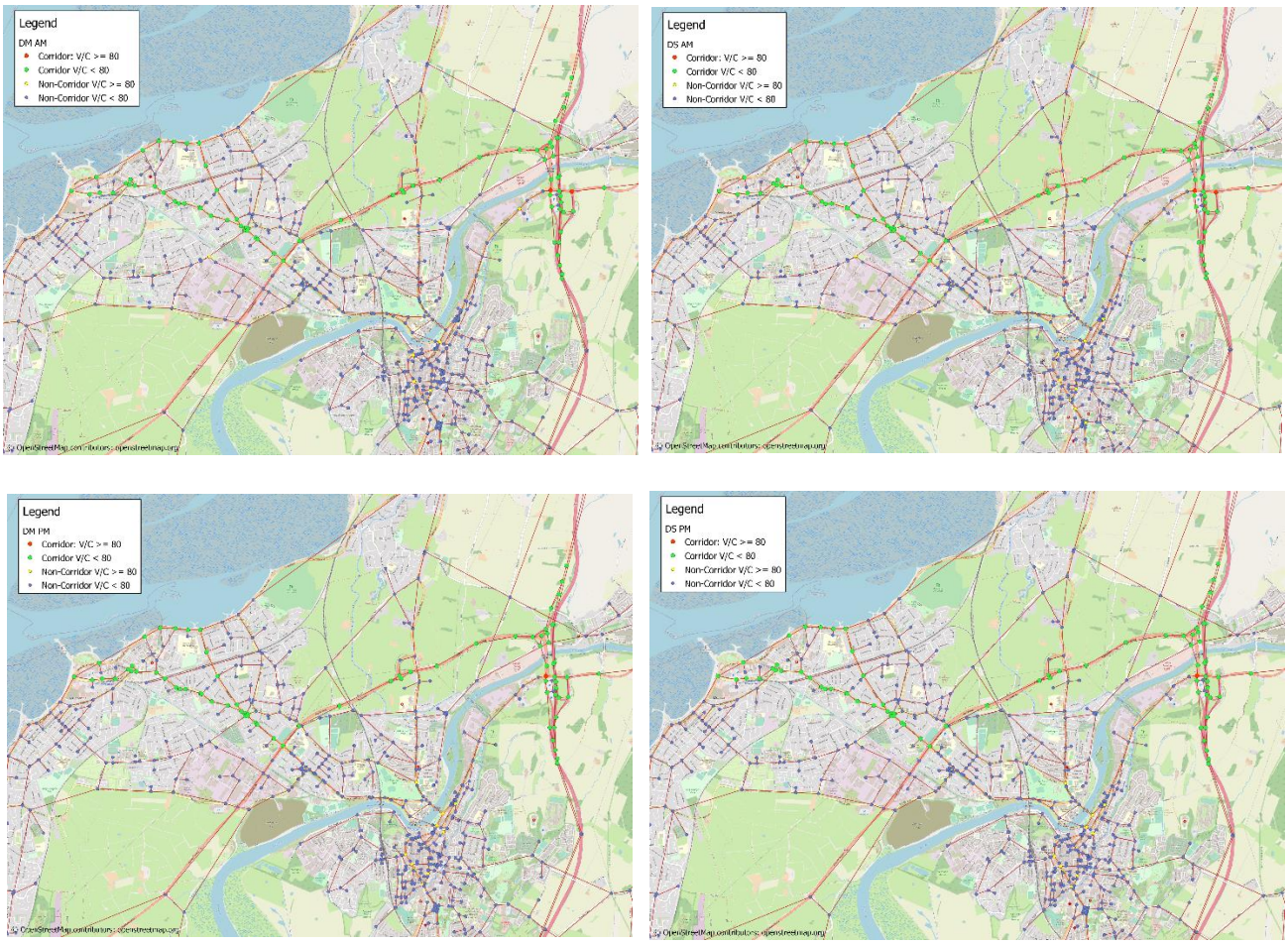
7.3.1 Following the agreed locations of parking across Lancaster and Morecambe, WSP identified the highways corridor likely to be used by Eden visitors as shown in Figure 7-1.

Figure 7-1 - Eden Project North Visitors Highways Corridor



7.3.2 An initial analysis of the corridor looked at the maximum volume over capacity (V/C) ratio turning movements at junctions along the corridor in the 2025 Do Minimum and Do Something scenarios. This analysis, presented in Figure 7-1 found that in all scenarios considered, the junctions along the corridor were operating within capacity in the SATURN model. The only junction with any nodes over 80% volume over capacity in any of the scenarios considered was the M6 J34. On the AM scenarios, both M6 J34 off slip / A683 junctions (both sides of the M6) are above 80%. Whilst on the PM scenarios, only the western recently upgraded junction is above 80%.

Figure 7-2 - SATURN Model V/C Scenarios (2025 DM AM / 2025 DS AM / 2025 DM PM / 2025 DS PM)



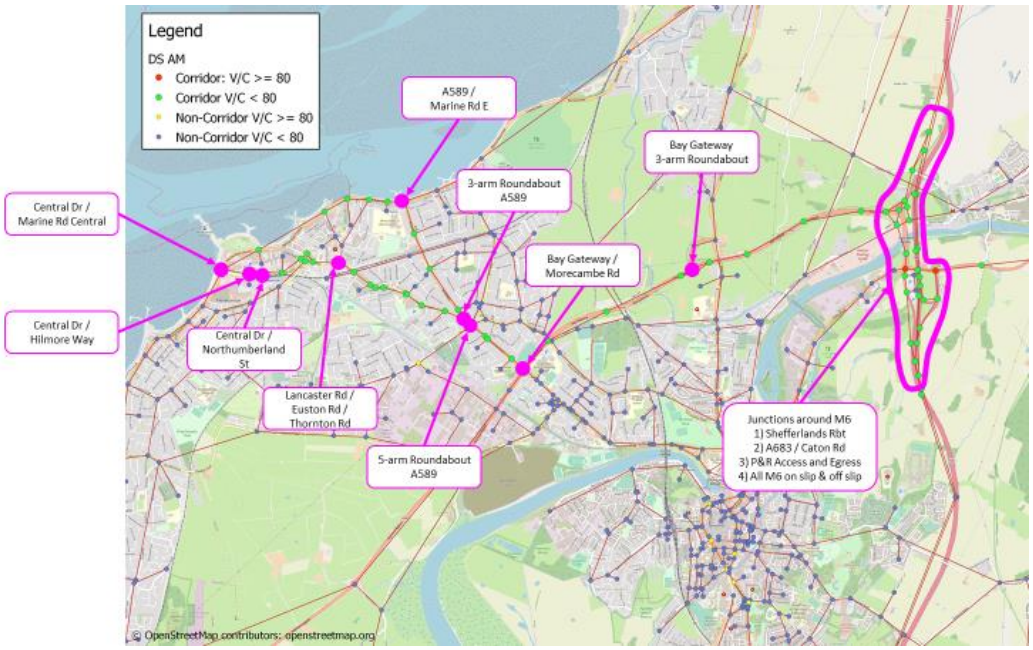
7.4 DETAILED HIGHWAYS IMPACT

7.4.1 To understand the full impact of the development on the highway network, a series of key junctions along the corridor have been selected for further analysis as shown below and in Figure 7-3.

- Central Dr / Marine Rd Central
- Central Dr / Hilmore Way
- Central Dr / Northumberland St
- Lancaster Rd / Euston Rd / Thornton Rd
- A589 / Marine Rd E
- 3-arm Roundabout A589
- 5-arm Roundabout A589
- Bay Gateway / Morecambe Rd
- Bay Gateway 3-arm Roundabout
- Junctions around M6
- Shefferlands Roundabout
- A683 / Caton Rd

- P&R Access and Egress
- All M6 on slip and off slip

Figure 7-3 - SATURN Model Key Junctions

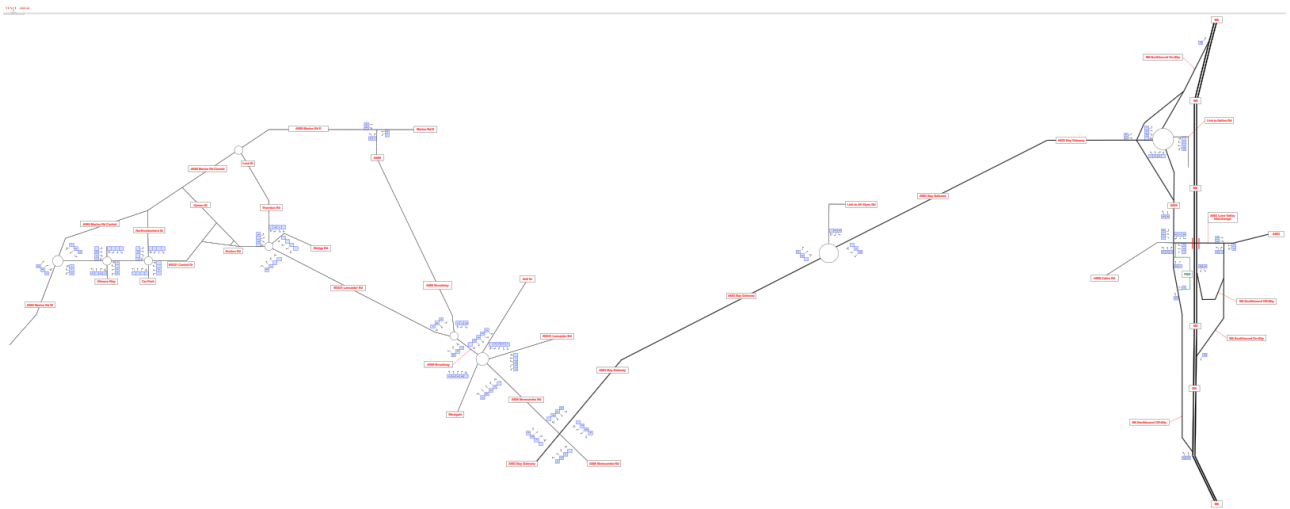


7.4.2 A proportional impact assessment of these key junctions has been done for each of the scenarios. A traffic diagram, as shown in Figure 7-4, was developed for this exercise.

7.4.3 All agreed scenarios have been tested. These are:

- Scenario 004, 005 and 006.
- 2025 DM AM, IP and PM.
- 2025 DS AM, IP and PM.

Figure 7-4 - Highways Proportional Impact Traffic Diagram Example

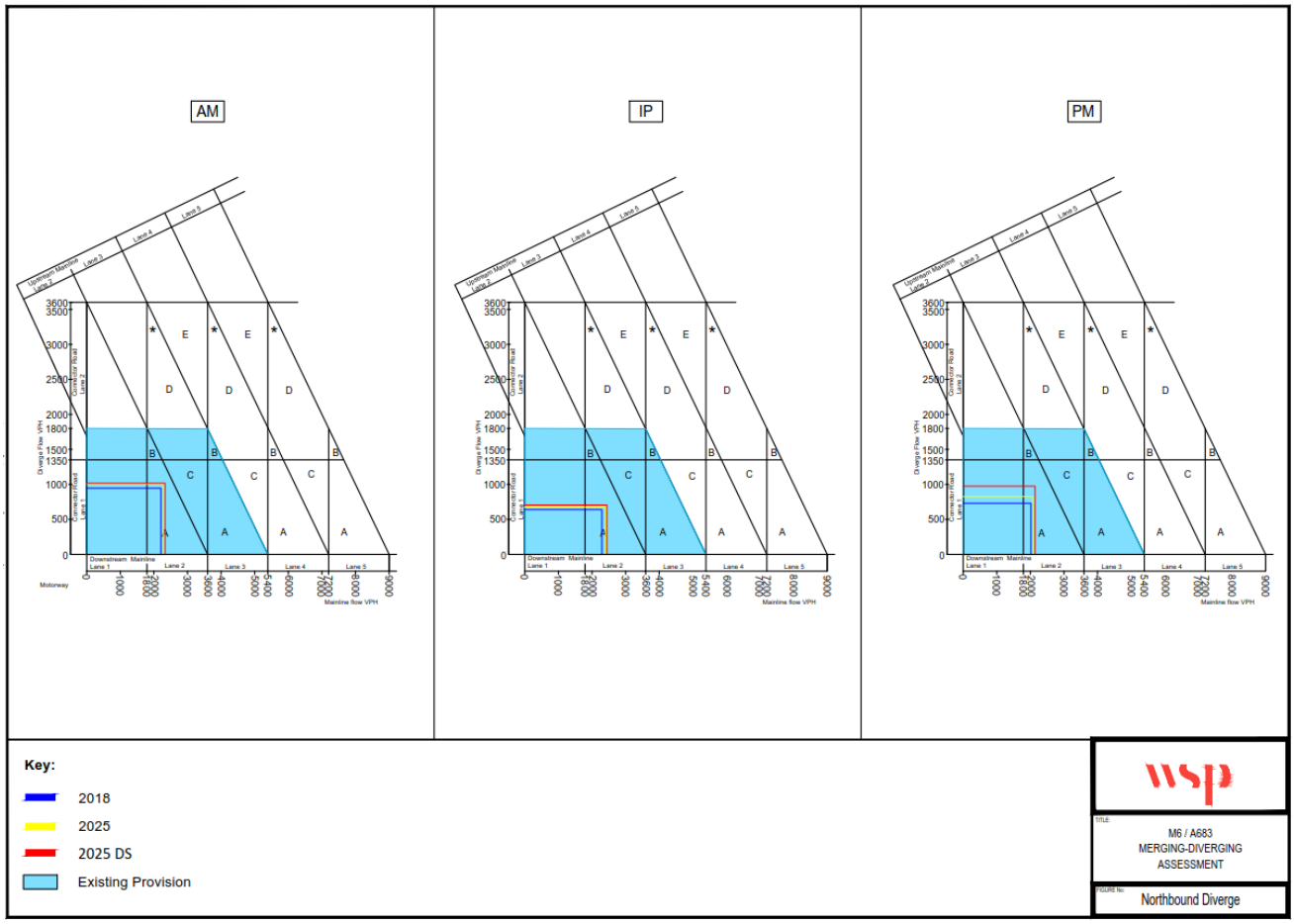


7.4.4 This analysis consisted of comparing the *typical peak* visitor scenarios against the high weekday peak hour flows. It should be noted that the *typical peak* visitor scenario is expected to fall on a bank holiday weekend or a summer weekend. Consequently, a comparison of high weekday flows and peak weekend visitor flows represents a robust worst case scenario. In reality, peak weekend visitor flows should have been compared to a much lower existing weekend flow. Whilst this may have suggested a greater proportional impact, in reality, junctions would have a much greater spare capacity since they have been designed and built to cater for weekday flows.

7.4.5 The analysis of the different scenarios suggest that no significant impact will be caused by the development proposals on any given location across the identified key junctions. Full details for each of the scenarios can be found in Appendix I.

7.4.6 In addition, a merge and diverge assessment of the M6 J34 has also been undertaken. This demonstrated that there is enough capacity to accommodate all Eden visitors at any given time throughout the year on the M6 J34 on slip and off slip roads. As reference, the Northbound diverge is shown in Figure 7-5 below. This demonstrates that the existing provision can accommodate the maximum estimated 152 to 171 car trips per hour generated by Eden. Full details can be found in Appendix I.

Figure 7-5 - M6 J34 Northbound Diverge Assessment



7.4.7 It should also be noted again that a number of different large-scale events such as the Vintage Festival and the Morecambe Carnival, with up to 55,000 visitors per event are organised yearly in Morecambe. These events are accommodated without causing major adverse effects on the local highway network and the wider transport network. The visitors attending these events are unquestionably much higher than the predicted maximum visitor trips generated by Eden Project North on a peak day (3,750).

7.5 SUMMARY

7.5.1 This chapter has assessed the potential development proposals impact on the highway network.

7.5.2 A strategic traffic model for the area of Morecambe and Lancaster has been shared by Lancashire County Council with WSP to assess the potential highways impact by Eden Project North.

7.5.3 Following the agreed locations of parking across Lancaster and Morecambe, WSP identified the highways corridor likely to be used by Eden visitors. An initial analysis of the corridor looked at the maximum volume over capacity (V/C) ratio turning movements at junctions along the corridor in the 2025 Do Minimum and Do Something scenarios. This analysis found that in all scenarios all junctions along the corridor operate within capacity in the SATURN model. With the exception of the recently upgraded M6 J34.

7.5.4 To understand the full impact of the development on the highway network, a series of key junctions along the corridor have been selected for further analysis. A proportional impact assessment of these key junctions has been done for each of the scenarios.

7.5.5 This analysis consisted of comparing the *typical peak* visitor scenarios against the high weekday peak hour flows. It should be noted that the *typical peak* visitor scenario is expected to fall on a bank holiday weekend or a summer weekend. Consequently, a comparison of high weekday flows and peak weekend visitor flows represents a robust worst case scenario. In reality, peak weekend visitor flows should have been compared to a much lower existing weekend flow. Whilst this may have suggested a greater proportional impact, in reality, junctions would have a much greater spare capacity since they have been designed and built to cater for weekday flows.

7.5.6 The analysis of the different scenarios suggest that no significant impact will be caused by the development proposals on any given location across the identified key junctions.

7.5.7 A merge and diverge assessment of all on slip and off slip roads of the M6 J34 also demonstrates that the existing highways provision can perfectly accommodate the maximum estimated 152 to 171 car trips per hour generated by Eden Project North.

AGENDA & MEETING NOTES

PROJECT NUMBER	70083611	**MEETING DATE**	14 June 2021
PROJECT NAME	Eden Project North	**VENUE**	Teams
CLIENT	Eden Project International	**RECORDED BY**	APF
MEETING SUBJECT	Transport Scope, Lancashire CC		

PRESENT	LCC: Neil Stevens (NL), Dave Watson (DW), Andrew Barrow (AB) WSP: Kevin Riley (KR), Alberto Poltz Faggiani (APF) Trivandi: Ashley Holland (AH) Grimshaw: Andy Barnes (AB.G) EPN: Tim Narey (TN)
APOLOGIES	WSP: Jim Outterside (JO)
DISTRIBUTION	As above plus: WSP: Dan Jackson (DJ), James Warrington (JW), Alec Drake (AD)
CONFIDENTIALITY	**Confidential**

ITEM	SUBJECT	ACTION	DUE
1	**Introductions**		
2	**LCC comments from 03/12/2019 meeting** NS confirmed that following the NPPF, LCC would not be asking for new infrastructure that's not required.		
3	**Transport Scope** APF introduced the transport scope and talked through various aspects of this.		
3.1.1	**Proposed Development** NS asked about Eden events and likely number of attendees. WSP confirmed that circa 6 events a year would occur, and that management plans would be in place for each event. However, details of these would not form part of the application. However, WSP would make reference to this within the TA.		
3.1.2	**Transport Principles** NS suggested that north – south traffic not using the M6 should also be considered by WSP in their assessment.		
3.1.3	**Trip Generation and Distribution**		

	NS seek clarification on the catchment area, and whether this accounted for congestion and journey time. NS suggested that TA cannot assume that all staff would travel sustainably. TA will need to clarify what % of overnight trips will be staying in Morecambe, to ensure that the demand can be catered.		
3.1.4	**Parking Strategy** APF clarified that no turnover of the car parks has been assumed. Instead, the number of parking spaces identified and located across various existing car parks would be assigned for a single Eden visitor car throughout the day. The space would become available when this visitor car has left the car park. TN confirmed that no facilities are currently proposed to be constructed at the P&R. Instead, some sort of light kiosk or similar could be provided for staff managing the northern section of the car park being used by Eden.		
3.1.5	**Traffic Capacity Assessment** APF explained the basis of why the predicted vehicular trips are not considered significant by WSP. • Eden Peak Hour vs Highways Peak Hour • Eden Peak Day vs Highways Peak Day • Less than 60 two-way vehicular trips to/from Morecambe per hour on 260 days a year • Less than 100 two-way vehicular trips to/from Morecambe per hour on weekends and school holidays • Existing car parks • Recently upgraded highways network and associated junctions NS suggested that traffic capacity assessment would be required as per any other TA produced.	WSP to prepare further information to be provided at the next meeting.	
3.1.6	**Active Travel and Sustainable Transport** APF briefly introduced the strategy		
4	**Next meeting** will cover traffic capacity assessment, servicing and refuse strategy, TROs and Net Zero aspirations.		

NEXT MEETING

Wednesday 23rd June.

Disclaimer: These meeting notes reflect the author's recollection of the discussions held during the meeting detailed above. Should you consider these meeting notes to be in any way inaccurate or require any additions, amendments or have comments generally on the content, these must be submitted to the author in writing within five working days of the date of this document. If no writer responses are received within this period, this version of the note will be deemed the official record of the meeting.

AGENDA & MEETING NOTES

PROJECT NUMBER	70083611	**MEETING DATE**	23 June 2021
PROJECT NAME	Eden Project North	**VENUE**	Teams
CLIENT	Eden Project International	**RECORDED BY**	APF
MEETING SUBJECT	Transport Scope, Lancashire CC		

PRESENT	LCC: Neil Stevens (NL), Andrew Barrow (AB) WSP: Kevin Riley (KR), Jim Outterside (JO), Alberto Poltz Faggiani (APF) Trivandi: Ashley Holland (AH) EPN: Tim Narey (TN)
APOLOGIES	LCC: Dave Watson (DW)
DISTRIBUTION	As above plus: WSP: Dan Jackson (DJ), James Warrington (JW), Alec Drake (AD)
CONFIDENTIALITY	**Confidential**

ITEM	SUBJECT	ACTION	DUE
1	**Introductions**		
2	**Minutes from last meeting** NS confirmed that comments will be issued to WSP shortly.		
3	**Transport Scope** APF pick up the transport scope where it was left on last meeting 14/06/2021.		
3.1.1	**Active Travel and Sustainable Transport** NS expressed LCC concerns in regards of locating the coach and shuttle drop off and pick up points on an adopted highway (Marine Rd Central). Safety of existing and future users should not be compromised. Similarly, by having these on the adopted highway, it will be difficult to enforce that these are only used by Eden vehicles. Instead, a layby into the site could be used by Eden exclusively. WSP will consider the optimum solution considering the above issues but also constraints such as land ownership and the constraints of the Midland Hotel and the war memorial. The TA will describe in detail the coach strategy, expected numbers etc and set out how the area will be managed to ensure safety of all users of the area.		

3.1.2	**Servicing** APF & KR confirmed that the TA will outline the detailed servicing approach, routes, swept paths, frequency etc. However, the intention is to keep the existing signalised junction (Marine Rd Central / Northumberland St) as the main access point for servicing, refuse, maintenance and emergency vehicles. Subject to appropriate TROs. APF confirmed that Eden has met on several occasion to RNLI to understand and accommodate their access requirements. APF confirmed that Eden is also working in coordination with the Midland Hotel to combine both servicing strategies.		
3.1.3	**Net Zero Aspirations** APF briefly presented the net zero aspirations. Explained how a series of internal and external interventions would come forward over the coming years as it happened at Cornwall.		
3.1.4	**Various** Electric vehicles – LCC suggested to engage with Peter Bell, Chris Nolan and Andrew Varley. Road safety review (PIAs) to include vicinity of development proposals. LCC suggested that a Stage 1 Road Safety Audit (by independent auditor) be undertaken of the new crossing proposals and any amendments to the public highway adjacent to the site.		
3.1.5	**Traffic Capacity Assessment** APF explained the basis of why the predicted vehicular trips are not considered significant by WSP. • Eden Project North aims to work with the existing infrastructure where possible • Three visitor seasons • Time controlled advanced ticketing booking system • Number of visitors capped at 600 per hour • Car occupancy rate of 3.0 • LCC commissioned Atkins to develop a Saturn model. This included the three single hour time periods representing the busiest peak hours of the highway network • WSP understands highway peak hour is the one used to support the Junction 33 HIF works during 2018 and 2019. Weekday AM (08:00-09:00) and PM (17:00-18:00) • EPN peak day and hour would fall outside highways network peak day and hour.		

	• Existing infrastructure = theoretical capacity for those trips. Recently upgraded junctions. • Maximum peak of 207 two-way vehicles (weekend 14.00-15.00) APF presented the VoC and % traffic impact at the M6 J34 based on the LCC Saturn model (2025 Base scenario). Concluding that Eden would not have a significant vehicular impact at any specific location. KR confirmed that WSP believes the data behind the analysis is strong and robust to support the conclusion. JO confirmed that the presence of the time controlled advanced booking system will allow Eden to control traffic demand. NS suggested that WSP needs to be comfortable and have certainty that the evidence base used for the analysis can be scrutinised by LCC and others. Recognising that Saturn is a strategic tool which may not account for localised delays and queueing that could be raised by local community. WSP will present a comprehensive evidence base within the TA, building upon the evidence contained within the Business Case submission.		
4	**AOB** WSP are happy to share further information on specific aspects which have been raised by LCC at this meeting and the previous meeting (e.g. the derivation of the 3.0 persons per car figure for average car occupancy).		

Disclaimer: These meeting notes reflect the author's recollection of the discussions held during the meeting detailed above. Should you consider these meeting notes to be in any way inaccurate or require any additions, amendments or have comments generally on the content, these must be submitted to the author in writing within five working days of the date of this document. If no writer responses are received within this period, this version of the note will be deemed the official record of the meeting.

AGENDA & MEETING NOTES

PROJECT NUMBER	70074551	**MEETING DATE**	07 April 2021
PROJECT NAME	Eden Project North	**VENUE**	Meeting venue
CLIENT	Eden Project International	**RECORDED BY**	APF
MEETING SUBJECT	Eden Project North		

PRESENT	Kristian Marsh (KM), Warren Hilton (WH), Neville McKenzie (NM), Jim Outterside (JO) and Alberto Poltz Faggiani (APF)
APOLOGIES	Kevin Riley (KR)
DISTRIBUTION	As above plus: Click to type
CONFIDENTIALITY	**Confidential**

ITEM	SUBJECT	ACTION	DUE
1	Introduction. APF presented a series of slides describing the Eden Transport Strategy, the proposed usage of the M6 J34 P&R as well as predicted maximum number of vehicular trips per hour and day.		
2	WH agreed with the types of visitors, but raised concerns about J34 P&R users who may arrive sooner/later than booked, and reliance of EPN on future transport interventions such as the HIF M6 J33 P&R JO clarified that the time ticketing will include this. As the assigned time slot is indicative and expected to be followed by the majority of visitors. Similarly, the future transport interventions such as the J33 P&R are not required for *"Year 1"*. They are more of a future aspiration to achieve the Net Zero Agenda across Morecambe town centre.		
3	NM agreed with the traffic profile and trip generation and distribution principles. However, raised the uncertainty of the assumptions over the sensitivities of the Eden Transport Vision. NM also suggested that HE are not fully aware of the validation process of the Lancashire CC Saturn model. He also asked for timescales. JO confirmed the intention of submit a planning application by the end of summer. WSP will produce a TA scope and share with HE.	WSP	
4	WH raised questions about how the M6 J34 P&R would be secured by EPN and how Lancaster would use this facility in the future. As well as		

	the potential risk of traffic accessing the P&R to queue back into the off slip roads. JO confirmed that a Parking Strategy document is being prepared to agree the dynamic parking solution with both Councils. And that the proposed use of the P&R would not exceed the existing parking spaces. Hence the junction and off slip roads should be able to accommodate that demand. Particularly when EPN peak hour and day sits outside typical highways network peak hour and day.		
5	WH acknowledged that traffic travelling into Morecambe is not a big concern for HE. But usage of the M6 J34 P&R facility is. Particularly in the future once the Lancaster City Movement Strategy is published and approved.		
6	NM suggested to do a traffic forecasting exercise over time. Exploring how multi-modal share would fluctuate over time.		
7	KM needs evidence on how realistic the Eden Transport Strategy is. How will this be enforced? JO suggested that the transport solution needs to be realistic in order for EPN to submit a successful planning application, but more importantly, achieve their goal of regenerating the town using a unique and pioneering sustainable approach.		

NEXT MEETING

An invitation will be issued if an additional meeting is required.

Eden Project North

Highways England Comments on WSP Scoping Note of 28/04/21

Highways England has been appointed by the Secretary of State for Transport as a strategic highway company under the provisions of the Infrastructure Act 2015. Highways England is responsible for operating, maintaining and improving the strategic road network (SRN) in England, in accordance with the licence issued by the Secretary of State for Transport (April 2015) and government policies and objectives.

Highways England's approach to engaging with the planning system is governed by the advice and guidance set out in:

The Strategic Road Network Planning for the Future - A Guide to Working with Highways England on Planning Matters (2015).

The document is written in the context of statutory responsibilities as set out in Highways England's licence, and in the light of government policy and regulation, including the:

- National Planning Policy Framework (NPPF);
- Town and Country Planning Development Management (Procedure) Order (England) 2015 (DMPO); and
- DfT Circular 02/2013 The Strategic Road Network and the Delivery of Sustainable Development ('The Circular').

As a statutory consultee in the planning system, Highways England has a regulatory duty to co-operate. Consequently, Highways England are obliged to consider all proposals received and to provide appropriate, timely and substantive responses.

The SRN in Lancaster comprises specifically of Junctions 33, 34 and 35 of the M6 motorway; a route of national significance that links the Midlands, North West England and Scotland.

We note that prior to the submission of a planning application, Eden Project International Limited ('The Eden Project') will undertake an EIA, including Transport Assessment (TA) through their consultants, WSP / Indigo Planning. We further note that proposed development would attract a maximum one million visitors per annum, with an estimated annual averge visitor number of 760,000. Although the site is remote from the SRN itself, this level of patronage may have implications for the SRN.

Highways England first provided scoping comments on this proposal in July 2019 and, subsequently, a further scoping exercise is now underway. As such Highways England now provides comments on the Environmental Statement (ES) scoping note that has been produced by WSP dated April 2021.

Highways England EIA Scoping Response July 2021

To recap, Highways England responded to the EIA Scoping request on 5 July 2019 and noted that whilst the site was remote from the SRN, the number of visitors may then have implications for its operation, as such a number of key topics were then identified.

The site itself within Morecambe is allocated for leisure uses in the current Lancaster Local Plan, which has since been adopted. However, our previous concerns remain that the transport evidence base supporting the now adopted Lancaster Local Plan was not robust. Indeed, these concerns extend to there being no evidence of the wider implications of both the City and County Council's separate ambition to remove vehicle traffic from a section of Morecambe promenade linked to the Eden project North Site as set out within the Lancaster Highways and Transport Masterplan.

The scoping note set out ten principles which form the transport vision for the site (and are repeated within this Transport Scoping Note) which can be given below for ease of reference:

1. Eden Project North aims to work with the existing transport infrastructure – including the use of the M6 junction 34 park and ride facility;
2. Eden Project North aims to support future transport developments where multiple schemes can create an argument for larger-scale improvements;
3. Eden Project North aims to positively influence circulation routes in and around the town of Morecambe, encouraging pedestrianisation and inspiring people to spend more time in different areas;
4. The baseline for the planning horizon is 2025+, with a vision towards 2030;
5. Last two miles – no fossil fuel vehicles around the site;
6. Pedestrianisation of the Prom;
7. The journey should be joyful;
8. Visitors that make a special effort to travel to the destination sustainably will be rewarded by reduced entry prices and other incentives; and,
9. Eden Project North's transport vision extends as far as the perimeter of the project site but aims to be flexible enough to allow for collaboration in parallel with neighbouring infrastructure.

The above was then accepted by Highways England as a general approach to the development, although the use of the Junction 34 of the M6 as a park and ride facility was highlighted as potentially increasing traffic movements to and from the SRN.

The general approach to the EIA based upon the IEMA Guidance was accepted, although further clarification would be needed around the proposed expansion of the existing park and ride at Junction 34 of the M6.

The use of the Morecambe Traffic Model was accepted in principle although any data must have been collected after the opening of the Bay Gateway.

It was also highlighted that the construction phase is fully assessed along with the Construction Traffic Management Plan.

In terms of the forthcoming Transport Assessment (TA), we stated that we expected the forthcoming Scoping Report to include the following:

- Details of the road network and junctions to be assessed;
- Trip generation and distribution, and
- Modelling tools to be used to assess the impact.
- Further details relating to multi modal trip rates and visitor numbers should also be included and Highways England also requested a sensitivity test should the site be accessed by 100% private cars as a more conservative estimate of the modal share.

In addition, we also requested that an assessment of the slip roads at Junction 34 of the M6 is also included, with a further list of elements to be included within any Transport Assessment (TA) as follows:

- Baseline assessment of the current conditions;
- Planning Policy context;
- Sustainable access appraisal;
- Details of the development proposals;
- Trip generation and distribution;
- Baseline and forecast year traffic flows with and without the development, and
- Highway impact assessment.

Whilst being supportive of the wider vision to promote sustainable travel to and from the site and the linkages with the wider vision for the pedestrianisation of the promenade, the site does rely on private cars then using the park and ride facility at the M6 junction, with a potential for additional spaces being provided by Lancashire County Council.

The Concern raised by us was therefore not only how this proposal would impact upon Junction 34 of the M6, but also, the wider impact of the Local Plan, the potential for traffic from south Lancaster to use this junction to access the city centre as well as this junction becoming a park and ride for most visitors to Morecambe.

Highways England Comments on WSP Environmental Statement Scoping Note of 28/04/21

It is stated that the application will be accompanied by an Environmental Statement (ES) which will consider both a Baseline scenario as well as ‘With Development’ scenario, along with any cumulative effects. Chapter 14 of the ES will set out the Traffic and Transportation element, including construction, with a supporting Transport Assessment (TA) and Travel Plan (TP).

This is therefore accepted and we have no further comment. We now comment on the following sections of the ES scoping document:

Transport Assessment – Existing Conditions

This will include the existing facilities and conditions for active travel, public transport and the operation of the highway network. This is considered reasonable although any assessment of existing public transport should also include a review of available capacity and the ability for any existing services to accommodate additional demand.

A review of the previous five years accident data is proposed, and this is considered acceptable and should include the SRN.

Transport Assessment - Proposed Development
This will set out key details of the development including seasonality, visitor and staff numbers as well as how the site will operate. This is reasonable although we would wish to see full details regarding the visitor and staff numbers to ensure that it is clear how they have been derived and are consistent across all supporting documents.

Transport Assessment - Transport Principles
This will set out how the development will work including control and influence over visitors travel mode choice, origin and time of arrival. This is welcomed, although the trip generation should not focus solely on the arrival time / length of stay at the development as some visitors may wish to arrive early or stay later and use other facilities within Morecambe or even stay overnight.

This element will be a key consideration in agreeing any trip generation as such any measures proposed will need to be robust and enforceable to ensure a level of comfort to any numbers that are then agreed.

Trip Generation and Distribution
The trip generation will use information from the Outline Business Case (OBC) and is based upon various datasets from similar sites, leisure consultant advice and tourism data, with the key figures being given as follows:

- 76% of visitors will be Day visitors, with 24% being overnight visitors who will either stay in Morecambe or in the local area;
- The mode share will vary, but on average the car modal split is between 68% and 78%, and
- A total of 3 passengers per car has been assumed.

It is noted that the sensitivity assessment requested within the response to the EIA scoping report, whereby 100% of visitors arriving by car is not being undertaken due this being highly unlikely to occur in practice due to control over ticket sales.

Whilst this is potentially acceptable it is stated that the control could be via financial incentives to use non-car modes of travel, and as mentioned above any measures to control the modal shift and arrival times etc. must be robust and enforceable to ensure compliance. We would therefore wish to see further details before this can be accepted.

Active Travel and Sustainable Transport Strategy

This will set out the existing facilities for pedestrians, cyclists and public transport along with opportunities for travelling to the development by these modes. It will also set out enhancements and incentives to travel by active modes of travel, such as a proposed shuttle bus service.

This is an acceptable approach although we would highlight the following:

- The capacity of the existing facilities along with any enhancement must be checked against the level of demand, particularly in the case of public transport, when there may be peak periods of useage;
- The given mode share must be checked against the level of provision to ensure that it is sensible and achievable given the level of supporting infrastructure;
- The funding for any new or enhanced level of public transport must be given so that it can be understood whether this is a "permanent" addition or could be a risk of being discontinued?

Parking Strategy

A dynamic parking solution has been agreed with the Local Authority whereby some underutilised parking with Morecambe town centre would be used, along with the park and rise site at Junction 34 of the M6. It is envisaged that of the 162 parking spaces given in the OBC, 50% would be within the town centre and 50% would be at the park and ride site.

It is stated that a separate Eden parking strategy document will be agreed with both Lancaster City and Lancashire County Councils as car park owners. We would also request that Highways England should also be consulted on this document given the potential for an impact upon the SRN at the park and ride site.

We find this approach to be acceptable in principle, although further details in terms of capacity (both at the park and ride and within Morecambe), impact upon the SRN and how this will be controlled is required before it can be accepted. Rather than be quoted in an aspirational context, the specifics of how this will work in practice (particularly in terms of managing all traffic at the Junction 34 park and ride site) needs be demonstrated. Highways England remains concerned as to how the Junction 34 park and ride may operate in future if measures are taken to reduce parking capacity within Morecambe itself coupled with a rise Morecambe visitor demand associated with a revival of the resort.

Visitor Groups Strategy

This will set out how groups arriving by coach will be managed, and we have no further comment on this approach.

Servicing and Refuse Strategy

This will set out how servicing would be managed along with any associated TRO's, and we have no further comment on this approach.

Traffic Capacity Assessment
The Lancaster SATURN model built by Lancashire County Council (originally developed as part of the Heysham Link Road / Bay Gateway scheme, but now being updated to assist in the development of the M6 Junction 33 relocation project associated with the County Council's South Lancaster Growth Catalyst Housing Infrastructure Fund [HIF]bid) has been used and from the work undertaken at the OBC stage (reviewed below) it is stated that the vehicular trips generated are not significant compared to baseline and future traffic flows (the impacts being outside of the normal highway network peaks). Therefore, it is not proposed to undertake any junction capacity analysis beyond a merge / diverge assessment at Junction 34 of the M6.

However, as set out in our review of the OBC traffic data below, further information is required before we can agree that no operational assessment of Junction 34 of the M6 is required.

Furthermore, it should be noted that Highways England has not yet been consulted on / approved the updated Lancaster SATURN model / modelling of the HIF schemes and Local Plan growth, which is a funding caveat of the South Lancaster Growth Catalyst HIF funding award in principle.

Construction Traffic Management Plan
A Construction Traffic Management Plan (CTMP) will be provided setting out numbers and routes of construction vehicles and this is considered an acceptable approach, and any routing must be extended to include the SRN as appropriate.

Nett Zero Aspirations
Based upon the ten Transport Aspirations of the Eden Project a set of interventions and solutions will be submitted outlining how these will be met over time, as not all can be achieved at "day one". This is an acceptable approach that we look forward to commenting on when completed.

Travel Plan
The Travel Plan will set out measures to encourage sustainable travel and will form a Framework covering all land uses on the site with a full Travel Plan being produced at the time of occupation.

This approach is acceptable although the submitted Travel Plan should also include timescales for implementing any measures, targets for increasing sustainable travel modes over time, as well as any penalties should the mode share assumed not be achieved. As previously stated, any measures introduced to control the mode share by visitors will need to be robust and enforceable.

Highways England Comments on Outline Business Case Highways Impact

Two Way Vehicle Trips
A table is included giving the two way vehicular trips based upon the maximum building throughput, and it is not clear how these have been derived and they will clearly need to be updated as part of the TA process, but are given below for reference.

Table 1. Two Way Vehicle Trips

Time	Peak day	Inter Peak	Off Peak
0800	9	5	2
0900	102	57	27
1000	123	77	37
1100	131	76	39
1200	157	91	50
1300	167	98	55
1400	190	112	64
1500	167	102	58
1600	138	83	45
1700	134	78	40
1800	126	74	35
1900	212	128	37
2000	27	17	9

As stated, the above figures were provided at the OBC stage and as such the most recent data and a full justification must be included within the TA

Detailed Highways Impact

WSP have then provided an analysis of key junctions along the corridor and focusing only on the SRN it is stated that based upon a merge / diverge analysis the existing provision can accommodate the additional 152 to 171 car trips generated by the Eden project.

Although, as given above it is not clear how the above figures have been derived and further information is required before we can accept the conclusion that no detailed junction modelling of Junction 34 of the M6 is required.

Summary & Conclusions

- The assessment of the existing public transport conditions should also include an assessment of available capacity to ensure that any future passenger demand can be accommodated;
- Full details of visitor numbers must be provided along with a predicted length of stay and modal choice. Whilst it is stated that the development can influence visitor mode choice, this must be fully justified, be robust and enforceable;
- The assumption that 76% of visitors will be a day visit and 24% will be staying in the area appears to be reasonable, although full justification will be required before it can be accepted;
- In terms of active travel, the mode choice of visitors should be cross referenced against the available provision bymode to ensure that the demand can be accommodated, public

transport routes should have sufficient capacity on buses to accommodate any peak times and the funding details of any public transport enhancements should be provided so that it can be understood if they will continue or would be a risk of being discontinued in the future;

- The use of underutilised parking within Morecambe is agreed along with the use of the park and ride at junction 34, although full level of impact will need to be set out in the TA. In addition, due to the potential for an impact upon the SRN, Highways England should be consulted on the Eden parking strategy document;
- Whilst a high level assessment of the traffic impact has been included from the OBC submission which concludes that no detailed junction analysis is required, we would need to see further justification in terms of additional vehicle movements before this can be agreed;
- Whilst a merge / diverge assessment has been shown from the OBC submission this will need to be updated with the latest traffic flow data before it can be agreed;
- The Travel Plan should contain meaningful measures to ensure that the mode choices assumed are met and have a series of penalties should the targets not be achieved.

We hope that our comments are useful and look forward to further engagement as the transport assessment develops.

Highways England
30th June 2021

Eden Project North Scoping

Highways England Comments on WSP Parking Strategy and Traffic Capacity Assessment Documents dated June 2021

Highways England has considered the following documents as prepared by WSP in response to our earlier scoping comments of 30th June 2021 in relation to the WSP ES Scoping Report:

- Eden Parking Strategy dated 14 June 2021, and
- Traffic Capacity Assessment Technical Notes dated 22 June 2021.

We now comment on each of the above as follows:

Eden Parking Strategy

We have looked at the information in Tables 1 and 2 relating for Eden Visitors per Day expected parking requirements by season and Proposed Parking Provision for Eden Visitors and Staff respectively.

The above assumptions would seem to be reasonable in principle although the *existing* demand at these sites will need to be verified, particularly during the peak periods, to ensure that the additional demand can be accommodated.

It is stated that the Eden North project will operate a time-ticketing system to ensure that the capacity is not exceeded, with visitors being directed to a specific car park. This is accepted in principle, although the detail will need to be agreed to avoid the situation whereby visitors potentially arrive early, and have to wait, as well as the control to ensure the space is either reserved (if so how is this managed) or is still available at the required time. Indeed, what would happen if visitors arriving to park missed their time slot (e.g. due to travel delay) and so needed to utilize the car parking space for later and longer than anticipated. Furthermore, should visitors to the EPN park at J34 for their visit (say, fixed for the morning), but then decide to spend all day in Morecambe, this may jeopardise parking availability for other at peak times and may in turn affect the functioning the Park & Ride as a whole.

The Park and Ride bus will use the existing facility at the M6 junction and drop off within Morecambe centre, which is considered reasonable, although again the control and availability of parking spaces will need to be reviewed and agreed.

It is stated that accessible parking will be provided within the existing car parks identified above and can be investigated at a future date. However, it should be identified at this stage whether there are sufficient levels of suitable parking for the project and that there are also suitable linkages from the car parks to the Eden Project for less mobile visitors, who may not wish to walk longer distances to access the development.

Therefore, further explanation and detail as to how this will operate is required. This is important, as there appears to be no actual evidence of any agreement with LCC / Lancaster City Council as to exactly how parking will be managed.

Therefore, whilst the above is fine as a principle, the following will need to be considered by Eden Project / WSP before it can be accepted:

- The demand will need to be demonstrated and evidenced through the Transport Assessment;
- The existing demand at the car parks will need to be demonstrated to ensure that there is sufficient capacity for the additional Eden North visitors;
- Once a time ticket has been issued to a particular visitor, how is that space reserved, and how will this system will operate;
- Is there a limit on the length of stay associated with the time ticketing system, as there could then be more demand for parking than is forecast, if you have to accommodate not only people visiting the project but also those who have stayed longer and are now either still within the site or are visiting other facilities in Morecambe;
- The demand for and existing capacity of accessible parking should be investigated at this stage.
- Seeking the agreement of the parking area owners and local highway authority as to how this will operate.

Traffic Capacity Assessment Technical Notes – 22 June 2021

The WSP report sets out the traffic capacity assessment within various steps, and for ease of reference we can comment numbered against the corresponding statement made within the on each step as follows.

1. The core principle is set out that the Eden Project will work with the existing infrastructure where possible, this is accepted, although mitigation may need to be provided if required;

2. The Peak, Inter Peak and Off Peak seasons seem to be reasonable, and the supporting highway infrastructure will need to be assessed so that it can accommodate the most reasonable worst case scenario;

3. The time-controlled advanced ticketing system will allocate an arrival slot based upon the origin and method of travel. This is considered to be acceptable in principle although as mentioned above further details will be required in terms of exactly how this will operate and the methods of control and enforcement;

4. The number of visitors per hour is based upon the capacity of 750, although around 600 is expected, this seems reasonable, although any demand forecasting will need to be based upon a realistic worst case scenario;

5. A car occupancy of 3 would seem to be a reasonable assumption, although the Parking Strategy report, from a simple check between visitor numbers and car parking spaces, indicates around 5 visitors per car. Whilst we appreciate that a proportion of visitors will arrive by non-car modes, this will need to be fully evidenced in the Transport Assessment;

6. The mode share is given as varying according to the visitor type and this is accepted in principle and will be reviewed through the Transport Assessment. The Trip generation and Distribution Note mentioned has not been provided for our review;

7. As mentioned previously, Highways England has not had sight of the Lancaster SATURN model by LCC and none of its outputs can as yet be agreed by Highways England. Further detail is required before it can be agreed that an assessment of the SRN junction is not required;

8. Same comment as for (7) above, although the exact requirement of any modelling required at the SRN will be agreed as required;

9. Whilst the Eden Project peak days may fall outside of the network peaks, the impact upon available parking spaces both in Morecambe and at the Park and Ride may be greater at weekends in the summer? This will need to be covered with in the Transport Assessment;

10. As above, whilst the peak hour may be outside the network peak hours the availability of parking spaces will need to be assessed;

11. It is stated that the Eden project will use currently underutilised car parking both within Morecambe and at the Park and Ride site, and again this will need to be evidenced before it can be agreed;

12. The Eden project is given as generating 207 two way vehicle movements between 14.00 and 15.00 on a peak day, and again this will need to be evidenced within the Transport Assessment before it can be accepted;

13. The exact requirement for any highway impact at the SRN, will be reviewed through the Transport Assessment;

14. The comments regarding the operation of the M6 sliproad are noted, although as above, the exact requirement for any highway impact at the SRN, will be reviewed through the Transport Assessment, and

15. The number of Eden North trips are noted, and as previously mentioned, will be reviewed through the Transport Assessment.

Again, we hope that our comments are useful and look forward to further engagement as the transport assessment develops.

Highways England
16th July 2021

Appendix C

PERSONAL INJURY ACCIDENT DATA

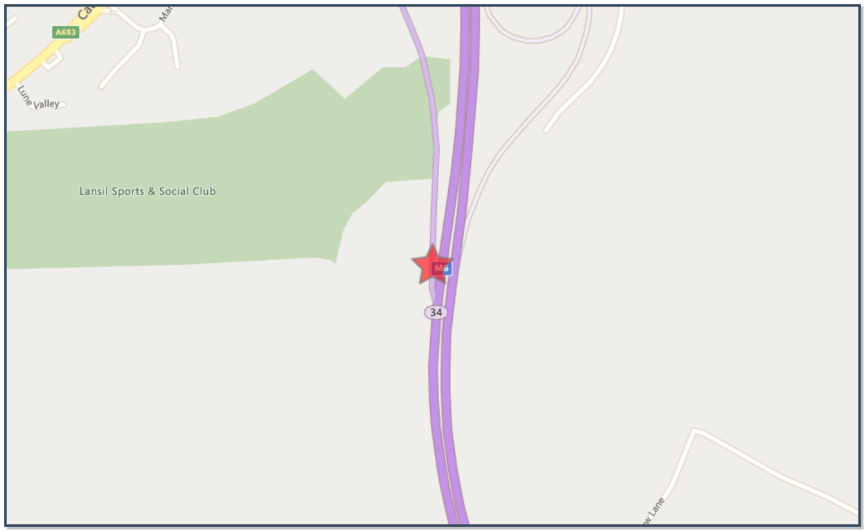
PUBLIC

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Validated Data

Crash Date:	Thursday, May 09, 2019	**Time of Crash:**	7:21:00 AM	**Crash Reference:**	**2019040852600**

Highest Injury Severity:	Serious	**Road Number:**	M6	**Number of Casualties:**	2
Highway Authority:	Lancashire			**Number of Vehicles:**	1
Local Authority:	Lancaster City			**OS Grid Reference:**	349586 463558
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Slip Road				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	6	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None

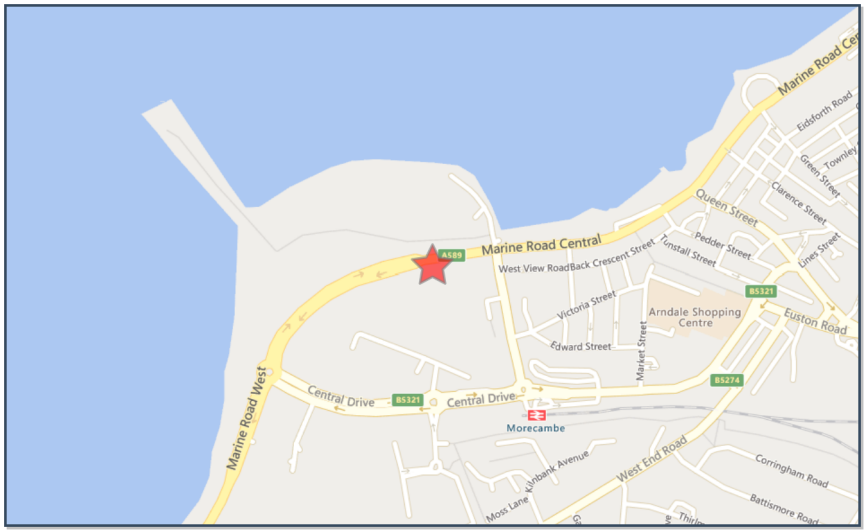
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other
1	2	Serious	Vehicle or pillion passenger	Male	26 - 35	Unknown or other	Unknown or other

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Validated Data

Crash Date:	Wednesday, November 13, 2019	**Time of Crash:**	5:22:00 PM	**Crash Reference:**	**2019040898399**
Highest Injury Severity:	Serious	**Road Number:**	A589	**Number of Casualties:**	1
Highway Authority:	Lancashire			**Number of Vehicles:**	3
Local Authority:	Lancaster City			**OS Grid Reference:**	343048 464405
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Did not impact	Journey as part of work	None	None
2	Car (excluding private hire)	9	Male	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
3	Car (excluding private hire)	-1	Unknown	Unknown	Vehicle is parked in the carriageway	Back	Other	None	None

Casualties

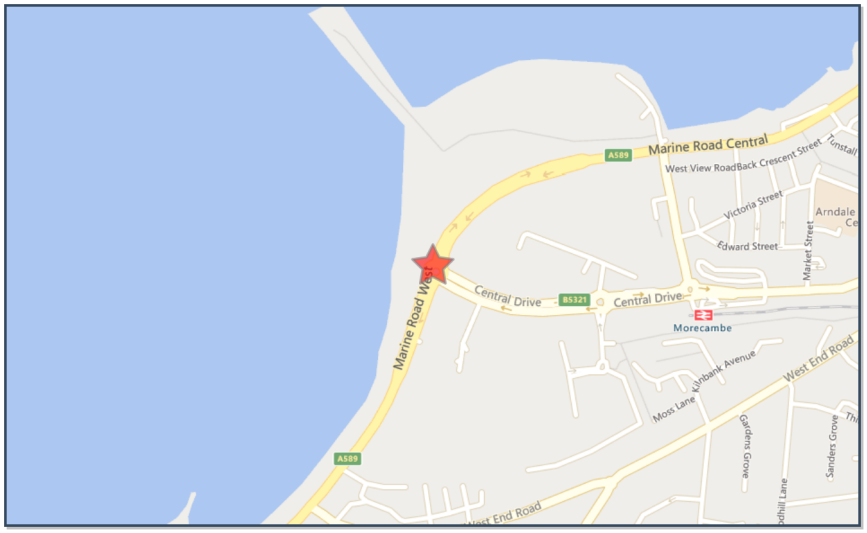
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	Over 75	Unknown or other	Unknown or other

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Provisional Data does not include vehicle and casualty records

Crash Date:	Friday, June 19, 2020	**Time of Crash:**	6:18:00 AM	**Crash Reference:**	**2020040964354**

Highest Injury Severity:	Serious	**Road Number:**	A589	**Number of Casualties:**	2
Highway Authority:	Lancashire			**Number of Vehicles:**	2
Local Authority:	Lancaster City			**OS Grid Reference:**	342786 464253
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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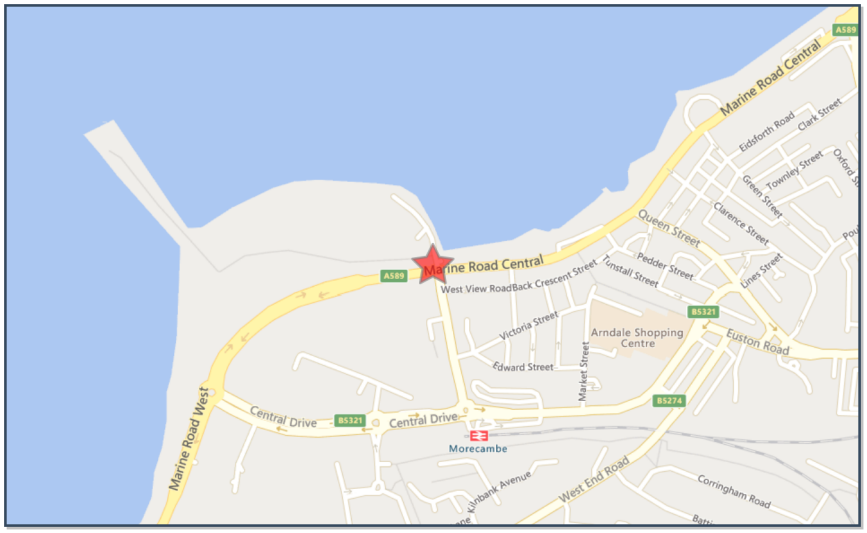
Provisional Data does not include vehicle and casualty records

crashmap.co.uk

Validated Data

Crash Date:	Saturday, April 23, 2016	**Time of Crash:**	9:03:00 PM	**Crash Reference:**	**201604WB16006**

Highest Injury Severity:	Serious	**Road Number:**	A589	**Number of Casualties:**	1
Highway Authority:	Lancashire			**Number of Vehicles:**	1
Local Authority:	Lancaster City			**OS Grid Reference:**	343140 464440
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Pedal cycle	-1	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	Other permanent object

Casualties

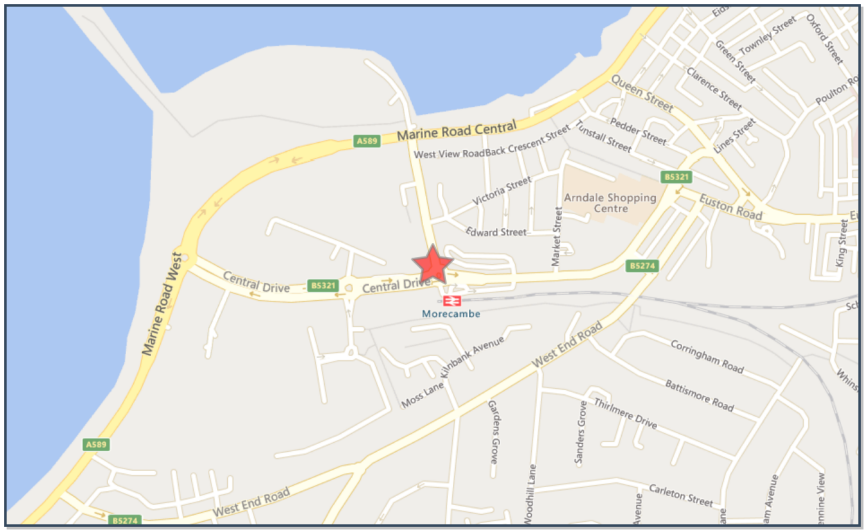
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date:	Friday, August 26, 2016	**Time of Crash:**	9:49:00 AM	**Crash Reference:**	**201604WB16290**

Highest Injury Severity:	Serious	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	Lancashire			**Number of Vehicles:**	2
Local Authority:	Lancaster City			**OS Grid Reference:**	343180 464220
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	Zebra crossing				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	8	Male	26 - 35	Vehicle is in the act of turning left	Nearside	Other	None	None
2	Pedal cycle	-1	Female	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

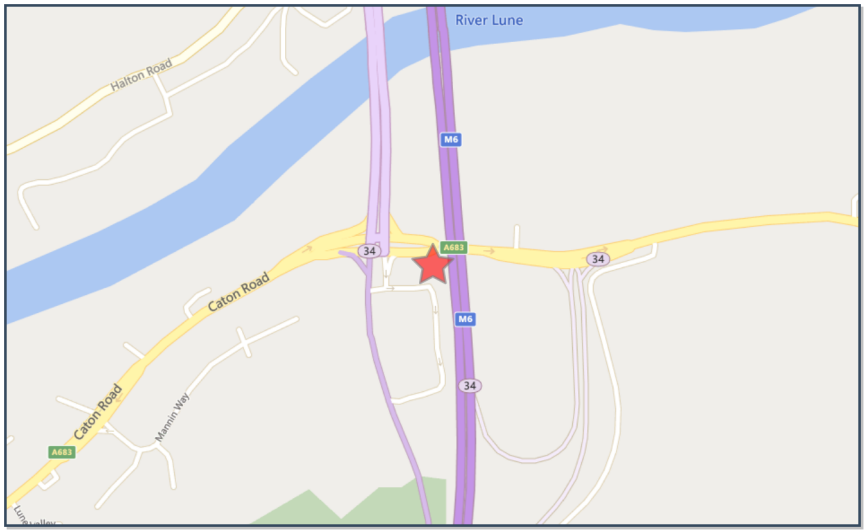
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date:	Saturday, May 05, 2018	**Time of Crash:**	7:45:00 PM	**Crash Reference:**	**201804WB18105**

Highest Injury Severity:	Fatal	**Road Number:**	A683	**Number of Casualties:**	2
Highway Authority:	Lancashire			**Number of Vehicles:**	2
Local Authority:	Lancaster City			**OS Grid Reference:**	349600 464210
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Crossroads				
Junction Pedestrian Crossing:	Pedestrian phase at traffic signal junction				
Road Type:	Single carriageway				
Junction Control:	Auto traffic signal				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	2	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Motorcycle over 500cc	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None

Casualties

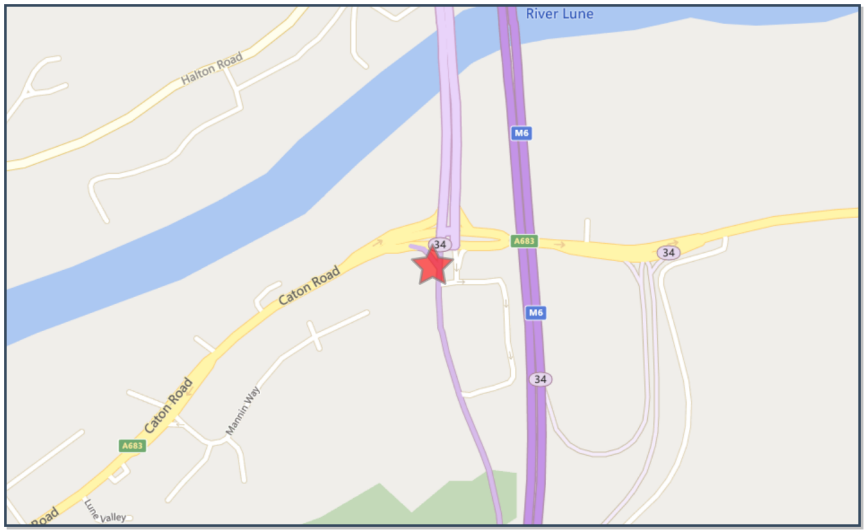
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other
2	2	Fatal	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

crashmap.co.uk

Validated Data

Crash Date:	Saturday, March 09, 2019	**Time of Crash:**	6:34:00 AM	**Crash Reference:**	**2019040837142**

Highest Injury Severity:	Serious	**Road Number:**	M6	**Number of Casualties:**	9
Highway Authority:	Lancashire			**Number of Vehicles:**	8
Local Authority:	Lancaster City			**OS Grid Reference:**	349489 464203
Weather Description:	Raining without high winds				
Road Surface Description:	Frost or Ice				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	4	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Van or goods vehicle 3.5 tonnes mgw and under	3	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Back	Journey as part of work	None	None
3	Goods vehicle 7.5 tonnes mgw and over	2	Male	66 - 75	Vehicle is parked in the carriageway	Front	Journey as part of work	None	None
4	Van or goods vehicle 3.5 tonnes mgw and under	1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None
5	Car (excluding private hire)	4	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	Parked vehicle	None
6	Car (excluding private hire)	3	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
7	Car (excluding private hire)	10	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
8	Car (excluding private hire)	6	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Did not impact	Other	None	None

Validated Data

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other
4	3	Serious	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
5	4	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other
5	9	Slight	Vehicle or pillion passenger	Female	56 - 65	Unknown or other	Unknown or other
7	5	Serious	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other
7	6	Slight	Vehicle or pillion passenger	Male	46 - 55	Unknown or other	Unknown or other
8	7	Serious	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other
8	8	Serious	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

Appendix D

EDEN TRANSPORT VISION (2019)

PUBLIC

Eden Project North - Transport Vision

Eden Project North aims to be the leading example for progressive and healthy transport methods in the UK. We want to subvert typical transport expectations (that a journey requires petrol, that it's boring, that it requires lots of planning and forethought) to provide a clean, smooth, accessible, fun and active alternative to arriving at a destination that further endorses these values.

Eden Project North recognises that the experience starts long before the visitor crosses the entrance gates, and that our decisions and commitments to sustainability and human health extend far beyond the duration of their stay. This is why we remain dedicated to establishing a forward-thinking and innovative strategy that can bring new and positive things to the town, the people and the natural environment of Morecambe.

The purpose of this statement is for us to explain to Lancashire County Council and Lancaster City Council our transport vision for Eden Project North.

As a vision it is innovative, forward looking and thought provoking. Its objective is to stimulate discussion and set the principles which will guide the transport strategy and engagement with key consultees. It is the first stage in establishing the detailed transport strategy for the project, which will be developed over the coming months in collaboration with Eden Project North, its highways and planning consultants and the City and County Councils.

Eden's core principles

1. **Eden Project North aims to work with the existing transport infrastructure where possible.**

   We believe the most sustainable and effective method of accessing Eden Project North and integrating a new transport strategy is to use the resources and infrastructure that are already available. We will investigate how we can best use existing infrastructure such as the Park and Ride at M6 Junction 34, the existing local train line from Lancaster to Morecambe, the bus network, footpaths and the existing Way of the Roses cycle path.

2. **Eden Project North aims to support future transport developments where multiple schemes can create an argument for larger-scale improvements.**
   We support many of the principles established in the Lancashire City Council Highways and Transport Masterplan 2016 to help deliver a wide-reaching network of sustainable travel options. We will work with the City and County Councils to try and weave the principles into our transport strategy to help make the Morecambe Area Action Plan a reality. We will consider a range of measures to improve gateways into Morecambe Town Centre and aim to fully integrate the seafront with the town to make it more attractive to spend time in a Morecambe less dominated by cars.

3. **Eden Project North's Transport Strategy aims to positively influence circulation routes in and around the town of Morecambe, encouraging pedestrianisation and inspiring people to spend more time in different areas.**

"At the moment, though the seafront and some of the shopping areas are often busy, this footfall doesn't actually benefit the town centre as much as it might, because many people who come to Morecambe don't spend much time actually in the centre." Highways and Transport Masterplan 2016[1].

We aim to support businesses in the town centre by drawing people through the town and encouraging dwell/stay times through creating attractive routes and public realm. This should assist with people spending leisure time at cafes and in shops or galleries, to assist in economic regeneration of the commercial centre.

4. **Public transport is the priority method.**

Public transport is integral to Eden Project North's Transport Vision, as it not only mitigates fossil fuel emissions per head, but also can encourage interaction through social spaces around waiting rooms, shared carriages and friendly service operators. Encouraging public transport use will also enhance services for residents, workers and all visitors.

5. **The baseline for the planning horizon is 2025+, with a vision towards 2030.**

The vision for transport with Eden North looks as far as possible into the future. The potential for new solutions and technologies to emerge towards 2030 will be taken into consideration, and room for these to be incorporated will be made available in the 2025+ plan. Such technologies could range from advances and improvements to existing vehicles, such as electric methods of transport, to new infrastructures such as a Hyperloop, to new ways of imagining the public's interaction with the built environment, such as kinetic pavements and energy harvesting.

Permeable paving and enhanced rainwater collection methods may also be relevant to the Eden Project North site, as resilience to unreliable weather patterns becomes ever more important.

6. **Last two miles – no fossil fuel vehicles around the site.**

Diesel and petrol vehicles release particulate matter under 2.5microns in diameter (PM2.5). This type of particulate matter is the most directly harmful for human health, as it is absorbed into the respiratory and circulatory systems. Eden Project North's Transport Vision aims to factor in the health benefits of reducing fossil fuel vehicles from not only a physical exercise and social interaction perspective, but also by focusing on the invisible chemical and biological impacts of pollution on both human health and the surrounding environment. This is why a 'last two miles' rule will be in place for most vehicles, meaning the air quality and layout of the town centre will be improved.

The Transport Strategy will, of course, take into consideration and make exceptions for emergency vehicle access and blue badge parking options, with the potential for these spaces to be reserved in advance, and the site will be entirely accessible for those with additional mobility requirements. Eden Project North aims to be wholly inclusive in all aspects of the experience, and especially in its Transport Strategy which will make people feel welcome and supported from the very first stage of their Eden journey.

DEFRA information on PM2.5 https://laqm.defra.gov.uk/public-health/pm25.html

[1] https://www.lancashire.gov.uk/media/899614/final-lancaster-highways-and-transport-master-plan.pdf

7. **Pedestrianisation of the Prom.**
   Pedestrianisation is fundamental to Eden Project North's transport plan, as it results in cleaner air, increased physical activity, more time spent outside and reduced noise pollution. Optimising the use of car parks in the town centre, public transport and walking/cycling means the beautiful landscapes of Morecambe will be able to be much better appreciated by locals and tourists alike, as the heavy traffic on Marine Road Central will be significantly reduced. This means the town will not be cut off from the promenade, and people will have better opportunities to walk and cycle. It also will increase safety from a traffic perspective, as well as safety in terms of 'eyes on the street'.

8. **The journey should be joyful.**
   Eden Project North endeavours to make transport part of the overall experience. This means eliminating and reducing queues, over-crowding, over-priced tickets and introducing a sense of fun into the journey.

   The could mean that the inside and outside of trains, buses and waiting areas are decorated in unexpected ways, and that the method of transport encourages users to engage with Eden Project North's core ideas from before the point of arrival.

9. **Visitors that make a special effort to travel to the destination sustainably will be rewarded by reduced entry prices and other incentives.**
   Eden Project North believes that effort on the public's part should be recognised and rewarded by the venue. Eden Project in Cornwall operates a Green Travel Plan £5 off scheme for visitors arriving either by public transport or on foot or by bike, which has proved popular and effective. https://www.edenproject.com/visit/before-you-visit/directions/by-bus-or-train#greentravel

   An emphasis on sustainability and natural choices will also be applied to the site directly, by transforming the redundant grey spaces (such as disused road) into lawns and wildflower areas.

10. **Eden Project North's transport vision extends as far as the perimeter of the project site, but aims to be flexible enough to allow for collaboration in parallel with neighbouring infrastructure.**

EDEN PROJECT NORTH - SEASONAL CALENDAR

January

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1*	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Feburary

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19*	20	21
22*	23	24	25	26	27	28
29	30					

May

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6*	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27*	28	29	30	31		

June

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August

Mon	Tue	Wed	Thu	Fri	Sat	Sun
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26*	27	28	29	30	31	

September

Mon	Tue	Wed	Thu	Fri	Sat	Sun
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						/ 1

October

Mon	Tue	Wed	Thu	Fri	Sat	Sun
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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December

Mon	Tue	Wed	Thu	Fri	Sat	Sun
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25*	26*	27	28	29
30	31					/ 1

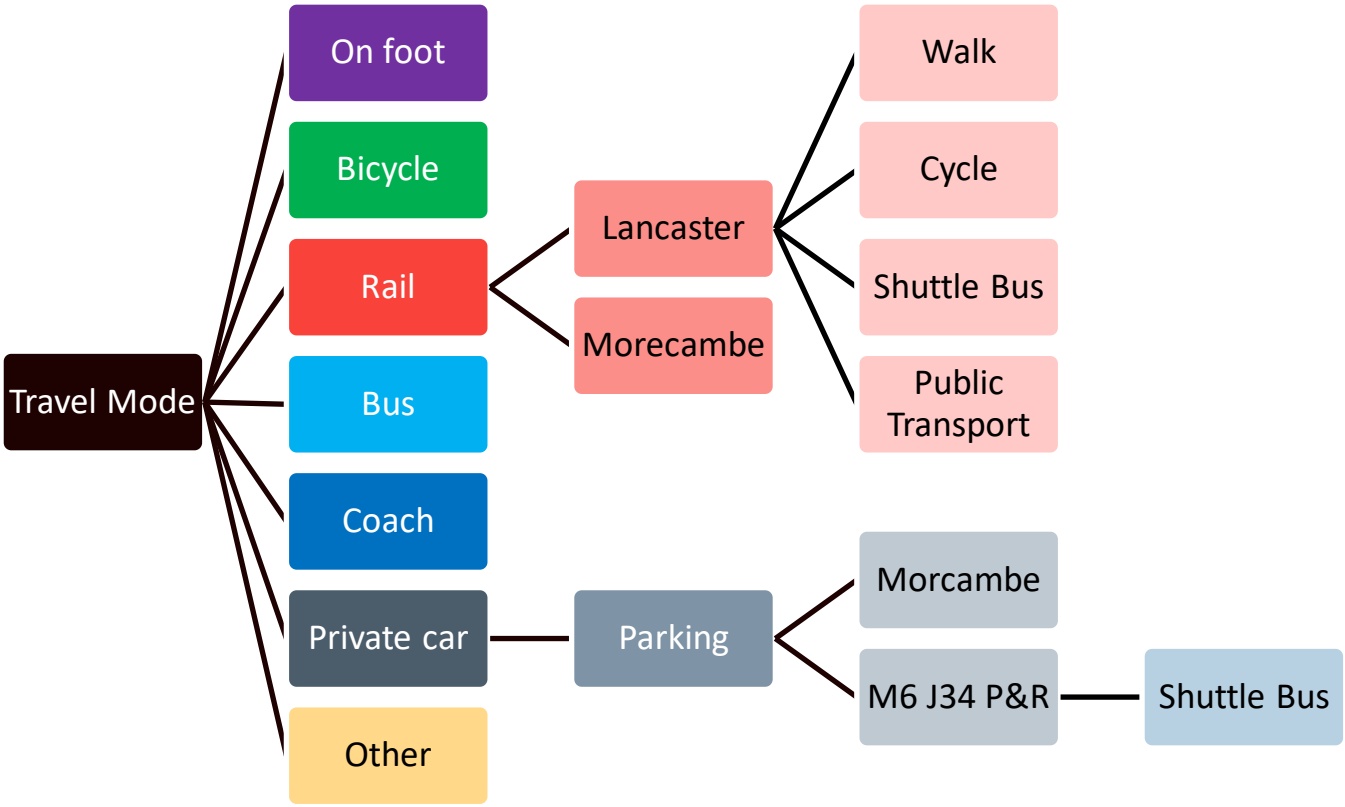
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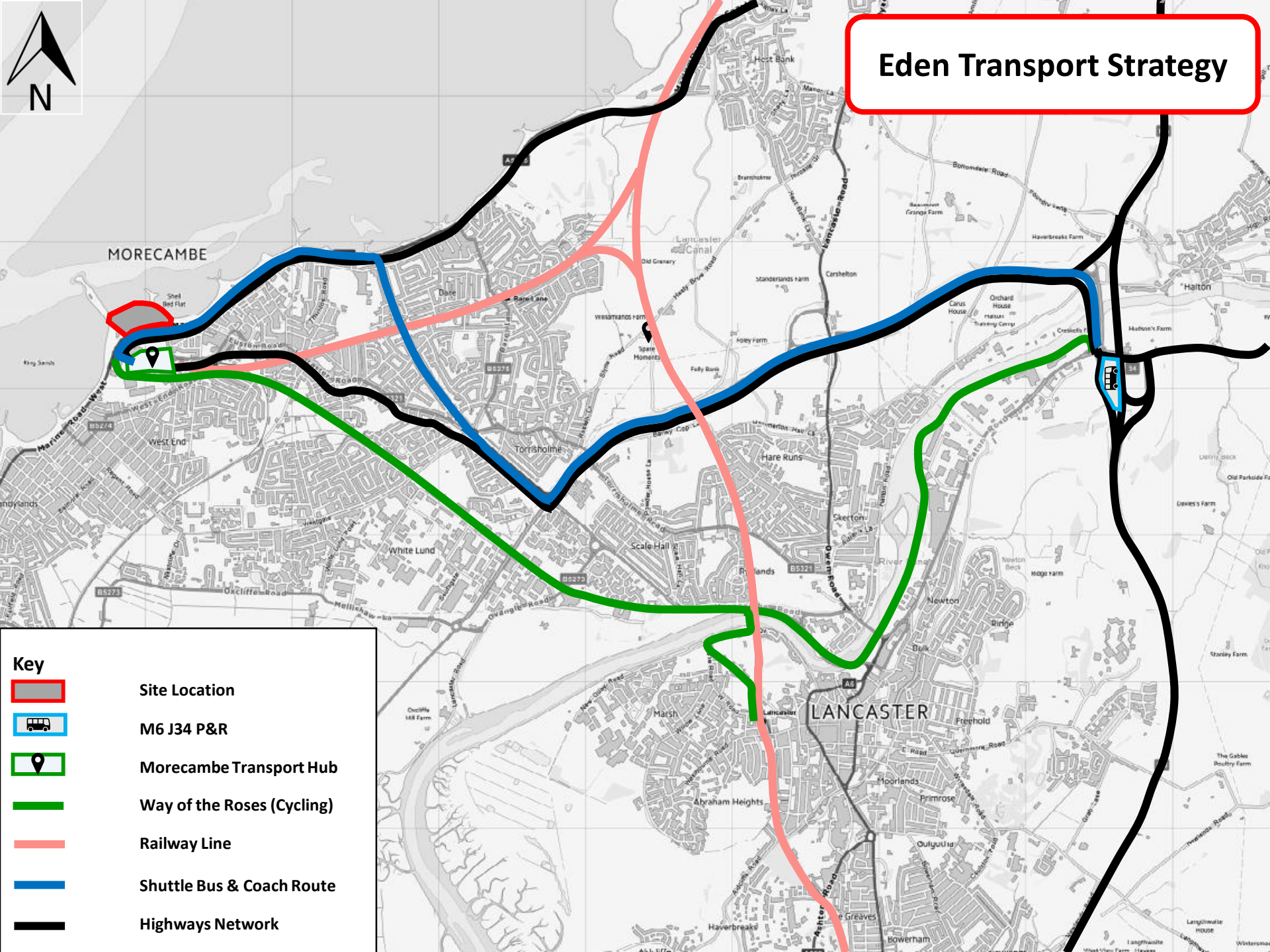
1) Typical calendar showing predicted peak, inter peak and off peak days.
2) Based (to certain extent) on existing visitor numbers to Eden Cornwall.

Key:

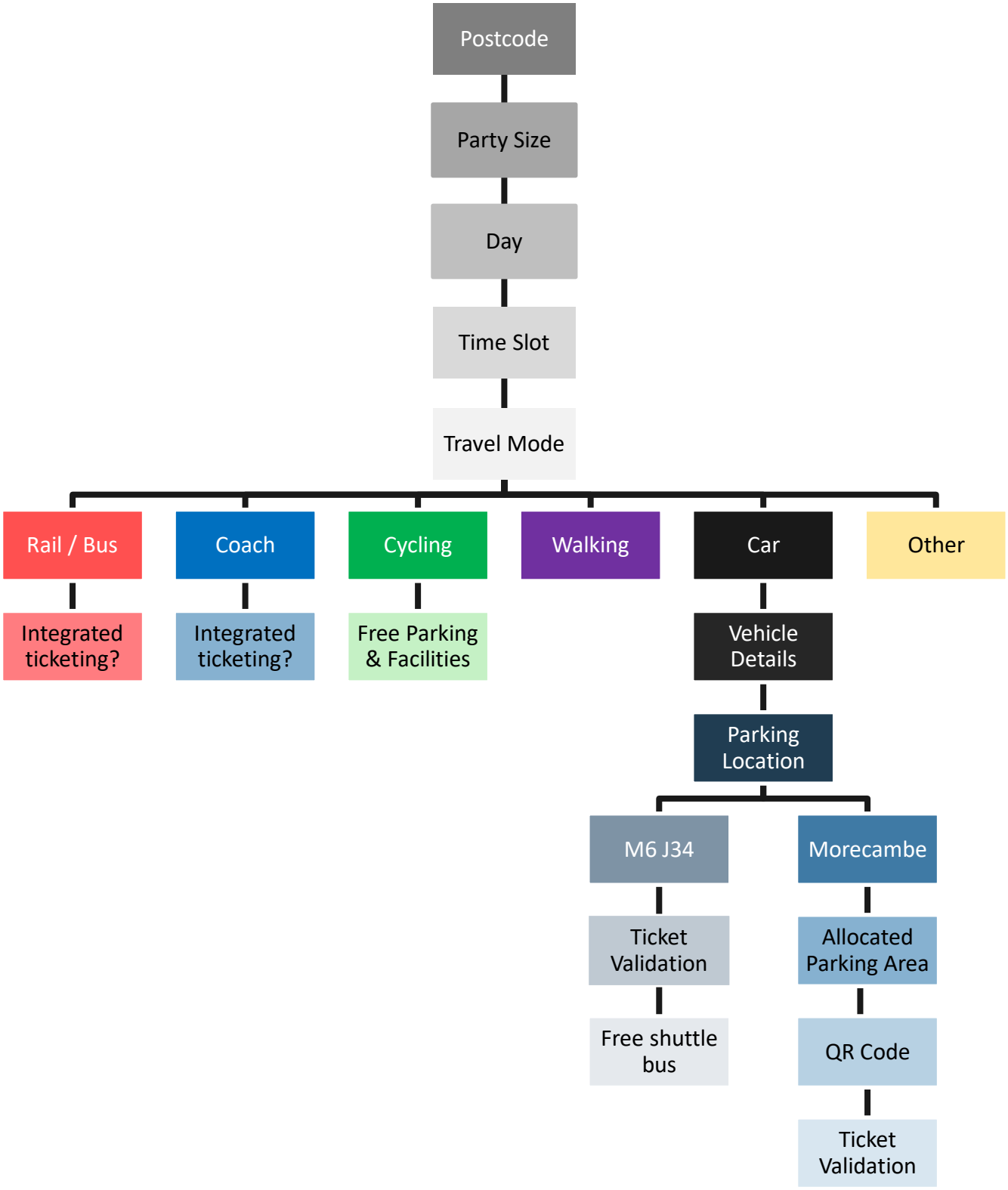
25*	BANK HOLIDAY
25	SCHOOL HOLIDAYS
25	PEAK DAY
25	INTER PEAK DAY
25	OFF PEAK DAY

MULTI-MODAL STRATEGY, TRAVEL METHODS




Eden Transport Strategy
N
MORECAMBE
West End
Torrisholme
White Lund
Hare Runs
Scale Hall
Skerton
Halton
Newton
Ridge
LANCASTER
Marsh
Freehold
Moorlands
Primrose
Abraham Heights
Bowerham
Haverbreaks
Key
Site Location
M6 J34 P&R
Morecambe Transport Hub
Way of the Roses (Cycling)
Railway Line
Shuttle Bus & Coach Route
Highways Network

BOOKING SYSTEM FLOWCHART



Appendix E

OUTLINE BUSINESS CASE

PUBLIC

Lancashire County Council on behalf of Eden Project International

EDEN PROJECT NORTH

Transport Report, Outline Business Case



70074551-001
AUGUST 2020

CONFIDENTIAL

Lancashire County Council on behalf of Eden Project International

EDEN PROJECT NORTH

Transport Report, Outline Business Case

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70074551

OUR REF. NO. 70074551-001

DATE: AUGUST 2020

Lancashire County Council on behalf of Eden Project International

EDEN PROJECT NORTH

Transport Report, Outline Business Case

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CONFIDENTIAL

QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	v1			
Date	21/08/2020			
Prepared by	Alberto Poltz Faggiani			
Signature				
Checked by	James Outterside			
Signature				
Authorised by	Kevin Riley			
Signature				
Project number	70074551			
Report number	70074551-001			
File reference	70074551-001			

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1 INTRODUCTION

1.1 OVERVIEW

1.1.1 WSP have been instructed by Lancashire County Council (LCC) on behalf of Eden Project International (EPI) to provide transport and highways advice for the support of the submissions of an Outline Business Case (OBC) to central government to secure funding for the Eden Project North development in Morecambe.

1.1.2 Previously, WSP were instructed by EPI to provide transport and highways advice for a full planning application pertaining to development of land north of Marine Road Central, Morecambe.

1.1.3 Since April 2019 WSP has been working alongside EPI and multiple stakeholders and co-consultants in order to prepare the Environmental Impact Assessment scope (EIA). Since June 2020 WSP has been actively working on the OBC.

1.1.4 The planning application will be accompanied by a single Environmental Statement (ES) which will set out how the proposals can be accommodated in environmental terms and the benefits which are likely to arise as a consequence of the development.

1.1.5 A Transport Assessment (TA) and Travel Plan (TP) will accompany the ES. Both documents will analyse the potential transport impacts of the development and its transport strategy mitigation.

1.1.6 In order to support the OBC, WSP has developed a transport strategy and has carried out a thorough analysis of the trip generation and distribution, parking demand and associated potential off site highways impact. WSP has also identified potential active travel benefits associated with the development.

1.2 METHODOLOGY

1.2.1 Since the initial appointment in April 2019, WSP has worked alongside multiple stakeholders and co-consultants, including:

- Lancaster City Council (*Parking, Economic Growth and Regeneration, Sustainable Travel and Planning Teams*);
- Lancashire County Council (*Highways, Infrastructure, Parking and Public Transport Teams*);
- Highways England (and Atkins, Spatial Planning Framework Consultants in the Northwest);
- Stagecoach;
- Network Rail;
- Northern Railway;
- SLC Rail (Lancaster City Council rail consultants)
- WSP Indigo Planning;
- Genecon; and
- Planning Solutions Consulting Limited.

1.2.2 Since April 2019, WSP undertook a series of key documents and milestones as set out below:

- Environmental Impact Assessment Transport Scope;
- Initial Visitor and Staff Trip Generation and Distribution Technical Note;
- Transport Group Meeting – The initial working assumptions were presented to multiple stakeholders on September 2019;

- Various meetings with LCC and their rail consultants (SLC Rail) to understand the potential of the rail industry in Lancaster and Morecambe. Particularly on the long term;
- Engagement with Lancashire Highways. Initial agreement on presented assumptions and feedback incorporated to work being prepared for the OBC.
- Two-day site visit to Eden Cornwall to understand existing transport strategy and logistic operations.
- Various meeting with City and County Councils to discuss wider transport strategy.

1.2.3 Following the feedback received from the original business case, WSP has focused on demonstrating how the existing transport infrastructure could accommodate and therefore mitigate the potential off site highways impact and associated costs of the development.

> ***Comment received***
>
> *"The OBC fails to account for any wider transport infrastructure investments required to accommodate visitor traffic or additional utility requirements. Additional spending requirements here will impact the benefit/cost ratio."*

1.2.4 Following a logical order, WSP has worked and engaged with the appropriate and relevant stakeholders in order to discuss and agree the following milestones:

- Staff Trip Generation and Distribution;
- Visitor Trip Generation and Distribution;
- Parking Strategy;
- High Level Highways Modelling;
- Walking, Cycling and Public Transport Appraisal;
- Transport Economic Implications;

1.2.5 Multiple meetings have taken place over the last year. Since early June, WSP has organised 12 different external meetings with various stakeholders and co-consultants to discuss and agree the transport strategy set out in this report. A series of agreement and endorsement letters from various stakeholders have been included in Appendix A to reflect the support that the development has from a transport point of view. It also proves that Eden Project North and their consultants have thoroughly engaged with the appropriate and relevant stakeholders. Particularly during Covid-19 times, where all engagement has been online with various people sitting in multiple locations across the UK.

1.2.6 Relevant stakeholder meeting minutes have also been included in Appendix B.

1.3 DOCUMENT PURPOSE

1.3.1 The purpose of this document is to inform the Outline Business Case of the transport and highways work to date. Including engagement and working assumptions agreed with multiple stakeholders. As well as presenting a robust analysis of the transport and highways work which underpins the overall benefits of Eden Project North and its transport strategy.

1.3.2 The structure of this report will continue as follows:

- Chapter 2 – A description of the Eden Project North proposals and key facts;
- Chapter 3 – A summary of the Transport Strategy set out across this document;
- Chapter 4 – Staff Trip Generation and Distribution;

- Chapter 5 – Visitor Trip Generation and Distribution;
- Chapter 6 – Parking Strategy;
- Chapter 7 – Highways Impact;
- Chapter 8 – Active Travel Benefits;
- Chapter 9 – Economic Transport Analysis;
- Chapter 10 – A summary of this report.

2 EDEN PROJECT NORTH

2.1.1 Eden Project International is part of the Eden Trust (Registered Charity number 1093070). It is an educational charity with a mission to connect people with each other, and the living world.

2.2 DEVELOPMENT SITE

2.2.1 The *Area of Interest* comprises land situated to the north and west of Morecambe town centre and broadly falls within the following areas:

- The main development site bound by the promenade to the north and east, Marine Road Central to the south and Grade II listed Midland Hotel to the west;
- The promenade to the north, east and west of the main development site, including the sea wall to the north and stone jetty to the north west; and
- Adopted highways, footways and public realm to the south of the site.

2.2.1 A site location plan showing the extent of the *core site boundary* is shown in Appendix C.

2.3 PROPOSED DEVELOPMENT

2.3.1 The working assumption is that full planning permission will be sought for the following development:

> *Demolition of existing buildings and proposed construction of major mixed leisure development in association with Eden Project (including use classes A1, A3, A4, B1, D1, D2 and Sui Generis), public realm, landscaping, car parking and associated engineering works.*

2.3.2 Maximum visitor numbers of 1 million per annum with an estimated average of 950,000 per annum. There will be timed ticketing to control visitor flows. The proposed development has been designed to accommodate a maximum of 4,000 visitors per day. Feasibility studies indicate an estimated average of 100 days per annum of up to 3,750 visitors; 200 days per annum of up to 2,500 visitors; and 60 days per annum of up to 1,250 visitors. There will be a maximum of 500 to 1,000 visitors per hour accessing the site, dependant of architectural design.

2.3.3 Maximum core hours of operation (main site): Daily 09:00 – 21:00.

2.3.4 Maximum hours of operation (main site – summer time): Daily 09:00 – 00:00.

2.3.5 Maximum 4,000-person capacity outdoor arena to host late evening events during the following hours: Daily 18:00 – 00:00 (music finishing at 23:00).

2.3.6 An indicative opening year for the development has been given as 2024, with pre-opening operations from late 2023.

2.4 EDEN PROJECT NORTH TRANSPORT VISION

2.4.1 The focus of Eden Project North is upon developing a Transport Strategy that reduces car borne trips both to the wider area and in particular to Morecambe town centre, thus reducing impact upon the highway network and the wider environment. The core principles as set out in the transport vision (Appendix D) are:

1. Eden Project North aims to work with the existing transport infrastructure where possible.

2. Eden Project North aims to support future transport developments where multiple schemes can create an argument for larger scale improvements.
3. Eden Project North aims to positively create circulation routes in and around the town of Morecambe, encouraging pedestrianisation and inspiring people to spend more time in different areas.
4. Public transport is the priority method.
5. The baseline for the planning horizon is 2025+, with a vision towards 2030.
6. Last two miles – no fossil fuel vehicles around the site.
7. Pedestrianisation of the Prom.
8. The journey should be joyful.
9. Visitors that make a special effort to travel to the destination sustainably will be rewarded by reduced entry prices and other incentivise.
10. Eden Project North's transport vision extends as far as the perimeter of the project site, but aims to be flexible enough to allow for collaboration in parallel with neighbouring infrastructure.

3 EDEN TRANSPORT STRATEGY

3.1 INTRODUCTION

3.1.1 The information set out in this Transport Strategy is a summary of the thorough analysis undertaken on the remaining chapters and appendices of this transport document.

3.1.2 The Eden Transport vision aims to position Eden Project North as a leading example for progressive and healthy transport methods in the UK. It aims to provide clean, smooth, accessible, fun and active alternatives to the traditional transport strategies of reliance upon the private car.

3.1.3 With the Way of the Roses, the West Coast Mainline, the M6, the A6, the A683 Bay Gateway and the recently upgraded M6 J34, the extensive regional transport network already handles millions of annual visitors to the region and the nearby Lake District. Morecambe itself enjoys a direct rail link with Lancaster and a robust, generally uncongested, local road network, including the A589. It hosts a number of annual large-scale events such as the Vintage Festival and the Morecambe Carnival, with up to 55,000 visitors per event. The City Council is highly experienced at dealing with large peaks on the local transport network in terms of both traffic flow and parking demand in 'major event mode'.

3.1.4 This business case shows how visitor and employee numbers translate into demand for transport and how we intend to address such demand. The Eden Project Team are working in partnership with both the Lancaster City and Lancashire County Council to ensure the existing transport network is optimised and aligned with the anticipated growth of the wider region and the Eden Transport Vision.

3.1.5 The project immediately benefits from enhanced capacity in the area created by recent local transport investments in infrastructure improvements through the Housing Infrastructure Fund (HIF) and possible Future High Streets Fund (FHSF) funding, for which a bid was recently submitted.

3.1.6 A time-control advanced ticketing booking system will allocate visitors a specific time slot to enter the site. It will enable the Eden Project North to know, in advance, how visitors will be travelling and how many parking spaces will be required in each parking location on any given day. The combination of a comprehensive and resilient transport network with capacity, combined advanced and dynamic ticketing plus limits on daily attendance allows us to do what Eden does extremely well – make use of existing underused resources in a sustainable manner.

3.1.7 Feasibility studies indicate an estimated average of 100 days per annum of up to 3,750 visitors; 200 days per annum of up to 2,500 visitors; and 60 days per annum of up to 1,250 visitors. There will be a maximum of 500 to 1,000 visitors per hour accessing the site, dependant of architectural design.

3.1.8 From a transport perspective this business case demonstrates that the use of existing assets means that the Eden Project can be developed without extensive transport infrastructure or operations costs and that amenities needed can be overwhelmingly be supplied in a cost neutral manner by the partners involved. It demonstrates how any off site costs are therefore minimal and focused on relatively low cost items such as signing and local upgrades to cycle or waking infrastructure as opposed to costly junction upgrades, parking provision or public transport schemes. We also demonstrate how the Eden Project acts as a catalyst for wider transport benefit – for example in relation to cycling it can provide wider use of amenities and increased justification for investment to benefit all.

3.2 EDEN TRANSPORT STRATEGY

3.2.1 The key principle of Eden Transport Strategy is to encourage people to arrive by non-car modes, particularly for their last mile element of the journey. At the same time as this there is also a practical reality that on 'day one' many visitors will still seek to travel by car, particularly as the rail industry will take time to be able to respond to increased demand created by the attraction and the wider uplift it brings. While Morecambe is not congested with a large proportion of visitors arriving by car the aim is to intercept many as they leave the Motorway at Junction 34 of the M6, where there is an underused Park and Ride amenity. Others would use readily available parking in the town centre, with these two amenities being linked through ticketing to allow a dynamic and flexible response according to demands.

3.2.2 One of the key aims of Eden Project North is to revitalise Morecambe town centre, the wider district and its economy. In order to achieve this, it is a key aim of the Transport Strategy that visitors are actively encouraged to spend time in Morecambe before and/or after their visit to the attraction. The Eden Transport Hub shown in Figure 3-1 and Figure 3-2 below showcases the Transport Strategy working assumptions to achieve this at a town level. The strategy has been discussed and agreed in principle with both Lancaster City and Lancashire County Council.

3.2.3 The area around Morecambe Rail Station will be the focal point and key destination for all modes accessing the town centre as well as Eden Project North, a very short walk (5 minutes) away. It also happens to be where the major cycle route into the town centre arrives too. The railway car park is set to be transformed, as per the FHSF proposals, into a new bus area with direct access from Central Drive. This will operate as a bus drop off and pick up point for different visitor groups and the proposed bus service for Eden visitors running from the M6 J34 Park and Ride site. Caton Road Park and Ride is currently underutilised, and the initial discussion and principles reached with Lancashire County Council will allow Eden Project North to use the Park and Ride facility to accommodate circa 50% of the Eden parking spaces needed throughout the year, particularly during the peak season. An Eden Reception Centre can be included at M6 J34 with facilities such as toilets, small coffee shop, merchandise and information stall and seating to intercept car borne users as they transfer to buses for the short (circa 15 minutes) ride to Eden before they impact on wider highways network.

Figure 3-1 - Eden Welcome Centre (Morecambe town centre)

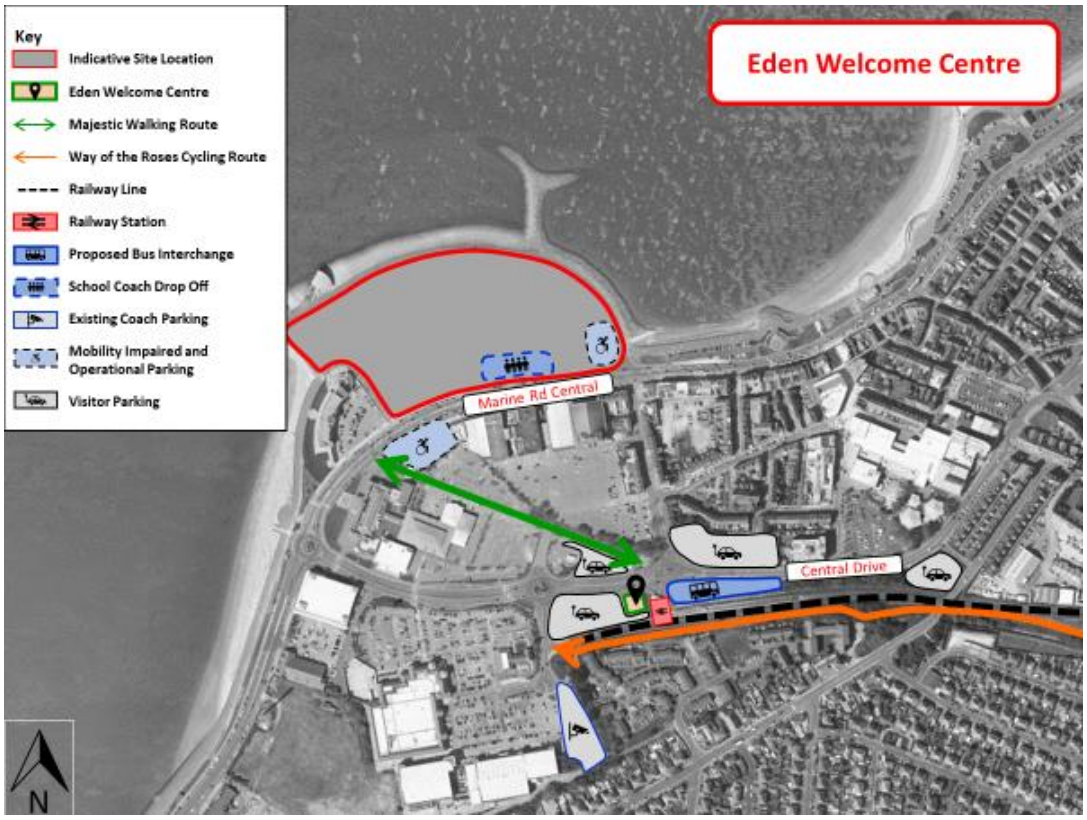
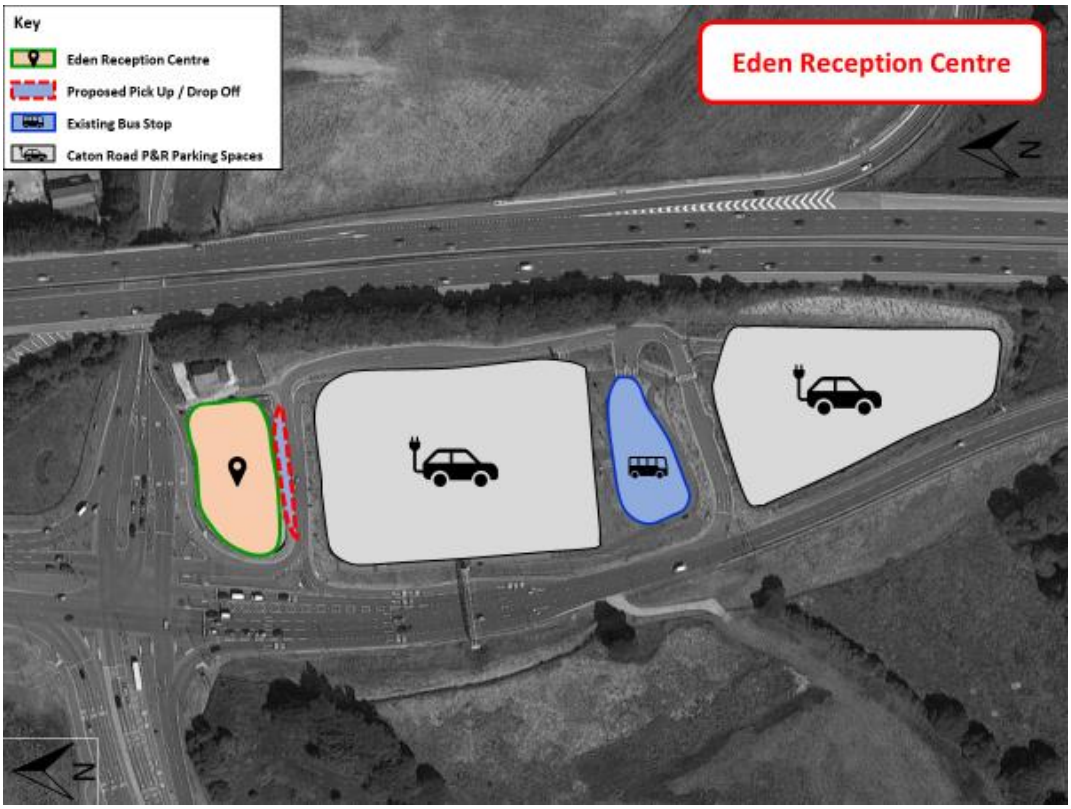


Figure 3-2 - Eden Reception Centre (M6 J34)



3.2.4 Four locations for car parking have been initially identified in the town centre which were suggested by and agreed with Lancaster City Council to accommodate the remaining 50% required parking spaces. As well as car parks near the station, two parking locations are currently proposed near the site on Marine Rd Central. These will be exclusively for the use of mobility impaired visitors and a limited number of parking spaces for operation requirements.

3.2.5 School groups will benefit from both the new bus interchange by the rail station, and the exclusive drop off facilities by the main entrance within the site. Visitors cycling to the site will be able to use the magnificent Way of the Roses, which is a 171-mile coast-to-coast route on the National Cycle Network. Cycling facilities such as parking and changing rooms could be located at the Eden Welcome Centre just a few metres away from the end of the route and within the main site.

3.2.6 Finally, pedestrians and visitors arriving at the main reception centre will benefit from the upgraded walking route running from the rail station to the site. The dwell times and amenities that we have worked upon for transport purposes recognise that while Eden will typically be a half day attraction many visitors will spend further time in and around Morecambe.

3.3 STAFF

3.3.1 Eden Project North has anticipated approximately 389 direct annual jobs. These have been exhaustively examined and categorised into two different groups: those who will work on a shift pattern; and those who will work standard office hours.

3.3.2 The Eden Project North aspiration is that the vast majority of staff, including directorate, will reside in the local region of Lancashire. Whilst the long-term yearning of Eden Project North is that all staff will travel by active modes and public transport, it is recognised that this may not be achieved for the opening year based on their experience at the Cornwall site. As such, different modal splits, based on census data, have been used for residents within Lancaster city region, and residents with Lancashire.

3.3.3 A maximum of 127 trips will be generated during the peak hour, 59 of which will be car trips. However, on average across a peak day, only 38 trips will be generated per hour, 17 of which will be car trips.

3.4 VISITORS

3.4.1 Opening hours, daily visitors' numbers and hourly visitor numbers have been provided by Eden Project International. WSP have worked alongside Planning Solutions Consulting Limited (PSCL) in order to carry out the trip generation and distribution exercise. This has been informed by multiple datasets, including benchmarking of similar sites, 2011 census data, Visit Britain, STEAM, as well as knowledge and experience from the Eden Cornwall site. Assumptions have been based on industry best practice and discussed and agreed with multiple stakeholders, including Lancaster City Council and Lancashire County Council.

3.4.2 It is important to recognise that PSCL and WSP have developed two different methodologies in order to understand the visitor split between day and overnight visitors. Whilst PSCL has focused on understanding market penetration, socio-economic parameters, entry ticket costs and annual visitors, WSP has focused their transport work on origin and modal split. Notwithstanding this, Table 3-1 below shows the robustness of both analyses. Which despite being two completely independent methodologies, have reached the same conclusion. That a 76%-24% across day and overnight visitors is expected for Eden Project North.

Table 3-1 – PSCL and WSP Visitor Split[1]

	PSCL[2]			WSP		
	Day Trip	Overnight Trip	Total	Day Trip	Overnight Trip	Total
<1h Distance	25%	*	*	24.5%	6.5%	**31.0%**
>1h Distance	51%	*	*	51.8%	17.3%	**69.0%**
Total	**76%**	**24%**	**100%**	**76.3%**	**23.7%**	**100.0%**

3.4.3 To predict the exact modal split for the opening year, on top of the off peak and inter peak scenarios, eighteen different peak scenarios have been developed, assessed and discussed in our work. These are based on a combination of parameters including visitors per day, visitors per hour and modal split. This represents a very thorough and robust analysis scenario.

3.4.4 Notwithstanding the above, the time-controlled ticketing proposal has been crucial to our work. This has been used to analyse trip generation and distribution since visitors per hour are capped at a certain maximum (different caps in different scenarios).

3.4.5 The agreed working assumption is that 3,750 visitors per day are expected, with a maximum capacity of 750 visitors per hour. Three different scenarios have been chosen, with three different modal splits, as the right working assumptions. These will generate a maximum of 152 to 171 private vehicle two-way trips during the peak hour of the *typical peak* scenario (a bank holiday weekend or a summer weekend). However, on average across a peak day, 117 to 132 private vehicle two-way trips per hour will be generated.

3.5 PARKING

3.5.1 Time-control ticketing will require advance booking for the majority of visitors allowing the Eden Project North team to control the demand. This acts as both a capacity control and management tool. The advance booking process can also capture mode of travel for each ticket purchased. This will facilitate managing the parking demand at both initial agreed parking location: M6 J34 Caton Road Park & Ride; and different existing parking locations across Morecambe town centre. The reasonable working assumption at this point of splitting circa 50%-50% parking demand across both locations has been agreed with both Lancaster City Council and Lancashire County Council, after sensitivity analysis. Visitors parking in Morecambe town centre are likely to pay more than at the

[1] Figures have been rounded for simplicity reasons. Hence why it may not add to 100%.
[2] Planning Solutions scope of work does not include full details required for a transport trip generation and distribution exercise. WSP has done some analysis with the expected number of visitors per year reported in Table 5-1 to obtain, if possible, the number of visitors from different travel origin distances.

Park and Ride site, reflecting their impact on the town, but also contributing to cost operating the Park and Ride service at an attractive frequency.

3.5.2 Parking will be managed in a dynamic style. Visitors purchasing an entry ticket to Eden Project North will have to choose an entry slot time, travel mode and parking location (if appropriate) which will dictate the pricing of the entry ticket. This will allow the Eden Project North team to dynamically update the booking systems to promote parking at any given location based on multiple factors such as other events happening in Morecambe on a particular day, forecasted weather conditions, need for visitors to park in Morecambe to enhance the local economy or need for visitors to park at J34 to protect the availability of parking in the town centre for other users.

3.5.3 The parking accumulation scenarios suggest a need of between 759 and 854 parking spaces on a peak day to be distributed roughly equally across both Morecambe and the parking facilities at J34.

3.5.4 The working assumption for staff is that dedicated parking will be built near the site alongside other back-of-house facilities. On a peak day, 129 parking spaces for staff will be needed. As per the Eden Transport Vision, the aspiration is to reduce this provision after the opening year with the help of the Travel Plan being prepared.

3.6 OFF SITE HIGHWAYS IMPACT

3.6.1 A strategic traffic model for the area of Morecambe and Lancaster has been provided by Lancashire County Council. The *'M6 J33 SATURN Model'* was built and validated as part of the HIF bid to support the upgrading of M6 J33. The model has been developed in SATURN for a base year of 2018. Forecast models were developed for 2025 and 2040 Do Minimum and Do Something scenarios.

3.6.2 An initial assessment of the main highways' corridor from the M6 to the development site in Morecambe has identified that only the M6 / A683 western and eastern junctions present a maximum volume over capacity (VoC) ratio of turning movements above 80% in the 2025 AM scenarios. Whilst in the PM scenarios only the western junction indicates a performance above 80%. In order to understand the impact of the development on the highway network, a series of key junctions along the corridor have been selected for further analysis.

3.6.3 This analysis consisted of comparing the *typical peak* visitor scenarios against the high weekday peak hours flows. Different trip generation scenarios have been tested, none of which cause any significant impact at any given location. A merge and diverge assessment of the M6 J34 has also been undertaken. It demonstrates that there is enough capacity to accommodate all Eden visitors at any given time throughout the year on the M6 J34 slip roads.

3.6.4 The *typical peak* visitor scenario is expected to fall on a bank holiday weekend or a summer weekend. Consequently, a comparison of high weekday flows and peak weekend visitor flows represents a robust worst case scenario. In reality, peak weekend visitor flows should have been compared to a much lower existing weekend flow. Whilst this may have suggested a greater proportional impact, in reality, junctions would have a much greater spare capacity since they have been designed and built to cater for weekday flows. It should also be noted again that a number of different large-scale events such as the Vintage Festival and the Morecambe Carnival, with up to 55,000 visitors per event, are organised yearly in Morecambe. These events are accommodated without causing major adverse effects on the local highway network and the wider transport network.

The visitors attending these events are unquestionably much higher than the predicted maximum visitor trips generated by Eden Project North on a peak day (3,750).

3.6.5 The working assumption is that no off site highways work will be required at any given location. Other than signage on both the Highways England and local highways networks.

3.7 ACTIVE TRAVEL

3.7.1 An Active Travel Strategy has been set out to provide information on the wider transport strategy to encourage and facilitate waling and cycling trips to Eden Project North.

3.7.2 Most of the measures set out in the Active Travel Strategy are measures that have been implemented for years in Eden Cornwall. Meaning that the Eden Project Team have the experience and the will to set out an ambitious Active Travel Strategy.

3.7.3 Some of this measures include:

- Secure cycle parking facility, showers and changing rooms. With dedicated facilities for staff.
- Potential partnership with local bike shops so staff and volunteers could benefit from discounted rates for maintenance services and bicycle equipment.
- Cycle to work scheme for staff members.
- Eden Project International and WSP to work with different stakeholders, including both Council, to identify potential funding options to improve the Way of the Roses where needed.
- Bike hire scheme around Morecambe for both Eden visitors and general public.
- This could include e-bikes, a bike taxi service, tandems, quadricycles and large group bicycles.
- Visitors will be able to charge their e-bike batteries for free whilst visiting Eden Project North.

3.8 FINANCIAL SUMMARY

3.8.1 As seen above, we understand that no major infrastructure interventions and costs are needed to accommodate the predicted trips across the wider transport network.

3.8.2 And because we are not proposing any major interventions, other than some signage and way-finding for private vehicles, cyclists and pedestrians, it is difficult to obtain any transport benefits. However, we can demonstrate that, as a minimum, the whole Transport Strategy can be cost neutral.

3.8.3 The signage and way-finding strategy will have a capital cost of circa £100,000. This will consist on the installation of regulated traffic signals to facilitate the way-finding of Eden Project North from the motorway (M6) to Morecambe town centre. In addition, different way-finding systems will be installed at different locations to facilitate cyclists and pedestrians to locate the site from various locations around Morecambe and the Way of the Roses.

3.8.4 Table 3-2 shows how the operation costs of using the identified parking spaces across both locations and running a bus service from the M6 J34 to Morecambe town centre can be cost neutral. These figures are based on reasonable working assumptions at this point. These have been discussed and agreed with relevant stakeholders such as Lancaster City Council and Lancashire County Council.

Table 3-2 – Bus and Parking Operation Costs and Revenue

	Bus Operation Costs	Parking Operation Costs	Total Costs	Parking Revenue	Final Revenue
Scenario 004	£542,466	£236,785	£779,250	£819,638.7	£40,388.4
Scenario 005		£242,980	£785,446	£841,084.8	£55,639
Scenario 006		£249,176	£791,641	£862,530.9	£70,889.5

3.8.5 The purpose of charging for parking is no other than funding the bus running from the M6 J34 to Morecambe. The aim is to be cost neutral, and any additional final revenue will be used for upgrading the bus system, branding and promoting sustainable travel to the site.

3.8.6 In addition to this, there is a potential scope, and a letter of endorsement from Stagecoach, for a bus operator to collaborate with Eden in running the bus service from the M6 J34 Caton Road Park and Ride to the site and transport hub in central Morecambe. This bus has the potential to attract local users across different stops from the Lancaster College to Morecambe town centre. But more importantly, the buses used for Eden visitors could be used simultaneously for other purposes such as school buses before the Eden site opens. However, it should be noted that the financial analysis does not at this point in time incorporate any assumptions about bus operator fleet potential for commercial sponsorship from Eden branding and/or their partners.

3.8.7 The Active Mode Appraisal Toolkit, developed by the Department for Transport to calculate the monetised benefits of an increase in cycling and walking use, has reported an indicative overall benefits of £1,587,630. This figure is based on a series of assumptions, including staff and volunteers' numbers, and an average active travel mode share between the opening year and the long term aspiration.

3.9 SUMMARY

3.9.1 Transport related to Eden Project North is a key part of the visitor experience. It is also often a key cost. Having undertaken a robust scenario and development exercise, in close conjunction with both Local Authorities, we are able to conclude:

- Transport can be provided efficiently in a dynamic manner that responds to all needs and volumes of activity;
- The control of numbers and daily ticketing at Eden Project North allow excellent management and control of demand on transport networks;
- While there is the aim of more visitors coming by non-car modes, particularly rail, it is a practical reality at day one that many will arrive by shared car;
- There is sufficient underused transport infrastructure locally to be able to cope with impacts and facilitate effective access without the need for substantial investment in new, costly amenities;
- Where 'off-site' infrastructure is needed it will focus on 'additional' benefit, such as signing and local cycling and walking improvements rather than substantial costs;

- The cost of park and ride bus operation can be met through effective pricing and ticketing;
- Improved transport amenity use will add wider benefit to the local community, with regular additional volumes providing confidence of operators and others to invest in their provision.
- Eden Transport Plan can be provided in a broadly cost neutral manner with no need for substantial additional capital cost.

4 STAFF TRIP GENERATION AND DISTRIBUTION

4.1 INTRODUCTION

4.1.1 Eden Project International has anticipated 389 Full Time Equivalent jobs annually created directly by the Eden Project North development.

4.1.2 Considering the 09:00 – 21:00 opening hours previously described, and that some staff will need to be on site before and after opening times, WSP has categorised the jobs in two different staff groups. Table 4-1 below summarises the number of jobs per staff group.

- Group 1 (Admissions, Catering, Event, Interpretation and seasonal, and Retail) will start working between 08:00 and 13:00, and will end working between 17:00 and 22:00.
- Group 2 (Estates, Marketing, Horticulture, Directorate, Finance, IT, Reception and HR) will work on standard working hours from 08:00 to 17:00.

Table 4-1 – Staff Numbers per Group of Job

Group	Staff Numbers	Proportion
1	264	68%
2	125	32%

4.2 STAFF TRIP DISTRIBUTION

4.2.1 In order to calculate the trip generation, a trip distribution exercise has firstly been done using 2011 journey to work census data.

4.2.2 Analysis of Lancaster 006, 008 and 009 Middle Layer Super Output Area (Morecambe Town Centre) using ONS data (WF01BEW – Location of usual residence and place of work), indicates that 5,698 people work in Morecambe Town Centre. Table 4-2 below shows the location of usual residence and its origin travel zone as per the visitors' trip distribution exercise.

Table 4-2 – Location of Usual Residence for People Working in Morecambe

People	Lancaster	Lancaster 001	South Lakeland	Wyre	Lancaster 005	Lancaster 002	Lancaster 019	Ribble Valley
People	4437	177	127	76	69	68	64	31
Zone	-	C – North	C – North	A – South	B – East	B – East	A – South	A – South
Region	**Fylde**	**Preston**	**Blackpool**	**Blackburn**	**Craven**	**Rochdale**	**South Ribble**	**Other**
People	30	30	28	24	20	15	12	335
Zone	A – South	A – South	A – South	A – South	A – South	A – South	A – South	-

4.2.3 Those locations of usual residence that have less than 10 working population were grouped in *Other* and not considered in this exercise.

4.2.4 Due to the nature and ethos of Eden Project International, the working assumption is that the majority of employees will be based locally and will use sustainable modes of transport. Therefore, those living within the urban environment of Lancaster, including Morecambe, have been grouped under *Lancaster*.

4.2.5 Lancaster 001, 002, 005 and 019 are the *countryside* regions of Lancaster and have been treated separately to *Lancaster*.

4.2.6 Table 4-3 below summarises the total working population per zone and its modal split calculation methodology.

Table 4-3 – Working Population per Zone and Modal Split Methodology

Location of Usual Residence Zone	Working Population	Proportion	Modal Split Methodology
Zone A – South	310	6.0%	WU03UK
Zone B – East	157	3.0%	WU03UK
Zone C – North	304	5.8%	WU03UK
Lancaster	4437	85.2%	Assumed given split
Total	5208	100%	-

4.3 STAFF MODAL SPLIT

4.3.1 The modal split has been calculated using 2011 journey to work census data.

4.3.2 Analysis of Lancaster 006, 008 and 009 Middle Layer Super Output Area (Morecambe Town Centre) using ONS data (WU03UK – Location of usual residence and place of work by method of travel to work) is shown in Table 4-4 below.

Table 4-4 – Staff Modal Split

Work from Home	Train	Bus	Taxi	Motorcycle	Car Driver	Car Passenger	Bicycle	On Foot	Other
0%	1%	8%	1%	1%	57%	7%	4%	21%	0%

4.3.3 As it can be seen, the vast majority (85.2%) of the working population of Morecambe Town Centre live in the urban region of Lancaster. Therefore, the working assumption thanks to the Eden ethos is that in the long term all staff living in this area will use sustainable transport modes for commuting

(walking, cycling and public transport). With the exception of individuals who may require to drive to work for different reasons (e.g. disability).

4.3.4 However, for the opening year the Eden Project International understands that this modal split is not likely to be achieved based on their experience on the Cornwall site. As such, the working assumption assumes that those living in the urban region of Lancaster will commute with an even split between private vehicles (50%) and active and public transport (50%). Instead of the 64% private vehicle modal split from census data.

4.3.5 It can be seen that the working population with usual residence in the North West that commute to Morecambe do so by car (64%), on foot (21%), by public transport (9%), cycling (4%), rail (1%) and other (1%).

4.3.6 It is envisaged that staff parking will be located in a different location to visitors. And this site will not only be used for parking but for *back of house* operations and logistics.

4.3.7 Besides, it is possible to calculate the car occupancy rate by dividing the number of people travelling by car (car driver and car passenger) by the number of cars (car driver). Which gives a car occupancy rate of 1.13 people per car.

4.3.8 It should also be noted that Eden Project Cornwall has an important presence of volunteers on a daily basis. Particularly around the holiday season. Whilst these have not been yet quantified for Morecambe, volunteers tend to be local and therefore use both public and active transport to travel to and from home. As such, no vehicular trips are envisaged to be made by volunteers. Other than negligible trips generated by mobility impaired volunteers.

4.4 STAFF TRIP GENERATION

4.4.1 Once the staff numbers, their origin and modal split are known, the trip generation exercise can be done as described in this section.

4.4.2 It has been assumed that all members of staff will work five days per week. Therefore, a 0.71 (5/7) factor has been applied to the number of staff.

4.4.3 Besides, members of staff from Group 1 will arrive and depart across the starting and ending working hours described above. Hence, a 0.20 (1/5) factor has been applied to Group 1 staff for each arrival and departure hour.

4.4.4 Table 4-5 below shows the total number of trips generated by staff members

Table 4-5 – Staff Trip Generation

Time	Arrivals	Departures	Total
07:00 – 08:00			
08:00 – 09:00	127		**127**
09:00 – 10:00	38		**38**
10:00 – 11:00	38		**38**
11:00 – 12:00	38		**38**

Time	Arrivals	Departures	Total
12:00 – 13:00	38		**38**
13:00 – 14:00	38		**38**
14:00 – 15:00			
15:00 – 16:00			
16:00 – 17:00			
17:00 – 18:00		127	**127**
18:00 – 19:00		38	**38**
19:00 – 20:00		38	**38**
20:00 – 21:00		38	**38**
21:00 – 22:00		38	**38**
22:00 – 23:00			
23:00 – 24:00			

4.4.5 Considering the number of staff arriving and departing per hour, their trip distribution, modal split and car occupancy rate above described, the total trip generation by mode has been calculated as follows.

4.4.6 All Staff Trip Generation tables can be found in Appendix F.

4.4.7 Table 4-6 below shows the number of walking, cycling and public transport trips generated by staff and origin.

Table 4-6 – Staff Trip Generation (Walking, Cycling and Public Transport Trips)

Time	Zone A	Zone B	Zone C	Lancaster	Total
07:00 – 08:00					
08:00 – 09:00	3	1	3	54	**61**
09:00 – 10:00	1		1	16	**18**
10:00 – 11:00	1		1	16	**18**
11:00 – 12:00	1		1	16	**18**
12:00 – 13:00	1		1	16	**18**
13:00 – 14:00					

Time	Zone A	Zone B	Zone C	Lancaster	Total
14:00 – 15:00					
15:00 – 16:00					
16:00 – 17:00					
17:00 – 18:00	3	1	3	54	**61**
18:00 – 19:00	1		1	16	**18**
19:00 – 20:00	1		1	16	**18**
20:00 – 21:00	1		1	16	**18**
21:00 – 22:00	1		1	16	**18**
22:00 – 23:00					
23:00 – 24:00					

4.4.8 Table 4-7 below shows the number of car trips generated by staff and origin.

4.4.9 The staff commuting by car has been divided by the car rate (1.13) to calculate the car trips.

Table 4-7 – Staff Trip Generation (Car Trips)

Time	Zone A	Zone B	Zone C	Lancaster	Total
07:00 – 08:00					
08:00 – 09:00	4	2	4	48	**59**
09:00 – 10:00	1	1	1	14	**17**
10:00 – 11:00	1	1	1	14	**17**
11:00 – 12:00	1	1	1	14	**17**
12:00 – 13:00	1	1	1	14	**17**
13:00 – 14:00					
14:00 – 15:00					
15:00 – 16:00					
16:00 – 17:00					
17:00 – 18:00	4	2	4	48	**59**
18:00 – 19:00	1	1	1	14	**17**

Time	Zone A	Zone B	Zone C	Lancaster	Total
19:00 – 20:00	1	1	1	14	**17**
20:00 – 21:00	1	1	1	14	**17**
21:00 – 22:00	1	1	1	14	**17**
22:00 – 23:00					
23:00 – 24:00					

4.5 SUMMARY

4.5.1 This chapter has described the methodology that was followed to calculate the staff trip generation and distribution.

4.5.2 Overall, 85% of the staff will travel from Lancaster, 6% from the south, 3% from the east and 6% from the north.

4.5.3 The maximum number of car trips generated within the same hour is 59.

5 VISITOR TRIP GENERATION AND DISTRIBUTION

5.1 INTRODUCTION

5.1.1 In a 'typical' development, trip generation needs to be calculated before distributing the generated trips. However, the proposed ticketing control system of a maximum number of visitors per hour already provides a figure for the total number of visitors.

5.2 METHODOLOGY

5.2.1 EDEN PROJECT INTERNATIONAL VISITOR SPLIT

5.2.2 Eden Project international and Planning Solutions Consulting Limited (PSCL), their leisure consultants, have envisaged 921,906 annual visitors.

5.2.3 Table 5-1 below shows the assumed visitor split. EPI has assumed that 24% of the visitors will be overnight visitors, whilst the remaining 76% will be day visitors attracted from the residential market, groups and education trips.

Table 5-1 – Planning Solutions Visitor Type

	Day Visitor	Overnight Domestic (75%)	Overnight International (25%)	Groups	Education	Additional, incl. events	Total
Proportion	50%	22%	2%	4%	7%	14%	100%
Annual	458,376	207,240	21,273	38,550	66,003	130,465	921,906

5.2.4 Table 5-2 below summarises the proportion of trips made by each visitor type.

Table 5-2 – Planning Solutions Proportion of Visitor and Overnight Visitor Trips[3]

	Day Trip	Overnight Trip	Total
<1h Distance	25%	*	*
>1h Distance	51%	*	*
Total	76%	24%	100.0%

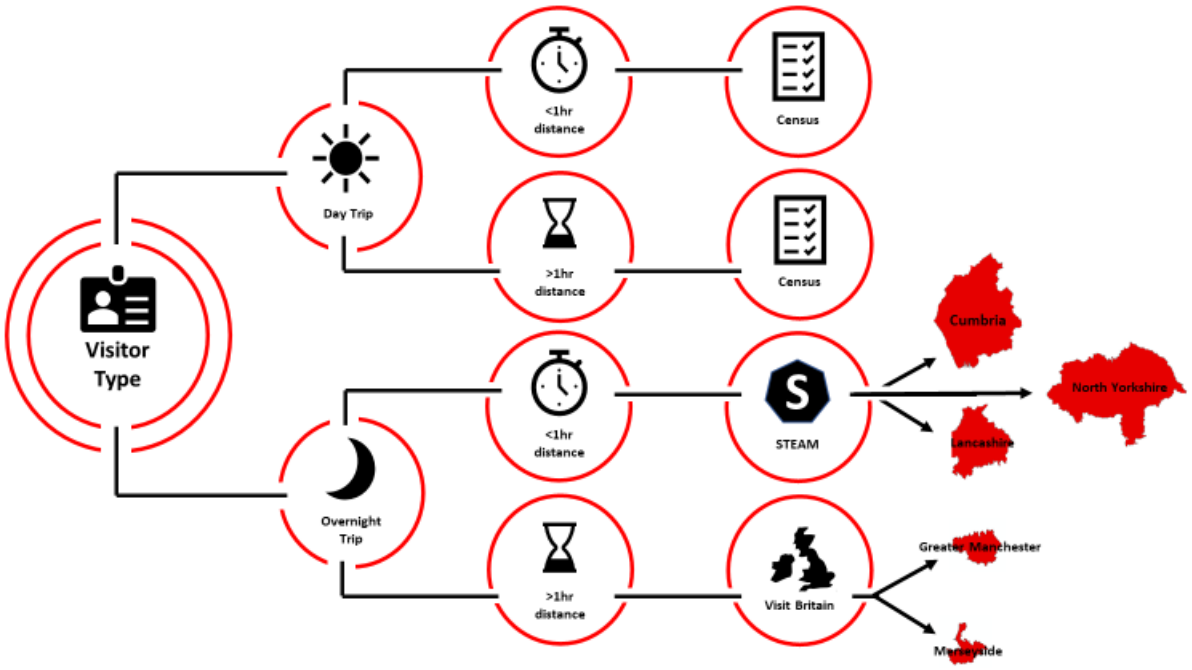
[3] Planning Solutions scope of work does not include full details required for a transport trip generation and distribution exercise. WSP has done some analysis with the expected number of visitors per year reported in Table 5-1 to obtain, if possible, the number of visitors from different travel origin distances.

5.2.5 WSP VISITOR SPLIT

5.2.6 The EPI and PSCL analysis does not look into the details needed for a robust trip generation and distribution exercise. Consequently, WSP has developed their own analysis, which is set out below.

5.2.7 The WSP visitor split methodology, described in full in the below sections. is summarised in Figure 5-1.

Figure 5-1 - WSP Visitor Split Methodology



Population (Day Trip)

5.2.8 A *gravity model* based on census data has been effectively created using ArcGIS software. Which has been used to calculate a two-hour distance catchment area assuming a 70mph driving speed on the road network (motorways, A-roads and primary roads), with the M6 J34 Caton Road P&R as a starting point. The catchment area has then been broken down into 30-minute sections.

5.2.9 However, the perception of Morecambe being closer in driving time to Glasgow and Edinburgh than to Birmingham (included in the two-hour distance catchment area) was a robust assumption to include both cities, and its immediate region, as a 120+ minute distance catchment area.

5.2.10 Caton Road P&R can be accessed from the north (M6), the east (A683) and the south (M6). Hence three different zones were created, as shown on the plan included in Appendix G**,** to provide an understanding of where visitors will travel from. The zones were then divided into subzones to facilitate data analysis:

- Zone A – South
- Zone B – East
- Zone C – North

A1 – Merseyside
B1 – Leeds
C1 – North East

A2 – Greater Manchester
B2 – North Yorkshire
C2 - Scotland

5.2.11 Population data (KS101EW – Usual resident population) was extracted using census data from Nomis (a web-based database of labour market statistics of the Office for National Statistics).

5.2.12 Middle Layer Super Output Area (MSOA) boundaries were downloaded from ArcGIS and then matched with population figures from Nomis to calculate the proportion of population living within each subzone catchment area as shown in Table 5-3.

5.2.13 If the trip distribution exercise was solely based on population, 69% would travel from beyond one-hour driving distance and 31% from within one-hour driving distance.

Table 5-3 – Percentage (%) of Population Living Within Each Zone

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1	3.3	*3.4*	0.1	0.0	*0.1*	0.0	0.5	*0.5*	**4.1**
30-60	8.3	10.5	*18.9*	5.8	0.5	*6.3*	0.4	1.4	*1.7*	**26.9**
60-90	3.6	4.2	*7.9*	7.4	1.2	*8.6*	8.2	1.0	*9.2*	**25.7**
90-120	2.3	19.9	*22.1*	3.6	1.3	*5.0*	2.5	0.9	*3.4*	**30.5**
120+	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	12.8	*12.8*	**12.8**
Total	**14.4**	**37.9**	***52.3***	**17.0**	**3.0**	***20.0***	**11.1**	**16.6**	***27.7***	**100.0**

Tourism Data (Overnight Trip)

5.2.14 We understand that the overnight trips to the site need to be categorised in two different classes for transport purposes.

5.2.15 A large proportion of overnight trips from destinations within one hour of Morecambe (Lancashire, Cumbria and North Yorkshire Dales) are likely to be made by car. Overnight trips from further afield (greater than one-hour driving distance) such as Merseyside, Greater Manchester, Yorkshire and Scotland are more likely to be made by international visitors, public transport and organised tours.

5.2.16 Tourism data has been obtained from STEAM for each immediate area. STEAM is a tourism impact modelling process which approaches the measurement of tourism. More information can be found in Appendix G.

5.2.17 Table 5-4 below shows the key data for the region analysed.

Table 5-4 - STEAM Data (2017)

	Lancashire	Cumbria	North Yorkshire Dales	TOTAL
Tourism Visits (M)	67.63	47.30	4.70	119.63
Day Visitors (M / %)	59.29 / 88%	40.70 / 86%	4.08 / 87%	104.07 / 87%

	Lancashire	Cumbria	North Yorkshire Dales	TOTAL
Overnight Visitors (M / %)	8.33 / 12%	6.60 / 14%	0.61 / 13%	15.54 / 13%
Total Nights (M)	25.99	22.00	2.14	50.13
Average Nights per Overnight Visitor	3.1	3.3	3.5	3.2

5.2.18 The tourism data suggests that a maximum of 13% of overnight trips will be generated by the development within the one-hour catchment area. These trips are segregated into zones as shown in Table 5-5. As a worst-case scenario from a transport point of view[4], and following Planning Solutions Consulting advice, it has been assumed that circa half of the 13% overnight visitors to the region (~6.5%) will be visiting the development during their stay.

Table 5-5 – Overnight Visitors within one-hour distance

	Total Overnight Visitors (M)	Total Overnight Visitors (%)	6.5% Weighted Proportion of Overnight Visitors from each Zone
Lancashire (Zone A)	8.33	54%	3.5%
North Yorkshire Dales (Zone B)	0.61	4%	0.3%
Cumbria (Zone C)	6.60	42%	2.8%

5.2.19 Regarding overnight visitors beyond the one-hour distance catchment area, it has been assumed that the proportion of domestic and international visitors provided by EPI is acceptable for this catchment area.

5.2.20 The domestic overnight population has been categorised as a day trip, since the location of Morecambe has ten times the population catchment of the site in Cornwall.

5.2.21 It has been assumed that the majority of international visitors will travel from Zone A (Merseyside and Greater Manchester area). A small proportion of these would travel from the Lake District and Yorkshire. However, for simplicity, and as a worst case scenario, it has been assumed that 100% of these overnight visitors will travel from the south (Zone A), creating additional pressure on the transport network. 2018 Visit Britain data show that 1.6M people visited Greater Manchester (66%) and 0.8M visited Merseyside (34%).

[4] Further explained in the *Trip Generation* section.

Day and Overnight Visitor Trips

5.2.22 Therefore, it has been assumed that 6, out of 31, overnight trips will start from within a one-hour drive of the site. While 25% of the 69% trips originating outside the one-hour drive band will be overnight trips (17.3%).

5.2.23 Table 5-6 below summarises the proportion of trips made by each visitor type.

Table 5-6 – WSP Proportion of Visitor and Overnight Visitor Trips

	Day Trip	Overnight Trip	Total
<1h Distance	24.5%	6.5%	31.0%
>1h Distance	51.8%	17.3%	69.0%
Total	76.3%	23.7%	100.0%

5.2.24 It can be seen that the WSP visitor type proportion matches the EPI and PSCL proportion shown in Table 5-2. Both analyses have forecasted a circa 76-24 split in day and overnight trips, which underlines the robustness of the transport analysis.

5.3 VISITOR TRIP DISTRIBUTION

5.3.1 This section summarises the calculated day and overnight visitor distribution from each zone using the methodology explained above.

Day Visitor

5.3.2 Table 5-7 shows the total day visitor distribution. 40% of the day visitors will travel from the south, 15% from the east and 21% from the north.

Table 5-7 – Day Trip Distribution (%)

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1	2.6	*2.7*	0.1	0	*0.1*	0.0	0.4	*0.4*	**3.3**
30-60	6.6	8.3	*14.9*	4.6	0.4	*5.0*	0.3	1.1	*1.4*	**21.2**
60-90	2.7	3.2	*5.9*	5.6	0.9	*6.5*	6.2	0.8	*6.9*	**19.3**
90-120	1.7	14.9	*16.6*	2.7	1.0	*3.7*	1.9	0.6	*2.5*	**22.9**
120+	0.0	0.0	*0.0*	0.0	0.0	*0.0.*	0.0	9.6	*9.6*	**9.6**
Total	**11.1**	**29.0**	***40.1***	**13.0**	**2.3**	***15.3***	**8.4**	**12.5**	***20.9***	**76.3**

Overnight visitor

5.3.3 Table 5-8 shows the total overnight visitor distribution. 21% of the overnight visitors will travel from the south, 1% from the east and 3% from the north.

Table 5-8 – Overnight Trip Distribution (%)

Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0	0	*0*	0	0	*0*	0	0	*0*	**0**
30-60	0	3.5	*3.5*	0.1	0.1	*0.3*	0	2.8	*2.8*	**6.5**
60-90	5.9	11.3	*17.3*	0	0	*0*	0	0	*0*	**17.3**
90-120	0	0	*0*	0	0	*0*	0	0	*0*	**0**
120+	0	0	*0*	0	0	*0*	0	0	*0*	**0**
Total	**5.**	**14.8**	***20.7***	**0.1**	**0.1**	***0.3***	**0**	**2.8**	***2.8***	**23.7**

Total Trip Distribution

5.3.4 Table 5-9 shows the total visitor distribution. 60% of the visitors will travel from the south, 14% from the east and 26% from the north.

Table 5-9 – Total Trip Distribution (%)

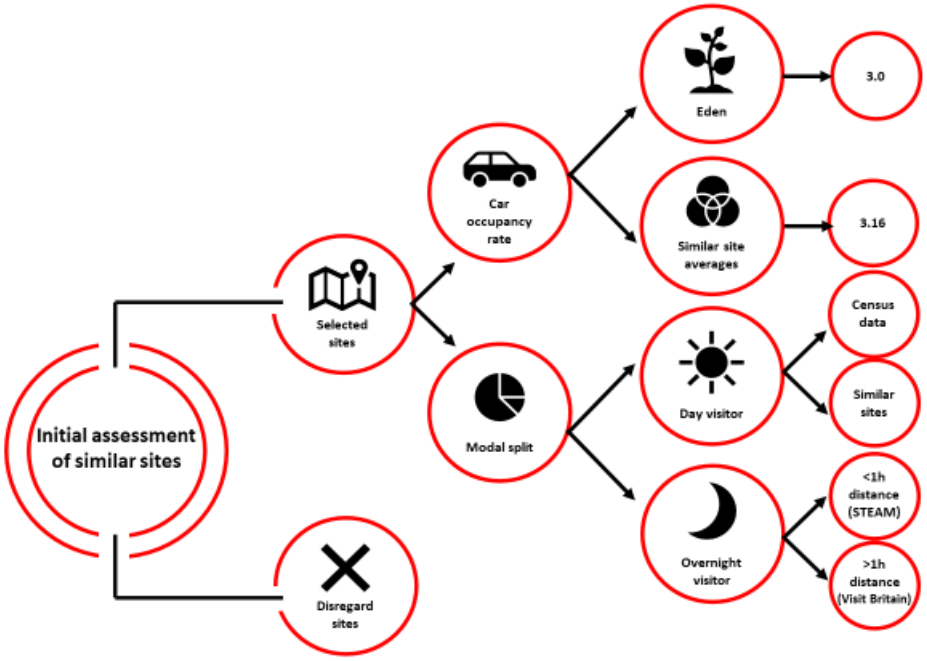
Distance (min)	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1	1.9	*2.0*	0.1	0.0	*0.1*	0.0	0.3	*0.3*	**2.4**
30-60	4.8	13.1	*17.9*	3.6	0.5	*4.2*	0.2	0.8	*6.5*	**28.6**
60-90	8.6	14.5	*23.1*	5.6	0.9	*6.5*	6.2	0.8	*6.9*	**36.5**
90-120	1.7	14.9	*16.6*	2.7	1.0	*3.7*	1.9	0.6	*2.5*	**22.9**
120+	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	9.6	*9.6*	**9.6**
Total	**15.3**	**44.4**	***59.7***	**12.0**	**2.4**	***14.4***	**8.3**	**17.6**	***25.9***	**100.0**

5.4 VISITOR MODAL SPLIT AND CAR OCCUPANCY RATE

5.4.1 METHODOLOGY

5.4.2 Figure 5-2 below summarises the visitor modal split and car occupancy rate methodology, which is fully described in this section.

Figure 5-2 - Visitor Modal Split and Car Occupancy Rate Methodology



5.4.3 In order to calculate the trip generation, an initial assessment of circa 30 potential similar sites (theme parks, zoos, aquariums, visitor attractions, etc) across the UK was done. However, not all the sites identified had the same characteristics as the proposed development.

5.4.4 Therefore, after disregarding those which visitor type, location or transport connectivity was not considered similar from a transport perspective, a thorough review of Alton Towers, Chester Zoo, Thorpe Park and Warner Bros Studio was done.

5.4.5 Table 5-10 below summarises the modal split for the four sites identified.

Table 5-10 – Similar Sites Modal Split and Car Occupancy Rate

	Alton Towers (2012)	Chester Zoo (2009)	Thorpe Park (2015)	Warner Bros Studio (2014)
Car (%)	88	89	69	50
Rail (%)	3	0	0	
Bus (%)	0	3	9	25
Coach (%)	8	6	14	22
Other (%)	1	2	8	3

5.4.6 MODAL SPLIT

5.4.7 A combination of similar sites data, census data and tourism data has been used to calculate the modal split for the different visitor types.

5.4.8 After further data gathering and review, it was decided that both Thorpe Park and Warner Bros Studio were not a representative site, and therefore, it was decided not to include it in the visitor modal split analysis.

Day Visitor

5.4.9 A combination of similar sites and census data was done.

5.4.10 It can be argued that Alton Towers and Chester Zoo have a very high proportion of car trips considering the nature and ethos of Eden Project International.

5.4.11 Notwithstanding this, the public transport connectivity of Morecambe to the wider north west is not the best possible. And whilst the industry will react to the opening of Eden Project North, it will take some time to balance the modal split and reduce the car modal share.

5.4.12 However, existing modal split in the region was decided to be used as well.

5.4.13 Census data (WU03UK – Location of usual residence and place of work by method of travel to work) was averaged with Alton Towers and Chester Zoo modal split. Table 5-11 below summarises the modal split for each site and the weighted average modal split.

Table 5-11 – Day Visitor Modal Split

	Alton Towers (2012)	Chester Zoo (2009)	WU03UK (2011)	Weighted Average
Car (%)	88	89	65	68
Rail (%)	3	0	1	26
Bus (%)	0	3	8	6
Coach (%)	8	6		
Other (%)	1	2	1	-
Walking and Cycling (%)	-	-	25	-

5.4.14 The 26% rail modal split has been obtained by assuming that walking, cycling and other modes of transport will be using the existing rail infrastructure, which stops immediately next to the proposed development.

5.4.15 Whilst it is true that local residents will be walking and cycling to the site, local residents are expected to visit the day during the off peak and inter peak season, rather than on a peak day of the peak season (bank holiday weekend or summer weekend).

5.4.16 However, as a sensitivity test, we have created a series of scenarios with different modal splits. On which the car share increase represents an equivalent decrease on rail share.

5.4.17 The average modal split provides a figure over 100%, hence a weighted average has been used.

5.4.18 Besides, other transport modes, including walking and cycling have been assumed to use rail as mode of transport due to the nature of the site and the development.

5.4.19 In summary, 68% of the day visitors will travel by car, 26% by train and 6% by coach.

Overnight Visitor

5.4.20 Visit Britain published in 2014 the *Types of transport used while visiting Britain* report, which summarises all transport modes used by tourists whilst visiting UK.

5.4.21 Table 5-12 below shows the weighted average for the three main transport modes assumed to be used by overnight international visitors to the site.

Table 5-12 – Visit Britain (Weighted) Modal Split

Train	Bus / Coach	Car
58.3%	25.0%	16.7%

5.4.22 It can be seen that the majority of visitors to the UK prefer to use public transport. However, a difference needs to be made between international and domestic visitors.

5.4.23 It has been assumed that domestic overnight visitors will be those staying within one-hour drive distance of the site (Lancashire, Cumbria and North Yorkshire Dales). Due to the nature and tourism offer of the region, it could be assumed that all of them will travel by car. However, for sensitivity reasons, it has been assumed that 90% will travel by car, and 10% by public transport proportionally to Visit Britain figures distributed.

5.4.24 International overnight visitors are assumed to travel from Merseyside and Greater Manchester. Therefore, the Visit Britain modal split has been used.

5.4.25 Table 5-13 below summarises the modal split for overnight visitors.

Table 5-13 – Overnight Visitor Modal Split

	Train	Bus / Coach	Car
Domestic Visitor (<1h)	7%	3%	90%
International Visitor (>1h)	58.3%	25.0%	16.7%

5.4.26 CAR OCCUPANCY RATE

5.4.27 Eden Project International has envisaged a car occupancy rate of 3 occupants per vehicle.

5.4.28 Notwithstanding the above, a review or car occupancy rates for different sites across the UK was done.

5.4.29 Table 5-14 below shows the different rates for similar sites across the UK, the Department for Transport (DfT) Holiday / Day Trip rate and the average.

Table 5-14 – Car Occupancy Rate

DfT Holiday / Day Trip	Eden Cornwall	Eden Project North	Thorpe Park[5]	Thorpe Park[5]	Alton Towers	Gulliver's Park	Chester Zoo	Average
1.92	2.3	3	3.33	3.45	3.6	3.8	3.9	3.16

5.4.30 Whilst only two sites have been considered for the modal split analysis, we understand that car occupancy rates of other sites can be used in order to obtain the Eden Project North expected car occupancy rate. The reason for this is that the proposed location for Eden Project North is quite unique for a tourism attraction site. Right next to a railway station, to a National Cycling Route and a local bus station, with a superb existing highways and transport infrastructure. When understanding the potential modal split, other sites with no such facilities are more car dependant. However, in terms of *party size*, the average car occupation rate tend to be similar (3 to 4) for the majority of the tourism attractions across the UK.

5.4.31 The Eden Cornwall car occupancy rate is currently at 2.3 visitors per car. However, as previously described, the Cornwall site cannot be used as benchmark for Morecambe because of different population catchment area.

5.4.32 It should be noted that the car occupancy rate is a seasonality factor that will vary across the year. Visitor' profile will differ from a sunny Saturday in August to a cold and rainy weekday in February. The first one is more likely to be a group of 3+ people, whilst the second one, will more likely be a member of Eden Project North with a group size lower than the average 3.16.

5.4.33 The average rate is slightly higher than the envisaged by Eden. However, as a worst-case scenario assumption, and as advised by Eden Project International, an occupancy rate of 3.0 has been used on the trip generation exercise.

5.4.34 It is key to provide enough infrastructure and parking for the peak season, but to not overdesign it. Since this will accommodate both cases: a higher car occupancy rate during the peak season with a higher number of visitors; and a lower car occupancy rate during the off peak season with a much lower number of visitors.

5.4.35 The coach capacity rate is assumed to be 50 passengers per coach.

[5] Two car occupancy rates for Thorpe Park are presented. These have been obtained from different planning applications for the last 10 years.

5.5 VISITOR TRIP GENERATION

5.5.1 After a fully comprehensive review of the trip distribution, modal split and car occupancy rate, the visitor trip generation was calculated as follows.

5.5.2 The time-controlled ticketing proposal has been crucial to our work. This has been used to analyse trip generation and distribution since visitors per hour are capped at a certain maximum (different caps in different scenarios).

5.5.3 To predict the exact modal split for the opening year, on top of the off peak and inter peak scenarios, eighteen different peak scenarios (001 to 018) have been developed, assessed and discussed in our work. These are based on a combination of parameters including visitors per day, visitors per hour and modal split as shown in Table 5-15. This represents a very thorough and robust analysis scenario.

5.5.4 Scenarios 010 to 018 comprise a sensitivity analysis for a 25% uplift in the maximum number of visitors per day on a peak day.

5.5.5 Whilst the 68% car modal split is the answer we have got after our thorough analysis, we acknowledge that despite the Eden Transport Vision, the rail industry will not have sufficient time to improve capacity / infrastructure for the opening year and that a sensitivity analysis is also required here. For that reason, an uplift of 5% and 10% has been applied to the private vehicle in detriment of the rail modal split.

Table 5-15 – Visitor Trip Generation Scenarios Summary Table

Scenario	Visitors / Day	Visitors / hour	Day Visitor Modal Split	Scenario	Visitors / Day	Visitors / hour	Day Visitor Modal Split
Off Peak	1,250	500	68% car	**Inter Peak**	2,500	500	68% car
001	3,750	500	68% car	**010**	4,688	500	68% car
002			73% car	**011**			73% car
003			78% car	**012**			78% car
004	3,750	750	68% car	**013**	4,688	750	68% car
005			73% car	**014**			73% car
006			78% car	**015**			78% car
007	3,750	1,000	68% car	**016**	4,688	1,000	68% car
008			73% car	**017**			73% car
009			78% car	**018**			78% car

5.5.6 At this point, the reasonable working assumptions, in line with Planning Solutions report, is that a maximum of 3,750 visitors per day will be expected, with a cap of 750 visitors per hour. This is presented on Scenarios 004, 005 and 006. As the private vehicle modal split cannot be known at

this point, and for the robustness of the analysis, we have selected all three scenarios when taking into account parking demand and understanding potential highways impact.

5.5.7 These three scenarios will generate a maximum of 152 to 171 private vehicle two-way trips during the peak hour of the *typical peak* scenario (a bank holiday weekend or a summer weekend). However, on average across a peak day, 117 to 132 private vehicle two-way trips per hour will be generated.

5.5.8 All trip generation scenarios can be found in Appendix F. Where detailed tables showing the number of trips generated by origin and modal split are presented.

5.6 SUMMARY

5.6.1 This chapter has described the methodology that was followed to calculate the visitor trip generation and distribution.

5.6.2 Eden Project International and their leisure consultants, Planning Solutions Consulting Limited (PSCL), have provided the split of day and overnight visitors. However, this does not include all the details needed for a typical trip generation and distribution exercise. Consequently, WSP has developed their own methodology which has concluded with the same 76%-24% day and overnight visitor split.

5.6.3 WSP have worked alongside PSCL in order to carry out the trip generation and distribution exercise. This has been informed by multiple datasets, including benchmarking of similar sites, 2011 census data, Visit Britain, STEAM, as well as knowledge and experience from the Eden Cornwall site. Assumptions have been based on industry best practice and discussed and agreed with multiple stakeholders, including Lancaster City Council and Lancashire County Council.

5.6.4 A *gravity model* based on census data has been effectively created using ArcGIS software.

5.6.5 Tourism data has been obtained from STEAM for each immediate area.

5.6.6 In order to calculate the trip generation, an initial assessment of circa 30 potential similar sites (theme parks, zoos, aquariums, visitor attractions, etc) across the UK was done. However, not all the sites identified had the same peculiarities as the proposed development.

5.6.7 A combination of similar sites data, census data and tourism data has been used to calculate the modal split for the different visitor types.

5.6.8 The time-controlled ticketing proposal has been crucial to our work.

5.6.9 To predict the exact modal split for the opening year, on top of the off peak and inter peak scenarios, eighteen different peak scenarios have been developed, assessed and discussed in our work.

5.6.10 At this point, the reasonable working assumptions, in line with Planning Solutions report, is that a maximum of 3,750 visitors per day will be expected, with a cap of 750 visitors per hour.

5.6.11 The three agreed scenarios will generate a maximum of 152 to 171 private vehicle two-way trips during the peak hour of the *typical peak* scenario (a bank holiday weekend or a summer weekend). However, on average across a peak day, 117 to 132 private vehicle two-way trips per hour will be generated.

6 PARKING STRATEGY

6.1 INTRODUCTION

6.1.1 Following the staff and visitor trip generation and distribution analysis, we have been able to quantify the parking demand for each of the 20 scenarios assessed.

6.1.2 This chapter presents the overall parking strategy for Eden Project North and describes how this has been agreed with multiple stakeholders and co-consultants, including Lancaster City Council and Lancashire County Council.

6.2 BACKGROUND INFORMATION

M6 J34 Caton Road Park and Ride

6.2.1 The recently constructed M6 J34 Caton Road Park and Ride provides 650 parking spaces immediately off the motorway. This is a magnificent facility that enables Eden to capture a significant number of vehicular trips from the M6 to Lancaster and Morecambe.

6.2.2 The site is currently open 24 hours a day, 7 days a week. However, the bus service does only operate Monday to Saturday with a 30-minute frequency.

6.2.3 Parking on this location is currently free, with bus fares shown in Table 6-1.

Table 6-1 – M6 J34 Caton Road Park and Ride Current Bus Fares

Ticket	Adult Return	Adult Weekly	Child Return	Family Return	Group Return	Concessions	Disabled
Fare	£1.60	£6.50	£0.80	£3.20	£4.30	Free after 9.30 am	

6.2.4 Currently, buses travel between the site and Lancaster city centre stopping at George Street, China Street and the bus station, just short walks from the Hospital, railway station and the city centre respectively.

6.2.5 The site does not just cater for park and ride. It is also the perfect place to meet up for car sharing thanks to the CCTV cameras and its ideal location, with being located right next to the M6 with easy access onto the motorway.

6.2.6 Discussions with Lancashire County Council have concluded that the site is currently used by an average of circa 200 vehicles per weekday. Which provides a spare capacity of circa 450 spaces.

6.2.7 However, the bus fare analysis indicates that the majority of the Caton Road P&R site users are meeting on the site for *park and share* purposes. Using one of the vehicles to continue the journey into the motorway or Lancaster to share ride and potential parking costs.

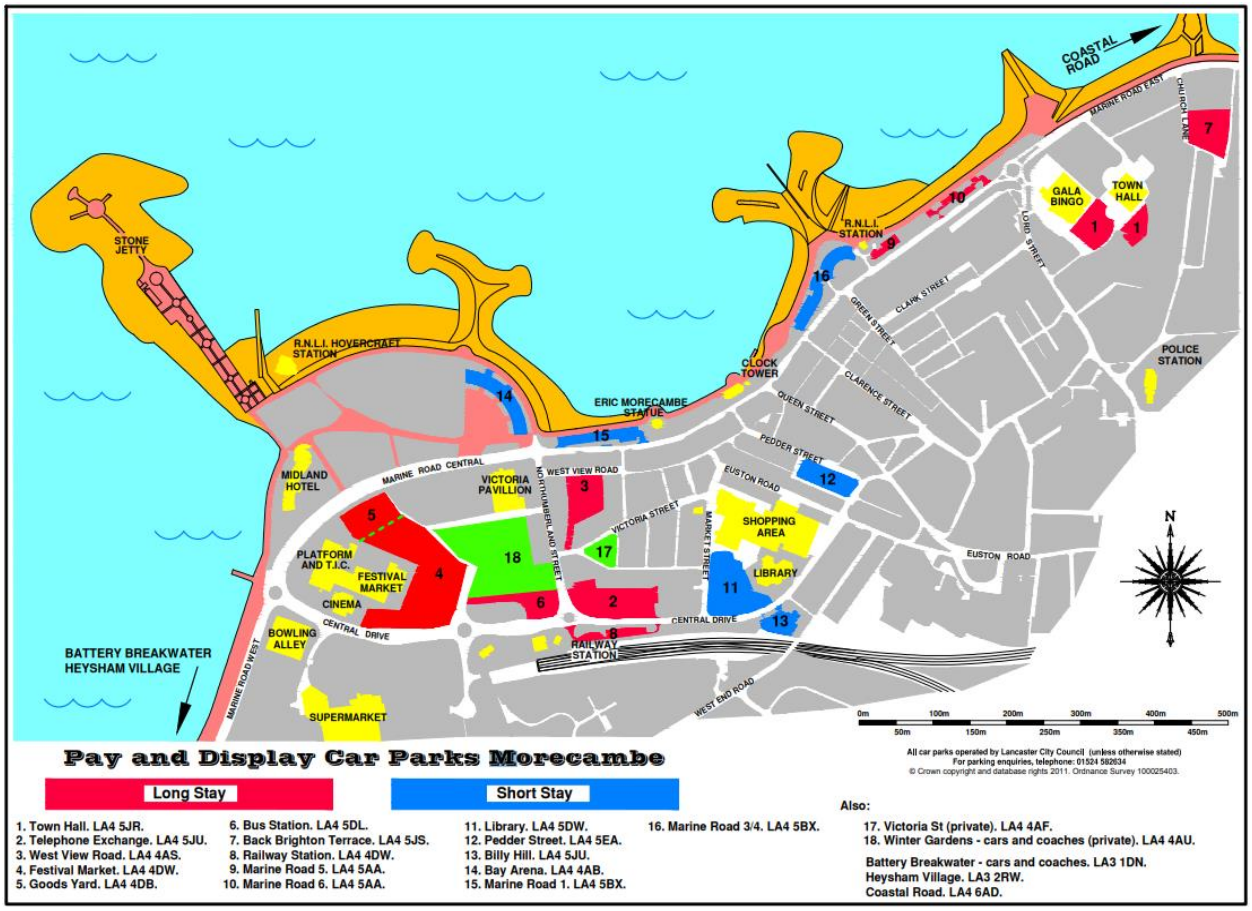
6.2.8 It should also be noted that the local NHS Trust / Lancaster Hospital is in the process of developing a new multi-storey car park on its existing car park site with a S106 agreement to temporarily provide an additional bus service from the P&R to Lancaster city centre. This arrangement does not include the exclusive usage and provision of a number of parking spaces at the P&R. However,

circa 250 spaces at the P&R may be used by staff whilst construction is ongoing. This arrangement is deemed as temporary and assumed as concluded by the time Eden Project North opens in 2024.

Morecambe Town Centre

6.2.9 Lancaster City Council currently owns and operates circa 1,800 surface Pay and Display parking spaces across Morecambe town centre on a series of different parking locations as shown in Figure 6-1. On street parking is not included in this figure.

Figure 6-1 - Morecambe Town Centre Parking Plan (Lancaster City Council)



6.2.10 Table 6-2 below summarises the current costs for parking on street and in both short stay (blue) and long stay (red) parking locations in Morecambe. Parking is charged daily from 8am to 6pm, including bank holidays.

Table 6-2 – Morecambe Town Centre Current Parking Costs

Time (h)	0.5	1	2	3	4	10	24
On Street	£0.70	£1.50	£2.60				
Short Stay		£1.50	£2.50	£3.00	£3.80	£9.00	£11.00
Long Stay		£1.30		£2.50		£3.40	

6.2.11 The City Council's Future High Street Fund (FHSF) bid suggest that the provision of circa 1,800 parking spaces on dedicated Pay and Display parking locations across Morecambe has a perceived surplus of approximately 25% at peak times, circa 450 parking spaces.

6.2.12 Morecambe's current FHSF is based on consolidating and repurposing some of the open parking land, with proposals for a new multi-storey car park and commercial and residential development. The proposal does not currently factor in parking demand from Eden Project North but the nature of the scheme is flexible enough to accommodate it should it need to.

6.3 TPARKING ANALYSIS

6.3.1 Following the trip generation and distribution analysis of the 20 different scenarios, a parking accumulation study was carried out in order to fully understand the parking demand requirements on all 20 different scenarios across the year.

6.3.2 Initial conversations with Lancaster City Council and Lancashire County Council suggested to run a series of scenarios with different parking splits across both identified locations (M6 J34 and Morecambe town centre). These three scenarios were identified as *High* (70%-30%), *Medium* (50%-50%) and *Low* (30%-70%) parking splits across J34 and Morecambe.

6.3.3 Table 6-3 below summarises the number of parking spaces required for each of the trip generation and parking scenarios. All parking accumulation details can be found in Appendix H.

Table 6-3 – Eden Project North Parking Demand Analysis Summary Table

Scenario	Visitors / Day	Visitors / Hour	Modal Split (car)	Parking Spaces	High Split		Medium Split		Low Split	
					70% Town	30% J34	50% Town	50% J34	30% Town	70% J34
Off Peak	1,250	500	68%	253	177	76	126	126	76	177
InterPeak	2,500	500	68%	455	319	137	228	228	137	319
001	3,750	500	68%	607	425	182	304	304	182	425
002			73%	645	452	194	323	323	194	452
003			78%	683	478	205	342	342	205	478
004	3,750	750	68%	***759***	531	228	***379***	***379***	228	531
005			73%	***807***	565	242	***403***	***403***	242	565
006			78%	***854***	598	256	***427***	***427***	256	598
007	3,750	1,000	68%	759	531	228	379	379	228	531
008			73%	807	565	242	403	403	242	565
009			78%	854	598	256	427	427	256	598

Scenario	Visitors / Day	Visitors / Hour	Modal Split (car)	Parking Spaces	High Split		Medium Split		Low Split	
					70% Town	30% J34	50% Town	50% J34	30% Town	70% J34
010	4,688	500	68%	557	390	167	278	278	167	390
011			73%	591	414	177	296	296	177	414
012			78%	626	439	188	313	313	188	439
013	4,688	750	68%	810	567	243	405	405	243	567
014			73%	860	602	258	430	430	258	602
015			78%	911	638	273	456	456	273	638
016	4,688	1,000	68%	911	637	273	455	455	273	637
017			73%	968	678	290	484	484	290	678
018			78%	1,025	718	308	513	513	308	718

6.3.4 Highlighted in bold and italic are the agreed trip generation scenarios (004, 005 and 006) and the agreed parking scenario (medium split). This initial reasonable working assumption will split the Eden Project North parking demand roughly equally (50%-50%) across the M6 J34 Caton Road Park and Ride and the Pay and Display existing parking provision around Morecambe town centre. Providing circa 400 spaces on each of the two locations on a peak day.

6.3.5 The Parking Strategy set out in the next section outlines the details of how this can be achieved and the different agreements reached with both City and County Councils.

6.4 PARKING STRATEGY

6.4.1 Initial agreement with both Lancaster City Council and Lancashire County Council has been reached on parking provision requirements for Eden Project North at both M6 J34 Caton Road Park and Ride and Morecambe town centre locations. These letters can be found in Appendix A.

6.4.2 The parking accumulation scenarios suggest a need of between 759 and 854 parking spaces on a peak day to be distributed roughly equally across both Morecambe and the parking facilities at J34.

6.4.3 Caton Road Park and Ride is currently underutilised, and the initial discussion and principles reached with Lancashire County Council will allow Eden Project North to use the Park and Ride facility to accommodate circa 50% of the Eden parking spaces needed throughout the year, particularly during the peak season.

6.4.4 Four locations for car parking have been initially identified in Morecambe town centre, which were suggested by Lancaster City Council in order to accommodate the remaining 50% required parking spaces. As well as car parks near the station, two parking locations are currently proposed near the site on Marine Rd Central. These will be exclusively for the use of mobility impaired visitors and a limited number of parking spaces for operation requirements.

6.4.5 Figure 6-2 and Figure 6-3 below show the identified parking locations.

Figure 6-2 - Eden Welcome Centre (Morecambe town centre)

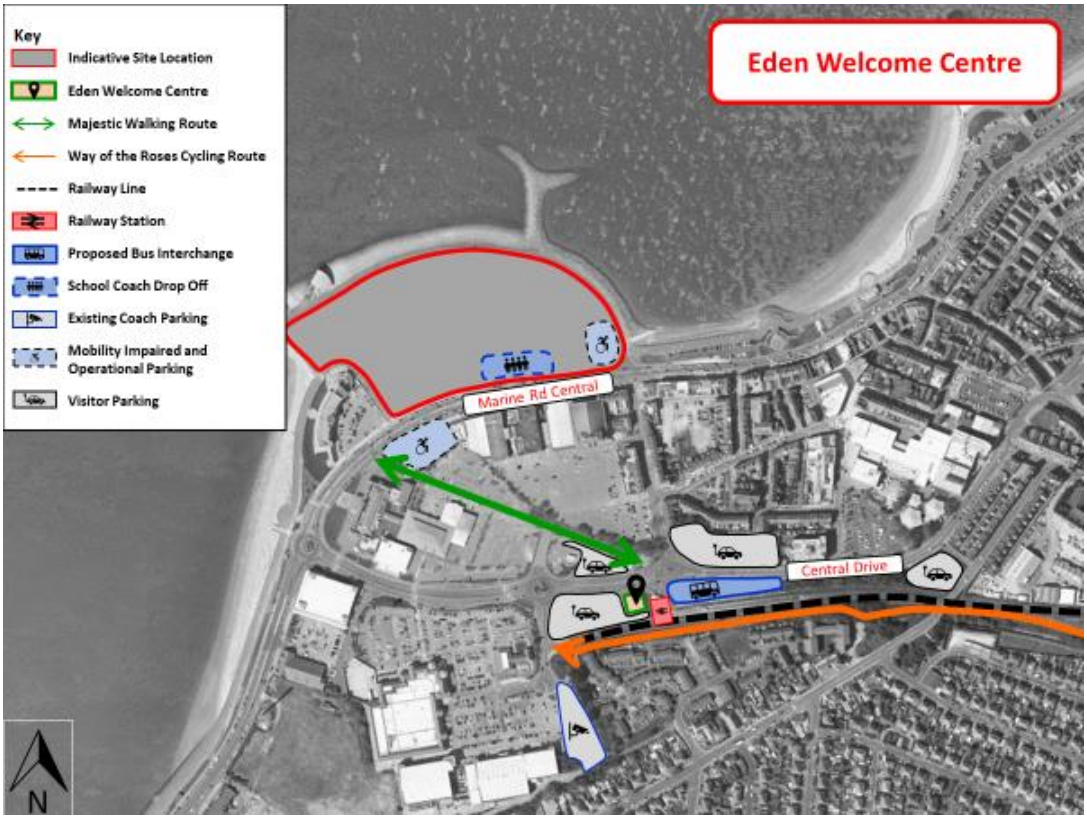
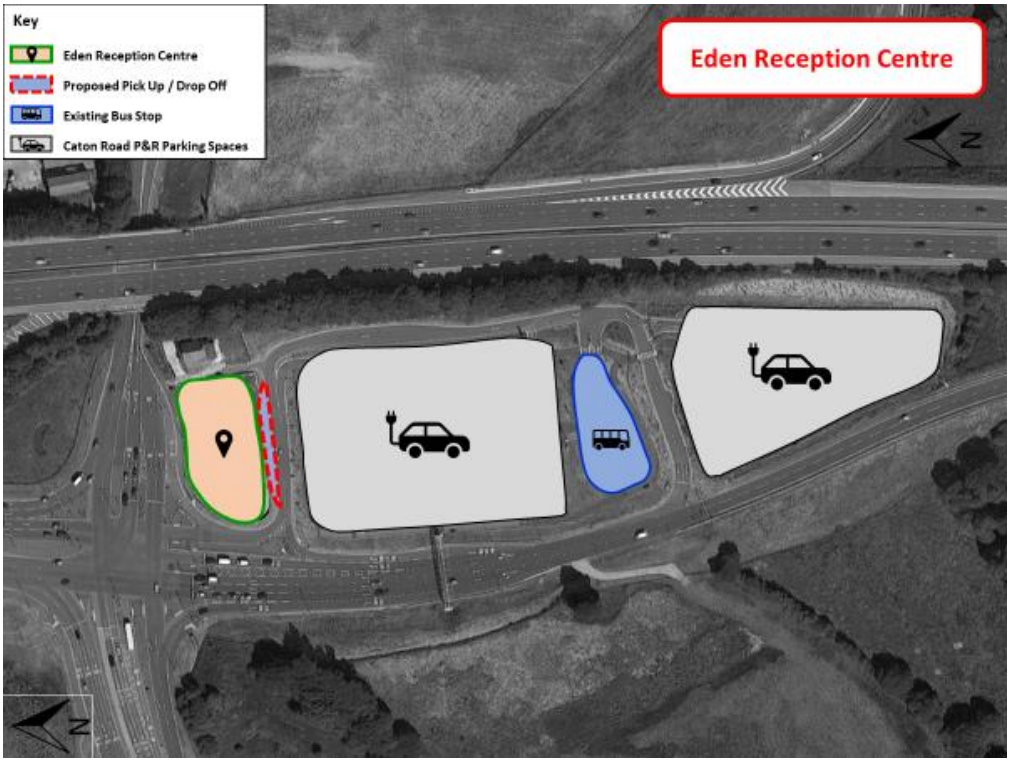


Figure 6-3 - Eden Reception Centre (M6 J34)



6.4.6 Time-control ticketing will require advance booking for the majority of visitors allowing the Eden Project North team to control the demand. This acts as both a capacity control and management tool. The advance booking process can also capture mode of travel for each ticket purchased. This will facilitate managing the parking demand at both initial agreed parking location: M6 J34 Caton Road Park & Ride; and different existing parking locations across Morecambe town centre.

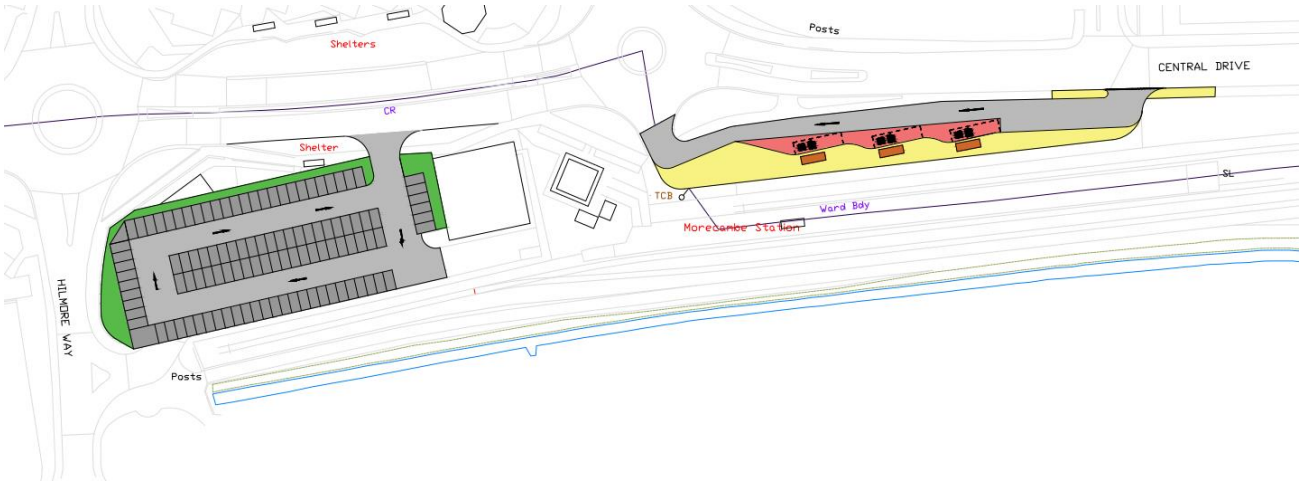
6.4.7 Parking will be managed in a dynamic style. Visitors purchasing an entry ticket to Eden Project North will have to choose an entry slot time, travel mode and parking location (if appropriate) which will dictate the pricing of the entry ticket. This will allow the Eden Project North team to dynamically update the booking systems to promote parking at any given location based on multiple factors such as other events happening in Morecambe on a particular day, forecasted weather conditions, need for visitors to park in Morecambe to enhance the local economy or need for visitors to park at J34 to protect the availability of parking in the town centre for other users.

6.4.8 Apart from accessible parking, which will be free and close to the Eden Project North entrance, all other town-centre parking is assumed as a separate concern, with ownership, management and maintenance largely kept by the Council. An agreed levy may be applied to the car parks closest to Eden Project North in order to cross-subsidise the operating costs of the J34 Park and Ride bus service and other sustainable transport initiatives (e.g. bike hire). Charges for cars may also encourage sustainable transport by discounting for low C02/EV models. Technological solutions for dynamic ticketing which respond to arrival time/duration, occupancy and vehicle type (using smartphone and ANPR etc) will be explored during the detailed design phase.

6.4.9 Initial conversations with Lancaster City Council suggest that the existing ANPR equipment installed in all Pay and Display locations in Morecambe could facilitate this. Eden would notify the Council in advance of how many parking spaces will be required on a given day, as well as vehicle details for each of the visitors parking in Morecambe. On arrival to the selected parking locations, the ANPR would recognise the vehicle details and automatically allow access without having to purchase nor display a ticket.

6.4.10 Figure 6-4 below shows how the identified site for additional parking could accommodate circa 110 additional parking spaces whilst providing greenery and public realm space. Similarly, it shows how the proposed new bus station could operate with three bus stops immediately adjacent to the railway station.

Figure 6-4 - Proposed Morecambe New Car Park Layout



6.4.11 This high level concept design has been proposed, discussed and agreed with Lancaster City Council. Who as per the FHSF bid, would like to relocate not only the bus station, but some of the bus stops on Central Drive. By also relocating the vehicular access to the car park from Hilmore Way to Central Drive, cyclists using the Way of the Roses would benefit from a much safer and upgraded connectivity to Morecambe town centre.

6.4.12 Some adjacent sites have been identified as possible locations for Eden Project North back of house facilities. These sites may also provide for a construction compound and construction staff parking during the construction phase.

6.4.13 The working assumption for staff is that dedicated parking will be built near the site alongside those back-of-house facilities. On a peak day, 129 parking spaces for staff will be needed. As per the Eden Transport Vision, the aspiration is to reduce this provision after the opening year with the help of the Travel Plan being prepared.

6.5 BUS SERVICE PROPOSALS

6.5.1 At this point, the reasonable working assumption is that a bus service will be running at a frequency of 10-12 minutes from the M6 J34 Caton Road Park and Ride to Morecambe town centre, stopping at the proposed new bus station by the railway station shown above on Figure 6-4.

6.5.2 A capacity of 50 visitors on average per bus will provide the right level of experience to all visitors, whilst allowing some extra capacity at peak times when required.

6.5.3 An average of 40 minutes has been agreed as the reasonable return journey time, including boarding, alighting and some reasonable, but unlikely, delays on the highways network.

6.5.4 With a 40-minute journey time and a capacity of 50 visitors per bus, Eden Project North would need to run a total of four buses to and from the site on a 10-12 minute frequency. The time-ticketed booking system will allow to distribute visitors across the day. Which would allow Eden Project North to provide a *wow factor* experience to those choosing to park their vehicle by the Caton Road Park and Ride.

6.5.5 Visitors parking in Morecambe town centre are likely to pay more than at the Park and Ride site, reflecting their impact on the town, but also contributing to cost operating the Park and Ride service at an attractive frequency. Further details are included in Chapter 9 ECONOMIC ANALYSIS.

6.5.6 An Eden Reception Centre (Figure 6-3) can be included at M6 J34 with facilities such as toilets, small coffee shop, merchandise and information stall and seating to intercept car borne users as they transfer to buses for the short (circa 15 minutes) ride to Eden before they impact on wider highways network.

6.6 SUMMARY

6.6.1 This chapter has presented the overall parking strategy for Eden Project North and describes how this has been agreed with multiple stakeholders and co-consultants, including Lancaster City Council and Lancashire County Council.

6.6.2 The recently constructed M6 J34 Caton Road Park and Ride provides 650 parking spaces immediately off the motorway. This is a magnificent facility that enables to capture a significant number of vehicular trips from the M6 to Lancaster and Morecambe.

6.6.3 Lancaster City Council currently owns and operates circa 1,800 surface Pay and Display parking spaces across Morecambe town centre on a series of different parking locations.

6.6.4 Three different parking scenarios were assessed as *High* (70%-30%), *Medium* (50%-50%) and *Low* (30%-70%) parking splits across J34 and Morecambe.

6.6.5 At this point, the reasonable working assumption is that the Eden Project North parking demand will be roughly equally (50%-50%) across the M6 J34 Caton Road Park and Ride and the Pay and Display existing parking provision around Morecambe town centre.

6.6.6 The parking accumulation scenarios suggest a need of between 759 and 854 parking spaces on a peak day to be distributed roughly equally across both Morecambe and the parking facilities at J34.

6.6.7 Caton Road Park and Ride is currently underutilised, and the initial discussion and principles reached with Lancashire County Council will allow Eden Project North to use the Park and Ride facility to accommodate circa 50% of the Eden parking spaces needed throughout the year, particularly during the peak season.

6.6.8 Four locations for car parking have been initially identified in Morecambe town centre, which were suggested by Lancaster City Council in order to accommodate the remaining 50% required parking spaces. As well as car parks near the station, two parking locations are currently proposed near the site on Marine Rd Central. These will be exclusively for the use of mobility impaired visitors and a limited number of parking spaces for operation requirements.

6.6.9 Time-control ticketing will require advance booking for the majority of visitors allowing the Eden Project North team to control the demand. This acts as both a capacity control and management tool. The advance booking process can also capture mode of travel for each ticket purchased. This will facilitate managing the parking demand at both initial agreed parking location: M6 J34 Caton Road Park & Ride; and different existing parking locations across Morecambe town centre.

6.6.10 At this point, the reasonable working assumption is that a bus service will be running at a reduced frequency of 10-12 minutes from the M6 J34 Caton Road Park and Ride to Morecambe town centre, stopping at the proposed new bus station by the railway station.

6.6.11 Visitors parking in Morecambe town centre are likely to pay more than at the Park and Ride site, reflecting their impact on the town, but also contributing to cost operating the Park and Ride service at an attractive frequency.

7 HIGHWAYS IMPACT

7.1 INTRODUCTION

7.1.1 Following the agreement and understanding of where parking will be located, it was possible to identify the route that vehicles would follow to arrive to the different parking locations, but more importantly, to quantify these trips and assess any potential highways impact caused by the development proposals.

7.2 BASE TRAFFIC DATA

7.2.1 A strategic traffic model for the area of Morecambe and Lancaster has been shared by Lancashire County Council with WSP to assess the potential highways impact by Eden Project North.

7.2.2 The *M6 J33 SATURN* model, which covers the area for Eden Project North, has been built and validated as part of an agreement for a total of £116m from the Housing Infrastructure Bid (HIF) for development of the M6 J33 improvement scheme.

7.2.3 The model has been developed in SATURN version 11.4.07H, for a base year of 2018. Forecast models were developed for 2025 and 2040.

7.2.4 Forecast models were developed for the following scenarios:

- The Do Minimum networks are the same as the base network with the exception of new values of time and operating costs.
- The Do Something networks include transport changes to the M6 J33 as part of the associated HIF proposals.

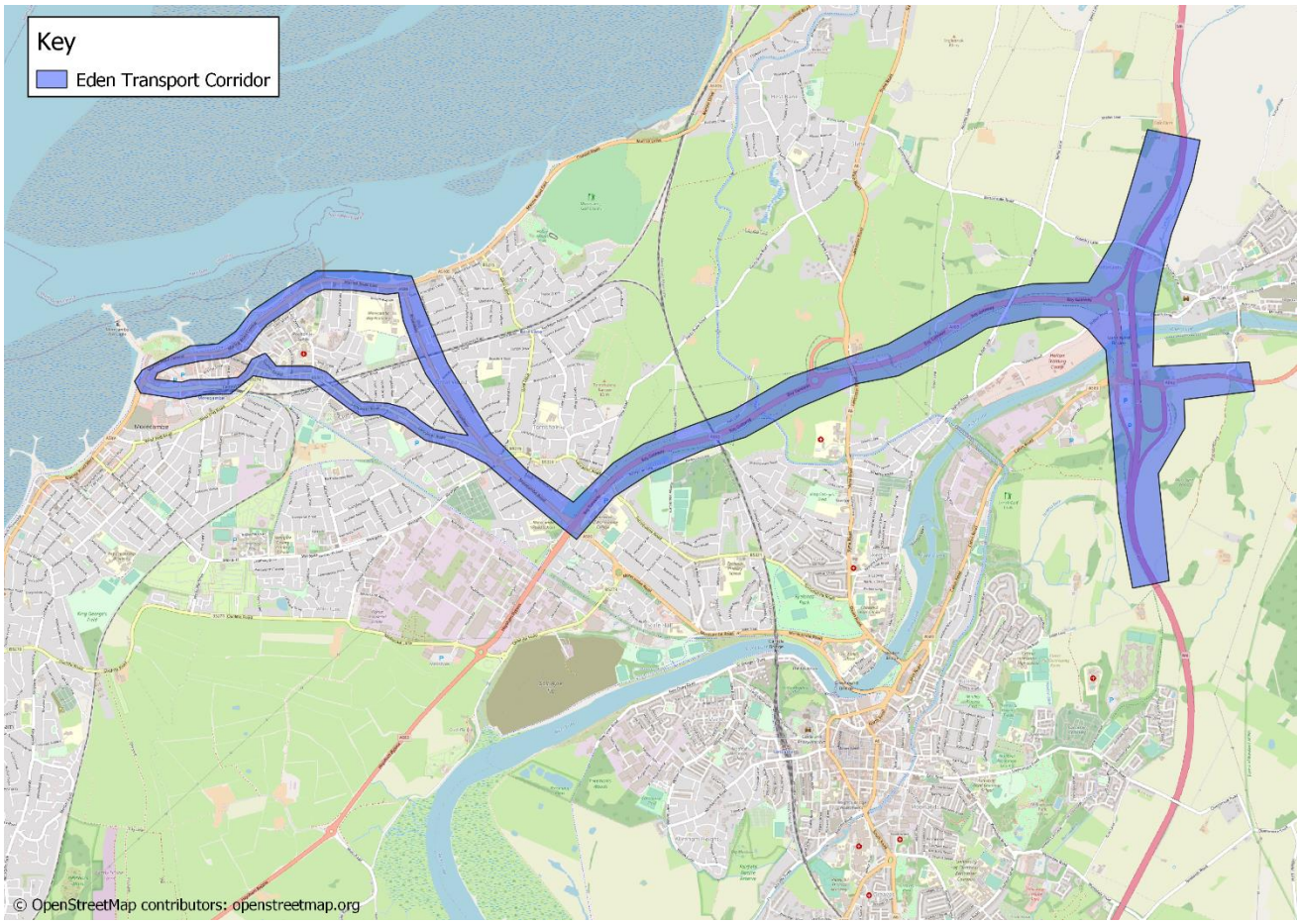
7.2.5 The model has been developed for three average weekday time periods, covering the peak hours and interpeak period as follows:

- AM Peak: 08:00-09:00
- Interpeak: average hour 10:00-16:00
- PM Peak: 17:00-18:00

7.3 INITIAL HIGHWAYS IMPACT

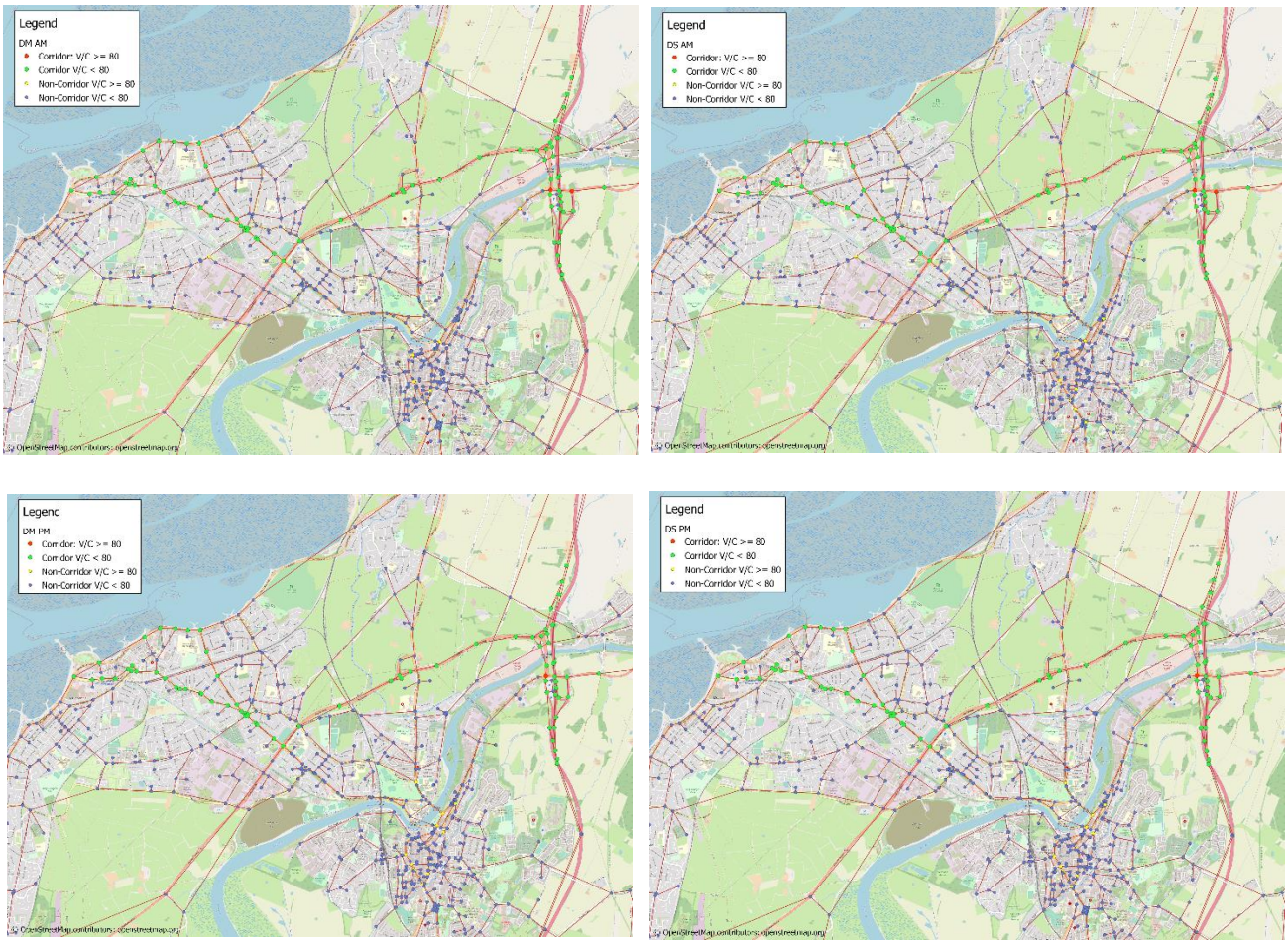
7.3.1 Following the agreed locations of parking across Lancaster and Morecambe, WSP identified the highways corridor likely to be used by Eden visitors as shown in Figure 7-1.

Figure 7-1 - Eden Project North Visitors Highways Corridor



7.3.2 An initial analysis of the corridor looked at the maximum volume over capacity (V/C) ratio turning movements at junctions along the corridor in the 2025 Do Minimum and Do Something scenarios. This analysis, presented in Figure 7-1 found that in all scenarios considered, the junctions along the corridor were operating within capacity in the SATURN model. The only junction with any nodes over 80% volume over capacity in any of the scenarios considered was the M6 J34. On the AM scenarios, both M6 J34 off slip / A683 junctions (both sides of the M6) are above 80%. Whilst on the PM scenarios, only the western recently upgraded junction is above 80%.

Figure 7-2 - SATURN Model V/C Scenarios (2025 DM AM / 2025 DS AM / 2025 DM PM / 2025 DS PM)



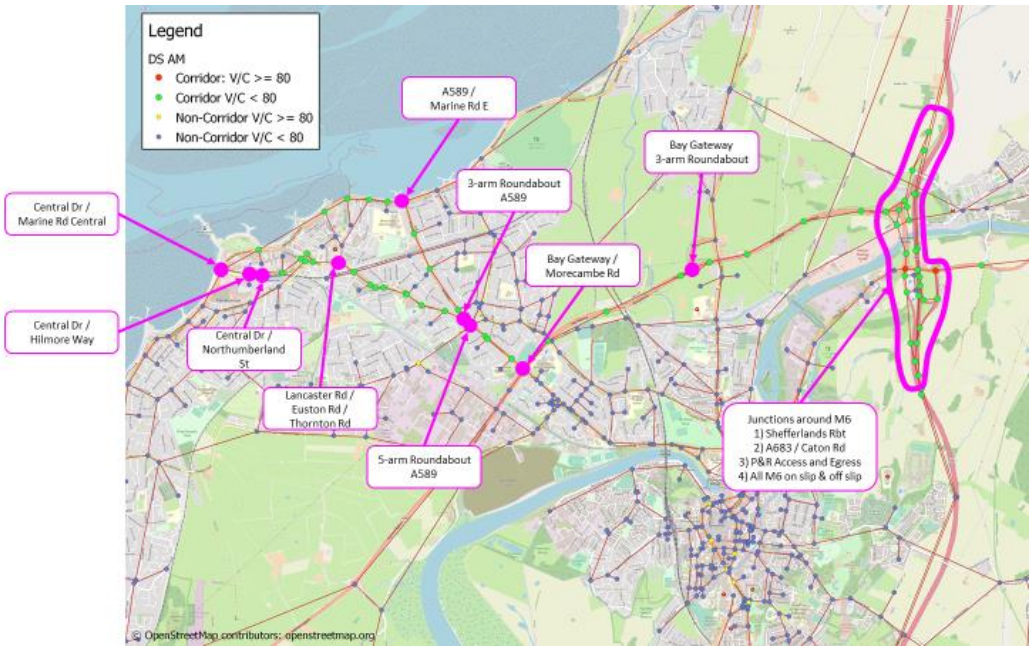
7.4 DETAILED HIGHWAYS IMPACT

7.4.1 To understand the full impact of the development on the highway network, a series of key junctions along the corridor have been selected for further analysis as shown below and in Figure 7-3.

- Central Dr / Marine Rd Central
- Central Dr / Hilmore Way
- Central Dr / Northumberland St
- Lancaster Rd / Euston Rd / Thornton Rd
- A589 / Marine Rd E
- 3-arm Roundabout A589
- 5-arm Roundabout A589
- Bay Gateway / Morecambe Rd
- Bay Gateway 3-arm Roundabout
- Junctions around M6
- Shefferlands Roundabout
- A683 / Caton Rd

- P&R Access and Egress
- All M6 on slip and off slip

Figure 7-3 - SATURN Model Key Junctions

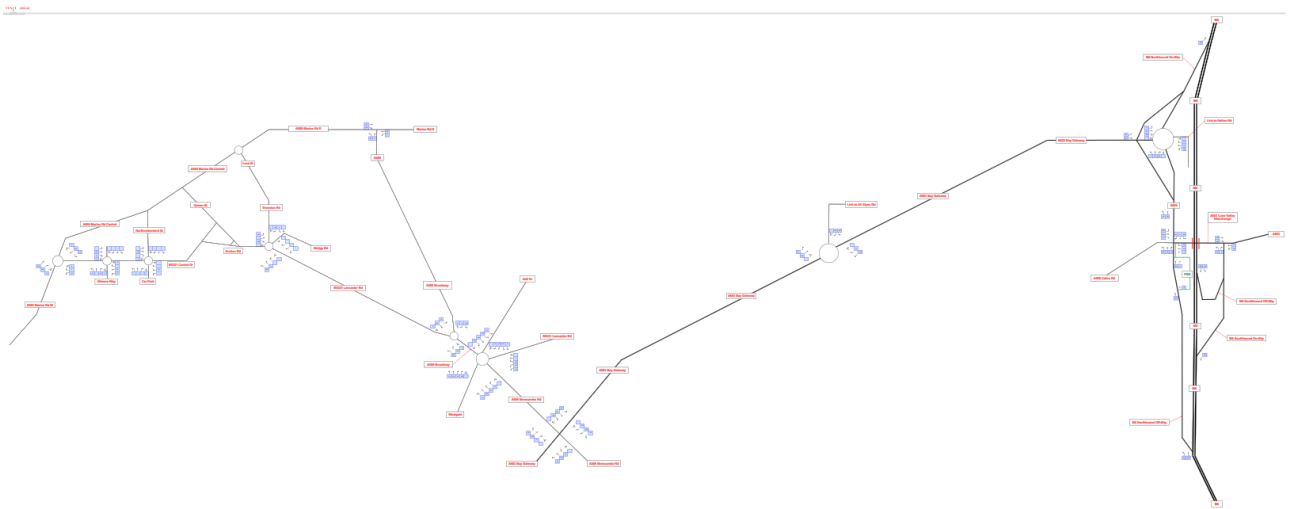


7.4.2 A proportional impact assessment of these key junctions has been done for each of the scenarios. A traffic diagram, as shown in Figure 7-4, was developed for this exercise.

7.4.3 All agreed scenarios have been tested. These are:

- Scenario 004, 005 and 006.
- 2025 DM AM, IP and PM.
- 2025 DS AM, IP and PM.

Figure 7-4 - Highways Proportional Impact Traffic Diagram Example

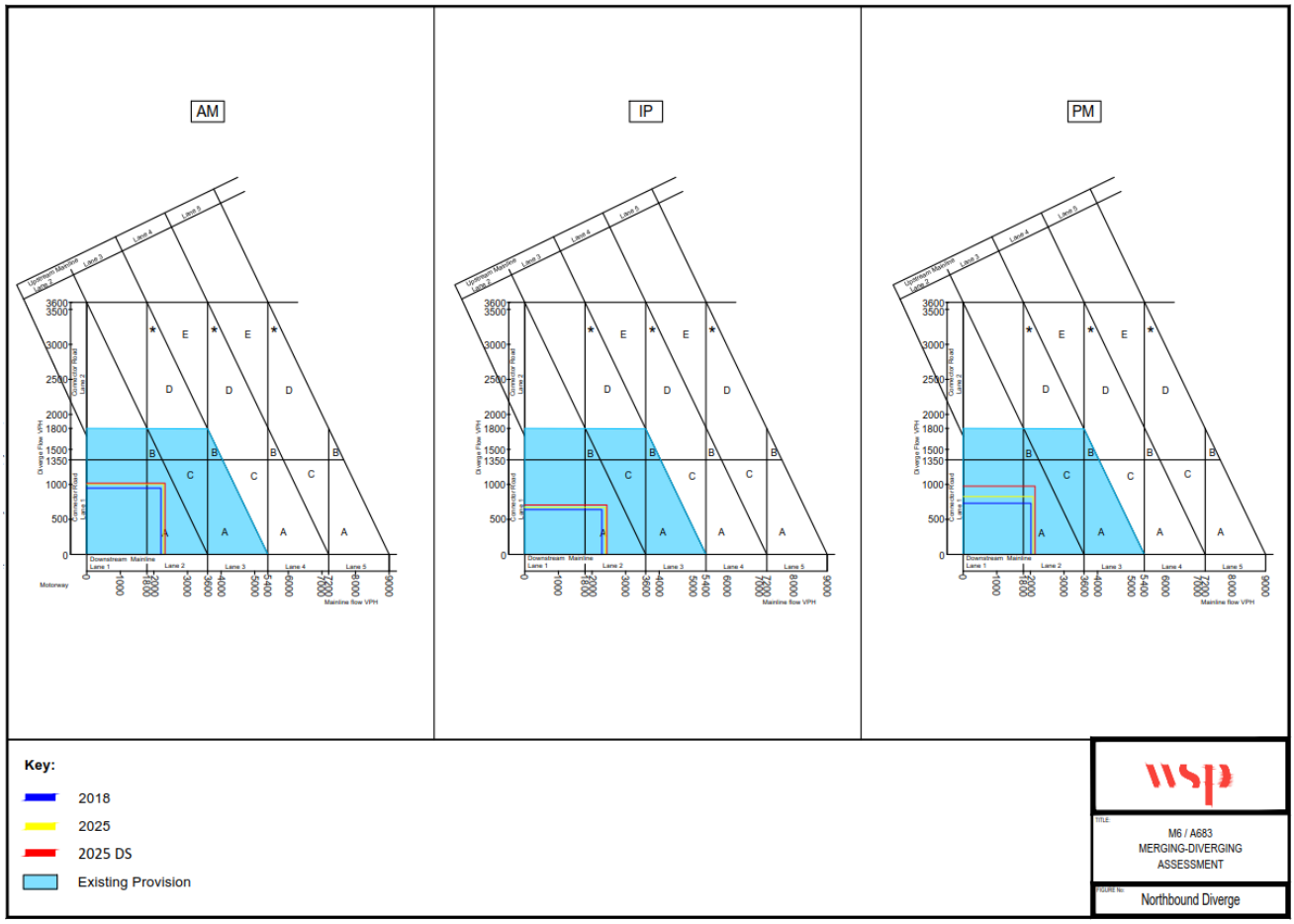


7.4.4 This analysis consisted of comparing the *typical peak* visitor scenarios against the high weekday peak hour flows. It should be noted that the *typical peak* visitor scenario is expected to fall on a bank holiday weekend or a summer weekend. Consequently, a comparison of high weekday flows and peak weekend visitor flows represents a robust worst case scenario. In reality, peak weekend visitor flows should have been compared to a much lower existing weekend flow. Whilst this may have suggested a greater proportional impact, in reality, junctions would have a much greater spare capacity since they have been designed and built to cater for weekday flows.

7.4.5 The analysis of the different scenarios suggest that no significant impact will be caused by the development proposals on any given location across the identified key junctions. Full details for each of the scenarios can be found in Appendix I.

7.4.6 In addition, a merge and diverge assessment of the M6 J34 has also been undertaken. This demonstrated that there is enough capacity to accommodate all Eden visitors at any given time throughout the year on the M6 J34 on slip and off slip roads. As reference, the Northbound diverge is shown in Figure 7-5 below. This demonstrates that the existing provision can accommodate the maximum estimated 152 to 171 car trips per hour generated by Eden. Full details can be found in Appendix I.

Figure 7-5 - M6 J34 Northbound Diverge Assessment



7.4.7 It should also be noted again that a number of different large-scale events such as the Vintage Festival and the Morecambe Carnival, with up to 55,000 visitors per event are organised yearly in Morecambe. These events are accommodated without causing major adverse effects on the local highway network and the wider transport network. The visitors attending these events are unquestionably much higher than the predicted maximum visitor trips generated by Eden Project North on a peak day (3,750).

7.5 SUMMARY

7.5.1 This chapter has assessed the potential development proposals impact on the highway network.

7.5.2 A strategic traffic model for the area of Morecambe and Lancaster has been shared by Lancashire County Council with WSP to assess the potential highways impact by Eden Project North.

7.5.3 Following the agreed locations of parking across Lancaster and Morecambe, WSP identified the highways corridor likely to be used by Eden visitors. An initial analysis of the corridor looked at the maximum volume over capacity (V/C) ratio turning movements at junctions along the corridor in the 2025 Do Minimum and Do Something scenarios. This analysis found that in all scenarios all junctions along the corridor operate within capacity in the SATURN model. With the exception of the recently upgraded M6 J34.

7.5.4 To understand the full impact of the development on the highway network, a series of key junctions along the corridor have been selected for further analysis. A proportional impact assessment of these key junctions has been done for each of the scenarios.

7.5.5 This analysis consisted of comparing the *typical peak* visitor scenarios against the high weekday peak hour flows. It should be noted that the *typical peak* visitor scenario is expected to fall on a bank holiday weekend or a summer weekend. Consequently, a comparison of high weekday flows and peak weekend visitor flows represents a robust worst case scenario. In reality, peak weekend visitor flows should have been compared to a much lower existing weekend flow. Whilst this may have suggested a greater proportional impact, in reality, junctions would have a much greater spare capacity since they have been designed and built to cater for weekday flows.

7.5.6 The analysis of the different scenarios suggest that no significant impact will be caused by the development proposals on any given location across the identified key junctions.

7.5.7 A merge and diverge assessment of all on slip and off slip roads of the M6 J34 also demonstrates that the existing highways provision can perfectly accommodate the maximum estimated 152 to 171 car trips per hour generated by Eden Project North.

8 ACTIVE TRAVEL

8.1 INTRODUCTION

8.1.1 The purpose of this chapter is to report on the quantification of monetised benefits associated with an increase in active travel use due to the proposed Eden Project North development.

8.1.2 The chapter presents Present Value Benefits (PVB) related to the increase in walking and cycling to be fed into the wider cost-benefit analysis and business case.

8.1.3 It also sets out the Active Travel Strategy of Eden Project North.

8.2 ACTIVE MODE APPRAISAL TOOLKIT

8.2.1 The Active Mode Appraisal Toolkit (AMAT) has been developed by the Department for Transport (DfT) to calculate the monetised benefits of an increase in cycling and walking use. The AMAT slows scheme promoters to carry out an appraisal of cycling and walking schemes that aligns with Transport Analysis Guidance (TAG) Unit A5-1 'Active Mode Appraisal'.

8.2.2 The AMAT calculates impacts linked to an increase in cycle and walking use; these benefits relate to three key areas:

- Health;
- Journey quality; and
- Mode shift

8.2.3 Within these three areas monetised costs and benefits are distributed to several impacts that are presented in Table 8-1.

Table 8-1 – Impacts appraised by the Active Mode Appraisal Toolkit

Benefits area	Benefits	Impacts assessed
Health	Reduced risk of premature death	Improved health, due to increased physical activity.
	Absenteeism	Reduced levels of absenteeism from employment due to increased physical activity.
Journey quality	Journey ambience	Improved experience due to the provision of cycle infrastructure.
Mode Shift	Congestion benefit	Reduced vehicle kilometres reduces the level of congestion experienced by road users.
	Infrastructure	Reduced vehicle kilometres travelled reducing the impact on infrastructure.
	Accidents	This reflects the effect of reducing vehicle kilometres on road safety. It is not the direct benefit of increased cycle safety.

Benefits area	Benefits	Impacts assessed
	Local Air Quality	Reflects a reduction in vehicle kilometres resulting in less pollutants emitted.
	Greenhouse Gases	Reflects a reduction in vehicle kilometres resulting in greenhouse gases emitted.

8.2.4 The use of AMAT in the context of this business case is based on an increase in cycle and walking use due to the proposed Eden Project North site having a sustainable mobility ethos. As this appraisal is not assuming any infrastructure improvements, only the benefits associated with health and mode shift will be attributed.

8.3 CALCULATING DEMAND

8.3.1 The methodology for generating monetised benefits associated with an increase in cycling and walking is based on a several variables and assumptions related to number of employees and volunteers and mode share.

8.3.2 Predicted staff numbers at the site are 389 annual jobs, with approximately two volunteers for each staff member, which equals to 778 volunteers.

8.3.3 For the opening year (2023) it is assumed that 35.3% of employees will travel to the site by active or public transport modes. This equates to 137 employees and 274 volunteers, an overall total of 411 people.

8.3.4 The long-term aspiration is that all staff, particularly those who live in the Lancaster and Morecambe urban area, will travel to the site by active or public transport modes as set out in Chapter 4.

8.3.5 The AMAT uses a 20-year appraisal period from the proposed opening date of 2023, however, the tool only allows the input of one figure for estimated walking and cycling users. The AMAT then uses this figure to calculate the monetised benefits over the 20-year period. Using the forecast 2023 mode share would potentially undercount the benefits of walking and cycling as it is estimated to increase to 100% in the long term. However, using the 100% sustainable mode share figure for 2023 would likely overcount the benefits. As such, a midpoint mode share has been derived that is an average of the two estimates, providing a sustainable mode share of 67.7%.

8.3.6 Table 8-2 presents details of how the Census 2011 data for the local area has been used in combination with the assumptions and details of the development to calculate an estimated number of users for the interim average scenario.

Table 8-2 – Estimated Number of Eden Project North Sustainable Mode Users

	Users (Census 2011)	Ratio of sustainable transport mode share (based on Census 2011)	Number of Eden Project North users (2023, assumed 35.3% sustainable mode share)	Number of Eden Project North users (long-term, assumed 100% sustainable mode share)	Number of Eden Project North users (interim average, assumed 67.7% sustainable mode share)

Public transport	4,218	0.29	120 (40 employees, 80 volunteers)	340 (113 + 227)	230 (77 + 153)
Bicycle	2,230	0.15	63 (21 + 42)	180 (60 + 120)	122 (41 + 81)
Walk	8,020	0.55	228 (76 + 152)	647 (216 + 431)	438 (146 + 292)
	14,468	**1.00**	**411**	**1,167**	**790**

8.3.7 Table 8-2 presents the estimated number of employees and volunteers cycling or walking to Eden Project North in the interim average scenario with 122 people cycling and 438 walking.

8.3.8 The AMAT calculate benefits related to mode shift and health that is based on the number of new walking and cycling users. It is acknowledged that a proportion of the people that have been calculated as travelling to Eden Project North by walking or cycling will already use either of these modes to travel to their current place of work.

8.3.9 As such, Table 8-3 calculates the proportion of the total sustainable transport users that can be assumed will be new users of the modes when they start working or volunteering at Eden Project North.

Table 8-3 – Estimated Numbers of New Eden Project North Sustainable Mode Users

	Column A		Column B	
	Number of Eden Project North users (interim average, assumed 67.7% sustainable mode share)	**Census 2011 mode share for local area**	**Existing users** (based on Census 2011 mode share and total employee and volunteer population of 1,167)	**New users** (Column A – Column B)
Public transport	230	8.7%	102	128
Bicycle	122	4.6%	54	68
Walk	438	16.6%	194	244

8.3.10 Table 8-3 presents that there will be 68 new bicycle users and 244 additional walkers from the total employee and volunteer population at Eden Project north.

8.4 CALCULATION OF BENEFITS

8.4.1 The values in Table 8-3 were used in the AMAT to calculate the associated benefits of these people cycling or walking to the site. Xx presents a summary of the monetised benefits based on the methodology presented above.

Table 8-4 – Summary of Benefits (AMAT)

Impact	Benefits	% of benefits
Health	£1,528,640	96.3%
Mode shift	£58,990	3.7%
Total	**£1,587,630**	

8.4.2 Most of the benefits are related to the health impacts of more people walking or cycling with a small share related to the mode shift from private motor vehicle use.

8.5 ACTIVE TRAVEL STRATEGY

8.5.1 The purpose of the Active Travel Strategy is to provide information on the strategy to encourage and facilitate trips to Eden Project North by walking and cycling (active travel modes).

8.5.2 The Strategy addresses travel to the site by visitors along employees and volunteers presenting the reasonable measures that could be implemented to make cycling and walking key modes for travelling to the site for all part of people's journeys.

8.5.3 Most of the measures set out in this Active Travel Strategy are measures that have been implemented for years in Eden Cornwall. Meaning that the Eden Project Team have the experience and the will to set out an ambitious Active Travel Strategy.

8.5.4 EMPLOYEES AND VOLUNTEERS

8.5.5 The long-term aspiration is for all employees and volunteers, particularly those living within the Lancaster and Morecambe urban area, to travel to the site by active travel or public transport. Through the site Travel Plan, staff and volunteers will be provided with comprehensive sustainable travel information once they are confirmed in their role. For walking and cycling, this will include route maps and details of the on-site infrastructure to support travel by these modes (see below for details).

8.5.6 To encourage and facilitate cycling to Eden Project North, staff and volunteers will have access to a secure cycle parking facility. The facility will also include shower and changing areas along with personal lockers and an area to dry wet apparel.

8.5.7 To support people cycling to work on their own bicycle, staff and volunteers will be able to get their bicycle serviced on a regular basis. Through establishing a partnership with a local provider, staff and volunteers could be able to purchase discounted bicycle equipment or maintenance services.

8.5.8 Employees on the payroll will be able to take advantage of the Government cycle to work scheme, whereby they can save on the purchase of a new bicycle for cycling to work through a salary sacrifice arrangement. Local bicycle retailers will be promoted through the scheme as part of Eden Project North establishing partner retailers and service providers in the local area.

8.5.9 The Travel Plan being prepared will also feature a programme of continuous support, facilitation and encouragement of walking and cycling, linking with local and national campaigns, such as Cycle to Work Day[6].

8.5.10 VISITORS

Getting to the site

8.5.11 As part of the strategy to manage additional motor vehicle movements close to Eden, it is intended that the park and ride site adjacent to the M6 J34 will be where the majority of visitors arriving by car will park their vehicle as described in previous chapters. To complete their onward journey to Eden, people will have two sustainable options – bus or cycle. The Park and Cycle option forms a key element of the overall sustainable transport strategy, facilitating zero emission and healthy connectivity to Eden Project North.

8.5.12 For those connecting to the site by cycle it is envisaged that the existing 'Way of the Roses' cycle route (part of National Cycle Network (NCN) route 69) will be the primary route that is taken from the Junction 34 Park and Ride site. NCN 69 provides a predominantly off-highway route along the River Lune and using a former railway alignment finishing near to the proposed Eden Welcome Centre. It is acknowledged that improvements to this route are required to ensure it meets the core design principles for people travelling by cycle or on foot whereby it should be coherent, direct, safe, comfortable and attractive[7]. Once the development had been agreed and funding secured, Eden Project North and WSP will work with Lancashire County Council, Lancaster City Council and Sustrans to identify improvements and potential different funding streams to the walking and cycling network to improve active travel access to the site.

8.5.13 Visitors will be able to bring their own bicycles to complete the park and cycle journey and will be incentivised through various complementary measures (see 'While at the site' below). However, the provision of hire bicycles could be a key feature of the Park and Cycle offering, allowing people to collect a bike on arrival at the park and ride site for travelling to Eden. As part of booking their trip to Eden Project North, visitors could be able to book the hire bikes when purchasing their entry ticket online, so that they are waiting for them at the Eden Reception Centre when they arrive at the Park and Ride site. Visitors could be able to hire bikes for the duration of their trip to the Lancaster and Morecambe area, providing them with the freedom to explore the Morecambe Promenade or stop off in Lancaster on their way back to the Park and Ride site.

8.5.14 The bike hire provision could feature e-bikes to cater for a wide range of users and help provide a smooth and easy onward journey. A range of different types of bicycles could be available, such as tandems, quadricycles and larger group bicycles to cater for different types of group. This could also facilitate a shared and fun experience for the onward leg of the journey to Eden Project North. A bike taxi service could also operate allowing visitors a relaxing onward journey to the site, transported in a bike taxi driven by a tour guide who could provide information on the historical and geographical

[6] http://www.cycletoworkday.org/
[7] LTN 1/20 Cycle Infrastructure Design (DfT, 2020)

features of the area. Bicycle tour guides could also be available to offer guided bike tours to the Eden Project North site that could allow visitors to learn about the local area and their route to Eden.

While at the site

8.5.15 Those arriving by hired bike from the Park and Cycle site would drop their bikes at the Eden Welcome Centre where they would be stored for the duration of their visit to Eden Project North and if they wish while they explore Morecambe on foot. The bikes could be picked up to allow people to explore the Morecambe area on cycle after their visit to Eden Project North before returning to the Park and Cycle site.

8.5.16 Those arriving by their own bike could be able to utilise the bike valet service where they can drop their bike off to be stored safety and securely at the Eden Welcome Centre for the duration of their visit to Eden Project North and if they wish, while they explore Morecambe on foot. Luggage lockers would be available for the safe storage of bags, helmets, locks and other items of luggage. Visitors who use the bike valet service could also have the option of bike service by a trained mechanic while they are undertaking their visit to Eden Project North. Additionally, a multi-functional cycle maintenance stand could be available within the Eden Welcome Centre for people wanting to perform basic maintenance before leaving the site. Visitors who arrive by e-bike will have the facility to recharge their e-bike battery while they are conducting their visit to Eden Project North.

9 ECONOMIC ANALYSIS

9.1 INTRODUCTION

9.1.1 On a typical *transport business case*, a transport intervention would be assessed in terms of costs, benefits and disbenefits. However, this is not a *transport business case*. And therefore, it is difficult to quantify costs, benefits and disbenefits.

9.1.2 We understand that no major transport infrastructure interventions are proposed as part of the development of Eden Project North. Consequently, no significant costs, benefits or disbenefits are expected to contribute towards the BCR.

9.2 IDENTIFIED CAPITAL COSTS

9.2.1 At this point, the only transport interventions with associated costs is a series of signage and way-finding strategy for private vehicles, cyclists and pedestrians. This will have a capital cost of circa £100,000 and will consist on the installation of regulated traffic signals to facilitate the way-finding of Eden Project North from the motorway (M6) to Morecambe town centre. In addition, different way-finding systems will be installed at different locations to facilitate cyclists and pedestrians to locate the site from various locations around Morecambe and the Way of the Roses.

9.3 IDENTIFIED CAPITAL AND OPERATIONAL COSTS

9.3.1 As seen in Chapter 6, the proposed bus service from the M6 J34 Park and Ride location to Morecambe will consist on four buses running at a frequency of 10-12 minutes. The capital and operational cost of running this service has been obtained through different bus operators Annual Reports. This has also been discussed with Stagecoach to ensure the figure was reasonable.

9.3.2 Apart from accessible parking, which will be free and close to the Eden Project North entrance, all other town-centre parking is assumed as a separate concern, with ownership, management and maintenance largely kept by the Council. An agreed levy may be applied to the car parks closest to Eden Project North in order to cross-subsidise the operating costs of the J34 Park and Ride bus service and other sustainable transport initiatives (e.g. bike hire). Charges for cars may also encourage sustainable transport by discounting for low C02/EV models.

9.3.3 Table 9-1 below shows how the operation costs of using the identified parking spaces across both locations and running a bus service from the M6 J34 to Morecambe town centre can be cost neutral. These figures are based on reasonable working assumptions at this point. These have been discussed and agreed with relevant stakeholders such as Lancaster City Council and Lancashire County Council. More details can be found in Appendix J.

Table 9-1 – Bus and Parking Operation Costs and Revenue

	Bus Operation Costs	Parking Operation Costs	Total Costs	Parking Revenue	Final Revenue
Scenario 004	£542,466	£236,785	£779,250	£819,638.7	£40,388.4

Scenario 005		£242,980	£785,446	£841,084.8	£55,639
Scenario 006		£249,176	£791,641	£862,530.9	£70,889.5

9.3.4 The purpose of charging for parking is no other than funding the bus running from the M6 J34 to Morecambe. The aim is to be cost neutral, and any additional final revenue will be used for upgrading the bus system, branding and promoting sustainable travel to the site.

9.3.5 In addition to this, there is a potential scope, and a letter of endorsement from Stagecoach, for a bus operator to collaborate with Eden in running the bus service from the M6 J34 Caton Road Park and Ride to the site and transport hub in central Morecambe. This bus has the potential to attract local users across different stops from the Lancaster College to Morecambe town centre. But more importantly, the buses used for Eden visitors could be used simultaneously for other purposes such as school buses before the Eden site opens. However, it should be noted that the financial analysis does not at this point in time incorporate any assumptions about bus operator fleet potential for commercial sponsorship from Eden branding and/or their partners.

9.4 IDENTIFIED BENEFITS

9.4.1 The Department for Transport has developed the Active Mode Appraisal Toolkit (AMAT), a tool to calculate the monetised benefits of an increase in cycling and walking use. The AMAT allows scheme developers to carry out an appraisal of cycling and walking schemes that aligns with Transport Analysis Guidance (TAG) Unit A5-1 'Active Mode Appraisal'.

9.4.2 The AMAT calculates impacts linked to an increase in cycle and walking use; these benefits relate to three key areas:

- Health;
- Journey quality; and
- Mode shift

9.4.3 Based on predicted staff and volunteer numbers, the AMAT uses a 20-year appraisal period from the proposed opening date. However, because of the change in active travel modal split predicted for the opening year and the long term aspiration, a midpoint mode share has been derived that is an average of the two estimates, providing an active mode share of 67.7%.

9.4.4 With this assumptions, and using Census 2011 data, the AMAT has been used to calculate the monetised benefits shown in Table 9-2.

Table 9-2 – Summary of Benefits (AMAT)

Impact	Benefits	% of benefits
Health	£1,528,640	96.3%
Mode shift	£58,990	3.7%
Total	**£1,587,630**	

9.5 SUMMARY

9.5.1 Table 9-3 below presents an indicative summary of the total costs (disbenefits) and benefits related to transport and highways for the Eden Project North development.

Table 9-3 – Indicative Transport and Highways Benefits and Disbenefits Summary Table

Topic	Benefits	Disbenefits (Costs)
Signage and Way-finding	£0	£100,000
Parking and Bus System	Cost neutral	
Active Travel (AMAT)	£1,587,630	£0
Total	**£1,587,630**	**£100,000**

9.5.2 A total indicative benefits of £1,487,630 are estimated at this point in time.



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Appendix F

TRIP GENERATION AND DISTRIBUTION MODEL

PUBLIC

2017 Marketing Lancashire

STEAM Tourism Economic Impacts
2017 Year in Review

The Visitor Economy of Lancashire

This is a summary of the annual tourism economic impact research undertaken for Marketing Lancashire for the calendar year 2017, with comparisons to 2016.
Outputs in this report have been generated using STEAM, the tourism specific economic impact model, owned and operated by Global Tourism Solutions (UK) Ltd.

2017

67.63m Tourism Visits to Lancashire in 2017

85.28m Visitor Days and Nights generated across Lancashire in 2017

59.29m tourism visits made by **Day Visitors** in 2017

Day Visits generated **£2.06bn** for the local economy in 2017

8.33m visits made by **visitors staying in Lancashire** as part of a holiday or short break, generating **25.99m nights** spent in local accommodation and homes

A total of **£4.25bn** was generated within the local economy through visitor and tourism business expenditure

Together, **Shopping** and **Food and Drink** sectors generated more than **£2.18bn** of direct economic benefit in 2017

Tourism activity supports **60,007 full-time equivalent jobs** locally

In total, **staying visitors** generate a **total economic impact** of **£2.20bn** for local businesses and communities

On average, visitors **staying in Lancashire** stay for 3.1 nights and spend a total of **£404m** on local accommodation

Trends 2016-2017

Visitor Numbers **+0.5%**

Total Visitor Days & Nights **+0.7%**

Economic Impact **+2.9%**

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2017

Visitor Types

Staying Visitors encompass all tourists staying overnight for at least one night in one of the following types of accommodation:

- **Serviced Accommodation** - including Hotels, Guest Houses, B&Bs, Inns
- **Non-Serviced Accommodation** – including Self-Catering properties such as Houses, Cottages, Chalets and Flats, as well as Camping and Caravanning, Hostels and University / College accommodation
- **Staying with Friends and Relatives (SFR)** – unpaid overnight accommodation with local residents

Day Visitors visiting the area on a non-routine and non-regular leisure day trip from a home or holiday base

Staying Visitors
12.3% of Visits

Day Visitors
87.7% of Visits

Total Visitor Numbers
67.63m

Visitor Numbers

There were an estimated 67.63m tourism visits to Lancashire in 2017, 0.5% higher than in 2016. Over a period of five years (since 2012), tourism visits to Lancashire have grown by 8.4% with nearly 5.3m additional visitors arriving in 2017 compared to 2012.

8.33m visits to Lancashire in 2017 were from staying visitors. Staying visitors use the wide range of serviced and non-serviced accommodation across the county, in addition to stays with friends and relatives in local homes. Staying visitors accounted for 12.3% of the county's visitors in 2017. Visitors staying in serviced accommodation accounted for 4.44m visits (53% of overnight stays). The non-serviced accommodation sector, with a huge range of accommodation including hostels, caravan and camping and self-catering units, generated 1.44m staying visits (17% of overnight stays). Stays with friends and relatives are also very important, accounting for nearly 30% of staying visits (2.46m staying visits). Between 2016 and 2017, there was modest volume growth in the number of staying visits (+0.3%).

Day visitors accounted for 87.7% of all tourism visits made to Lancashire in 2017. The day visitor market is a vital driver for the local visitor economy and growth or decline in this market influences the overall performance of the destination to a significant extent. There was an estimated 0.5% increase in Day Visits compared to 2016.

Key Figures: Visitor Numbers - Marketing Lancashire 2017

Visitor Numbers		Serviced	Non-Serviced	SFR	Staying Visitors	Day Visitors	All Visitors
2017 (Millions)	**M**	**4.437**	**1.442**	**2.455**	**8.333**	**59.293**	**67.627**
2016 (Millions)	M	4.479	1.391	2.442	8.313	58.971	67.283
Change 16/17 (%)	**%**	**-1.0**	**+3.7**	**+0.5**	**+0.3**	**+0.5**	**+0.5**
Share of Total (%)	%	6.6	2.1	3.6	12.3	87.7	100.0

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Total Visitor Days

85.28m

Visitor Days

Lancashire's visitors spent an estimated 85.28m days / nights in the county during 2017; 0.7% higher than in 2016 and 9.2% higher than in 2012. This comprises the volume of day visits and the total number of days and nights spent by staying visitors. On average, staying visits to the county generate 3.1 days / nights spent in paid accommodation or as stays with friends and relatives in local homes.

Between 2016 and 2017, day visits increased by 0.5%. There were an estimated 59.29m tourism day visits to the county during 2017 and these accounted for 69.5% of all visitor days. Since 2012, the day visitor market has seen a growth of just under 5.2m visitor days (+9.6%).

Staying visitors accounted for the remaining visitor days (30.5%) and these overnight visits generated 25.99m visitor days in 2017. Staying visitor days increased by 1.2% between 2016 and 2017. Since 2012, staying visits have increased steadily, growing by 8.3% during that five year period.

There was a positive period of performance from Easter through the summer months (April to August), where visitor days were up by +2%. The day visitor trend was slightly above the overall trend for that period (achieving 2.4% growth April to August) with a more notable increase in visitor days during Easter (+6.7%). While day visits tailed off in September (-1.7%), the staying visitor market saw growth of 3.4%.

Key Figures: Visitor Days - Marketing Lancashire 2017

Visitor Days		Serviced	Non-Serviced	SFR	Staying Visitors	Day Visitors	All Visitors
2017 (Millions)	**M**	**9.608**	**10.033**	**6.347**	**25.988**	**59.293**	**85.281**
2016 (Millions)	M	9.706	9.669	6.316	25.691	58.971	84.662
Change 16/17 (%)	**%**	**-1.0**	**+3.8**	**+0.5**	**+1.2**	**+0.5**	**+0.7**
Share of Total (%)	%	11.3	11.8	7.4	30.5	69.5	100.0

Average Length of Stay for Different Visitor Types: 2017

Day Visitors	All Visitors	Serviced Accommodation	Staying with Friends/Relatives	Staying Visitors	Non-Serviced Accommodation
1.0	1.3	2.2	2.6	3.1	7.0

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Total Economic Impact

£4.25bn

Economic Impact

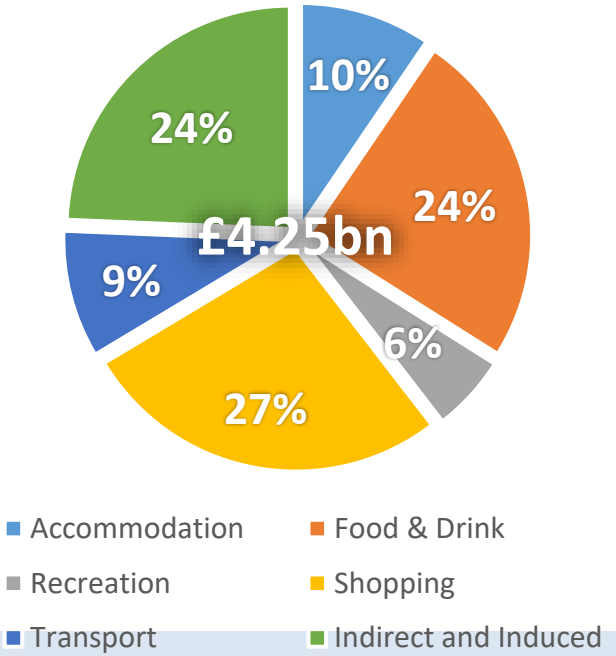
The value of tourism activity in Lancashire was estimated to be £4.25bn in 2017. Between 2016 and 2017, the total value of tourism activity grew by 2.9%. This growth was generated by a combination of additional visits and increased visitor expenditure levels on goods and services.

The total economic impact comprises the expenditure of visitors on goods and services, totalling £3.217bn, and the *indirect* and *induced* economic effects of local businesses and residents spending tourism revenues locally, accounting for a further £1.04bn.

In 2017, the two largest areas of expenditure for visitors were Shopping (£1.14bn) and Food and Drink (£1.04bn). Together, these two categories of spend accounted for 68% of total direct expenditure by visitors.

In 2017, the county's day visitor market accounted for 48.3% of the value of tourism activity (£2.06bn), and had increased by 3.2% between 2016 and 2017. The staying visitor market saw total value growth of 2.8% during the same period.

Composition of Total Economic Impact by Type of Expenditure 2017



Accommodation:	Payments for overnight stays in accommodation, such as room rates, pitch fees and hire charges for non-serviced accommodation
Recreation:	Covering expenditure on a wide range of leisure activities such as museum, event, concert / theatre and attractions attendance as well as sports participation and spectating.
Transport:	Expenditure within the destination on travel, including fuel and public transport tickets
Food and Drink:	Spend on eating and drinking at restaurants, cafes and other venues, takeaway food, snacks and groceries
Shopping:	What visitors spend on items including clothing / jewellery, household items, music / films / games, gifts and smaller items, books and maps, plants and garden items
Indirect:	The expenditure by local tourism businesses within the local supply chain

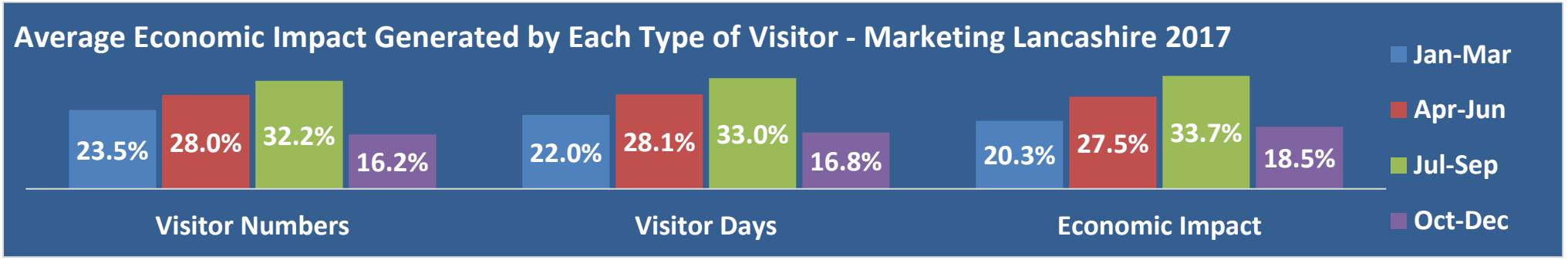
Key Figures: Economic Impact - Marketing Lancashire 2017

Economic Impact		Serviced	Non-Serviced	SFR	Staying Visitors	Day Visitors	All Visitors
2017 (£ Billions)	**£Bn**	**1.337**	**0.618**	**0.243**	**2.197**	**2.055**	**4.252**
2016 (£ Billions)	£Bn	1.323	0.580	0.235	2.139	1.992	4.130
Change 16/17 (%)	**%**	**+1.1**	**+6.4**	**+3.1**	**+2.8**	**+3.2**	**+2.9**
Share of Total (%)	%	31.5	14.5	5.7	51.7	48.3	100.0

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Average Economic Impact Generated by Each Type of Visitor - Marketing Lancashire 2017

Economic Impact	Serviced	Non-Serviced	SFR	Staying Visitors	Day Visitors	Visitors
Economic Impact per Day	**£ 139.20**	**£ 61.55**	**£ 38.22**	**£ 84.56**	**£ 34.65**	**£ 49.86**
Economic Impact per Visit	£ 301.43	£ 428.27	£ 98.81	£ 263.69	£ 34.65	£ 62.88



Total FTEs Supported

60,007

Employment Supported by Tourism

The expenditure and activity of visitors to Lancashire supported a total of 60,007 Full-Time Equivalent jobs (FTEs); 1% higher than in 2016 and 9.5% higher than in 2012.

Total employment includes the jobs generated by the expenditure of visitors on goods and services, totalling 48,945 FTEs, and the *indirect* and *induced* employment supported through local businesses and residents spending tourism revenues locally, accounting for a further 11,062 FTEs. Direct employment in Shopping (14,359 FTEs) and Food and Drink sectors (14,330 FTEs) account for 58.6% of direct FTEs supported by visitor activity.

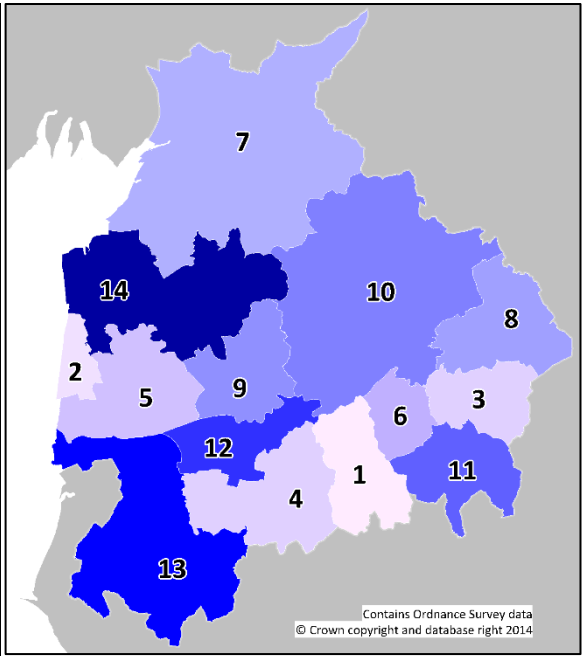
Employment Supported by Tourism: Full-Time Equivalents (FTEs) by Type - Marketing Lancashire 2017

Employment Supported by Sector 2017	Direct Visitor Employment						Indirect and Induced	Total
	Accommodation	Food & Drink	Recreation	Shopping	Transport	Total Direct		
Totals	13,860	14,330	3,974	14,359	2,423	48,945	11,062	60,007

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STEAM Key Impacts by Authority area: Marketing Lancashire 2017

	Authority Area	Visitor Numbers Share	Visitor Numbers Total	Economic Impact Share	Economic Impact Total	Employment Share	Employment FTEs
1	Blackburn with Darwen Borough Council	6%	4.2m	4%	£171.6m	4%	2,186
2	Blackpool Council	27%	18.1m	36%	£1,524.0m	42%	25,106
3	Burnley Borough Council	4%	2.5m	3%	£114.8m	2%	1,461
4	Chorley Borough Council	5%	3.7m	4%	£182.7m	4%	2,314
5	Fylde Borough Council	5%	3.3m	6%	£248.8m	5%	3,222
6	Hyndburn Borough Council	3%	2.0m	2%	£87.4m	2%	1,078
7	Lancaster City Council	11%	7.5m	11%	£476.5m	11%	6,352
8	Borough of Pendle	4%	2.7m	3%	£124.9m	3%	1,662
9	Preston City Council	10%	6.9m	7%	£317.4m	7%	3,961
10	Ribble Valley Borough Council	6%	4.1m	6%	£243.0m	5%	3,262
11	Rossendale Borough Council	2%	1.4m	1%	£59.0m	1%	778
12	South Ribble Borough Council	5%	3.4m	4%	£168.1m	4%	2,106
13	West Lancashire District Council	4%	2.9m	4%	£161.0m	3%	1,996
14	Wyre Borough Council	7%	4.9m	9%	£372.9m	8%	4,524
	LANCASHIRE	**100%**	**67.6m**	**100%**	**£4,252.1m**	**100%**	**60,007**



Notes:

- Visitor Numbers and Economic Impact figures rounded to one decimal place
- The total Economic Impact Figure for Lancashire expressed above as £4,252m is referred to elsewhere in this report as £4.252bn
- FTEs are Full Time Equivalent jobs

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STEAM Comparative Headlines: Marketing Lancashire 2016 and 2017

STEAM FINAL TREND REPORT FOR 2009-2017

MARKETING LANCASHIRE

Comparing 2017 and 2016

All £'s Historic Prices

COMPARATIVE HEADLINES

KEY PERFORMANCE INDICATORS BY TYPE OF VISITOR - COMPARING 2017 & 2016 - IN HISTORIC PRICES

KEY

An increase of 3% or more

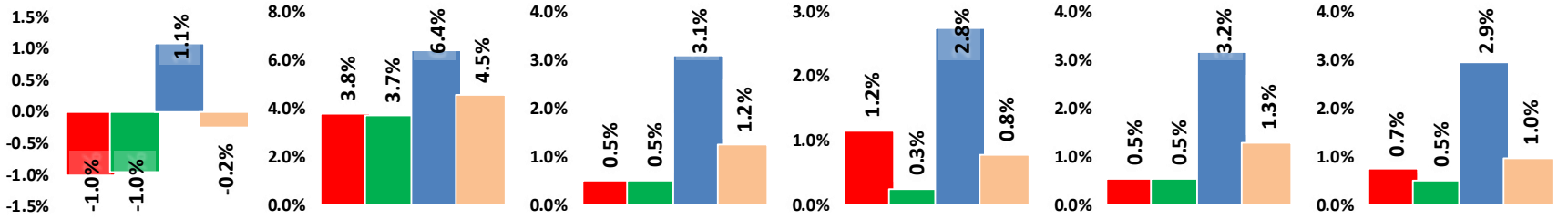
Less than 3% change

A Fall of 3% or more

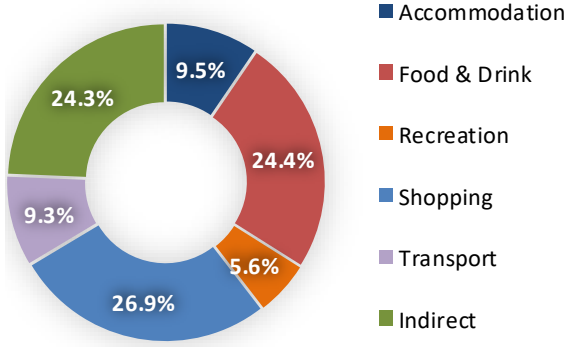
		Staying in Paid Accommodation						Staying with Friends and Relatives (SFR)			All Staying Visitors			Day Visitors			All Visitor Types		
		Serviced			Non-Serviced														
		2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %
Visitor Days	M	9.608	9.706	-1.0%	10.03	9.669	3.8%	6.347	6.316	0.5%	25.99	25.69	1.2%	59.29	58.97	0.5%	85.28	84.66	0.7%
Visitor Numbers	M	4.437	4.479	-1.0%	1.442	1.391	3.7%	2.455	2.442	0.5%	8.333	8.313	0.3%	59.29	58.97	0.5%	67.63	67.28	0.5%
Direct Expenditure	£Bn																3.217	3.126	2.9%
Economic Impact	£Bn	1.337	1.323	1.1%	0.618	0.580	6.4%	0.243	0.235	3.1%	2.197	2.139	2.8%	2.055	1.992	3.2%	4.252	4.130	2.9%
Direct Employment	FTEs	21,485	21,538	-0.2%	5,882	5,628	4.5%	2,269	2,242	1.2%	29,636	29,408	0.8%	19,309	19,065	1.3%	48,945	48,473	1.0%
Total Employment	FTEs																60,007	59,404	1.0%

PERCENTAGE CHANGE BY VISITOR TYPE AND PERFORMANCE MEASURE - COMPARING 2017 & 2016 - IN HISTORIC PRICES

KEY: Visitor Days; Visitor Numbers; Total Economic Impact; Direct Employment



Sectoral Distribution of Economic Impact - £Bn including VAT in Historic Prices



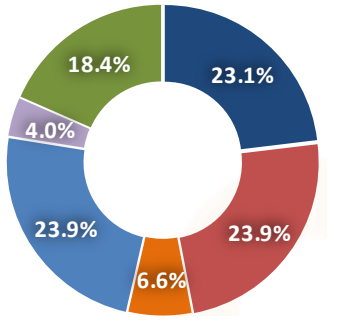
Accommodation; Food & Drink; Recreation; Shopping; Transport; Indirect

	2017	2016	+/- %
Accommodation	0.404	0.399	1.4%
Food & Drink	1.039	1.007	3.2%
Recreation	0.238	0.231	3.0%
Shopping	1.142	1.108	3.1%
Transport	0.393	0.382	3.1%
TOTAL DIRECT	**3.217**	**3.126**	**2.9%**
Indirect	1.035	1.004	3.1%
TOTAL	**4.252**	**4.130**	**2.9%**

Sectoral Distribution of Employment - FTEs

Sectors	2017	2016	+/- %
Accommodation	13,860	13,821	0.3%
Food & Drink	14,330	14,143	1.3%
Recreation	3,974	3,928	1.2%
Shopping	14,359	14,186	1.2%
Transport	2,423	2,394	1.2%
TOTAL DIRECT	**48,945**	**48,473**	**1.0%**
Indirect	11,062	10,932	1.2%
TOTAL	**60,007**	**59,404**	**1.0%**

Accommodation; Food & Drink; Recreation; Shopping; Transport; Indirect



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Report Prepared by: Alison Tipler. Date of Issue: 10/09/18

Volume 9, Issue 1 04/06/18

Cumbria Tourism

Latest Tourism Research Newsletter

Fifth consecutive year of growth for tourism

Inside this issue:

Tourism Business Performance Survey 2

Latest Information From VB and VE

Visits to Visitor Attractions 2017 3

Cumbria Tourist Accommodation Occupancy 2017/8 3

Comment: 2018 and Beyond 4

2018 Cumbria Tourism Visitor Survey 4

In 2017 Cumbria and the Lake District received over 47 million visitors, made up of 40.7 million day trippers and 6.6 million overnight visitors. Between them, day and staying visitors combined to produce 62.7m tourist days.

These visitors brought in £2.9 billion to the region's economy and provided employment for 37,796 full time equivalent (FTE) posts. As many tourism jobs are actually part time, or seasonal, the total number of people in tourism jobs is estimated at 64,992, around 20% of the county's total employment.

Between 2016 and 2017, there was an increase of 5.5% in tourist days, 4.8% in tourist numbers, and 6.4% in tourism revenue. This builds on increases in 2013, 2014 and 2015. In 2017 the county welcomed an extra 2.2m visitors, and generated an additional £175m, taking total tourism revenue to £2.9bn.

Staying visitors grew at a faster rate than day visitors. Staying visitors increased by 6.2%, equivalent to an extra 222,000 visitors, and day visitors by 5% - almost 2m additional day trip visits.

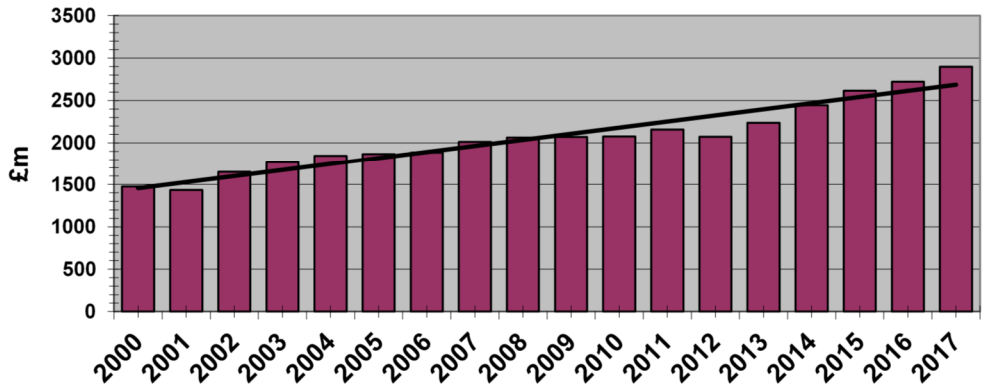
Much of the staying visitor growth was due to those choosing non-serviced accommodation (self-catering, caravan and camping etc) – non-serviced accommodation visitor numbers grew by 6.6% and visitor days by 9%.

South Lakeland district accounts for the greatest share of tourism revenue at 43%, followed by Carlisle with 19%, and Allerdale with 16%. Eden district generates 12% of the county's tourism revenue, Copeland 6% and Barrow 4%. The area covered by the Lake District National Park accounts for almost half of the county's total tourism revenue (49%).

In the nine years between 2009 and 2017, tourism revenue has grown by 40% from £2.07bn to £2.90bn (unadjusted). Over the same period, visitor numbers have grown by 15.8% and visitor days by 15.3%. Employment supported by tourism has increased by 13.2%.

Source: Cumbria Tourism (2018) Tourism in Cumbria 2017 Key Facts and Trends https:/www.cumbriatourism.org/shop/tourism-in-cumbria-key-facts-and-trends/

Tourism Revenue (unadjusted)



Windermere Road
Staveley
Kendal
Cumbria
015398 22222

Tourism Business Performance Survey

This biannual survey has been carried out by Cumbria Tourism for over 20 years. It is an online survey that is sent to all known tourism businesses (accommodation providers, visitor attractions, retailers etc) whether members of Cumbria Tourism or not.

The survey covered the six-month period from October 2017 to the end of March 2018, and looked ahead to the rest of 2018.

Bad weather, rising costs, uncertainties around Brexit and a downturn in consumer spending has resulted in profits being squeezed and a challenging start to the year

Just 19% of businesses reported profits up on the same six month period 12 months ago (compared to 32% in March 2017). Over half (52%) reported profits down.

30% said that visitor numbers over the last six months were up on the previous year, but almost half (47%) reported decreases in numbers overall.

Repeat business in the form of returning customers is a critical factor in the success of many tourism businesses, and 72% cited this as a positive factor over the last six months.

44% said that the use of social media had a positive effect on business. Other factors having a positive effect on business were people taking more short breaks/holidays (38%), investment in facilities (35%), special offers/discounts (33%) and more British people staying in the UK (31%). A fifth of tourism businesses (20%) said that the Lake District achieving World Heritage Site Status has had a positive effect on business.

84% of businesses said they had been adversely affected by the weather (spells of snow and the 'Beast from the East'). Over half (57%) of tourism businesses reported that increased costs had had a detrimental impact on business performance. 48% said people have been spending less.

Traffic and parking problems for visitors are also having a detrimental effect on trade. 38% reported problems for people getting to Cumbria and once here, and almost a third (32%) say visitors are having problems parking once they have arrived.

Confidence has fallen. 59% of businesses feel 'fairly confident' about the next six months, and 8% 'very confident' – a total of 67% confident to some degree. This compares to 79% in March 2017.

There was a mixed response to the anticipated impacts of Brexit based on current perceptions, with 36% expecting no impact at all. 21% of businesses think Brexit will impact positively on their business (up on 19% six months ago) but 43% of businesses think Brexit will impact negatively on their business (up on 37% six months ago). Areas of most concern are for operating costs (49%), the recruitment of workers from the EU (43%), border controls for visitors (38%) and overseas visitor numbers (33%).

Source: Cumbria Tourism (April 2018) March Tourism Business Performance Survey https://www.cumbriatourism.org/shop/tourism-business-performance-survey-march-2018/

VisitBritain/VisitEngland: Latest Research

Overseas Visitors

2016 was the seventh consecutive year of growth for inbound tourism.

Provisional figures for 2017 are an increase of 3% in the volume of trips, and 8% in value, bringing a total of 38.89m trips and generating £24,290m in revenue.

Overseas visits to the UK are forecast to break through the 40 million mark for the first time in 2018, reaching 41.7 million, up 4.4% on 2017 which is expected to see 39.9 million visits. Spending by overseas visitors to the UK is forecast to reach £26.9 billion in 2018, up 6.8% on 2017 which is expected to total £25.1 billion by year end.

Tourism Business Monitor

Easter 2018 was a difficult period for many accommodation sites, with 51% reporting a reduction in visits compared with the Easter period in 2017, and just 23% reporting an increase. Many cited extremely poor weather conditions as the primary reason for this adverse performance.

Aside from the weather conditions, more than one in five accommodation sites also commented that continuing issues surrounding the exchange rate and Brexit were impacting upon the performance of their business.

Business optimism for the remainder of 2018 remains broadly positive, but a reduction in the percentage of sites stating they are 'very confident' of better performance than in 2017 shows that many are erring on the side of caution after the Easter period.

Like accommodation sites, visitor attractions experienced a difficult Easter period. Whilst 31% of attractions did report an increase in visitors vs. the Easter period in 2017, a further 56% reported a decline.

When thinking about 2018 as a whole, 60% of attractions are optimistic that business performance will be better than in 2017 (slightly higher than the levels seen in January) - compared to just 11% who think that the year's performance will be down on last year.

Visits to Visitor Attractions 2017

This sector has seen increased visitor numbers over the last few years – by 4.7% in 2014, 3.3% in 2015, and 7.2% in 2016 (year on year comparisons).

Growth in visitors to visitor attractions in Cumbria has also been outperforming national results – VisitEngland's Annual Attractions Survey for 2016 showed an overall growth in visits to attractions of 2% on 2015, with gardens and zoos showing growth of 8%.

For 2017, data was captured from 71 visitor attractions, 60 of whom had provided figures in both 2016 and 2017. These attractions, with 5.5m visitors between them, saw an increase of 3.4% in 2017 - an extra 182,000 visitors through their doors.

Top 20 Visitor Attractions 2017 (by visitor numbers):

1. Windermere Lake Cruises
2. The Rheged Centre
3. Ullswater Steamers
4. Brockhole – the Lake District Visitor Centre
5. Whinlatter Forest Park & Visitor Centre
6. Tullie House Museum and Art Gallery
7. Grasmere Gingerbread
8. Lakeside and Haverthwaite Railway
9. The World of Beatrix Potter
10. Grizedale Forest Park and Visitor Centre
11. Carlisle Cathedral
12. Hill Top, Beatrix Potter's House
13. Lowther Castle and Gardens
14. Theatre By The Lake in Keswick
15. Wray Castle
16. Lakeland Motor Museum
17. Tree Top Trek, Brockhole
18. Muncaster Castle
19. The Puzzling Place
20. Dove Cottage and the Wordsworth Museum

Source: Cumbria Tourism - Visitor Attractions Monitor

(Please note this only includes visitor attractions who have provided data for 2017, and also gave permission for their figures to be published).

Cumbria Tourist Accommodation Occupancy 2017/8

Occupancy rates for serviced accommodation in Cumbria and the Lake District have been steadily increasing over the last few years. Cumbria was affected by severe flooding events during December 2015, which significantly affected the tourism industry well into 2016. Despite this, 2016 annual average occupancy rates for serviced accommodation were on a par with 2015 overall. 2017 ended marginally up on 2016, and the highest ever recorded.

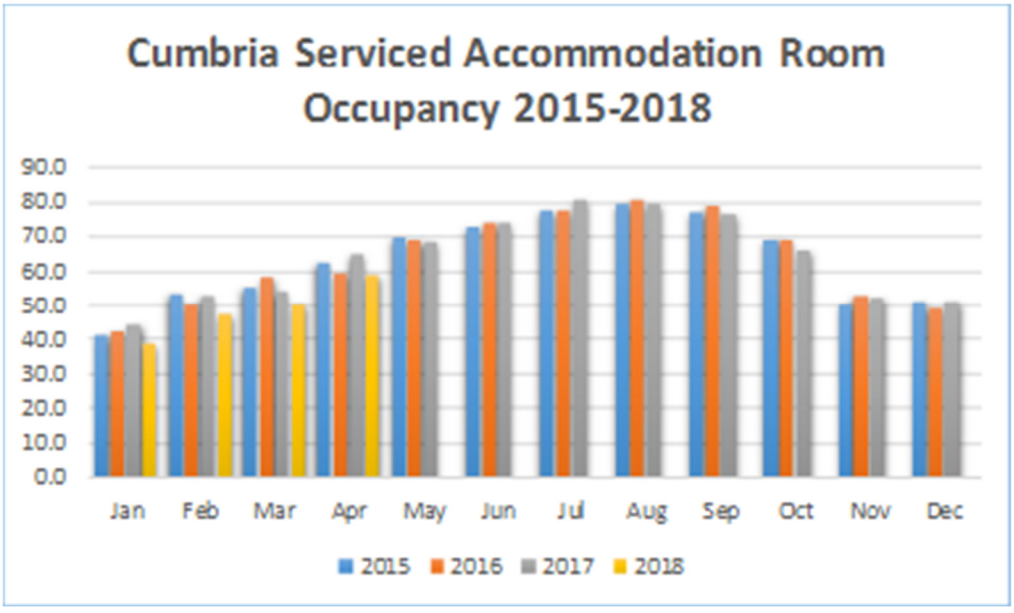
Unit occupancy rates for self-catering properties in Cumbria have been strong since 2014. 2017 annual average unit occupancy rates were the highest recorded.

However, the first four months of 2017 show both room occupancy rates for serviced accommodation, and unit occupancy for self catering accommodation, around ten percentage points down on the first four months of 2017. Bad weather seems largely to blame.

Pitch occupancy rates for touring caravans and campsites can vary depending on the weather. This sector has also performed particularly well since 2014. Pitch occupancy in 2017 was the highest recorded, and around 8% up on 2016.

Pitch occupancy levels for the first four months of the year are on a par with 2017 (but these are provisional results only).

Latest occupancy information available here: *https://www.cumbriatourism.org/what-we-do/research/*



Comment: 2018 and Beyond...

In an article written by George Clode, published by Travel GBI, Graham Donoghue, chief executive of Sykes Holiday Cottages, shared his five predictions for trends that will affect the UK travel sector throughout 2018 and beyond:

1. Importance of four-legged travelers
People's pets are a consideration now more than ever before, and four-legged travellers (and their owners) are an important market for staycations. This could be further reinforced in 2019 if there's no Brexit deal, as it may make travelling in the EU more difficult with pets.

2. Growth in unusual accommodation
Glamping is by no means a new phenomenon, but I expect this trend to continue throughout 2018 as families and an older demographic cotton on to the experiences available at these more unusual accommodation options, without compromising on comfort.
The supply of quality glamping accommodation is also on the up, as it's becoming a popular lifestyle business for many entrepreneurs and a diversification option for farmers and landowners.

3. Families spending on luxury
The family market will drive demand for luxury UK breaks in 2018, as the weak pound is pricing families out of foreign holidays. Hot tubs and swimming pools are holiday features that deliver reasonably-priced luxury that people can't get at home. In fact, hot tub breaks are the second most searched-for term on the Sykes Holiday Cottages website, behind pet-friendly properties.

4. Skill and experience-based breaks
Consumers are increasingly craving new experiences, and UK accommodation providers are up against competition from operators offering a whole host of experiences across the globe. This year, staycationers will seek adventure, thanks in part to destinations like Snowdonia upping the ante with new action-packed attractions such as the world's first inland surf lagoon and Europe's first four-man zipline. Travellers will also look to the UK for wellness breaks and to learn a new skill – be it surfing in Cornwall, orienteering in the Scottish Highlands or stargazing in the Brecon Beacons.

5. Girl power continues
In 2017, 63% of Sykes Holiday Cottage bookings were made by women – up 10% on the previous year. This should make tourism providers think more carefully about how they make their products and messaging more attractive to female bookers.

"In terms of popular locations, I'm expecting the Lake District to bear the fruits of its UNESCO listing in 2018. The region has had a huge PR boost in Britain and abroad, which is already translating into an increase in bookings.
With all of the above considered, there's probably never been a better time for anyone in the business of selling British breaks."

2018 Cumbria Tourism Visitor Survey

Tourism plays a vital role in Cumbria's economy, creating businesses, generating revenue, providing jobs, and sustaining rural communities, while also protecting the natural environment upon which it depends.

As the destination management organisation for Cumbria, Cumbria Tourism takes the lead in delivering information on our visitor markets. Every three years, we undertake a countywide visitor survey. The last one was in 2015, and we are carrying out this research again this year. In simple terms, the research identifies where our visitors come from, who they are with, their visit history, party size and composition, why they come, what they do (and spend) when they are here.

This project is being carried out in partnership with Cumbria's Local Enterprise Partnership, the Lake District National Park Authority, Allerdale Borough Council, Carlisle City Council, Copeland Borough Council, Eden District Council, and South Lakeland District Council, all of whom have committed financial resources.

In order to speak to a representative sample of visitors, we will be carrying out 1,400 face-to-face surveys with visitors across the county – at locations designed to pick up all visitor types. Fieldwork will be carried out by qualified researchers, between 1st June and the end of September. This is just to make you aware - so if you see surveys being carried out, you know what its all about!

Any questions about any of the information in this newsletter, please contact Helen Tate, Research Manager at Cumbria Tourism – htate@cumbriatourism.org

Cumbria Tourism
At the heart of our visitor economy

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Staveley
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Cumbria
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Yorkshire Dales National Park
Economic Data by Visitor Type – within National Park Boundary

STEAM FINAL TREND REPORT FOR 2015-2017 YORKSHIRE DALES NATIONAL PARK - WITHIN THE PARK BOUNDARY		Comparing 2017 and 2016 All £'s Historic Prices	COMPARATIVE HEADLINES

KEY PERFORMANCE INDICATORS BY TYPE OF VISITOR - COMPARING 2017 & 2016 - IN HISTORIC PRICES																			
KEY																			
An increase of 3% or more		Staying in Paid Accommodation						Staying with Friends and Relatives (SFR)			All Staying Visitors			Day Visitors			All Visitor Types		
Less than 3% change		Serviced			Non-Serviced														
A Fall of 3% or more		2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %
Visitor Days	M	0.59	0.57	2.8%	1.43	1.41	1.4%	0.12	0.12	0.7 %	2.14	2.10	1.7%	4.08	4.02	1.5 %	6.22	6.12	1.6 %
Visitor Numbers	M	0.33	0.31	**5.1%**	0.26	0.23	**14.5 %**	0.03	0.03	0.9 %	0.61	0.57	**8.7%**	4.08	4.02	1.5 %	4.70	4.59	2.4 %
Direct Expenditure	£M																239.73	229.10	**4.6 %**
Economic Impact	£M	78.07	73.53	**6.2%**	87.74	84.21	**4.2%**	5.65	5.47	**3.3 %**	171.45	163.21	**5.0%**	149.02	143.06	**4.2 %**	320.47	306.27	**4.6 %**
Direct Employment	FTEs	1,277	1,271	0.5%	1,625	1,613	0.7%	53	52	1.4 %	2,955	2,936	0.6%	1,370	1,340	2.3 %	4,325	4,276	1.1 %
Total Employment	FTEs																5,188	5,116	1.4 %

Yorkshire Dales National Park
Economic Data by Visitor Type – (Old Boundary – pre August 2016)

STEAM FINAL TREND REPORT FOR 2009-2017 YORKSHIRE DALES NATIONAL PARK - WITHIN THE PARK BOUNDARY																			
		Comparing 2017 and 2016 All £'s Historic Prices											COMPARATIVE HEADLINES						
KEY PERFORMANCE INDICATORS BY TYPE OF VISITOR - COMPARING 2017 & 2016 - IN HISTORIC PRICES																			
KEY																			
An increase of 3% or more		Staying in Paid Accommodation						Staying with Friends and Relatives (SFR)			All Staying Visitors			Day Visitors			All Visitor Types		
Less than 3% change		Serviced			Non-Serviced														
A Fall of 3% or more		2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %	2017	2016	+/- %
Visitor Days	M	0.53	0.52	2.7%	1.09	1.07	2.0%	0.10	0.10	0.6 %	1.71	1.68	2.1%	3.34	3.29	1.5 %	5.06	4.97	1.7 %
Visitor Numbers	M	0.30	0.28	**5.0%**	0.20	0.17	**15.2 %**	0.02	0.02	0.7 %	0.52	0.48	**8.5%**	3.34	3.29	1.5 %	3.86	3.77	2.4 %
Direct Expenditure	£M																197.51	188.98	**4.5 %**
Economic Impact	£M	69.77	66.41	**5.1%**	67.09	64.08	**4.7%**	4.74	4.59	**3.2 %**	141.59	135.08	**4.8%**	122.02	117.14	**4.2 %**	263.61	252.22	**4.5 %**
Direct Employment	FTEs	1,133	1,128	0.4%	1,324	1,314	0.7%	44	44	1.3 %	2,501	2,486	0.6%	1,122	1,097	2.3 %	3,623	3,583	1.1 %
Total Employment	FTEs																4,329	4,271	1.4 %

YORKSHIRE DALES
National Park Authority

Yorkshire Dales National Park Authority

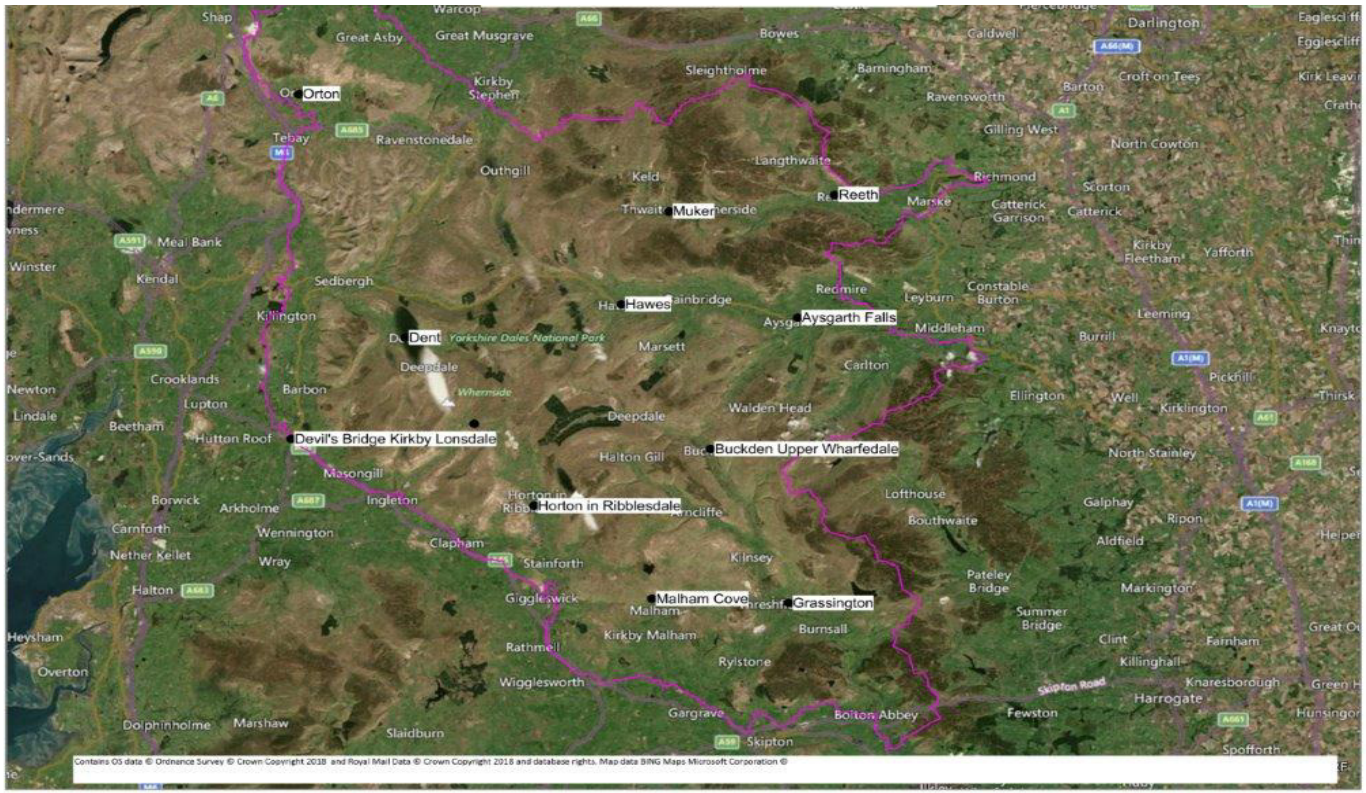
Results from Customer Survey 2017

MRS Evidence Matters™
Company Partner

ibyd information by design

Methodology – 652 interviews in the YDNP area – 12 locations including new locations of Orton and Devil's Bridge

- 652 Face-to-face interviews conducted with visitors to the Yorkshire Dales National Park at 12 locations from July to October – pre – mid – and post high season



- Aysgarth Falls, Buckden, Dent, **Devil's Bridge near Kirkby Lonsdale***, Grassington, Hawes, Horton in Ribblesdale, Malham Cove, Muker, **Orton***, Reeth, Ribblehead

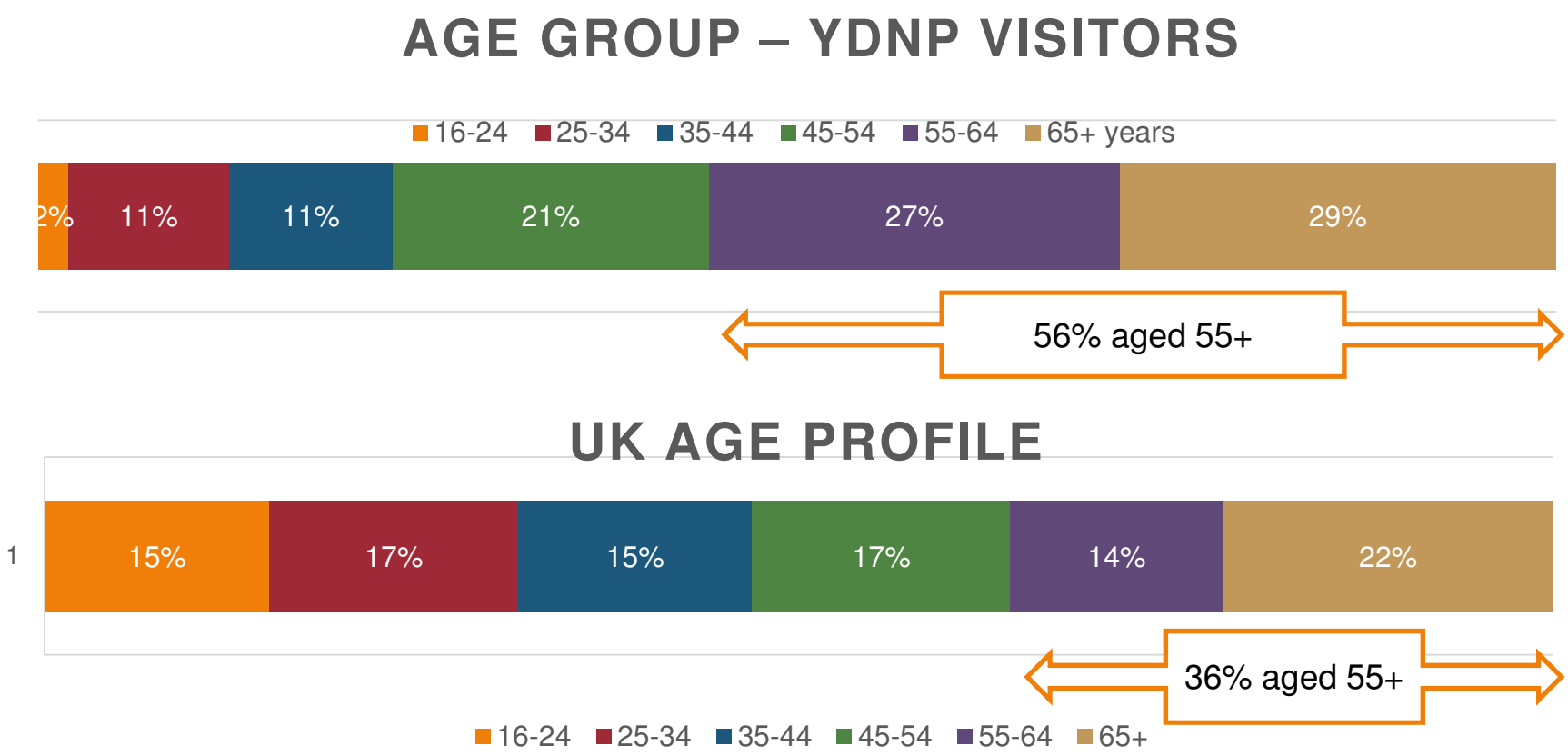
*New locations within the extended National Park

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VISITOR DEMOGRAPHICS

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YDNP Visitors have older profile than the UK population - higher proportion from older age groups– 56% aged 55+, 36% nationally

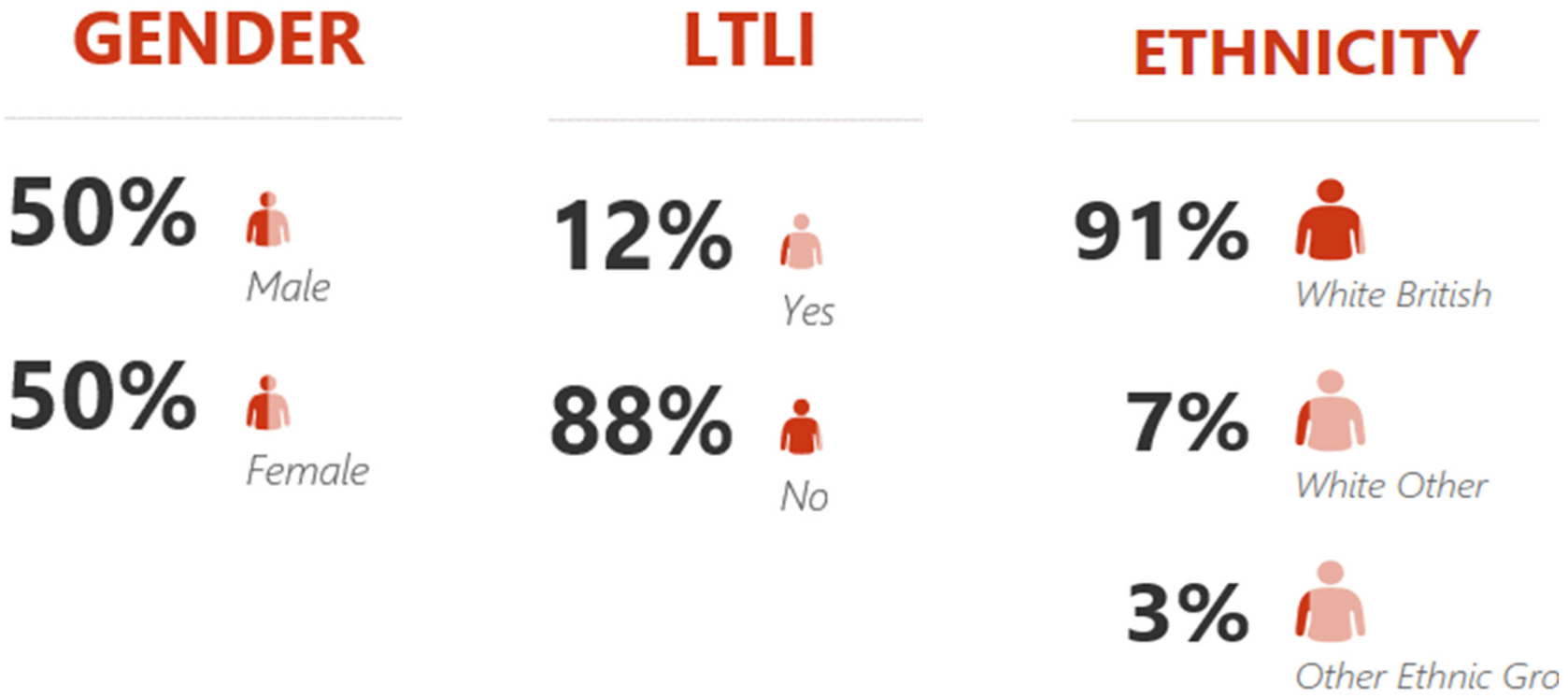


Source of UK Age profile: 2016 Mid-year population estimates

Base: 651

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Compared with UK population profile, visitor profile similar gender, lower LTLI and higher White British



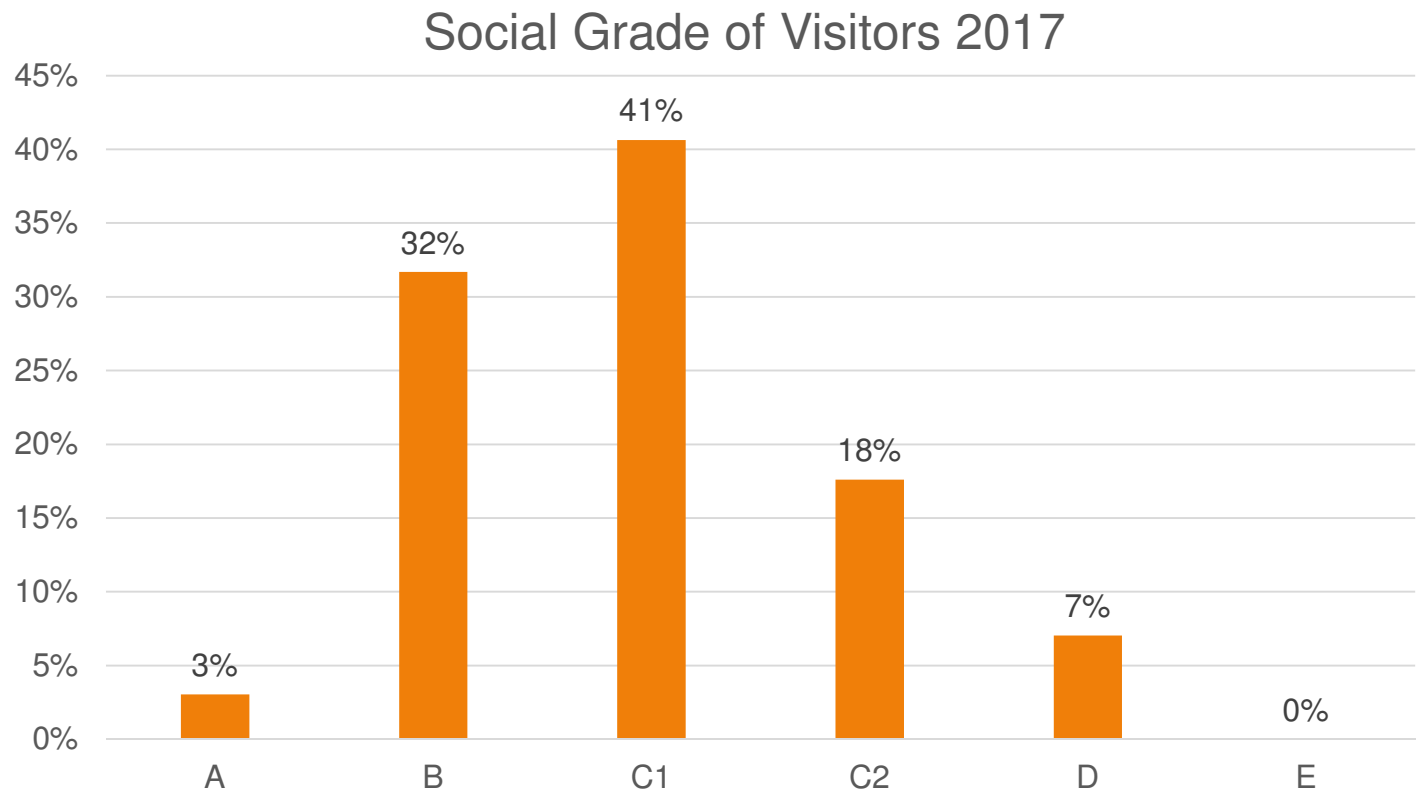
UK Population
51% Male
49% Female-
(Source: Mid-year population estimates 2016)

England and Wales
18% have
long-term limiting
illness
(Source: Census 2011)

England and Wales
80% White British
5% other White ethic group,
14% other ethic group
(Source: Census 2011)

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35% of visitors were social grade AB – higher than England and Wales (23%)



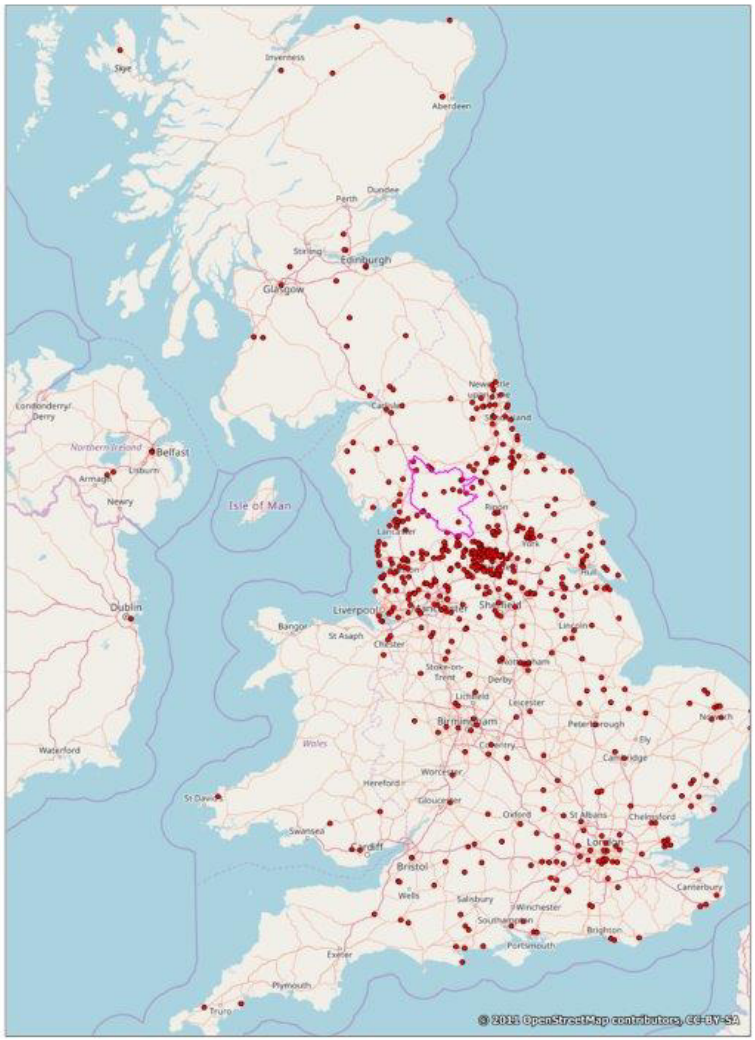
England and Wales: AB - 23%, C1 - 30%, C2 - 22%, DE - 25%

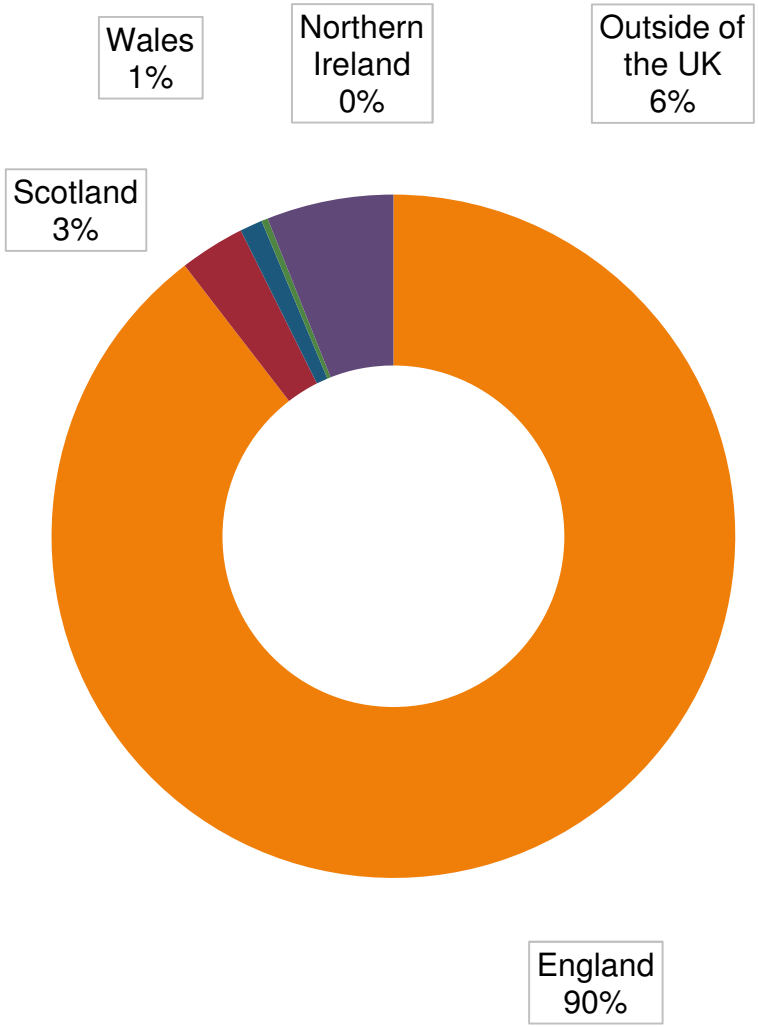
Base: 625 Q: What is the occupation of the main wage earner in your household? If retired, please give previous occupation and write 'retired' before occupation

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94% of visitors from across the UK – 6% from outside the UK

Home locations of interviewees in YDNP





Base: 651 Q: Please could I take your home postcode? Q: Where do you live? Enter Town and Country. If Overseas also record country

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VISIT DETAILS

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3.5 mean party size, 18% in party containing children, 43% day and 58% overnight – 4.49 mean number of nights stayed

VISITOR KEY FACTS

- The mean party size was 3.5
- 18% of respondents were in a group that contained children
- 43% were day visitors
- 58% were staying overnight
- The mean number of nights they were staying was 4.49

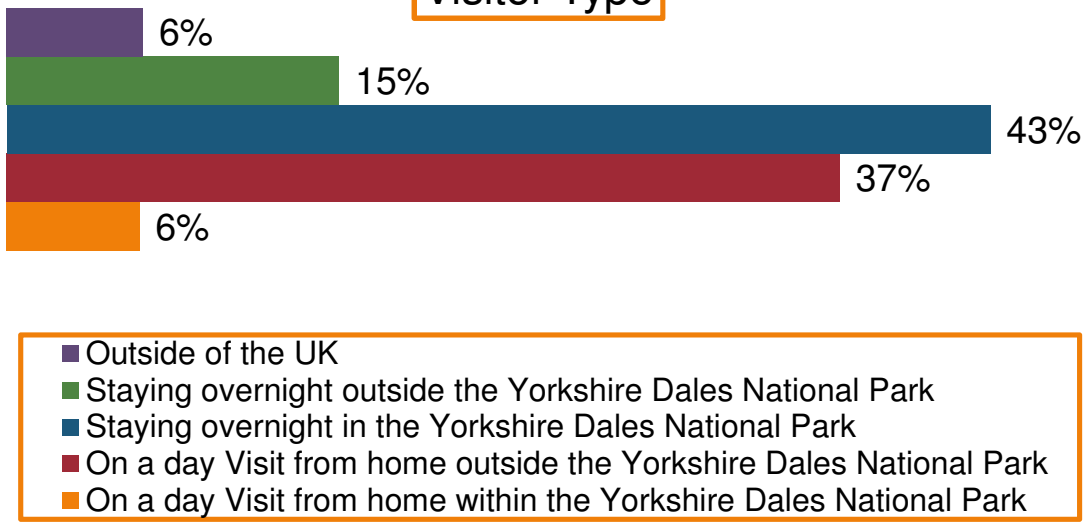
3.5 *Mean Party Size*

18% *Parties with children*

43% *Day Visitors*

58% *Staying overnight*

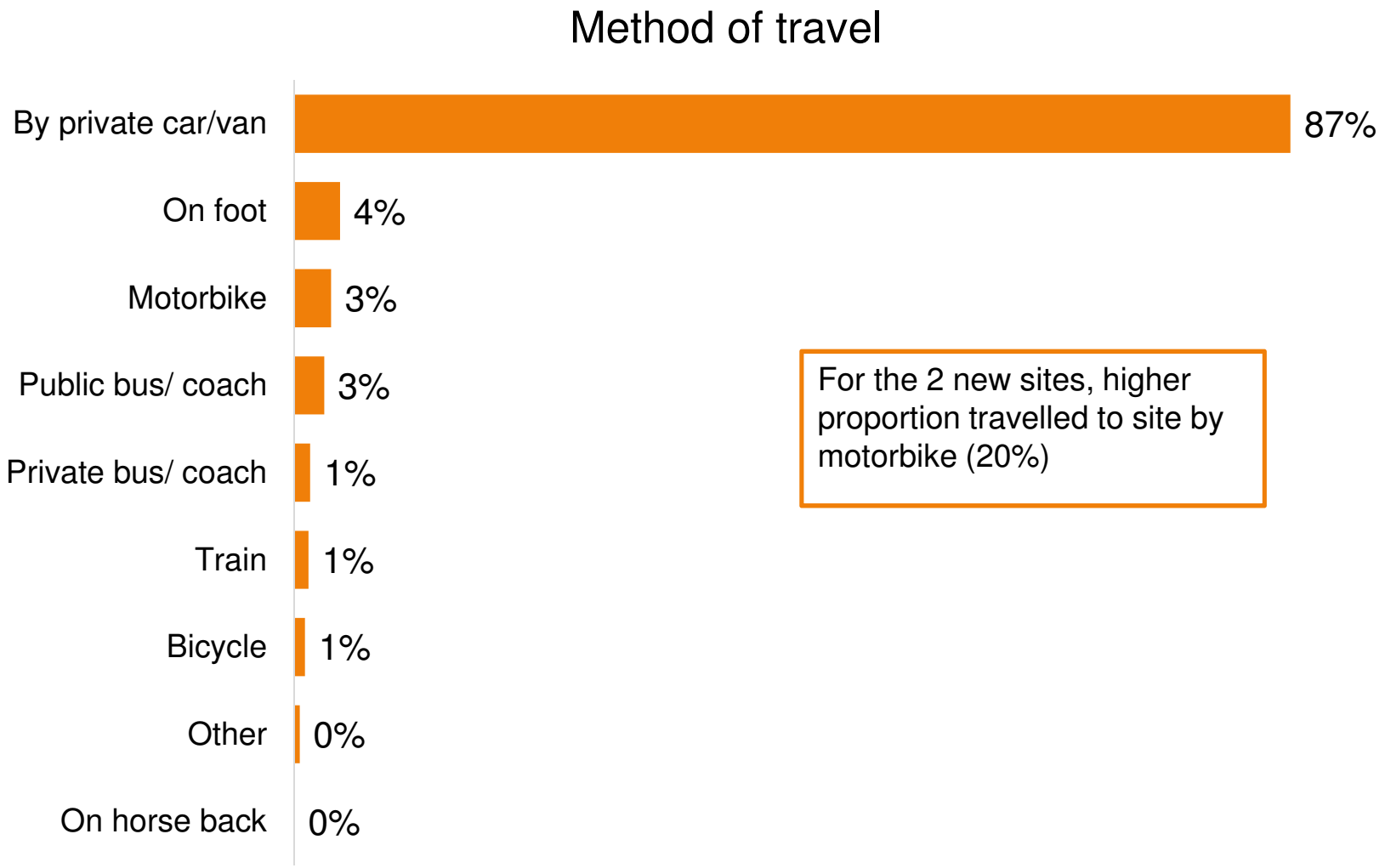
4.49 *Mean number of nights*



Base: 652 Q: How many adults (aged 16 and over) are in your group today? Q: How many children (under 16 years of age) are in your group today? Q: Which of the following best describes your visit today?

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87% had travelled to the location they were interviewed by private car or van



Base: 652

Q: How did you travel here today?

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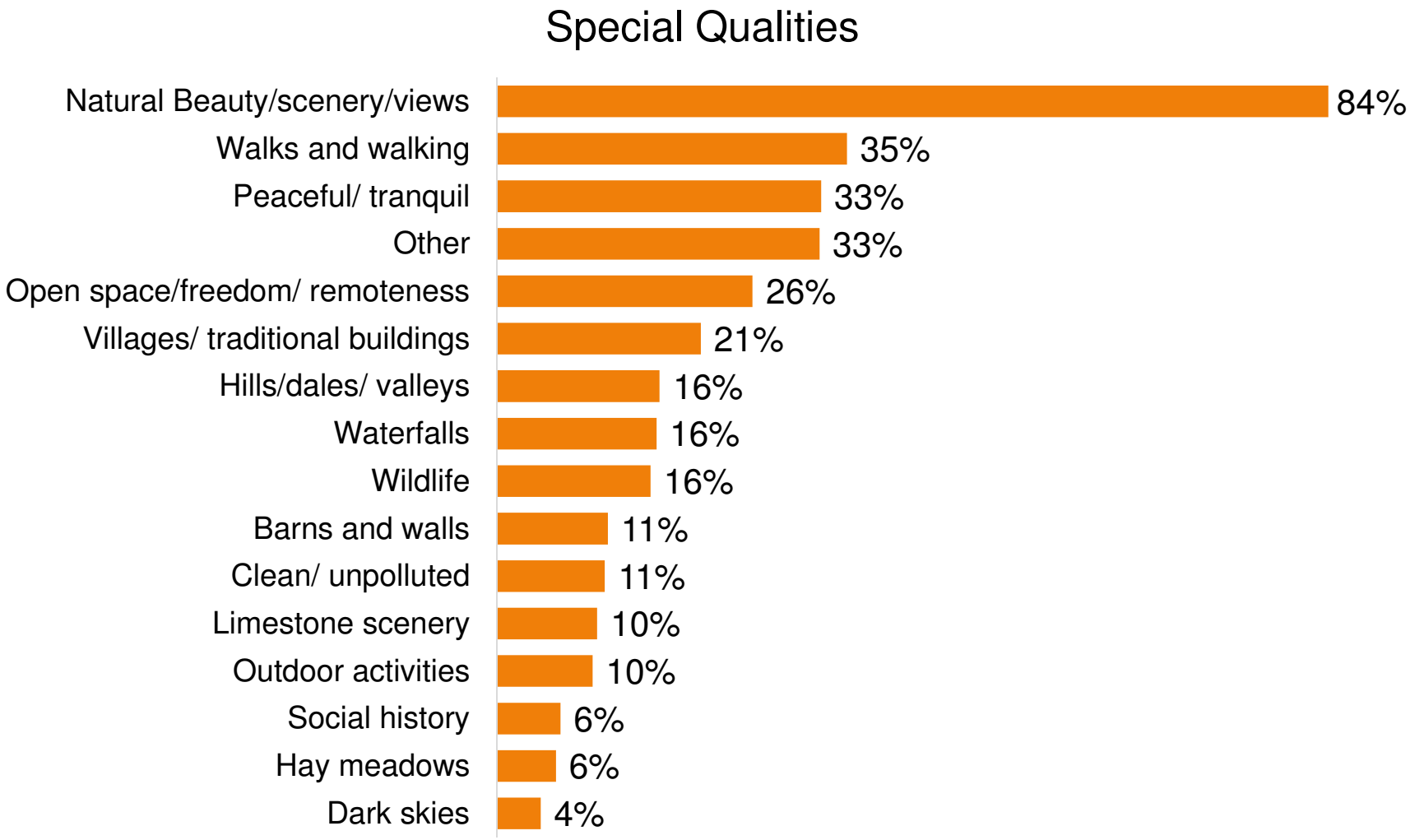
Been before, scenery/landscape/connecting to nature top reasons for visiting



Base: 652 Q: Thinking broadly about your decision to visit the Yorkshire Dales, what was it that attracted you to visit here **on this occasion**?

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Over four-fifths see natural beauty, scenery and views as a special quality of YDNP; walks and walking, peaceful/tranquil also feature

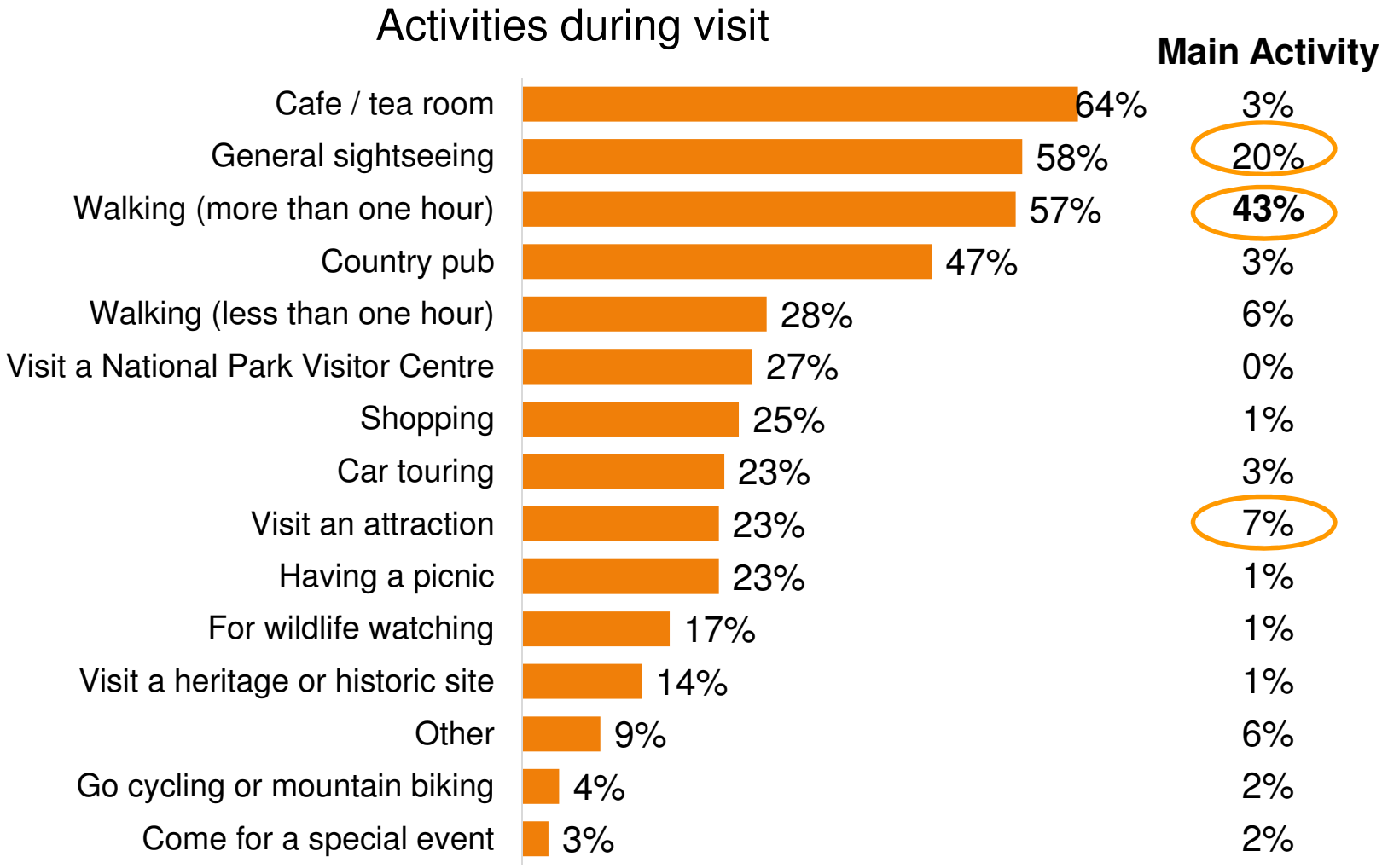


Base: 652

Q: With regards to the Yorkshire Dales National Park, what do you see as its special qualities

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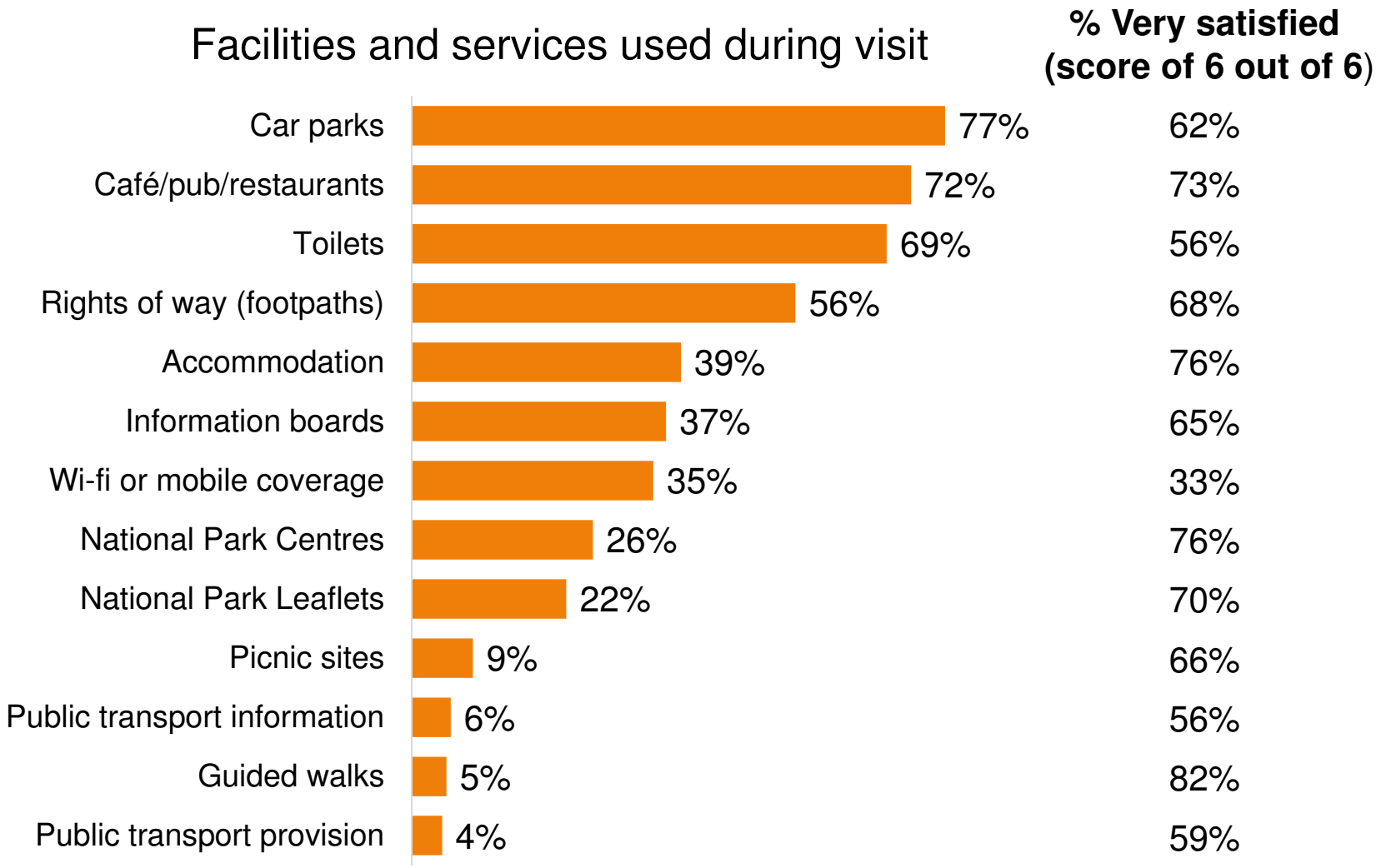
Cafes and tea rooms, general sightseeing and walking for more than one hour top activities during visit – but **main** activities walking, general sightseeing and visiting attractions



Base: 652 Q: What activities have you or will you participate in during your visit today Q: What is, or will be, your MAIN activity today?

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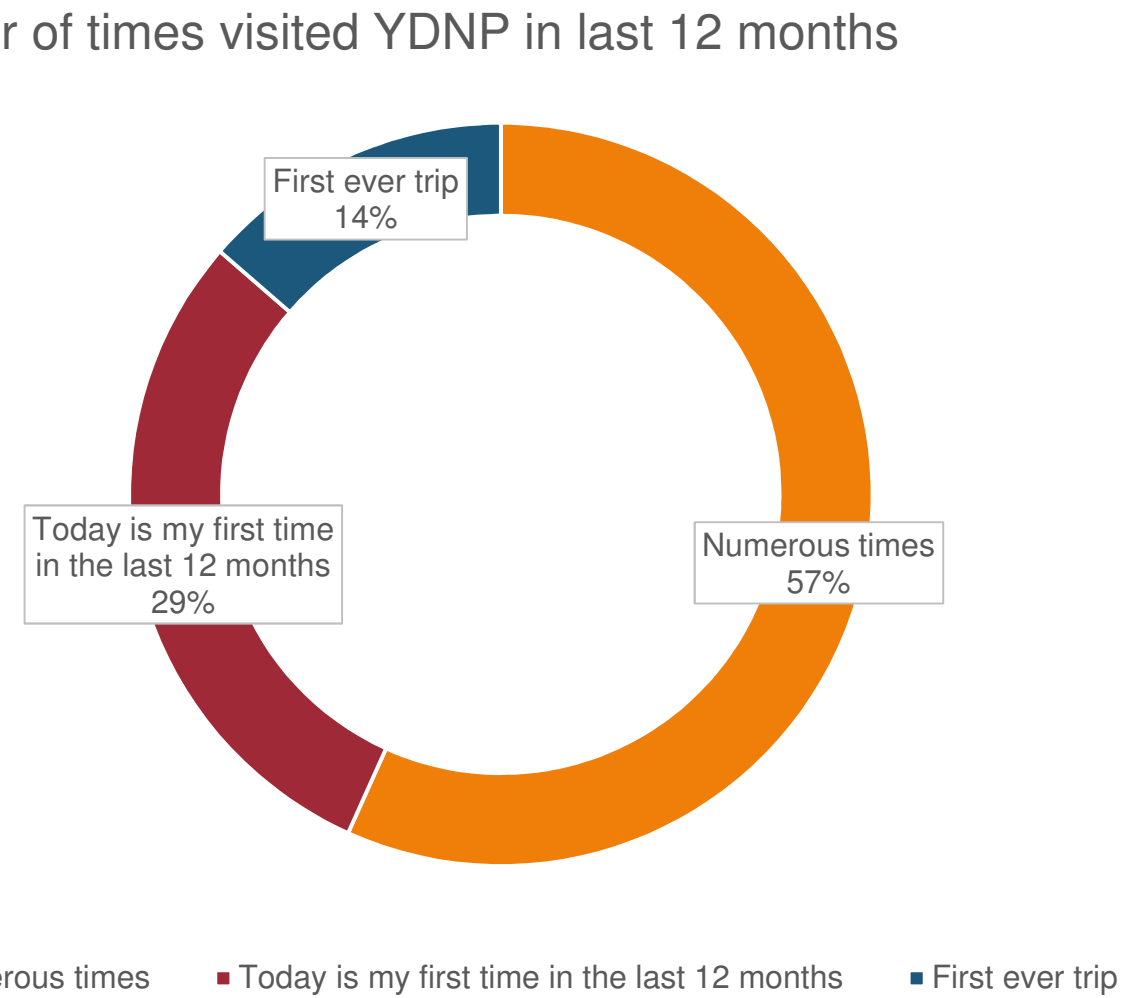
Car parks, cafes, pubs and restaurants and toilets most used facilities and satisfaction levels generally high - lower for Wifi/mobile coverage and public transport information/facilities



Base: 652 Q: During your visit to the Yorkshire Dales have you used any of the following facilities or services? Q:On a scale of 1 - 6 (where 1 is not at all satisfied and 6 is very satisfied) how satisfied or dissatisfied were you with the standard of…?

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86% had visited the Yorkshire Dales National Park before



Base: 652 Q: Before I spoke to you today, were you aware that this area was a part of the Yorkshire Dales National Park?

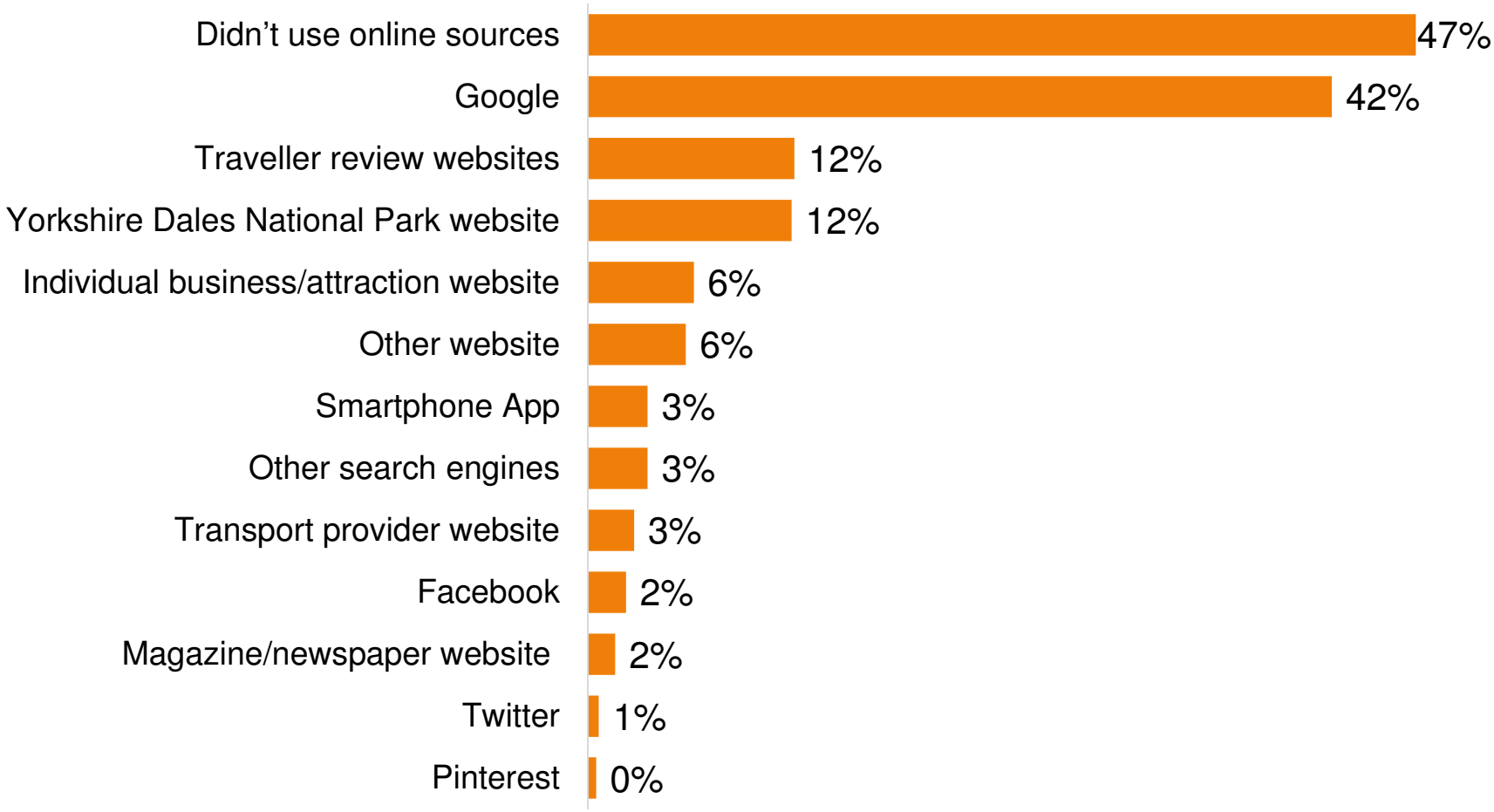
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VISITOR INFORMATION, DECISION MAKING AND AWARENESS OF YDNP

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53% used online information when planning visit – Google top online source used – 1 in 10 use traveller and YDNP websites

Sources of online information used for planning

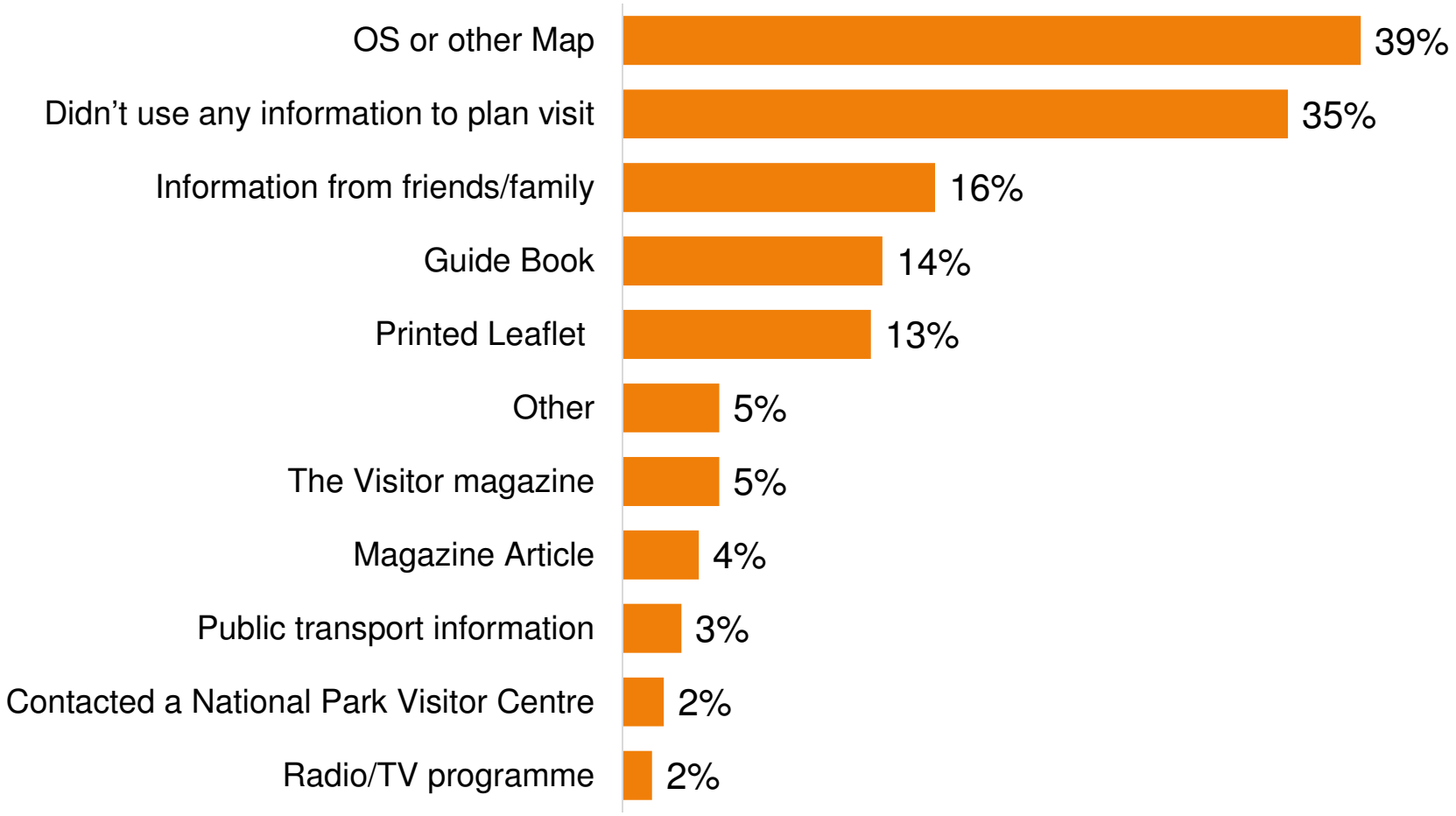


Base: 651 Q: Which of the following online sources, if any, did you use when planning your trip to the Yorkshire Dales?

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65% had used off-line information when planning visit – maps top information source used but 1 in 3 did not use information

Other sources of information used for planning



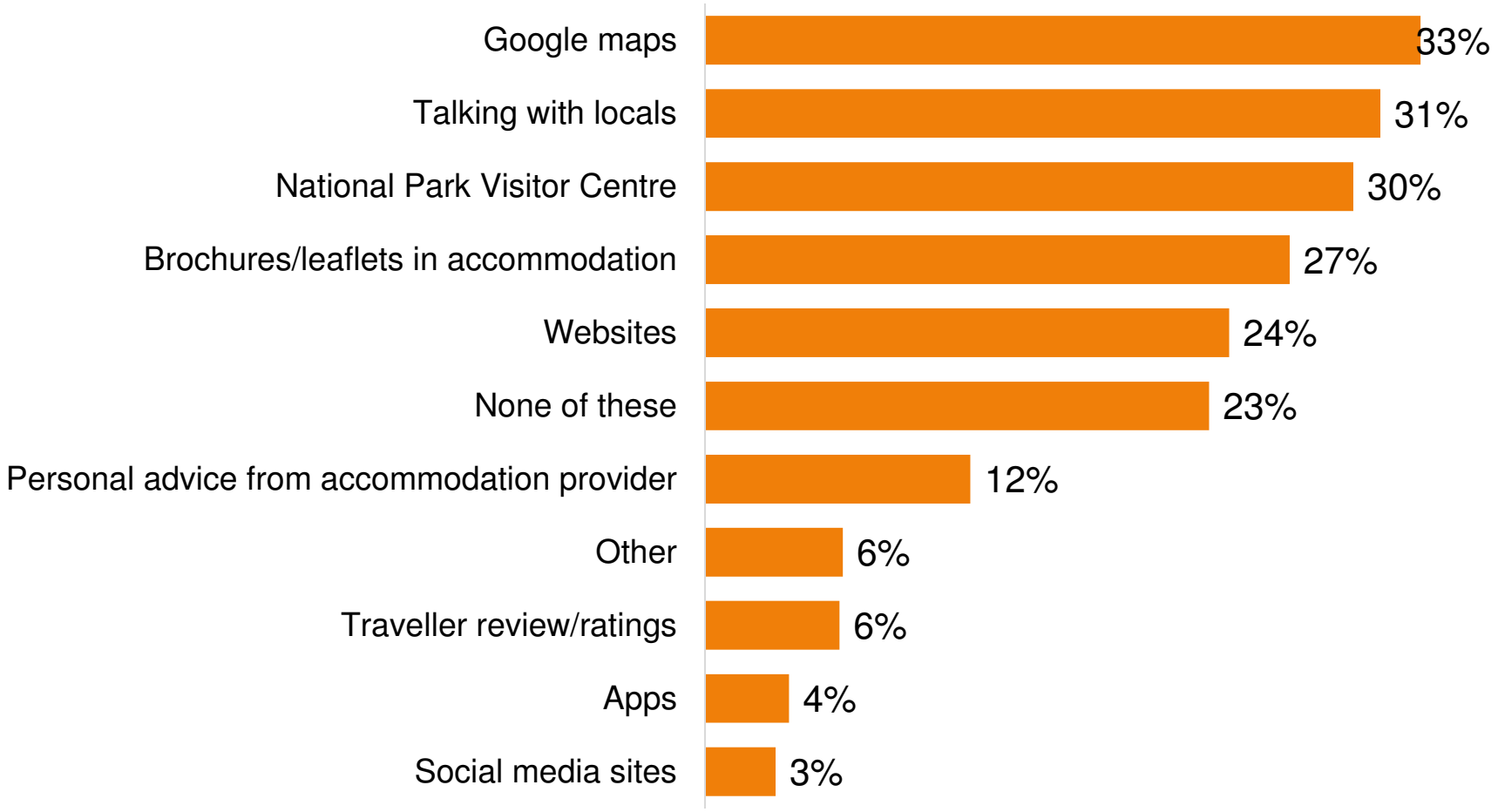
Base: 651

Q: What other information did you refer to, to plan your visit?

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One-third used/planned to use Googlemaps as source of information during visit – but similar proportions rely on talking with locals, NP visitor centres and brochures/leaflets in accommodation

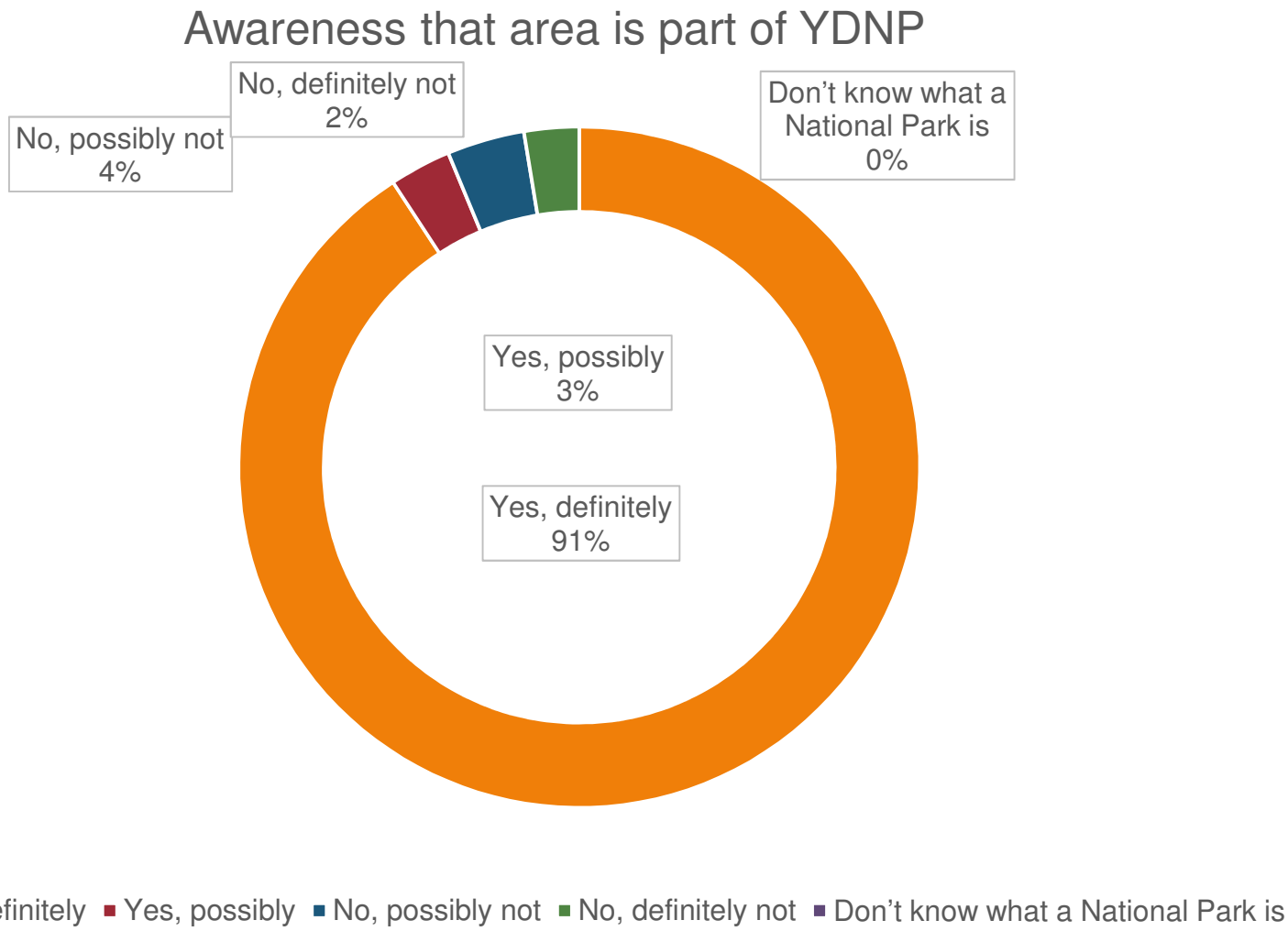
Information sources used (or will use) during visit



Base: 652 Q: During your visit which of the following sources of information have you or will you use to look for things to see and do?

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94% were aware the site they were interviewed at was part of YDNP



Base: 652 Q: Before I spoke to you today, were you aware that this area was a part of the Yorkshire Dales National Park?

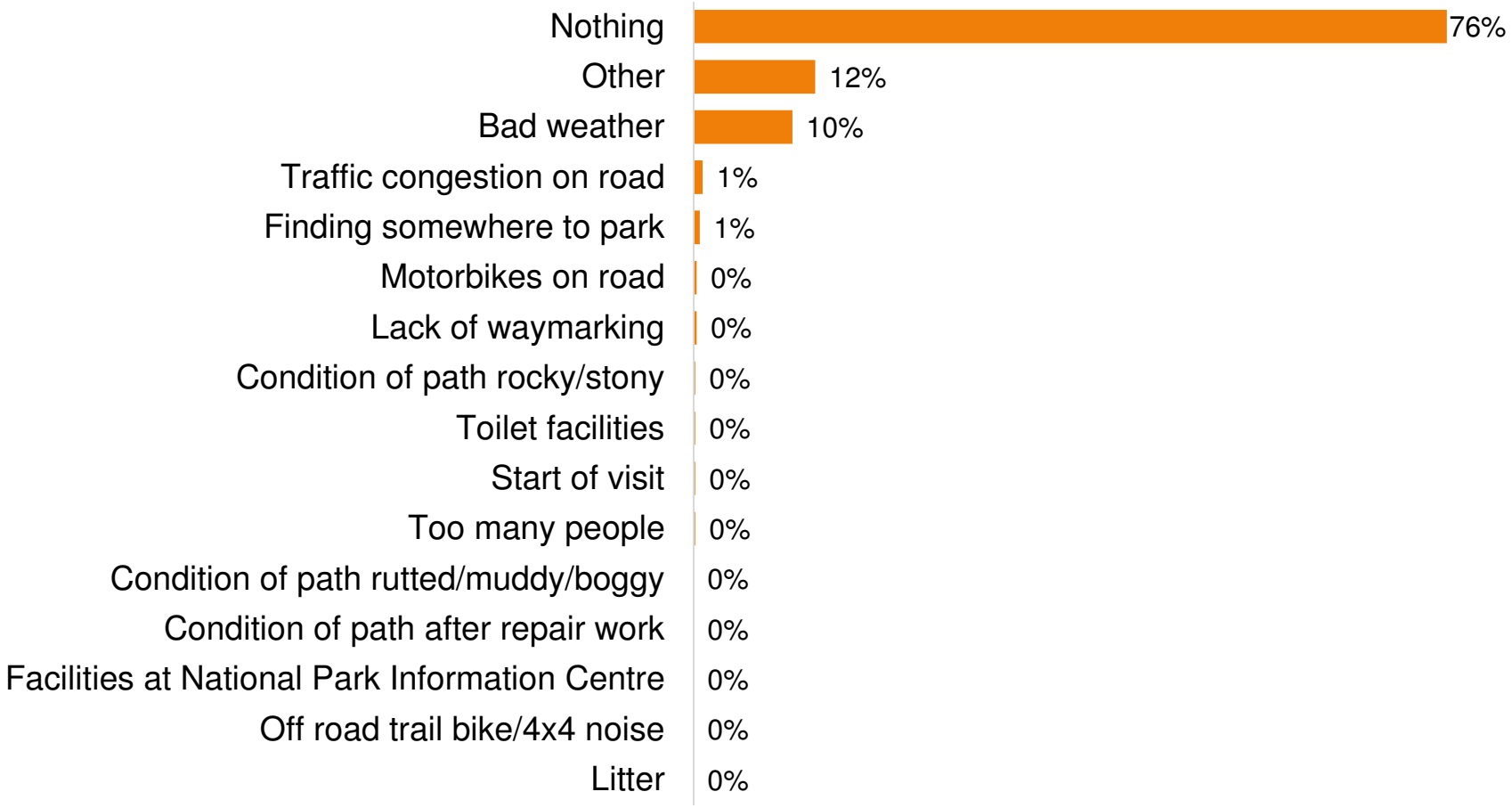
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VISITOR ENJOYMENT, SATISFACTION AND RECOMMENDATION

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Over three-quarters said ‘nothing’ spoilt the enjoyment of their visit to YDNP – 1 in 10 said bad weather

Spoilt enjoyment of visit

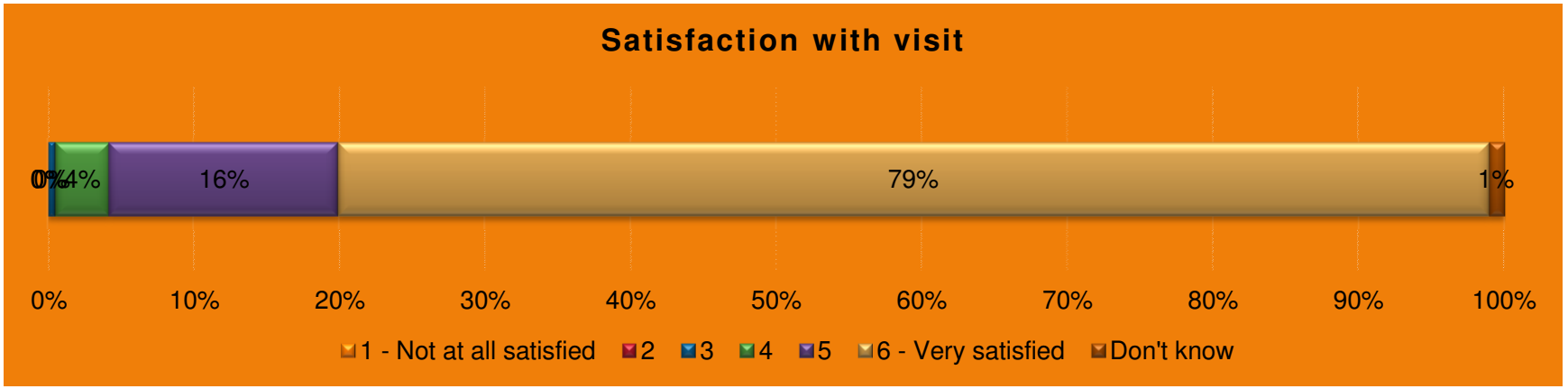


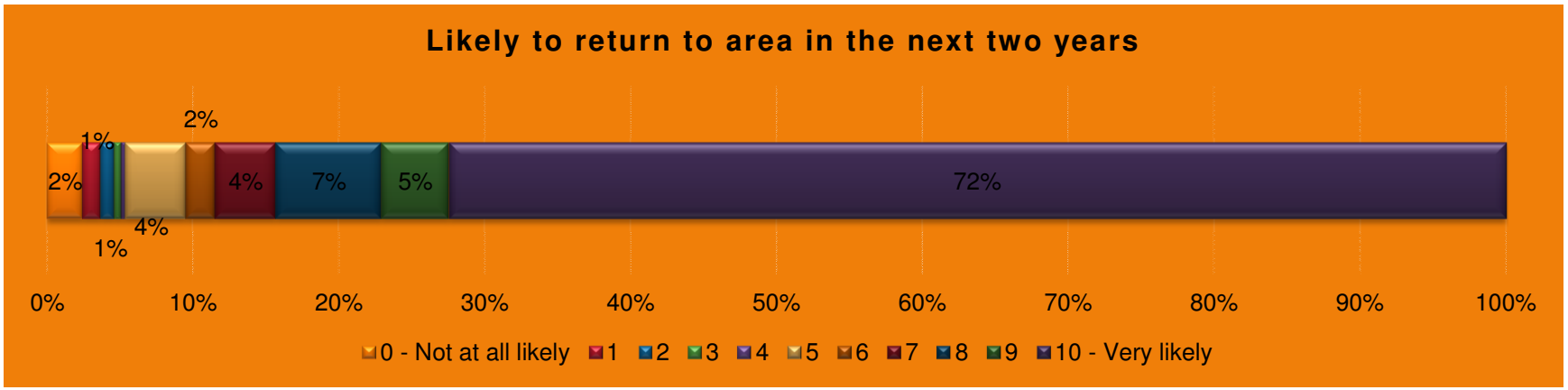
Base: 652

Q: Has anything spoiled the enjoyment of your visit to the Yorkshire Dales today?

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95% satisfied (5 or 6 out of 6); 79% likely to return (9 or 10 out of 10) – very high scores

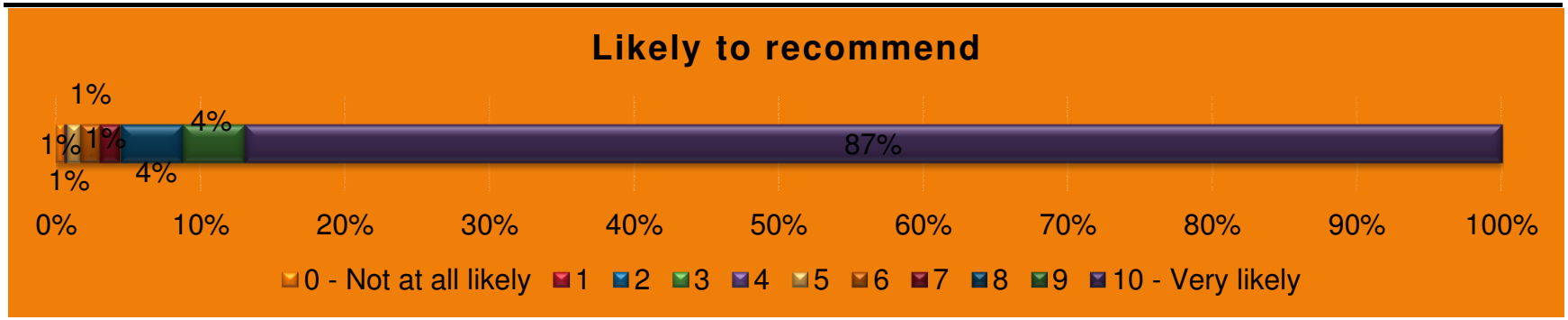


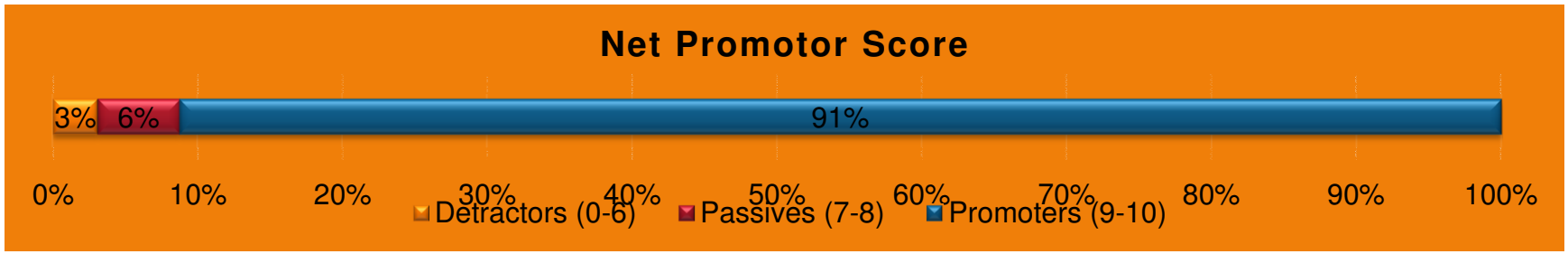


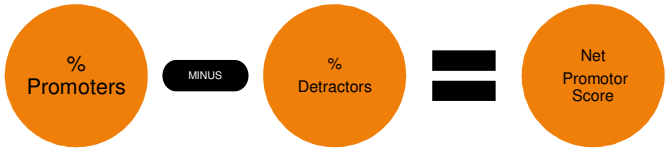
Base: 652 Q: Taking into account what you have enjoyed about your visit and what (if anything) has spoilt your visit, on a scale of 1 - 6 (where 1 is not at all satisfied and 6 is very satisfied) how satisfied or dissatisfied are you overall with your visit to the Yorkshire Dales National Park?

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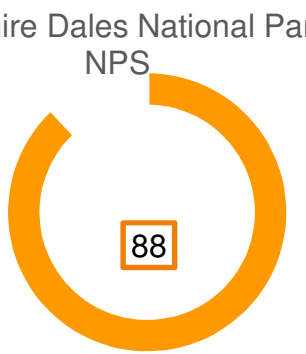
Net promoter score – 88% – very high in comparison to major brands

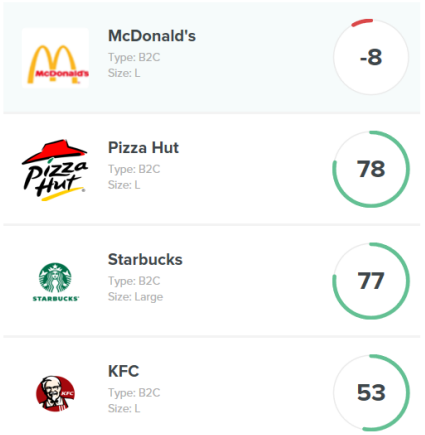






- Net Promoter Score (NPS) used to understand customer recommendation.
- Calculation - subtract % giving score of 0-6 (detractors) from % giving score of 9 or 10 (promoters).
- Scores of 7 or 8 classed as 'passives' - not included.
- For YDNP - 91% of respondents promoters and 3% detractors – high compared to major brands





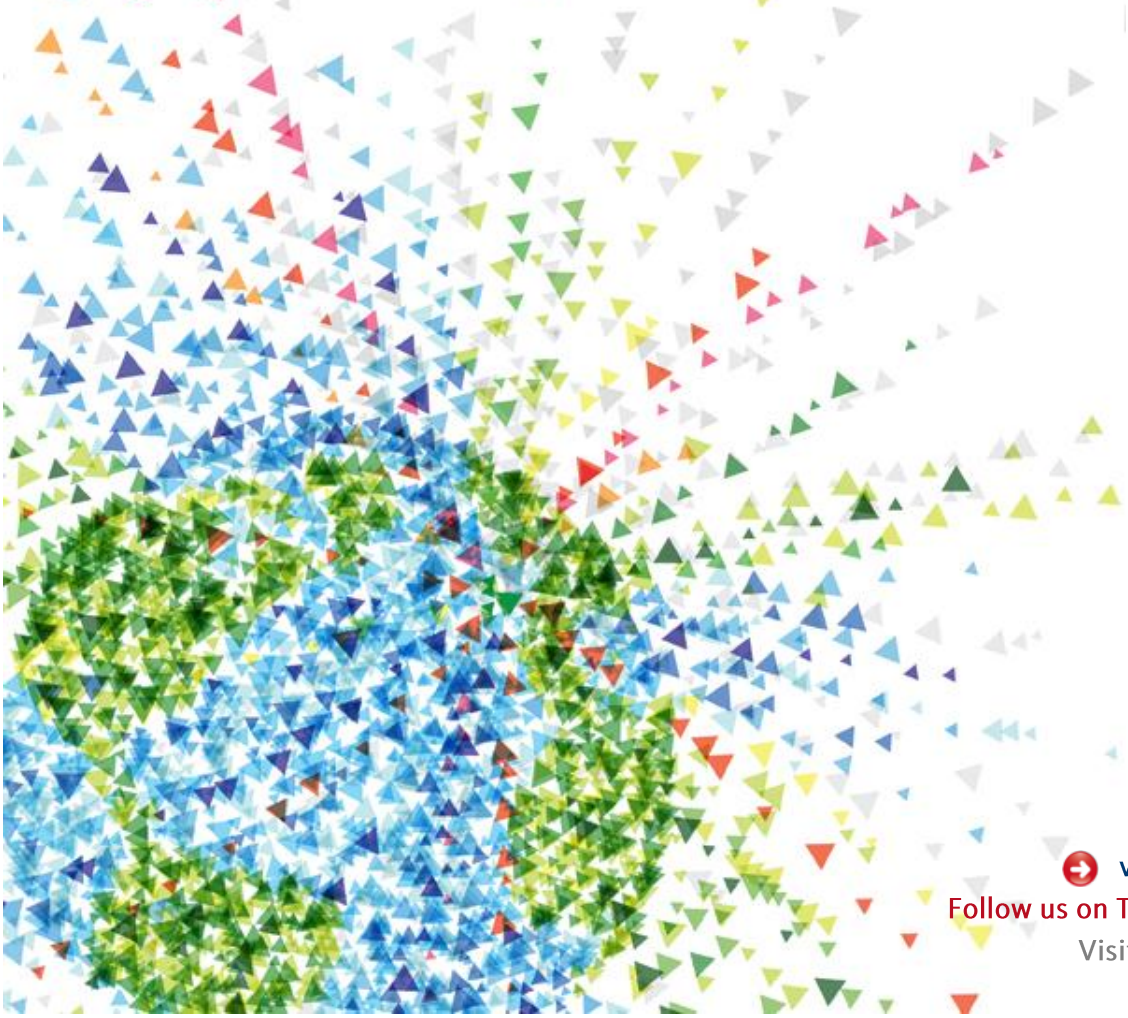
Base: 652 Q: On a scale of 0 - 10 (where 0 is not at all likely and 10 is very likely) how likely or unlikely are you to recommend this area to your friends and family?

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VisitBritain™

Foresight – issue 128
Types of transport used while visiting Britain

June 2014



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Our market intelligence products provide an unrivalled source of information on inbound tourism.
They paint a detailed picture of past, present and future inbound UK tourism trends, helping you gain an insight into how markets and segments are performing, as well as how Britain is perceived by prospective visitors.

Types of Transport used while visiting Britain

Introduction

Every year VisitBritain adds extra questions to the Office for National Statistics International Passenger Survey to help us better understand the needs and characteristics of overseas visitors to Britain.

One of the questions that we added during 2013 focussed on the types of transport that visitors used during their stay. The question read as follows:

While in the UK, did you use any of the following types of transport?

Domestic flight

Bus, tube, tram or metro train (within town/city)

Train (outside town/city)

Taxi

Public bus/coach (outside town/city)

Private coach/minibus (for group only)

Hired self-drive car/vehicle

Other car/vehicle you/group brought to the UK

Ferry boat

None of these

Table 1 presents the proportion of visits that entailed using each of the different types of transport that were asked about.

Table 1: Propensity to use mode of transport (%)

Type of transport	%
Domestic flight	2%
Bus, Tube, Tram or Metro Train (within town/city)	53%
Train (outside town/city)	28%
Taxi	32%
Public bus/coach (outside town/city)	8%
Private coach/minibus (for group only)	4%
Hired self-drive car/vehicle	8%
Car/vehicle you/group brought to the UK	15%
Ferry/boat	2%
None of these	10%

The most often used mode of transport is 'Bus, tube, tram or metro train (within town/city)', which is reported to be used by just more than half of all respondents.

Very nearly one-in-three say they use a taxi during their time in Britain and 28% use a train to travel outside of towns and cities.

Less than one-in-ten visits entailed the use of a hired self-drive car or vehicle, about half the number (15%) who said that they had used a car or vehicle that was brought to Britain by either themselves or one of their travelling group.

The 10% saying that they did not use any of the forms of transport listed looks high at first sight, but unlike previous occasions when a question similar to this has been asked respondents were not asked in 2013 whether they had used a car or vehicle that belonged to a friend or relative who lives in Britain. It is probable that most of those not using any of the modes listed were visitors whose transport needs were met by those that they were visiting.

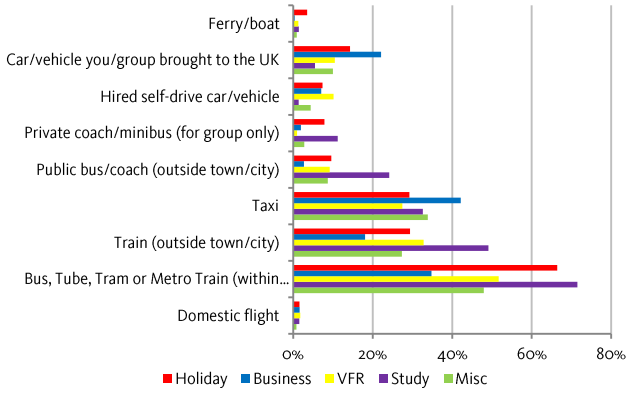
Trip purpose

As is often the case we find considerable variation in the characteristics of visitors once looking at the data by individual journey purpose.

Chart 1 presents the proportion of visits using each mode of transport according to why the trip was taking place. Two-thirds of Holiday visits include the use of 'local' forms of public transport while 29% includes a ride in a taxi and the same proportion use of a train outside of towns and cities. Only a minority, 7% of Holiday visits, makes use of a hired self-drive car or vehicle and just 4% take a domestic flight during their trip.

Looking at Business visits we can see that 42% use a taxi, 35% 'local' public transport and 22% a car or vehicle brought with them to the UK (the majority of which will be those driving a lorry).

Chart 1: Use of mode by journey purpose (%)

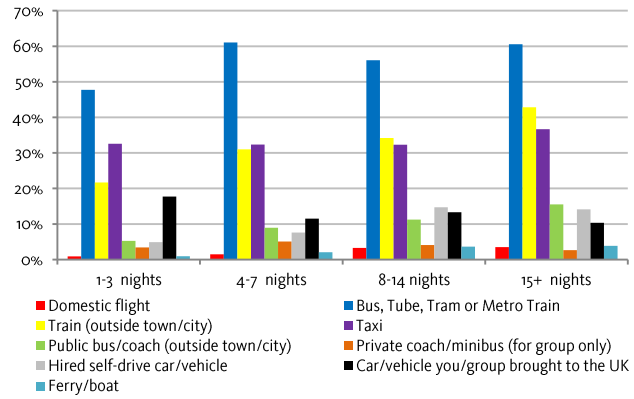


Half of those in Britain to see friends or relatives use 'local' public transport with one-in-three making use of a train to travel outside of towns and cities. VFR visits are more likely than others to make use of a hired car or vehicle in Britain, with 10% doing so.

Duration of stay

A glance at Chart 2 which shows the propensity to use each mode of transport according to the length of stay in Britain looks at first sight to be a case of 'spot the difference?' but there are some subtle variations, namely that those staying four nights or more are a little more likely to use 'local' public transport than those with a shorter trip duration and that the chances of a visit including the use of a train outside of towns and cities increases with duration of stay.

Chart 2: Use of mode by duration of stay (%)



There is even less variation by time of year than there is by duration of stay with the exception of that there is a higher likelihood that a visit will include use of a hired self-drive car or vehicle during July to September than there is in any other quarter of the year (10% versus 7%).

Demographics

Table 2 explores whether or not there are any differences according to the age and gender of the visitor when it comes to the types of transport that they make use of.

The cells of the table are shaded with the green indicating the higher and red the lower propensities within each individual type of transport. It is evident that there is relatively little variation by gender, but some subtle variation by age.

All age cohorts have a relatively high propensity to use local public transport but it is males aged 16-24 and females across a wider set of age-bands who are most likely to be found travelling around towns and cities on public transport.

Again females are marginally more likely to use trains outside of towns and cities with those in their teens and twenties favouring the train slightly more than other age cohorts.

The peak age for using a taxi while in Britain is a little older with it being males aged between 45-54 who are most prone to hop into a cab at some stage during their stay.

Visitors aged 16-24 are definitely the most likely to use public bus or coach services outside of towns and cities whereas it is clearly school-aged visitors who are the most frequent users of a private coach or minibus.

Looking at hired self-drive cars or vehicles we can see that males are generally more likely than females to use this option with it being most likely to be males aged 55 or older.

Table 2: Use of mode by age and gender (%)

		0 -15	16-24	25-34	35-44	45-54	55-64	65+
Domestic flight	Male	0%	1%	2%	2%	1%	2%	2%
	Female	1%	1%	2%	2%	2%	1%	2%
Bus, Tube, Tram or Metro Train	Male	42%	63%	55%	46%	41%	44%	42%
	Female	43%	72%	67%	61%	59%	54%	42%
Train (outside town/city)	Male	18%	30%	29%	24%	23%	22%	26%
	Female	21%	37%	33%	30%	32%	29%	24%
Taxi	Male	18%	27%	32%	35%	36%	33%	28%
	Female	17%	27%	35%	35%	34%	31%	28%
Public bus/coach (outside town/city)	Male	8%	14%	8%	5%	5%	6%	7%
	Female	9%	16%	10%	7%	8%	8%	9%
Private coach/minibus (for group only)	Male	20%	7%	2%	2%	2%	3%	6%
	Female	23%	7%	2%	3%	3%	5%	7%
Hired self-drive car/vehicle	Male	7%	3%	6%	7%	11%	13%	13%
	Female	6%	3%	5%	6%	10%	10%	8%
Car/vehicle brought to the UK	Male	26%	17%	16%	19%	18%	17%	17%
	Female	27%	7%	6%	10%	11%	13%	14%
Ferry/boat	Male	3%	1%	1%	1%	2%	3%	2%
	Female	2%	1%	1%	2%	2%	3%	5%

Location

The International Passenger Survey captures information on where visitors stay in Britain, and while visitors can stay in more than one area, meaning that we cannot know precisely whether they used particular forms of transport in any given area, Chart 3 shows the propensity of visitors to use different modes depending upon which area of Britain they stayed in first.

The most frequently used form of transport by visitors to Northern Ireland, the North West, Yorkshire and North East England is a taxi. Visitors to the South West are the least likely to use a taxi with only one-in-five doing so. Unsurprisingly visits that include time in Northern Ireland are also the most likely to include use of a domestic flight.

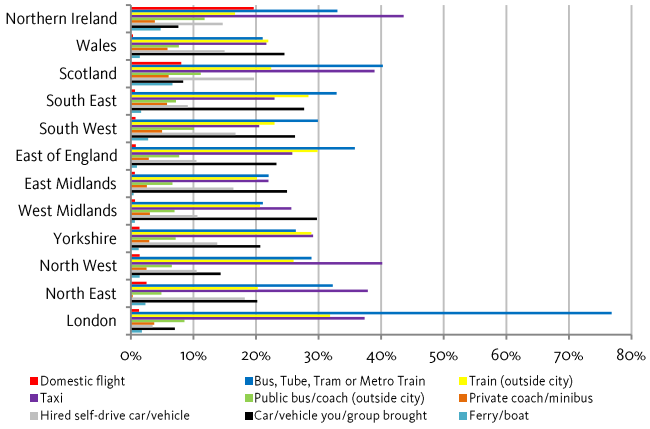
Local public transport is used most often by those visiting London (77% do so) followed by those visiting Scotland (40%). Visits to

Wales and the West Midlands are the least likely to use local public transport.

Those whose first area stayed in is London, South East England or Yorkshire are more likely than others to report using a train outside towns and cities whereas only 17% of those who stay first in Northern Ireland use this form of transport.

Scotland and the North East of England are the areas where a hired self-drive car is most likely to be used (roughly 20%) compared with London where only a minority (3%) hire a car. The South East, South West and the Midlands are the areas most prone to see use of a car or vehicle brought to the UK (which fits neatly with Britain's ferry links and the propensity of visitors driving a lorry to be heading to or from the Midlands).

Chart 3: Use of mode by first area of Britain that was stayed in (%)



Market variation

Domestic flights

Among the higher volume markets visitors from South Africa, Singapore, New Zealand, Canada and India are the most likely to use a domestic flight, but even then only around one-in-twenty do so.

Local public transport

More than two-in-three visits from an array of long-haul markets that have a tendency to visit London make use of local public transport, for example Brazil (79%), South Korea (70%), Australia (68%) and Malaysia (68%).

By contrast it is visitors from Eastern European markets and Ireland who are the least likely to frequent local public transport, for example Hungary (28%), Poland (33%) and Irish Republic (39%).

Train (outside town/city)

Visitors from New Zealand and Finland lead the way here with 47% of visits from each market seeing usage of a train outside of towns and cities with other Scandinavian markets such as Norway and Sweden also registering a propensity of more than 40%.

At the opposite end of the spectrum only 12% of visits from Belgium and 17% of visits from France use trains outside of towns and cities.

Taxi

It is very definitely visitors from the Middle East who are most likely to use a taxi during their stay; Bahrain (74%), Kuwait (72%), Qatar (71%), Saudi Arabia (66%) and Egypt (56%).

Once again it is visitors from Eastern Europe who are less likely to use a taxi with only 11% of visits from Hungary and 13% from Poland using a taxi, but even large Western European markets see comparatively low usage of taxis, for example Belgium (20%), France (24%) and Germany (25%).

Hired self-drive car or vehicle

There is something in common for many of the markets where there is the highest propensity to use a hired self-drive car or vehicle while in Britain; New Zealand (24%), Malta (21%), Australia (20%), UAE (16%), Cyprus (16%) and Hong Kong (15%), Qatar (14%), Thailand (14%) and South Africa (14%). It is that of these markets all bar those in the Middle East drive on the left hand side of the road, meaning that driving in Britain is less challenging than for those who are used to driving on the right.

A factor to note for Middle East markets is that some of these visits may in fact entail hiring a car with a driver, plus there is a strong command of the English language, which is also the case for two other markets where one-in-eight visits sees use a hired car, namely Canada and USA.

Only 4% of visits from France include use of a hired self-drive vehicle, while it is lower still for the likes of Belgium and Brazil (3%),

Car or vehicle brought to the UK

A mix of Eastern and Western European markets are found at the top of the table here with Hungary (54%), Poland (44%), Belgium (38%) and Netherlands (31%). It is worth emphasising that the vehicle brought to the UK could be a car on a leisure trip or a van/lorry as part of a business related visit.

Ferry/boat

Not many visits to Britain include use a ferry or a boat during the trip, but 4% of visits from both Canada and Australia involves exactly that.

Private coach/mini-bus (for group only)

Among only a handful of markets where one-in-ten visits encompassed using a private coach or mini-bus were China and India (each registering 10%), with Argentina only slightly behind on 9%.

Nationality

The above analysis is based on where a visitor reported as being their country of residence, but the International Passenger Survey also captures the nationality of the visitor.

The point of looking at the data in this way is that it is possible to see the degree to which those whose nationality is in fact British influence the results.

Compared with all visits those which were by ex-pats who were making a trip back to Britain were notably less likely to use local forms of public transport (37% compared with 53%) but significantly more likely to use a hired self-drive car or vehicle (17% compared with 8%).

Conclusions

Last month in Issue 127 we explored the number of visits to different parts of Britain, and in Issue 117 of Foresight we reported on the findings from research that VisitBritain had undertaken in France, Germany, Norway and USA to investigate the barriers that may be at play in deterring visitors from exploring more of Britain during their stay.

Later in the summer we will report on the findings from new research on the same topic that has been conducted in Brazil, India, UAE and Saudi Arabia.

It is clear from the above analysis that there is definite scope to grow the number of visits that include the use of trains for travel outside of towns and cities (only 28% at present) and with only 2% of visits from overseas currently making use of our domestic air network this is perhaps another opportunity to encourage a greater proportion of visits to involve travel around Britain.

Data Sources

Table 3: Data sources

Source	Charts/Tables
Office for National Statistics International Passenger Survey	All tables and charts



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% Holiday Trip Visitors

>1h Distance

% Overnight Trip Visitors >1h Distance

30' 2h

Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30										0.0%
30-60										0.0%
60-90	5.9%	11.3%	17.3%							17.3%
90-120										0.0%
120+										0.0%
Total	5.9%	11.3%	17.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.3%

% Day Trip Visitors

>1h Distance

% Day Trip Visitors >1h Distance

30' 2h

Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30										0.0%
30-60										0.0%
60-90	2.7%	3.2%	5.9%	5.6%	0.9%	6.5%	6.2%	0.8%	6.9%	19.3%
90-120	1.7%	14.9%	16.6%	2.7%	1.0%	3.7%	1.9%	0.6%	2.5%	22.9%
120+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.6%	9.6%	9.6%
Total	4.4%	18.1%	22.5%	8.3%	1.9%	10.2%	8.1%	11.0%	19.1%	51.8%

% Day Trip Visitors

<1h Distance

% Day Trip Visitors <1h Distance

30' 2h

Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1%	2.6%	2.7%	0.1%	0.0%	0.1%	0.0%	0.4%	0.4%	3.3%
30-60	6.6%	8.3%	14.9%	4.6%	0.4%	5.0%	0.3%	1.1%	1.4%	21.2%
60-90										0.0%
90-120										0.0%
120+										0.0%
Total	6.7%	10.9%	17.6%	4.7%	0.4%	5.1%	0.3%	1.5%	1.8%	24.5%

% Holiday Trip Visitors

<1h Distance

% Overnight Trip Visitors <1h Distance

30' 2h

Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30										0.0%
30-60	0.0%	3.5%	3.5%	0.1%	0.1%	0.3%	0.0%	2.8%	2.8%	6.5%
60-90										0.0%
90-120										0.0%
120+										0.0%
Total	0.0%	3.5%	3.5%	0.1%	0.1%	0.3%	0.0%	2.8%	2.8%	6.5%

Overall % Trip Visitors

Based on
Day Trip-Holiday Trip
Split

% Overall Visitors

30' 2h

Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1%	2.6%	2.7%	0.1%	0.0%	0.1%	0.0%	0.4%	0.4%	3.3%
30-60	6.6%	11.8%	18.4%	4.7%	0.5%	5.2%	0.3%	3.8%	4.1%	27.7%
60-90	8.6%	14.5%	23.1%	5.6%	0.9%	6.5%	6.2%	0.8%	6.9%	36.5%
90-120	1.7%	14.9%	16.6%	2.7%	1.0%	3.7%	1.9%	0.6%	2.5%	22.9%
120+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.6%	9.6%	9.6%
Total	17.0%	43.8%	60.9%	13.1%	2.4%	15.5%	8.4%	15.3%	23.6%	100.0%

% Day Trip Visitors

% Day Trip Visitors

30' 2h

Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.1%	2.6%	2.7%	0.1%	0.0%	0.1%	0.0%	0.4%	0.4%	3.3%
30-60	6.6%	8.3%	14.9%	4.6%	0.4%	5.0%	0.3%	1.1%	1.4%	21.2%
60-90	2.7%	3.2%	5.9%	5.6%	0.9%	6.5%	6.2%	0.8%	6.9%	19.3%
90-120	1.7%	14.9%	16.6%	2.7%	1.0%	3.7%	1.9%	0.6%	2.5%	22.9%
120+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.6%	9.6%	9.6%
Total	11.1%	29.0%	40.1%	13.0%	2.3%	15.3%	8.4%	12.5%	20.9%	76.3%

% Holiday Trip Visitors

% Holiday Trip Visitors

30' 2h

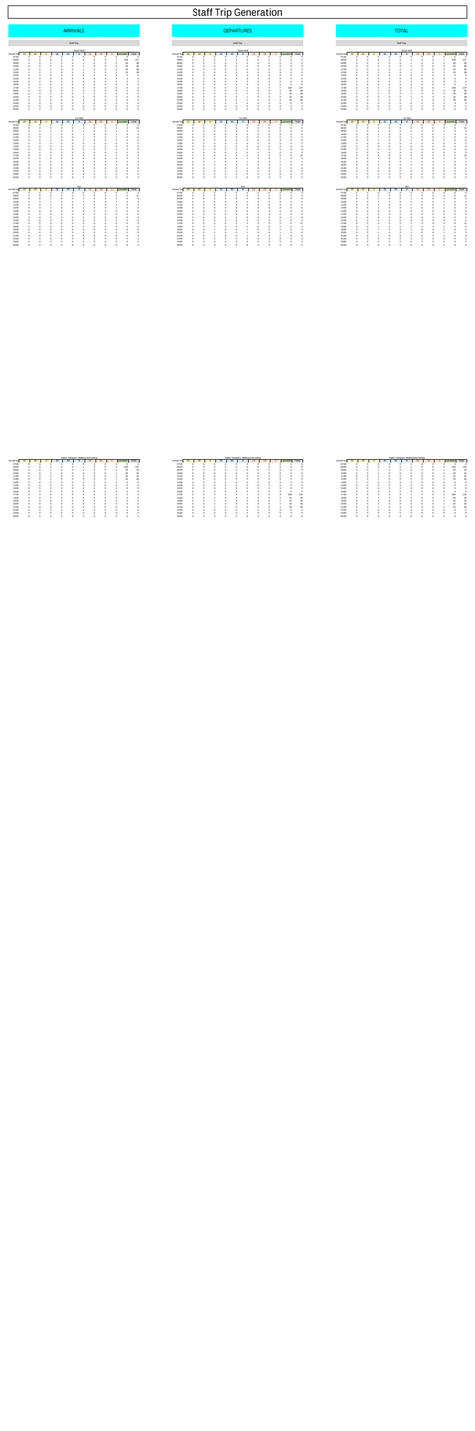
Distance	A1	A2	A	B1	B2	B	C1	C2	C	Total
0-30	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
30-60	0.0%	3.5%	3.5%	0.1%	0.1%	0.3%	0.0%	2.8%	2.8%	6.5%
60-90	5.9%	11.3%	17.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.3%
90-120	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
120+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	5.9%	14.8%	20.7%	0.1%	0.1%	0.3%	0.0%	2.8%	2.8%	23.7%

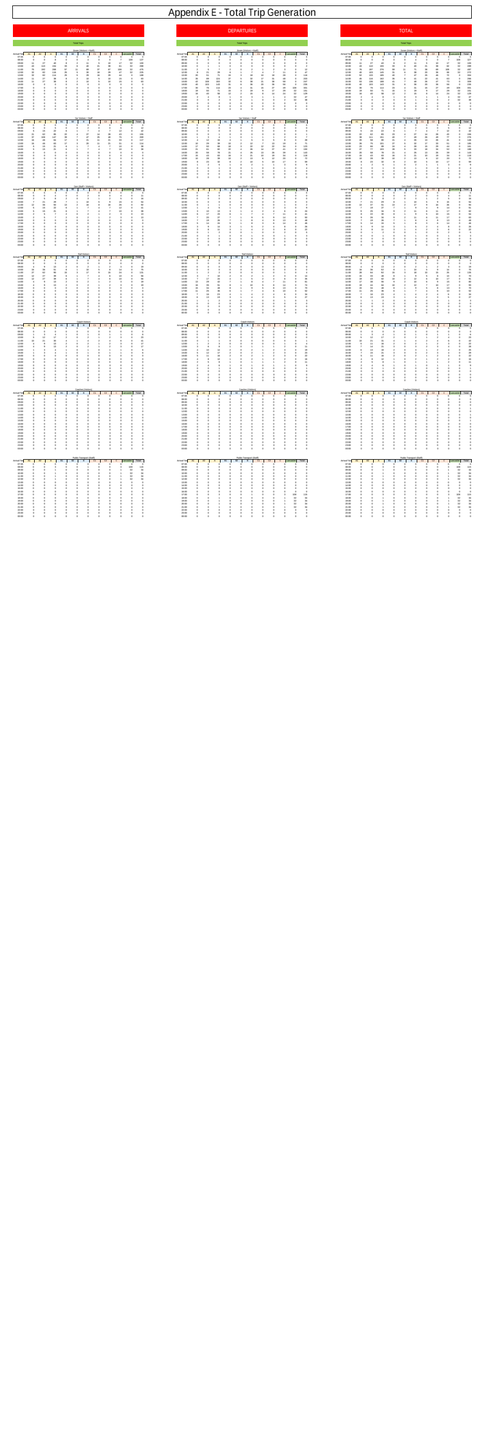










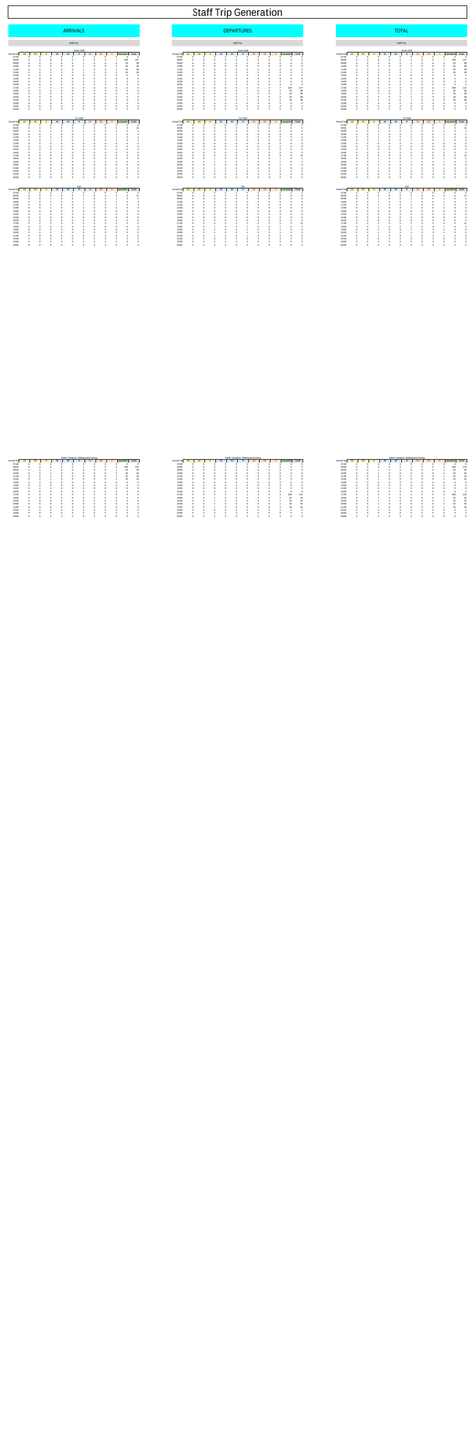


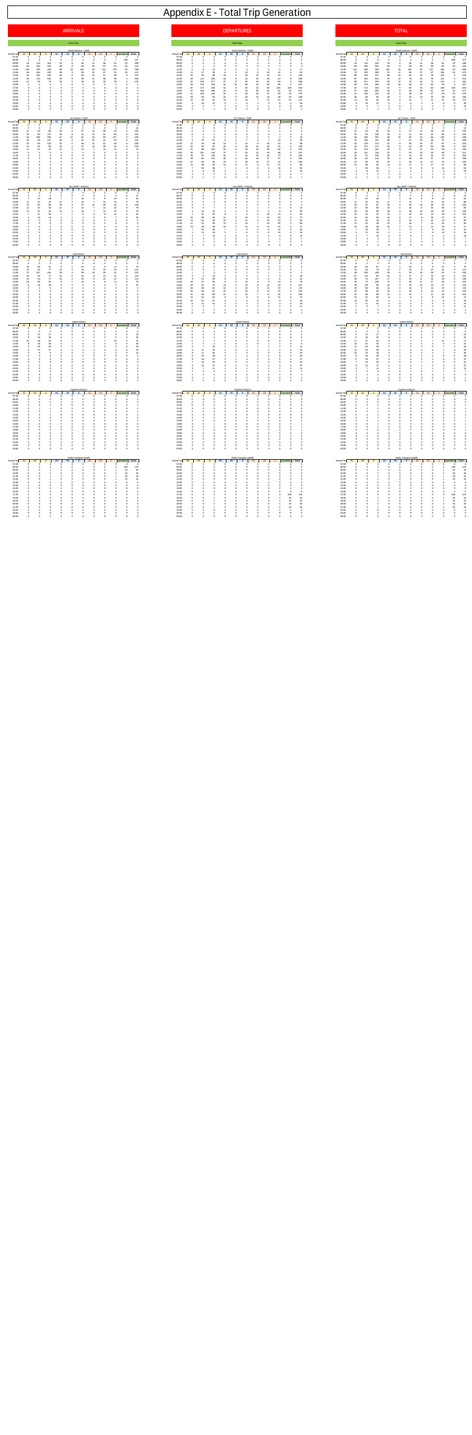



Visitor Trip Generation - Arrivals
ARRIVALS
ARRIVALS
ARRIVALS


Visitor Trip Generation - Departures
DEPARTURES
DEPARTURES
DEPARTURES


Trip Generation - Total
TOTAL
TOTAL
TOTAL


Staff Trip Generation
ARRIVALS
DEPARTURES
TOTAL

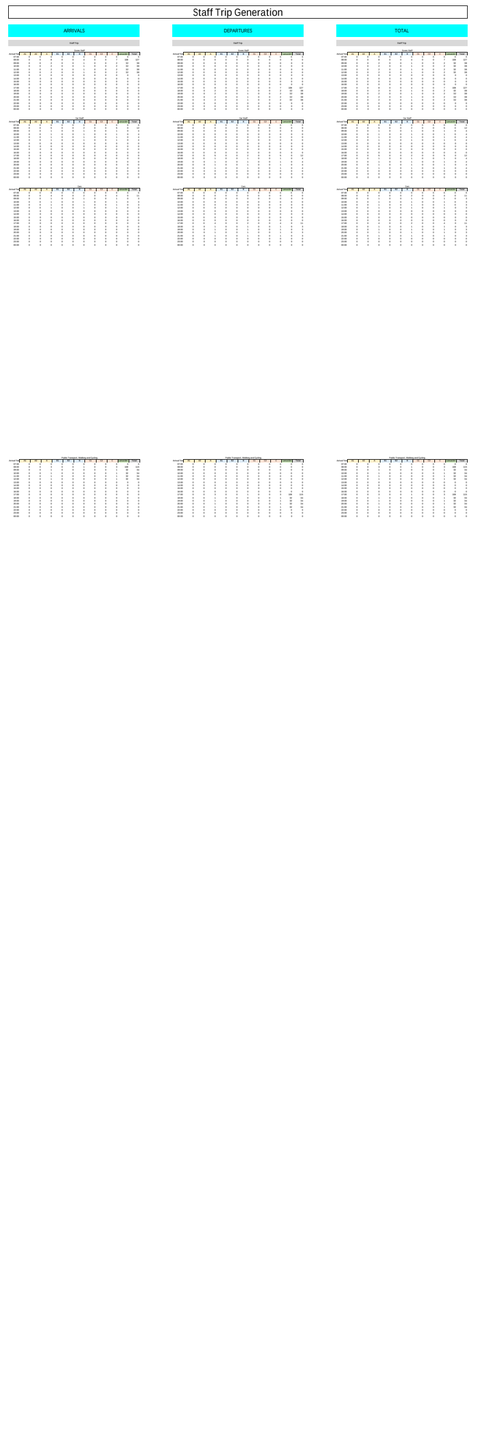

Appendix E - Total Trip Generation
ARRIVALS
DEPARTURES
TOTAL

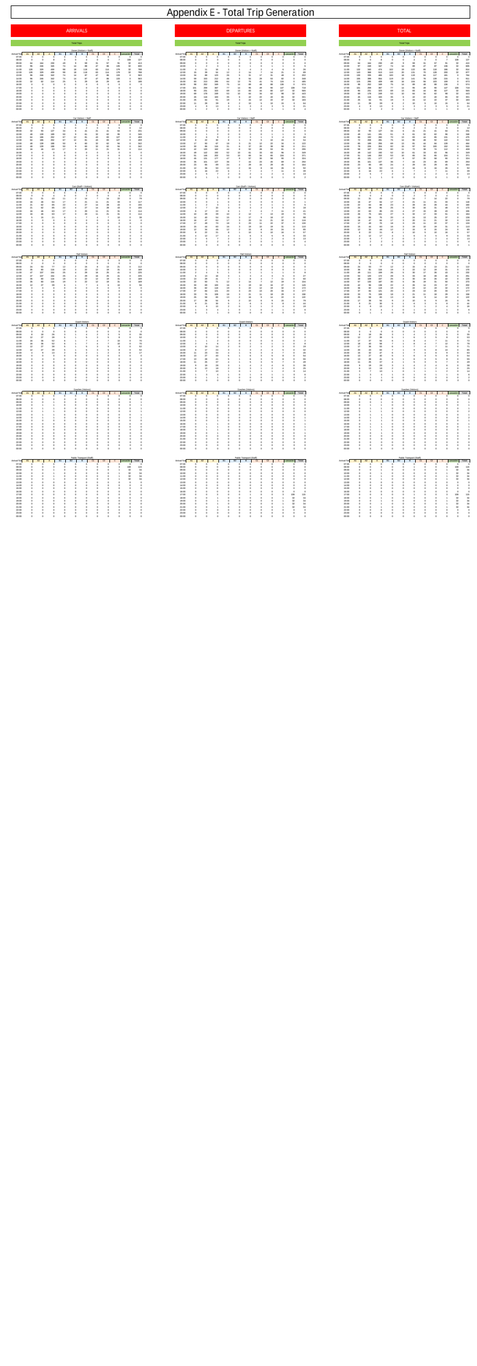



Visitor Trip Generation - Arrivals
ARRIVALS
ARRIVALS
ARRIVALS


Visitor Trip Generation - Departures
DEPARTURES
DEPARTURES
DEPARTURES


Trip Generation - Total
TOTAL
TOTAL
TOTAL


Staff Trip Generation
ARRIVALS
DEPARTURES
TOTAL

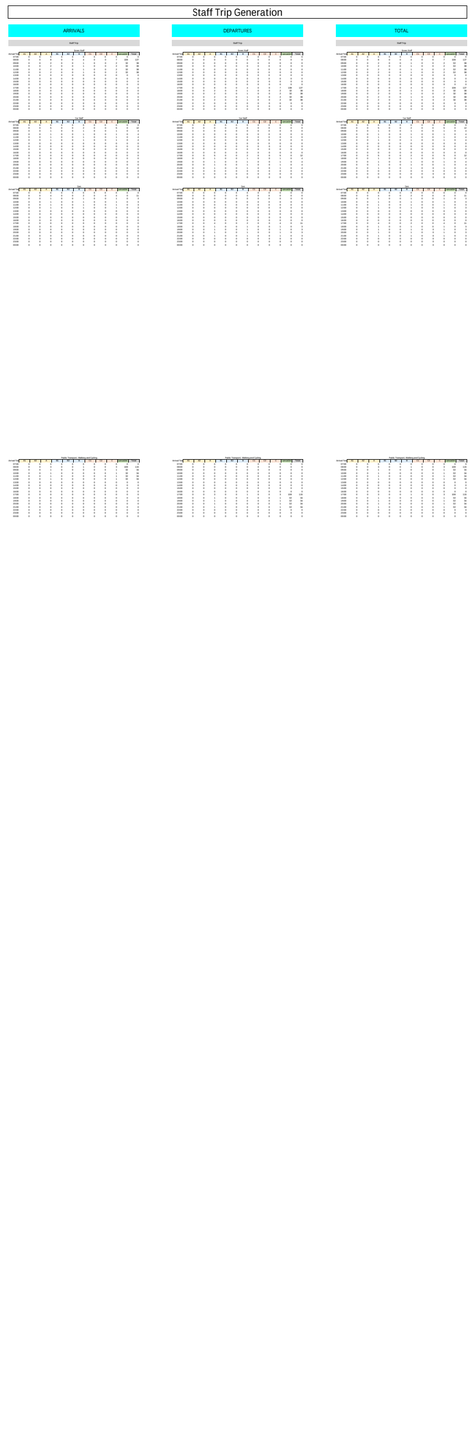

Appendix E - Total Trip Generation
ARRIVALS
DEPARTURES
TOTAL

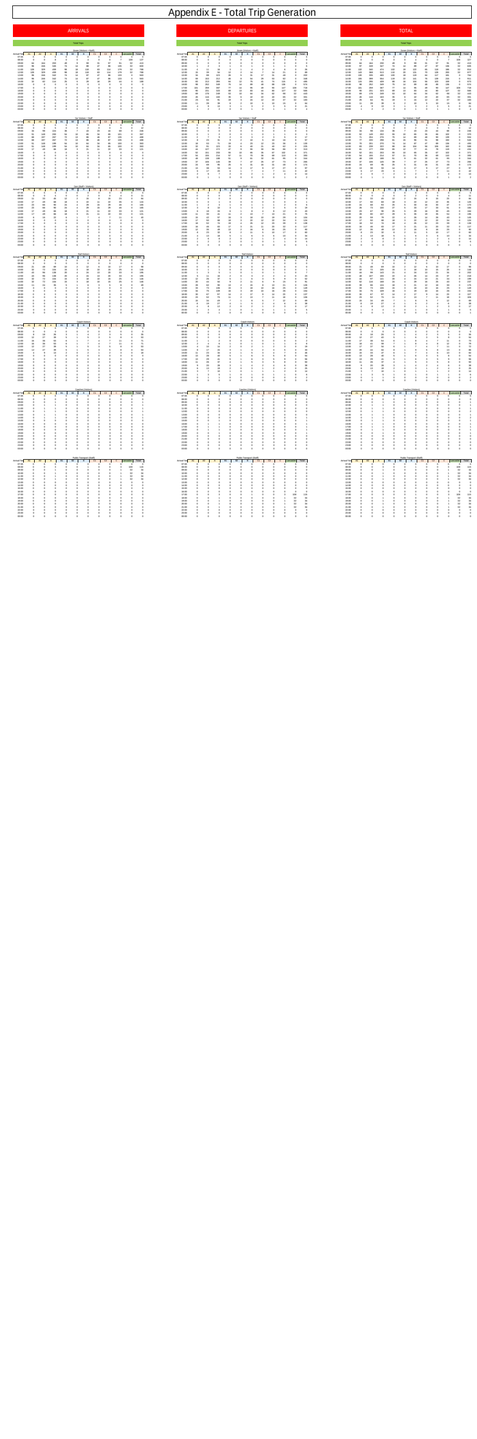



Visitor Trip Generation - Arrivals
ARRIVALS
ARRIVALS
ARRIVALS


Visitor Trip Generation - Departures
DEPARTURES
DEPARTURES
DEPARTURES


Trip Generation - Total
TOTAL
TOTAL
TOTAL


Staff Trip Generation
ARRIVALS
DEPARTURES
TOTAL

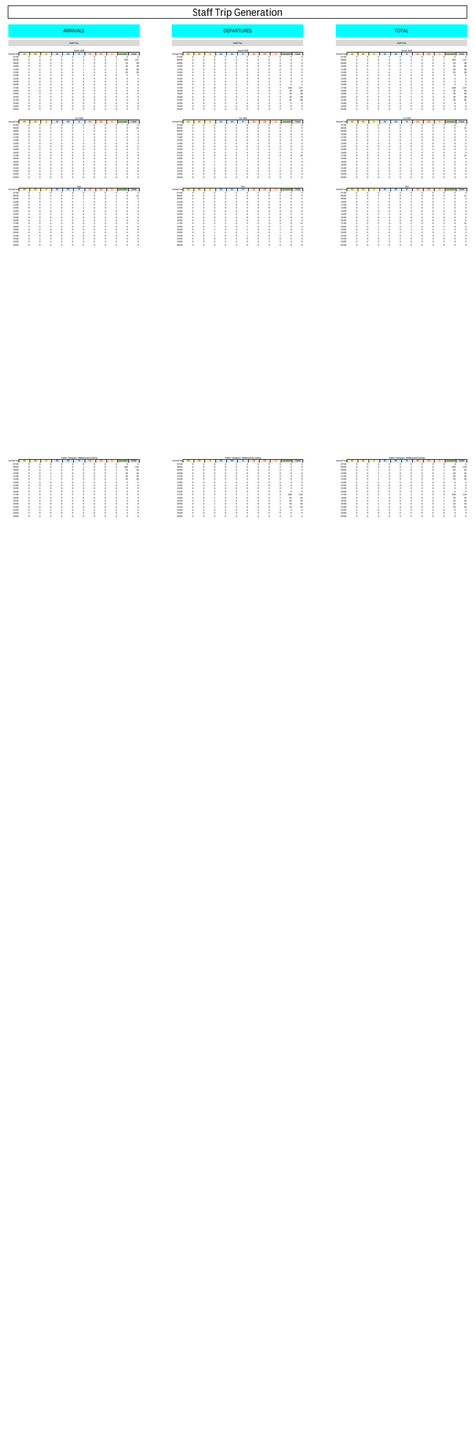

Appendix E - Total Trip Generation
ARRIVALS
DEPARTURES
TOTAL

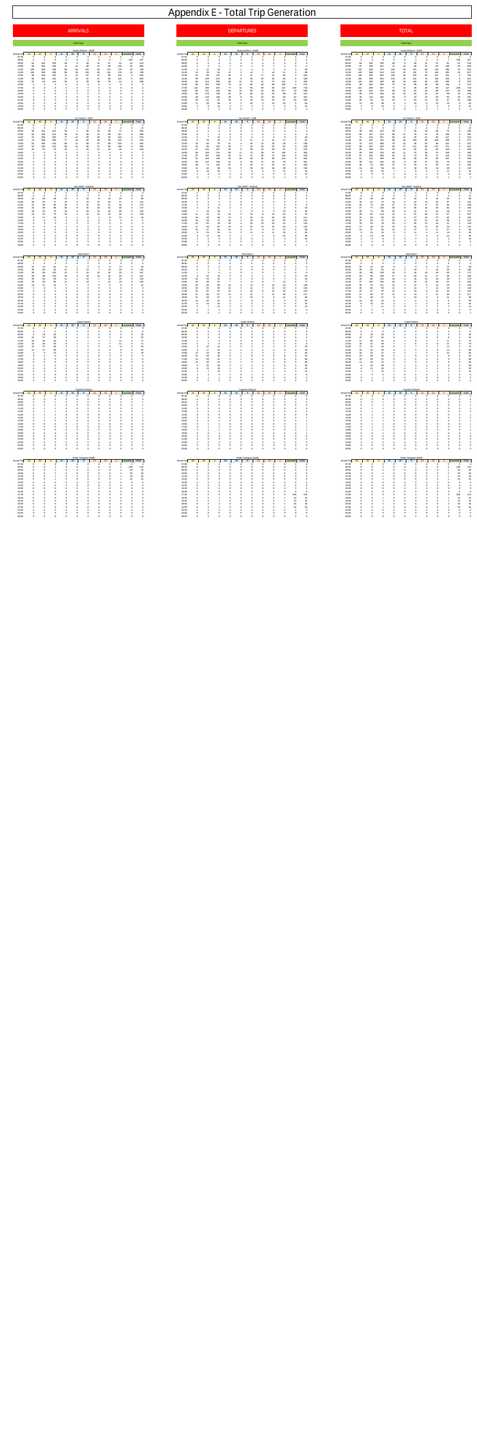



Visitor Trip Generation - Arrivals
ARRIVALS
ARRIVALS
ARRIVALS


Visitor Trip Generation - Departures
DEPARTURES
DEPARTURES
DEPARTURES


Trip Generation - Total
TOTAL
TOTAL
TOTAL


Staff Trip Generation
ARRIVALS
DEPARTURES
TOTAL


Appendix E - Total Trip Generation
ARRIVALS
DEPARTURES
TOTAL

Appendix G

GIS ACCESSIBILITY ISOCHRONES

PUBLIC

Walk Speed: 4.8kph

- 0 to 5 Minutes (0 - 400 Metres)
- 5 to 10 Minutes (400 - 800 Metres)
- 10 to 15 Minutes (800 - 1200 Metres)
- 15 to 20 Minutes (1200 - 1600 Metres)
- 20 to 25 Minutes (1600 - 2000 Metres)
- 25 to 30 Minutes (2000 - 2400 Metres)
- Core Site Boundary

MORECAMBE

Shell Bed Flat

Ring Sands

Old Skear

A589

Marine Road Central

Marine Road East

Lord Street

Thornton Road

Bare Lane

Bare

South Road

Euston Road

Morecambe

Lancaster Road

Broadway

Half Dr

B52

West End Road

B5274

Marine Road West

West End

Regent Road

Balmoral Road

Fairfield Road

Sandylands

Sham Road

Westgate

White Lund Road

Whi

Westcliffe Drive

Oxcliffe Road

B5273

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0 0.25 0.5 Kilometers

wsp

TITLE:

Eden Project North

FIGURE No:

Eden Project North
Walking Isochrone Plan

Cycle Speed: 16kph

- 0 to 5 Minutes (0 - 1333 Metres)
- 5 to 10 Minutes (1333 - 2667 Metres)
- 10 to 15 Minutes (2667 - 4000 Metres)
- 15 to 20 Minutes (4000 - 5333 Metres)
- 20 to 25 Minutes (5333 - 6667 Metres)
- 25 to 30 Minutes (6667 - 8000 Metres)
- Core Site Boundary

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0 0.85 1.7 Kilometers

wsp

TITLE:

Eden Project North

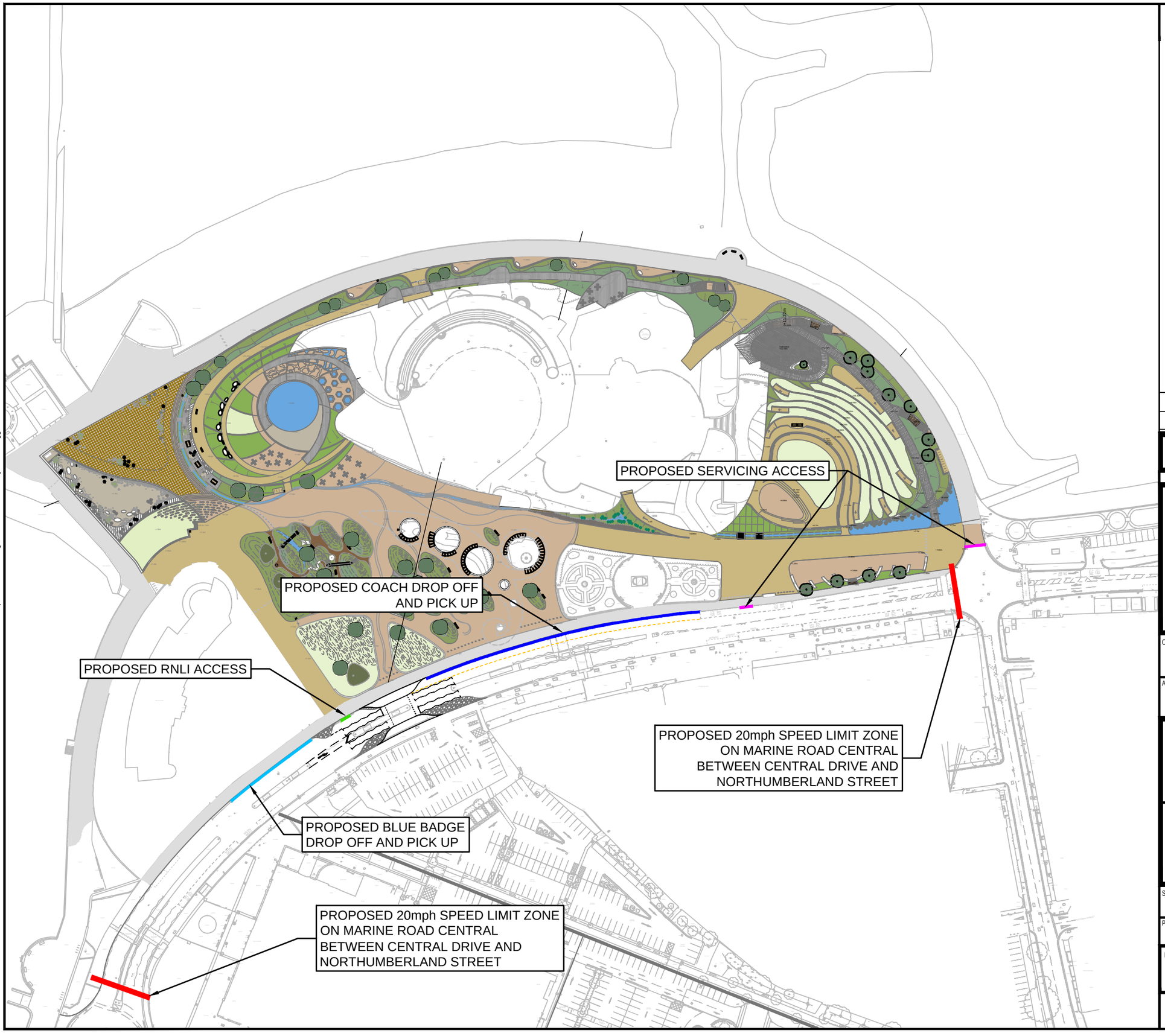
FIGURE No:

Eden Project North
Cycling Isochrone Plan

Appendix H

ACTIVE TRAVEL STRATEGY PLANS

PUBLIC



DO NOT SCALE

Key:

- PROPOSED SERVICING ACCESS POINTS
- PROPOSED COACH DROP OFF & PICK UP
- PROPOSED BLUE BADGE DROP OFF & PICK
- PROPOSED RNLI ACCESS
- PROPOSED 20mph SPEED LIMIT ZONE

REV	DATE	BY	DESCRIPTION	CHK	APP
A	10/08/2021	APF	FIRST ISSUE	APF	APF

DRAWING STATUS: S2 - FOR INFORMATION

8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT: EDEN PROJECT INTERNATIONAL

ARCHITECT: GRIMSHAW / TEP

PROJECT: EDEN PROJECT NORTH

TITLE: TRO PROPOSALS

SCALE @ A3:	CHECKED:	APPROVED:
1:1,500	APF	APF

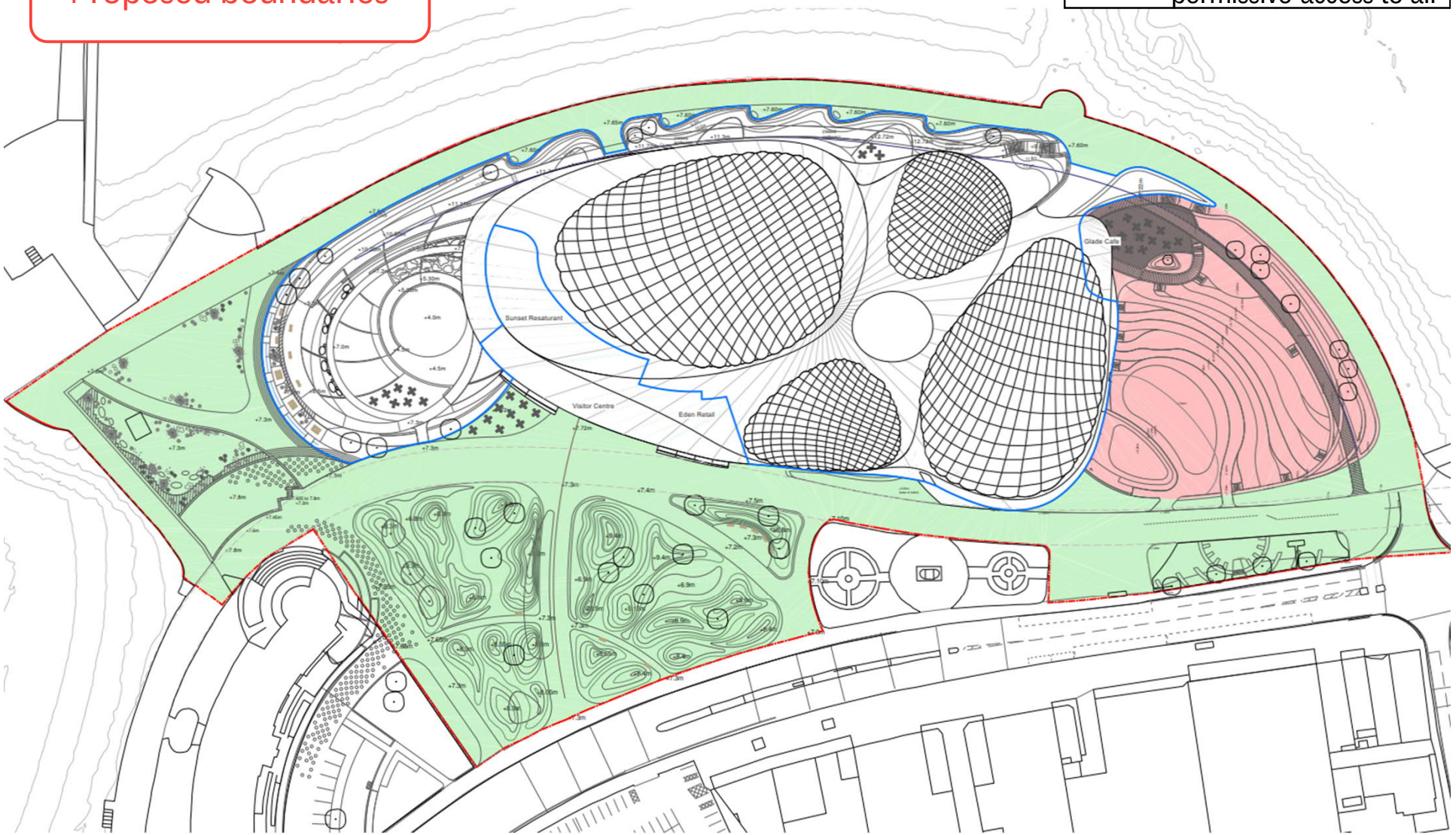
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70083611	APF	APF	July 21

DRAWING No: 3611-SK-102 REV: A

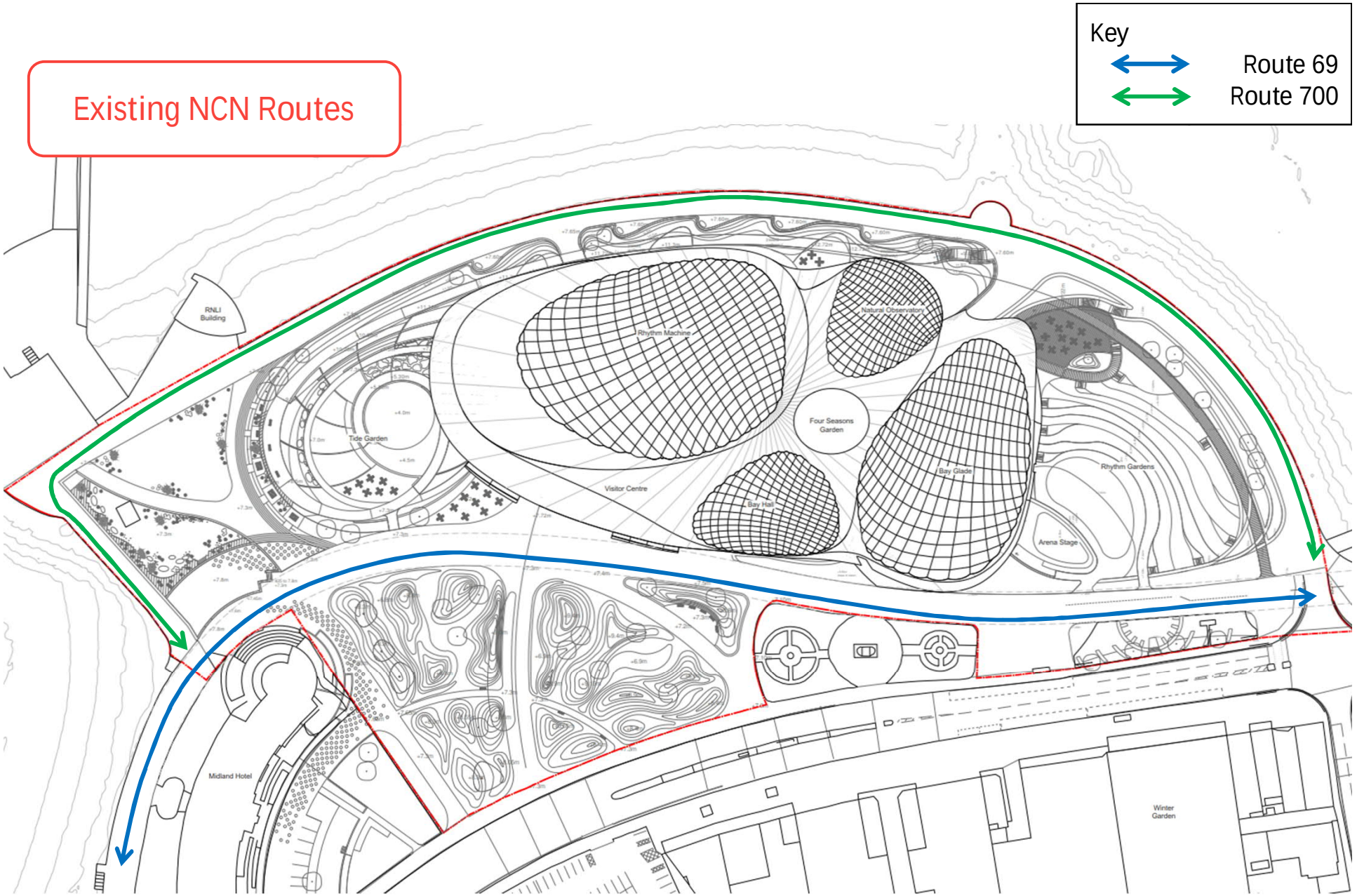
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Proposed boundaries



Existing NCN Routes



Proposed NCN Route

Key

Proposed Route 700

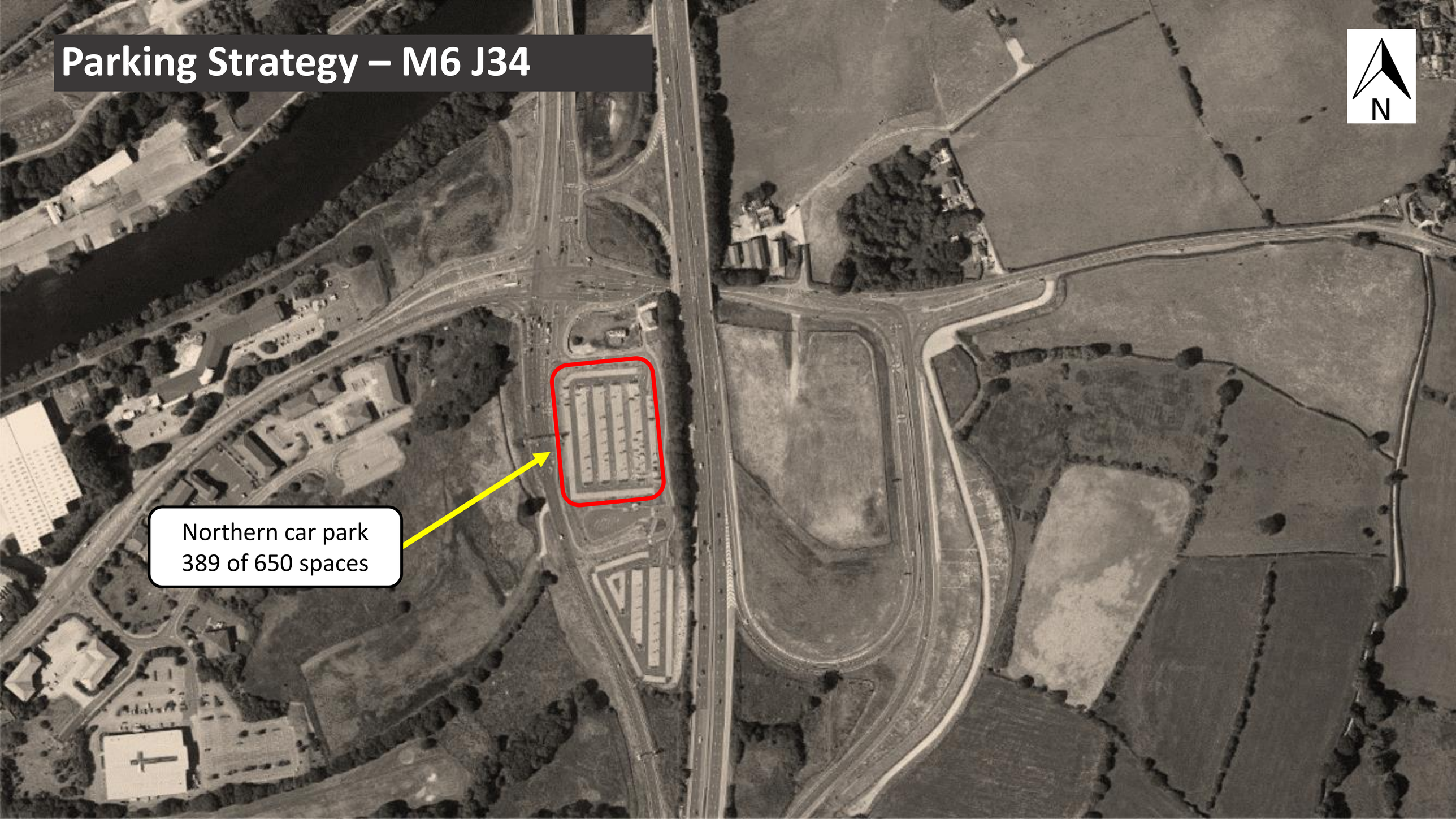


Appendix I

PARKING STRATEGY PLANS

PUBLIC

Parking Strategy – M6 J34



DO NOT SCALE

Key

- EDEN PROJECT NORTH RED LINE BOUNDARY
- EDEN PROJECT NORTH EIA SCOPE BOUNDARY
- LANCASTER CITY COUNCIL CAR PARK

TOWN HALL (100)

GOODS YARD (69)

TELEPHONE EXCHANGE (176)

BILLY HILL (44)

F&B's CAR PARK (44)

F&B's CAR PARK
FUTURE EXPANSION
(UP TO 130)

SCALE

100 metres

REV	DATE	BY	DESCRIPTION	CHK	APP
A	03/06/2021	APF	FIRST ISSUE	JO	KR

DRAWING STATUS:
S2 - FOR INFORMATION

wsp

8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW

PROJECT:
EDEN PROJECT NORTH

TITLE:
EDEN PARKING STRATEGY
MORECAMBE TOWN CENTRE
UP TO 433 SPACES

SCALE @ A2:	CHECKED:	APPROVED:
1:2000	JO	KR

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70074551	APF	APF	June 21

DRAWING No:	REV:
4551-SK-005	A

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Caton Road Park & Ride ● Eden Project North

Proposed shuttle bus timetable

INTER PEAK TIMETABLE

	Pull Out ↓		*Pull Out* ↓																		
Bus Working	**S1**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**
Trip No	**1**	**3**	**5**	**7**	**9**	**11**	**13**	**15**	**17**	**19**	**21**	**23**	**25**	**27**	**29**	**31**	**33**	**35**	**37**	**39**
Park & Ride M6 J34	0830	0910	0930	0950	1010	1030	1050	1110	1130	1150	1210	1230	1250	1310	1330	1350	1410	1430	1450	1510
Eden Project North	0845	0925	0945	1005	1025	1045	1105	1125	1145	1205	1225	1245	1305	1325	1345	1405	1425	1445	1505	1525
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*
Bus Working	**S1**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**
Trip No	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**	**32**	**34**	**36**	**38**	**40**
Eden Project North	0850	0930	0950	1010	1030	1050	1110	1130	1150	1210	1230	1250	1310	1330	1350	1410	1430	1450	1510	1530
Park & Ride M6 J34	0905	0945	1005	1025	1045	1105	1125	1145	1205	1225	1245	1305	1325	1345	1405	1425	1445	1505	1525	1545
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*
Bus Working	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**		**S2**							
Trip No	**41**	**43**	**45**	**47**	**49**	**51**	**53**	**55**	**57**	**59**	**61**	**0**		**0**							
Park & Ride M6 J34	1530	1550	1610	1630	1650	1710	1730	1750	1810	1830	1850	*Dead*		*Dead*							
Eden Project North	1545	1605	1625	1645	1705	1725	1745	1805	1825	1845	1905	*Trip*		*Trip*							
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*		*9.17*							
													Pull Out ↓		*Pull Out* ↓						
Bus Working	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S2**	**S1**	**S3**	**S2**	**S4**						
Trip No	**42**	**44**	**46**	**48**	**50**	**52**	**54**	**56**	**58**	**60**	**62**	**64**	**66**	**68**	**70**						
Eden Project North	1550	1610	1630	1650	1710	1730	1750	1810	1830	1850	1910	1922	1934	1946	1958						
Park & Ride M6 J34	1605	1625	1645	1705	1725	1745	1805	1825	1845	1905	1925	1937	1949	2001	2013						
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52* ↓ *Pull In*	*8.52* ↓ *Pull In*	*8.52* ↓ *Pull In*	*8.52* ↓ *Pull In*						

Bus working summary	**S1**	**S2**	**S3**	**S4**	**Total**
Outbound Trips	16	15	0	0	31
Inbound Trips	17	16	1	1	35
Total Trips	33	31	1	1	66
Live hours	11h07	10h31	00h15	00h15	22h01
Live kms	292	274	9	9	582
Dead kms	9	9	0	0	18
Total kms	301	283	9	9	601

Caton Road Park & Ride ● Eden Project North

Proposed shuttle bus timetable

PEAK DAY TIMETABLE

	Pull Out ↓	*Pull Out* ↓		*Pull Out* ↓					*Pull Out* ↓											
Bus Working	**S1**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**
Trip No	**1**	**3**	**5**	**7**	**9**	**11**	**13**	**15**	**17**	**19**	**21**	**23**	**25**	**27**	**29**	**31**	**33**	**35**	**37**	**39**
Park & Ride M6 J34	0830	0900	0915	0930	0945	1000	1012	1024	1036	1048	1100	1112	1124	1136	1148	1200	1212	1224	1236	1248
Eden Project North	0845	0915	0930	0945	1000	1015	1027	1039	1051	1103	1115	1127	1139	1151	1203	1215	1227	1239	1251	1303
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*

Bus Working	**S1**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**
Trip No	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**	**32**	**34**	**36**	**38**	**40**
Eden Project North	0850	0920	0935	0950	1005	1020	1032	1044	1056	1108	1120	1132	1144	1156	1208	1220	1232	1244	1256	1308
Park & Ride M6 J34	0905	0935	0950	1005	1020	1035	1047	1059	1111	1123	1135	1147	1159	1211	1223	1235	1247	1259	1311	1323
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*

Bus Working	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**
Trip No	**41**	**43**	**45**	**47**	**49**	**51**	**53**	**55**	**57**	**59**	**61**	**63**	**65**	**67**	**69**	**71**	**73**	**75**	**77**	**79**
Park & Ride M6 J34	1300	1312	1324	1336	1348	1400	1412	1424	1436	1448	1500	1515	1530	1545	1600	1615	1630	1645	1700	1715
Eden Project North	1315	1327	1339	1351	1403	1415	1427	1439	1451	1503	1515	1530	1545	1600	1615	1630	1645	1700	1715	1730
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*

Bus Working	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S4**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**	**S2**	**S1**	**S3**
Trip No	**42**	**44**	**46**	**48**	**50**	**52**	**54**	**56**	**58**	**60**	**62**	**64**	**66**	**68**	**70**	**72**	**74**	**76**	**78**	**80**
Eden Project North	1320	1332	1344	1356	1408	1420	1432	1444	1456	1508	1520	1535	1550	1605	1620	1635	1650	1705	1720	1735
Park & Ride M6 J34	1335	1347	1359	1411	1423	1435	1447	1459	1511	1523	1535	1550	1605	1620	1635	1650	1705	1720	1735	1750
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*
									↓ *Pull In*											

Caton Road Park & Ride ● Eden Project North

Proposed shuttle bus timetable

Bus Working	**S2**	**S1**	**S3**	**S2**	**S1**		**S2**							**S5**	**S5**	**S5**	**S5**
Trip No	**81**	**83**	**85**	**87**	**89**		**91**							**0**	**0**	**0**	**0**
Park & Ride M6 J34	1730	1745	1800	1815	1830		1845							*Dead Trip*	*Dead Trip*	*Dead Trip*	*Dead Trip*
Eden Project North	1745	1800	1815	1830	1845		1900							*9.17*	*9.17*	*9.17*	*9.17*
Km	*9.17*	*9.17*	*9.17*	*9.17*	*9.17*		*9.17*										

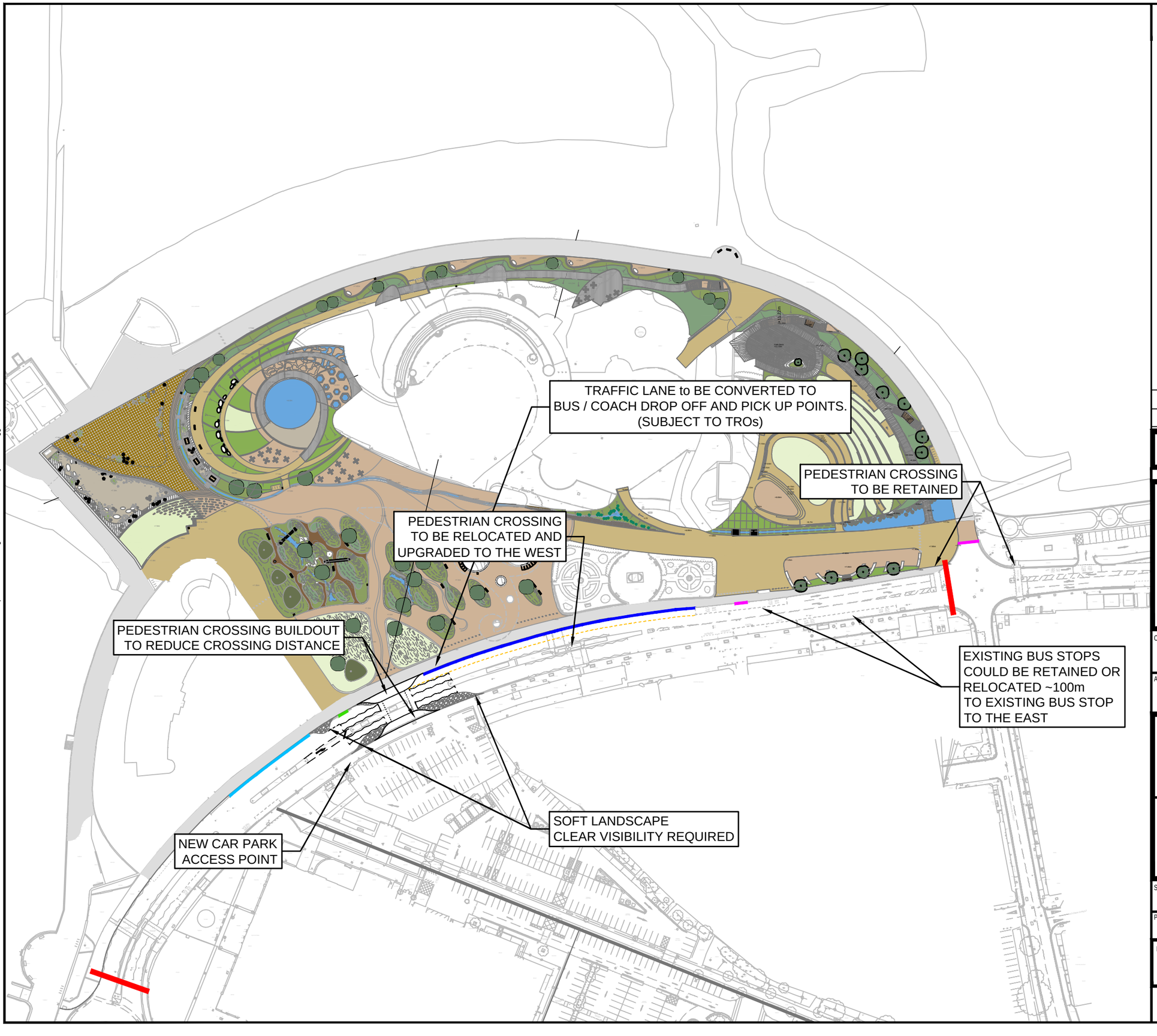
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Bus Working	**S2**	**S1**	**S3**	**S2**	**S1**	**S4**	**S3**	**S2**	**S5**	**S1**	**S4**	**S3**	**S2**	**S5**	**S5**	**S5**	**S5**
Trip No	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**108**	**110**	**112**	**114**
Eden Project North	1750	1805	1820	1835	1850	1900	1907	1915	1922	1930	1937	1945	1952	2000	2100	2200	2300
Park & Ride M6 J34	1805	1820	1835	1850	1905	1915	1922	1930	1937	1945	1952	2000	2007	2015	2115	2215	2315
Km	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52*	*8.52* ↓ *Pull In*	*8.52* ↓ *Pull In*	*8.52* ↓ *Pull In*	*8.52* ↓ *Pull In*	*8.52*	*8.52*	*8.52*	*8.52* ↓ *Pull In*

Bus working summary	**S1**	**S2**	**S3**	**S4**	**S5**	**Total**
Outbound Trips	14	14	12	6	0	46
Inbound Trips	15	15	14	8	5	57
Total Trips	29	29	26	14	5	103
Live hours	11h15	11h07	10h30	4h35	3h53	41h20
Live kms	256	256	229	123	43	907
Dead kms	0	0	0	0	37	37
Total kms	256	256	229	123	79	944

Appendix J

VISITOR GROUPS STRATEGY PLANS

PUBLIC



DO NOT SCALE

Key:

- PROPOSED SERVICING ACCESS POINTS
- PROPOSED COACH DROP OFF & PICK UP
- PROPOSED BLUE BADGE DROP OFF & PICK
- PROPOSED RNLI ACCESS
- PROPOSED 20mph SPEED LIMIT ZONE

REV	DATE	BY	DESCRIPTION	CHK	APP
A	10/08/2021	APF	FIRST ISSUE	APF	APF

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: EDEN PROJECT INTERNATIONAL

ARCHITECT: GRIMSHAW / TEP

PROJECT: EDEN PROJECT NORTH

TITLE: MARINE ROAD CENTRAL
PROPOSED OFF SITE HIGHWAYS WORKS

SCALE @ A3:	CHECKED:		APPROVED:
1:1,500	APF		APF
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70083611	APF	APF	July 21

DRAWING No: 3611-SK-102 REV: A

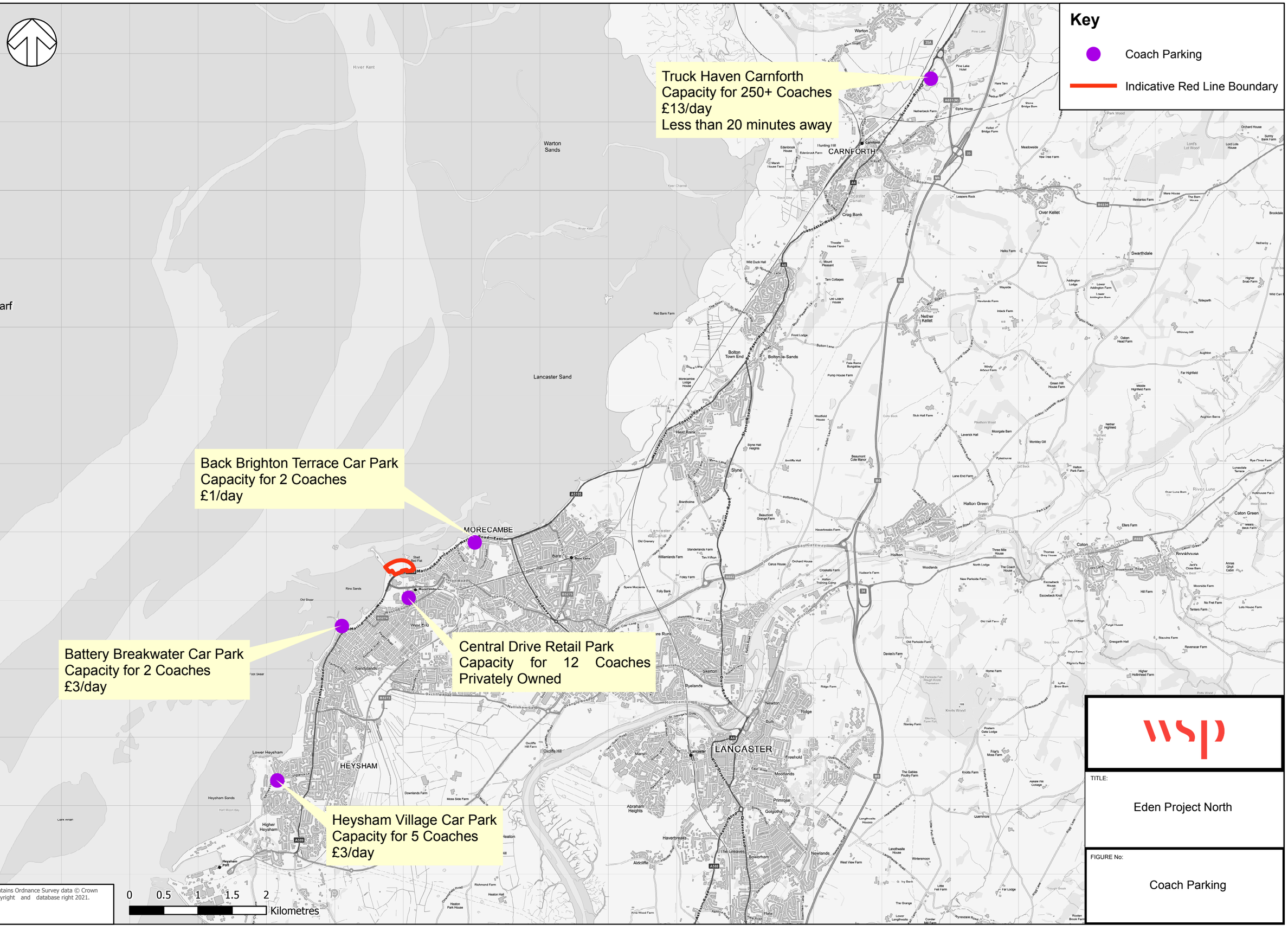
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TITLE:

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FIGURE No:

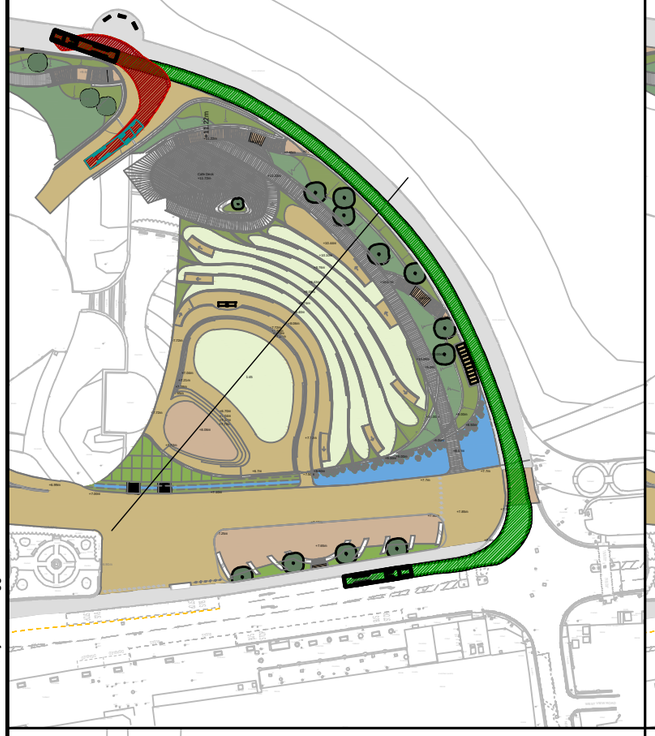
Coach Parking

Appendix K

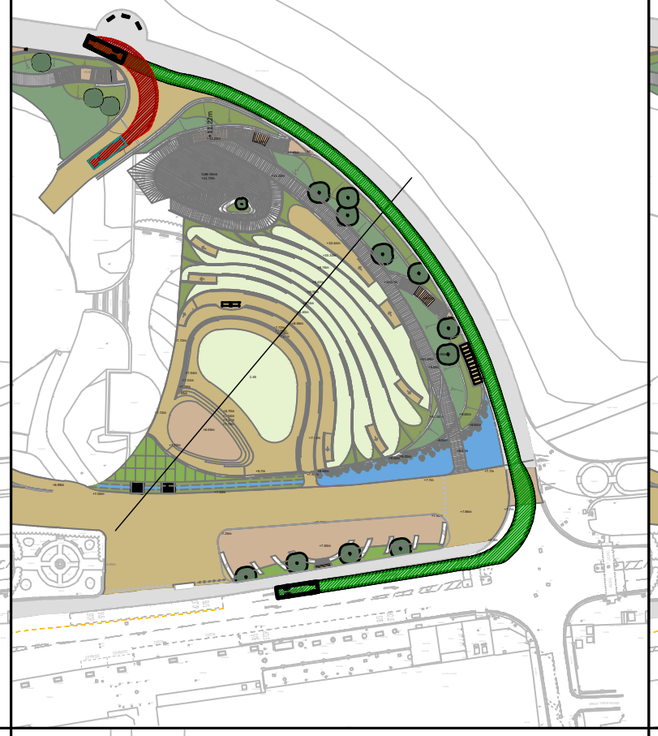
SERVICING STRATEGY PLANS

PUBLIC

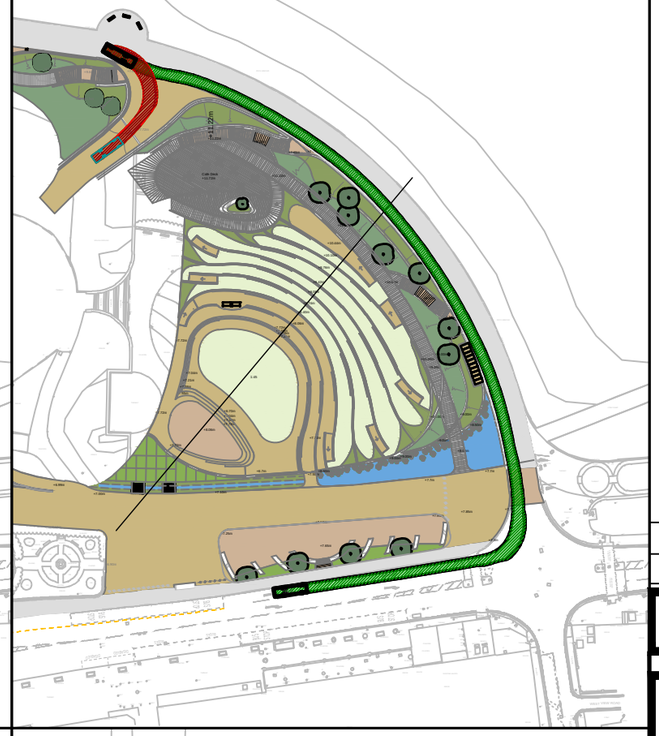
VP1 - 16.5m ARTICULATED IN



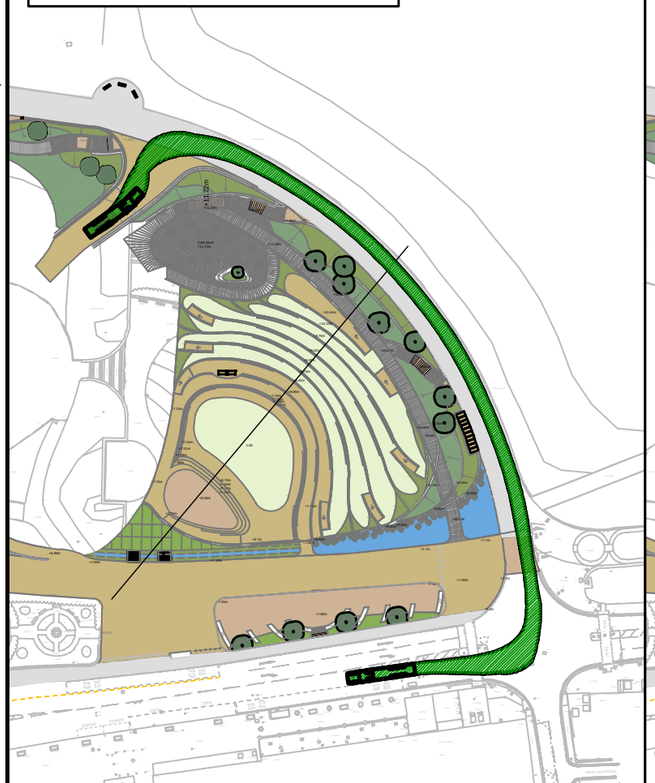
VP3 - 10.0m RIGID HGV IN



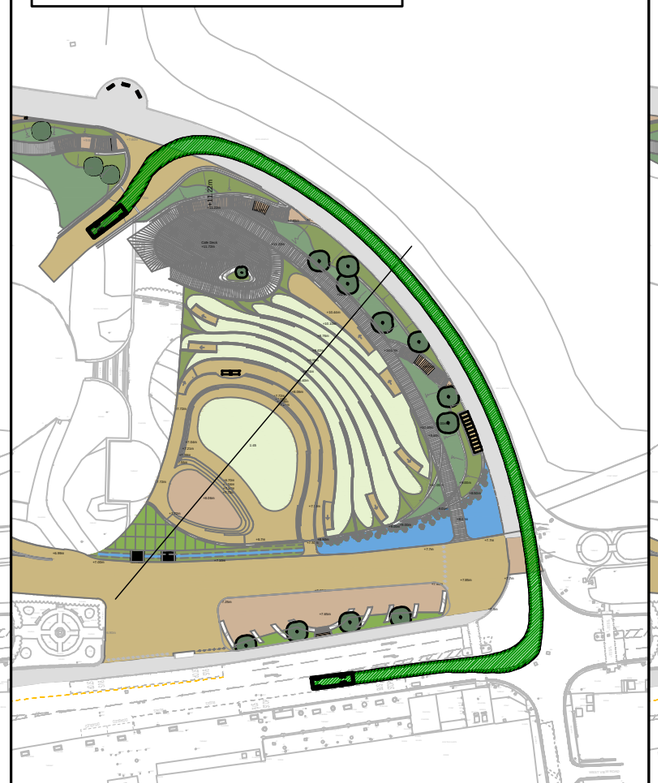
VP5 - 8.0m PANEL BOX VAN IN



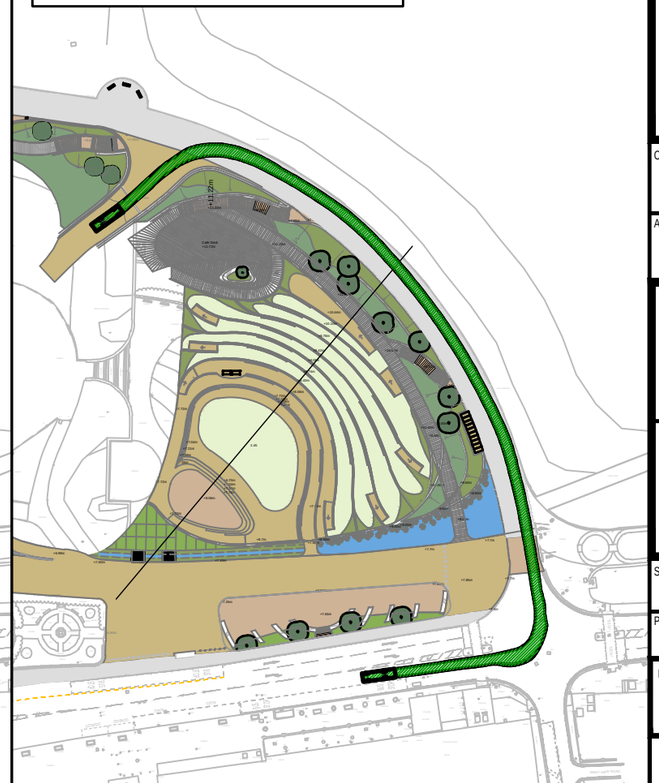
VP2 - 16.5m ARTICULATED OUT



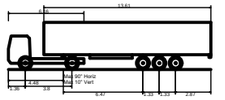
VP4 - 10.0m RIGID HGV OUT



VP6 - 8.0m PANEL BOX VAN OUT

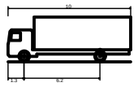


DO NOT SCALE



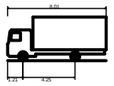
FTA Design Articulated Vehicle (1998)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m



FTA Design Rigid Vehicle (1983)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.000m



7.5t Box Van

Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	20/08/2021	APF	FIRST ISSUE	JO	JO

DRAWING STATUS:
S2 - FOR INFORMATION

8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW / TEP

PROJECT:
EDEN PROJECT NORTH

TITLE:
SERVICE YARD
SWEPT PATH ANALYSIS

SCALE @ A3:	CHECKED:	APPROVED:
1:1,500	JO	JO

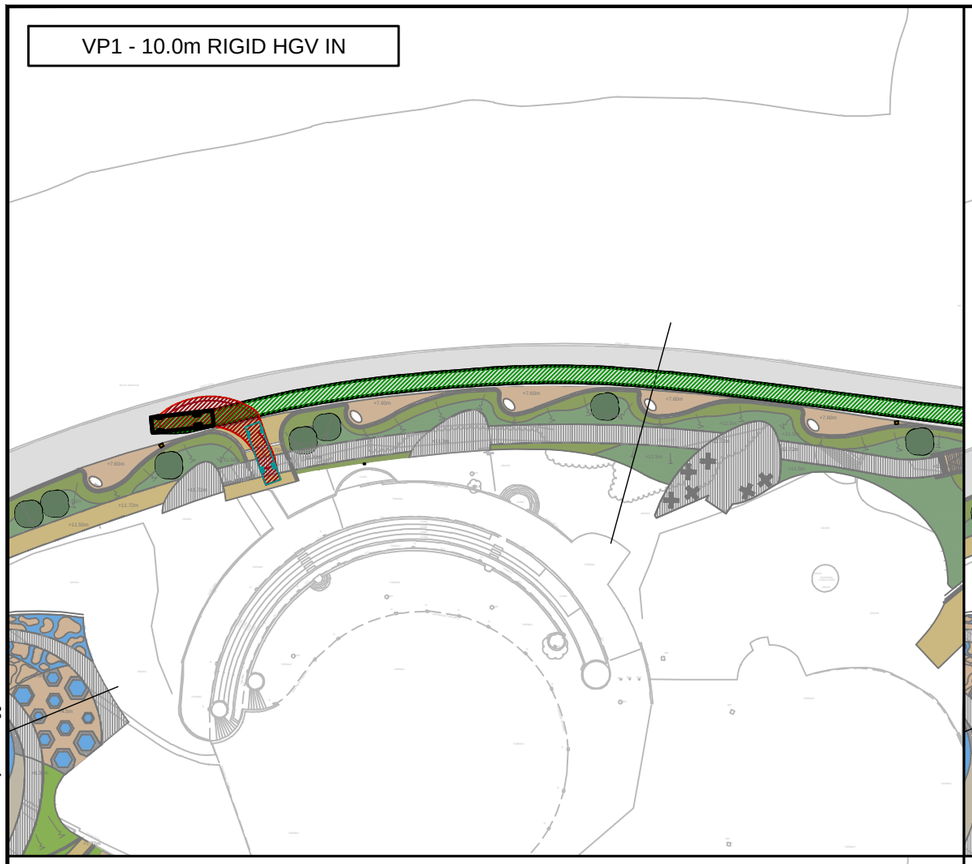
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7004551	APF	APF	July 21

DRAWING No:	REV:
4551-ATR-101	A

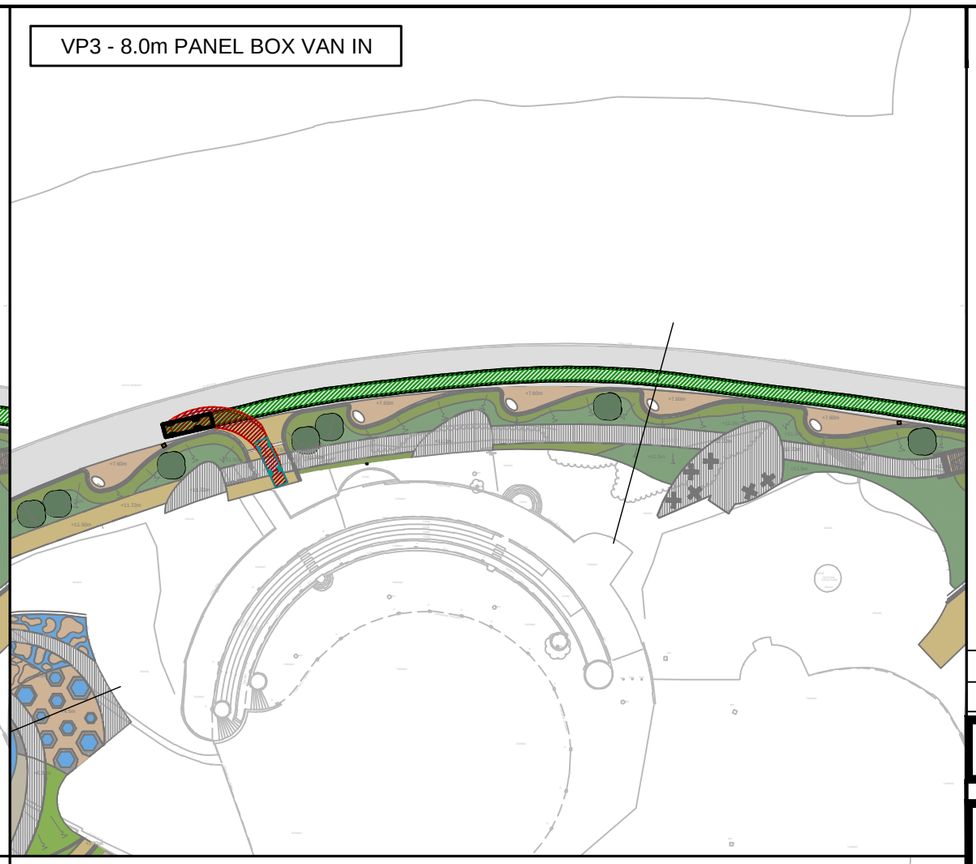
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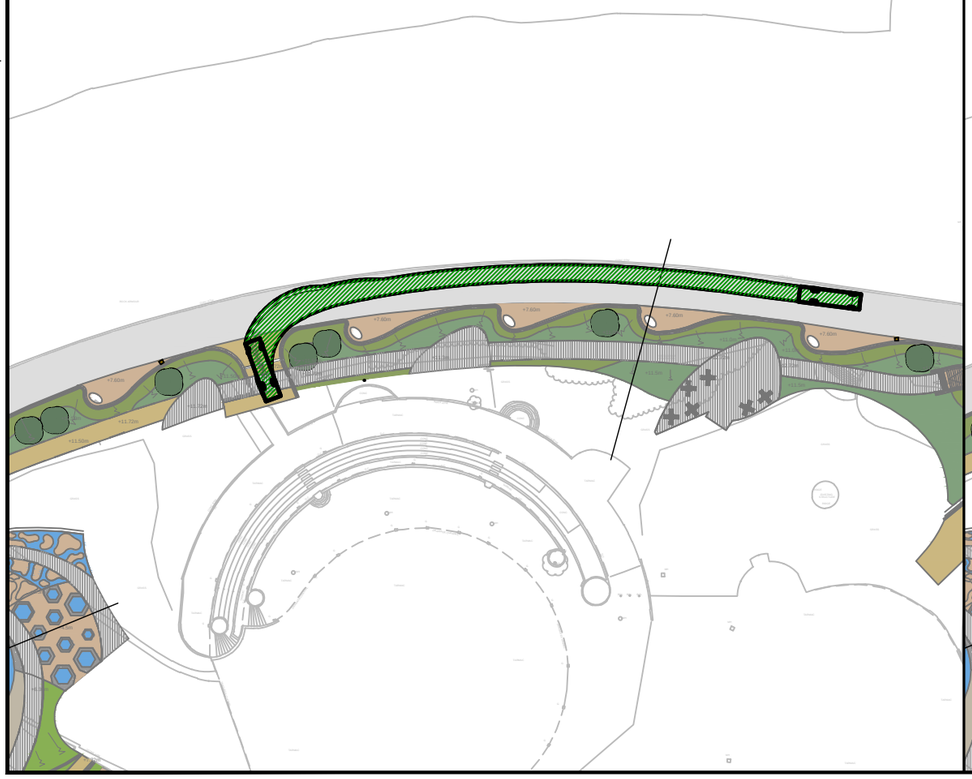
VP1 - 10.0m RIGID HGV IN



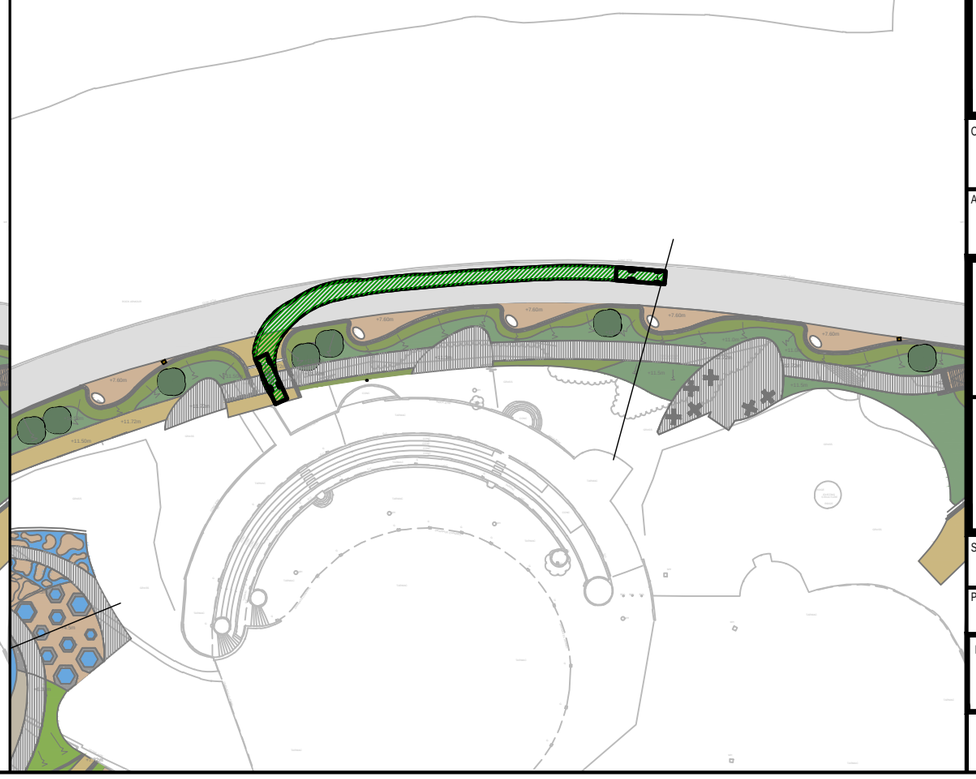
VP3 - 8.0m PANEL BOX VAN IN



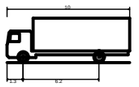
VP2 - 10.0m RIGID HGV OUT



VP4 - 8.0m PANEL BOX VAN OUT

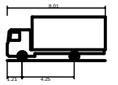


DO NOT SCALE



FTA Design Rigid Vehicle (1983)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.000m



7.5t Box Van

Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	20/08/2021	APF	FIRST ISSUE	JO	JO

DRAWING STATUS:
S2 - FOR INFORMATION

wsp

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CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW / TEP

PROJECT:
EDEN PROJECT NORTH

TITLE:
RESTAURANT
SWEPT PATH ANALYSIS

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	JO	JO

PROJECT No:	DESIGNED:	DRAWN:	DATE:
7004551	APF	APF	July 21

DRAWING No:	REV:
4551-ATR-102	A

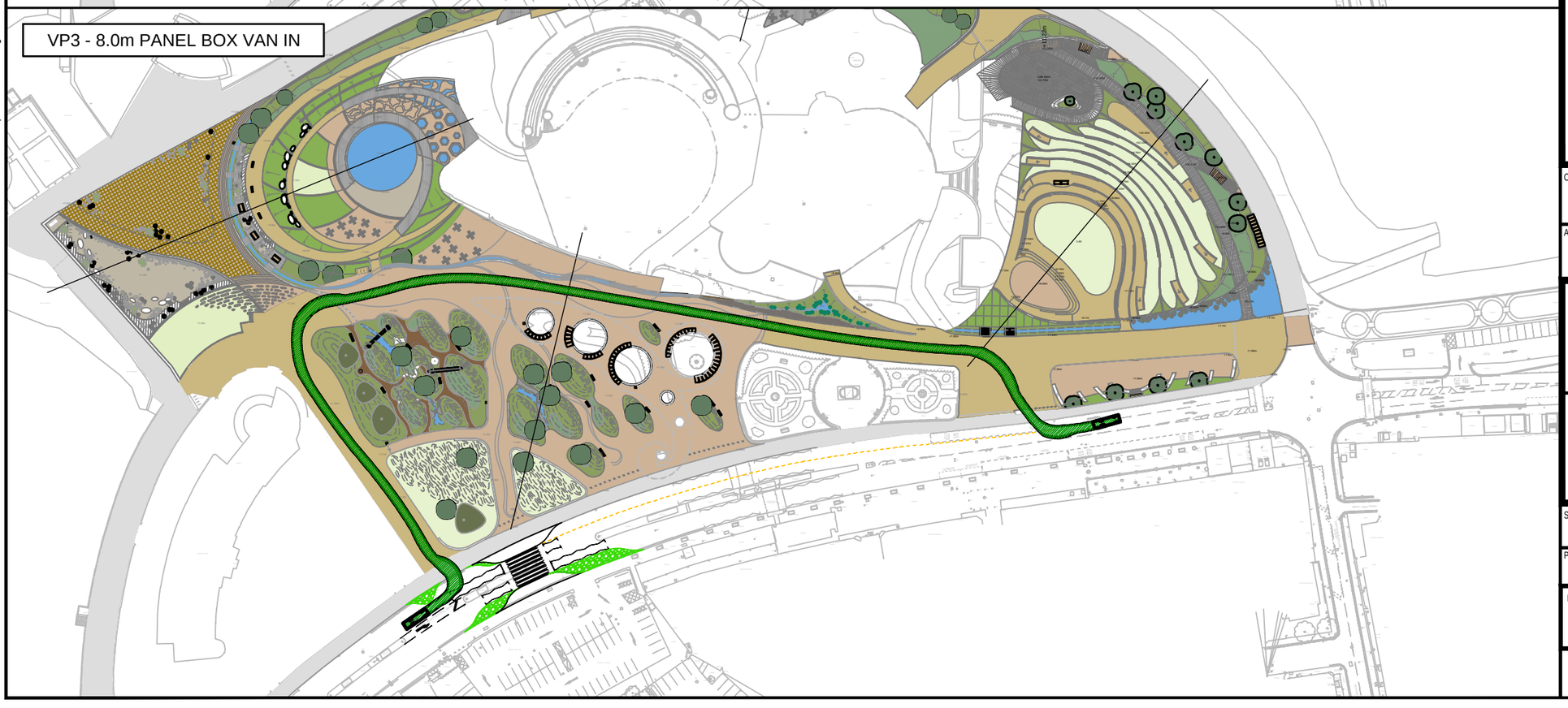
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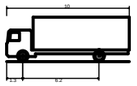
VP1 - 10.0m RIGID HGV IN



VP3 - 8.0m PANEL BOX VAN IN

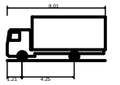


DO NOT SCALE



FTA Design Rigid Vehicle (1983)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.000m



7.5t Box Van

Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	10/08/2021	APF	FIRST ISSUE	JO	JO

DRAWING STATUS:
S2 - FOR INFORMATION

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T+ 44 (0) 161 200 5000
wsp.com

CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW / TEP

PROJECT:
EDEN PROJECT NORTH

TITLE:
VISITOR CENTRE
SWEPT PATH ANALYSIS

SCALE @ A3:	CHECKED:	APPROVED:
1:1500	JO	JO

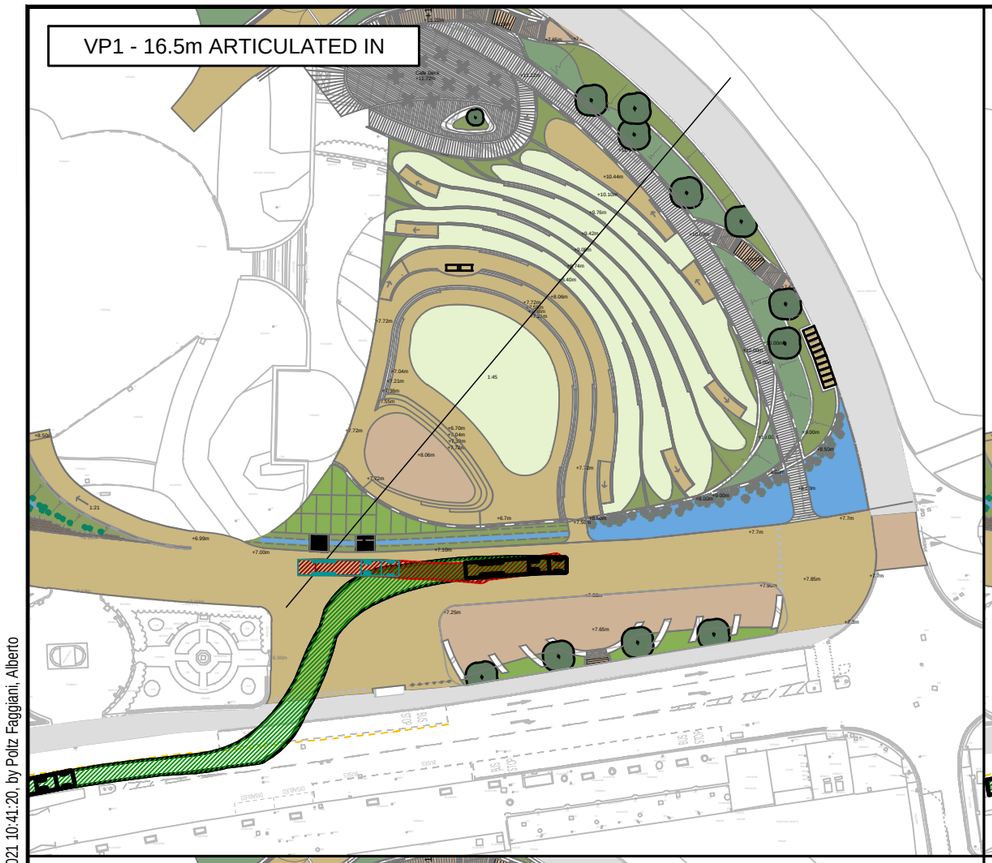
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7004551	APF	APF	July 21

DRAWING No:	REV:
4551-ATR-103	A

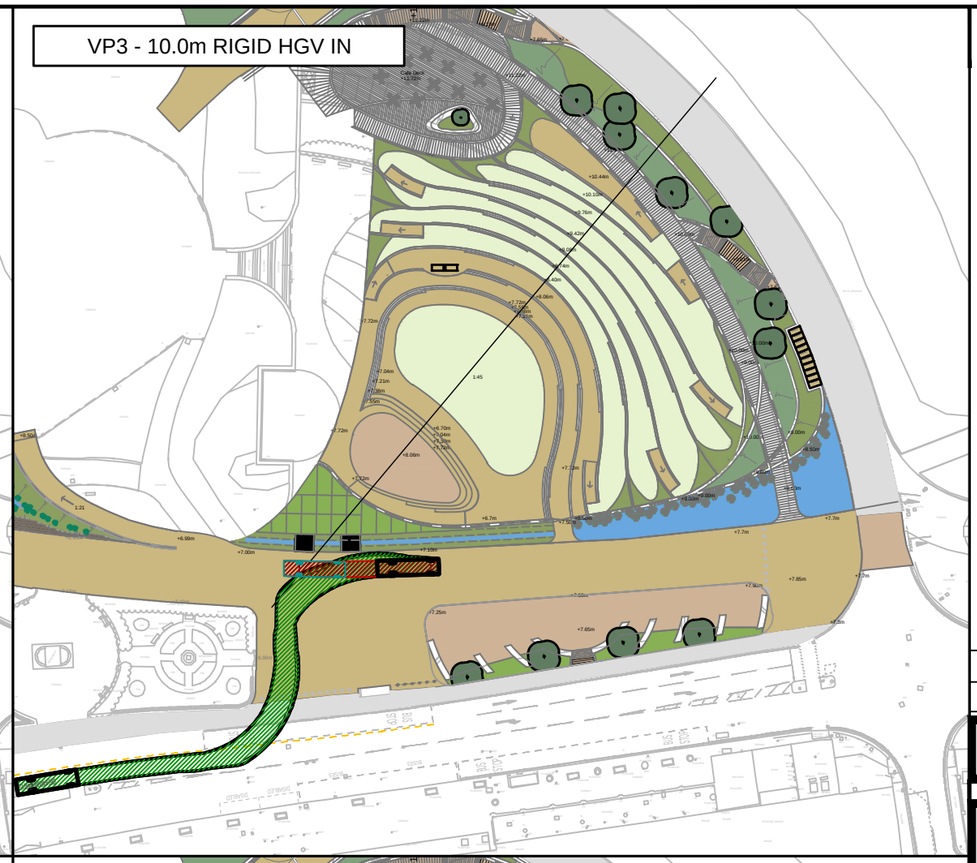
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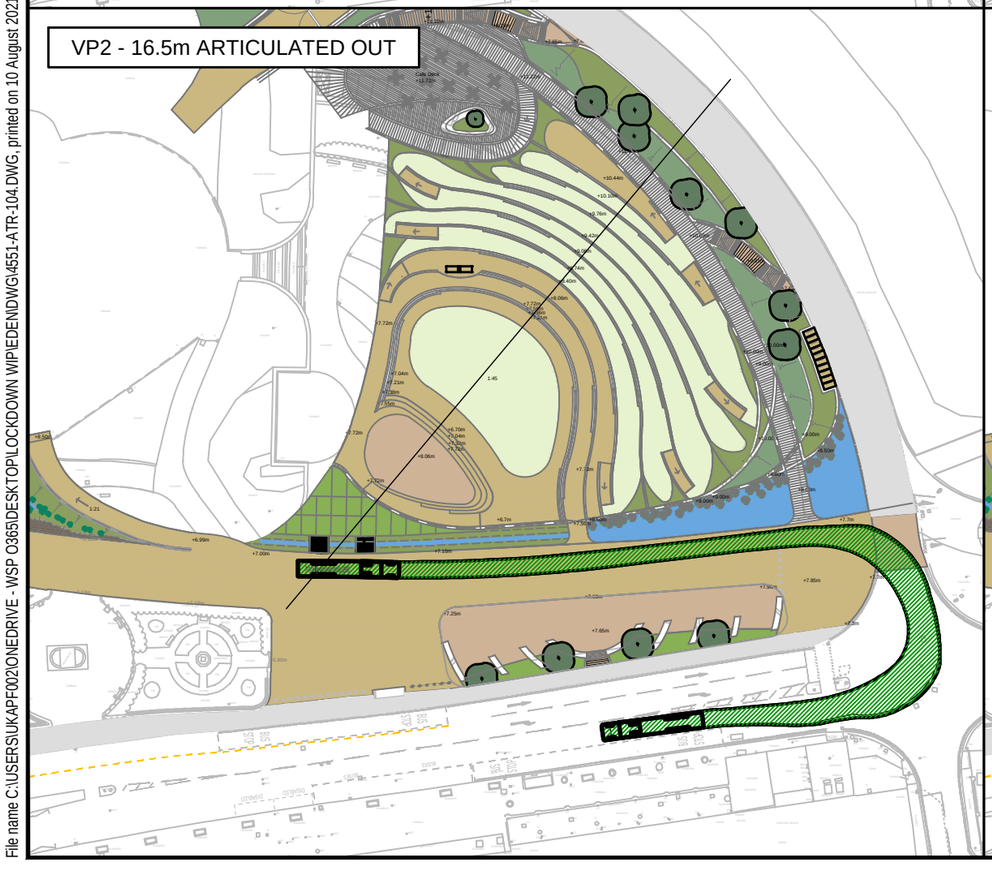
VP1 - 16.5m ARTICULATED IN



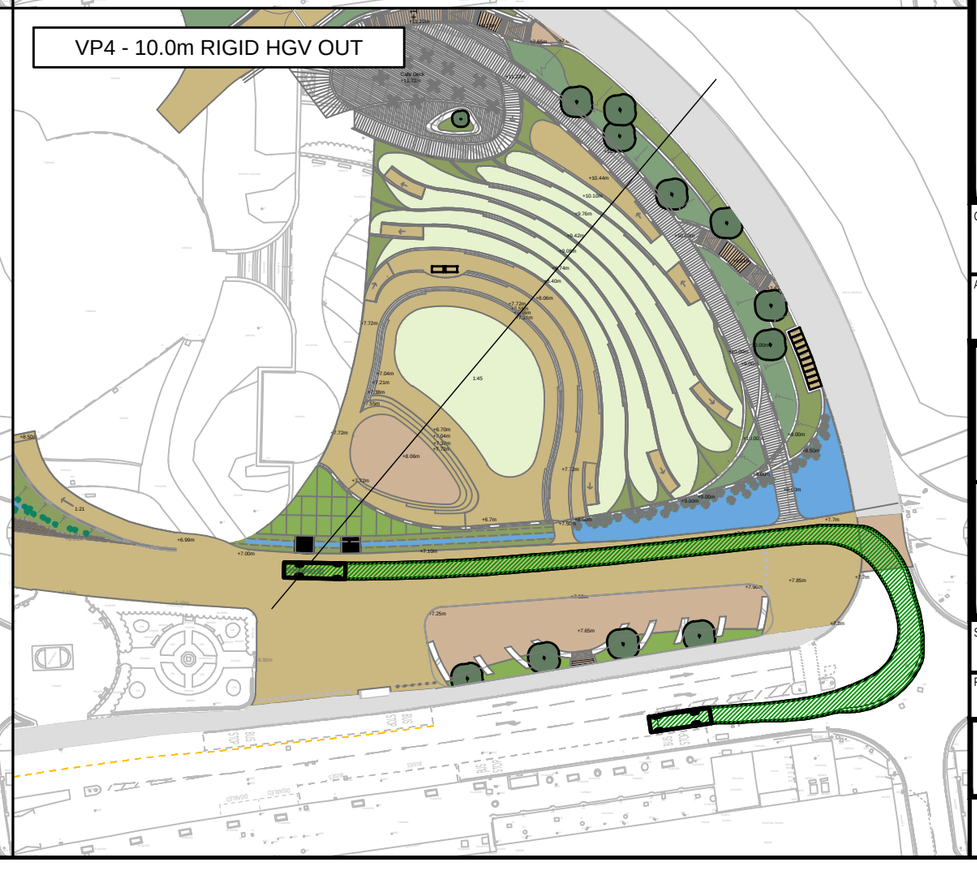
VP3 - 10.0m RIGID HGV IN



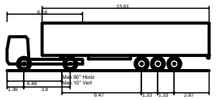
VP2 - 16.5m ARTICULATED OUT



VP4 - 10.0m RIGID HGV OUT

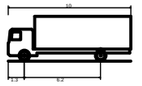


DO NOT SCALE



FTA Design Articulated Vehicle (1998)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m



FTA Design Rigid Vehicle (1983)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.000m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	10/08/2021	APF	FIRST ISSUE	JO	JO

DRAWING STATUS:
S2 - FOR INFORMATION

wsp
8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW / TEP

PROJECT:
EDEN PROJECT NORTH

TITLE:
RHYTHM GARDEN
SWEPT PATH ANALYSIS

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	JO	JO

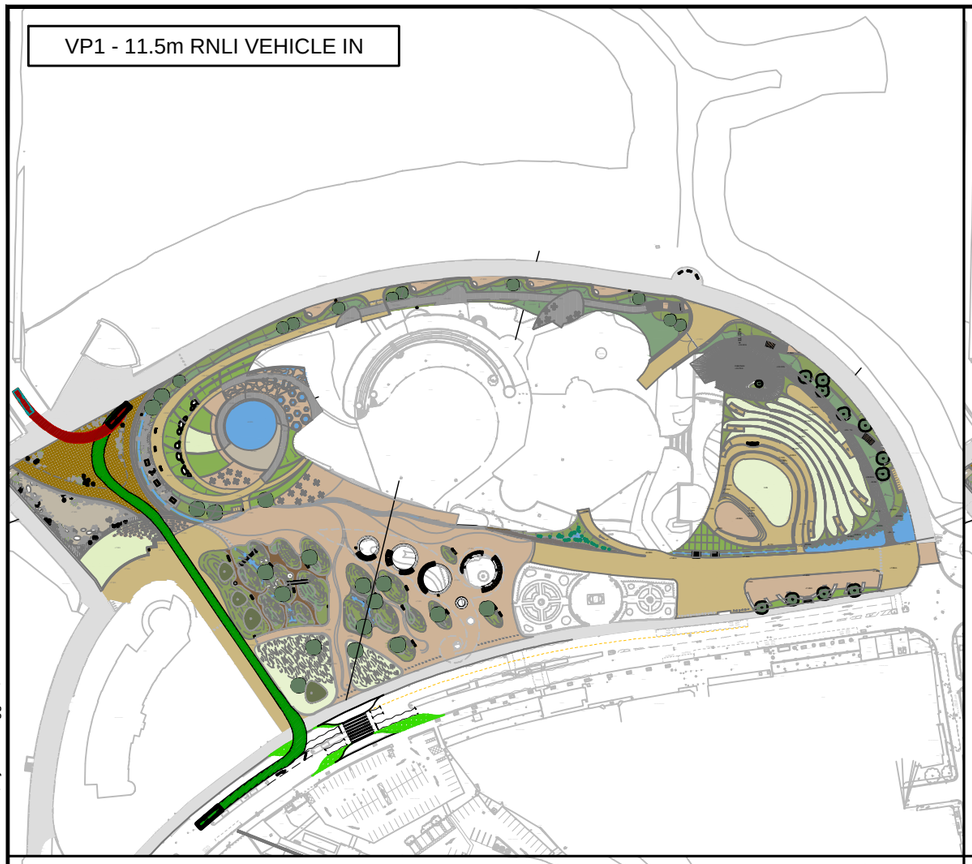
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7004551	APF	APF	July 21

DRAWING No:	REV:
4551-ATR-104	A

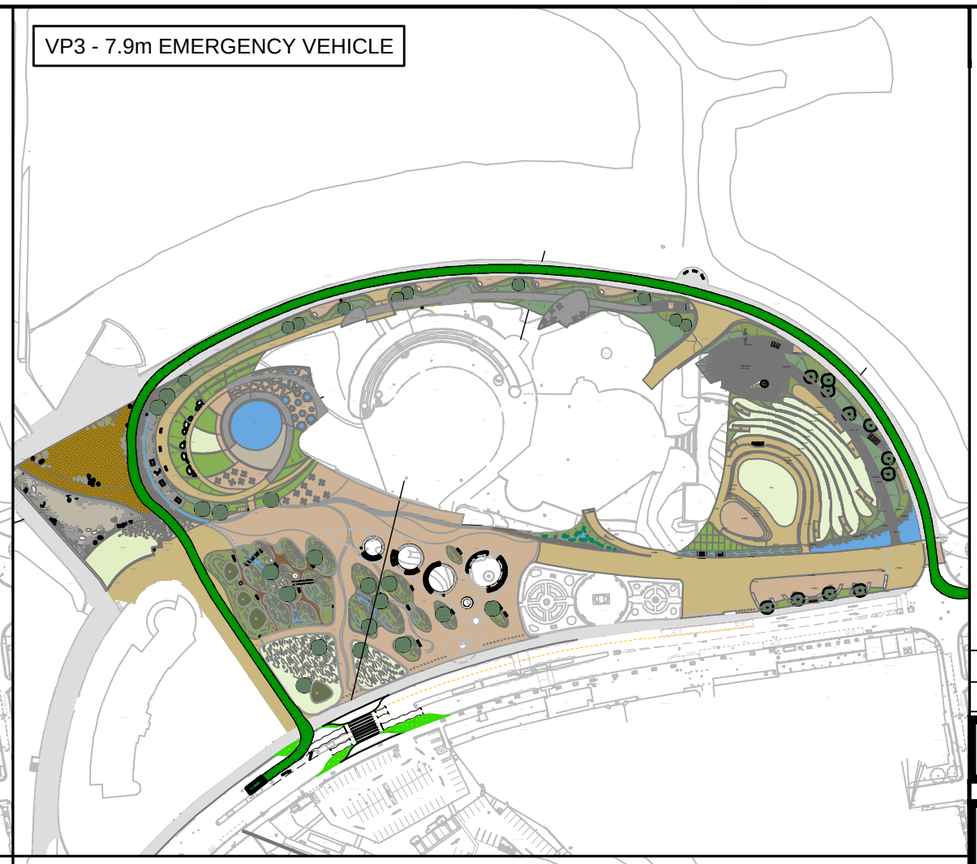
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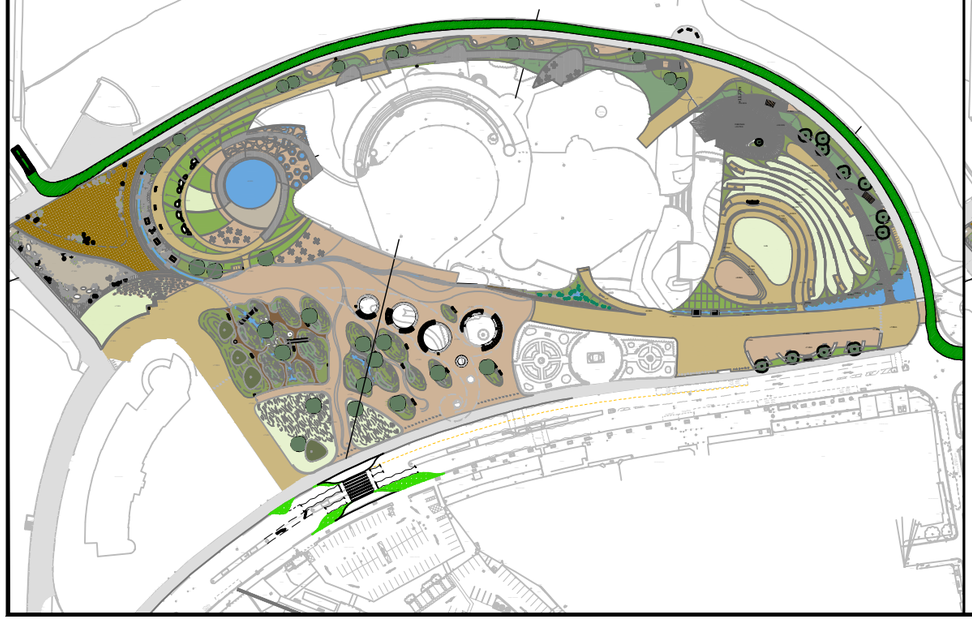
VP1 - 11.5m RNLI VEHICLE IN



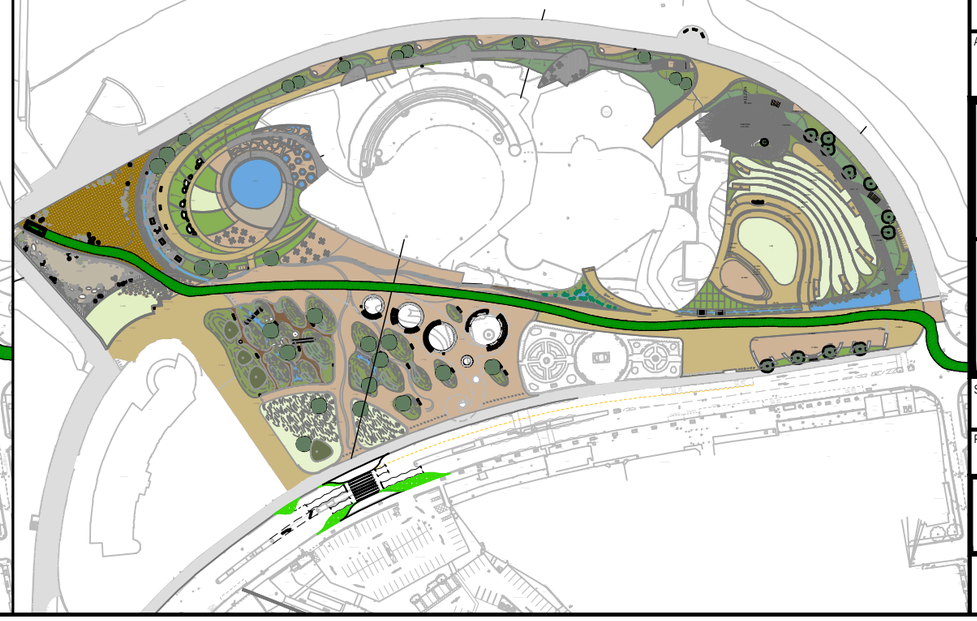
VP3 - 7.9m EMERGENCY VEHICLE



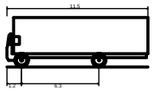
VP2 - 11.5m RNLI VEHICLE OUT



VP4 - 7.9m EMERGENCY VEHICLE

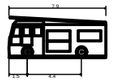


DO NOT SCALE



RNLI

Overall Length	11.500m
Overall Width	2.500m
Overall Body Height	4.046m
Min Body Ground Clearance	0.530m
Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	12.200m



Pumping Appliance

Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.750m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	10/08/2021	APF	FIRST ISSUE	JO	JO

DRAWING STATUS:
S2 - FOR INFORMATION

8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW / TEP

PROJECT:
EDEN PROJECT NORTH

TITLE:
RNLI AND EMERGENCY VEHICLE
SWEPT PATH ANALYSIS

SCALE @ A3:	CHECKED:	APPROVED:	
1:2500	JO	JO	
PROJECT No:	DESIGNED:	DRAWN:	DATE:
7004551	APF	APF	July 21

DRAWING No:	REV:
4551-ATR-105	A

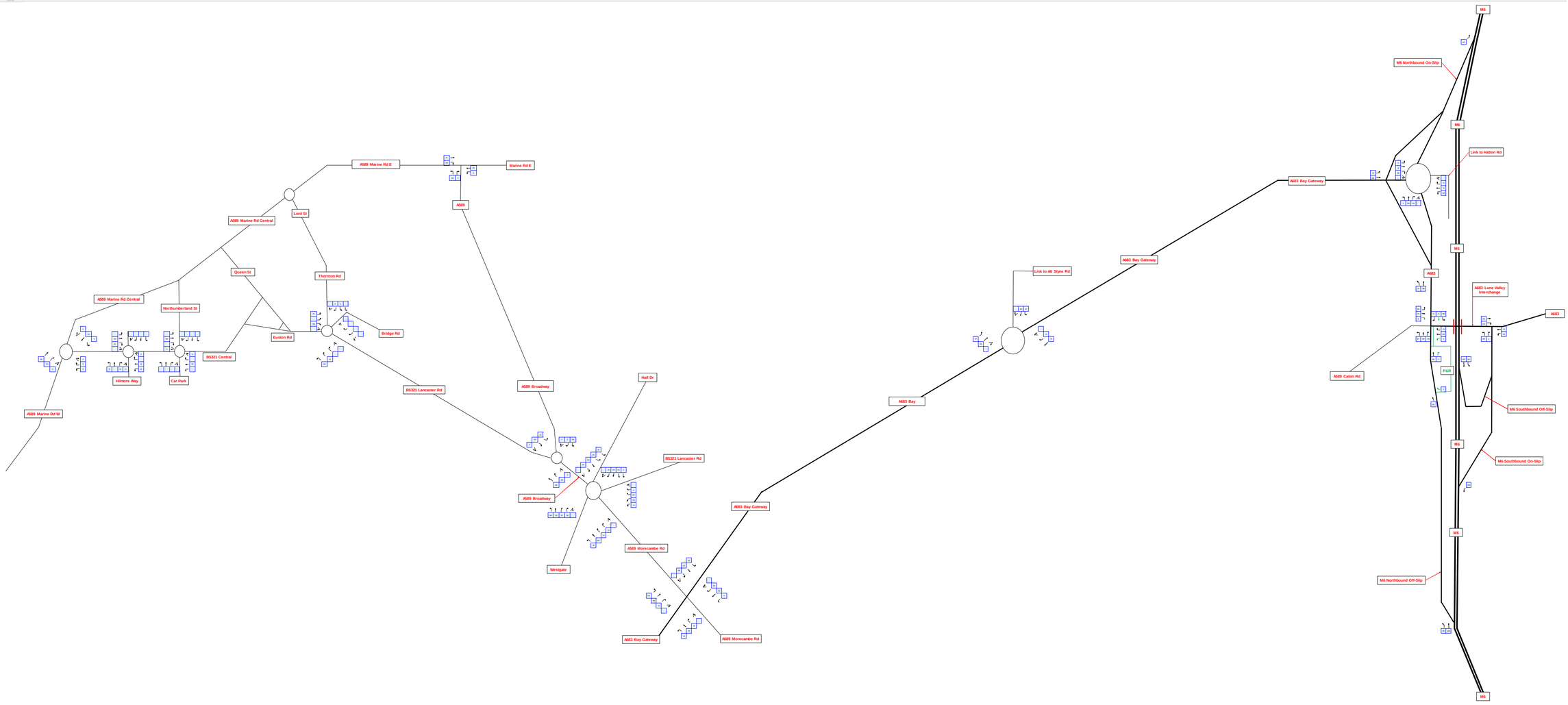
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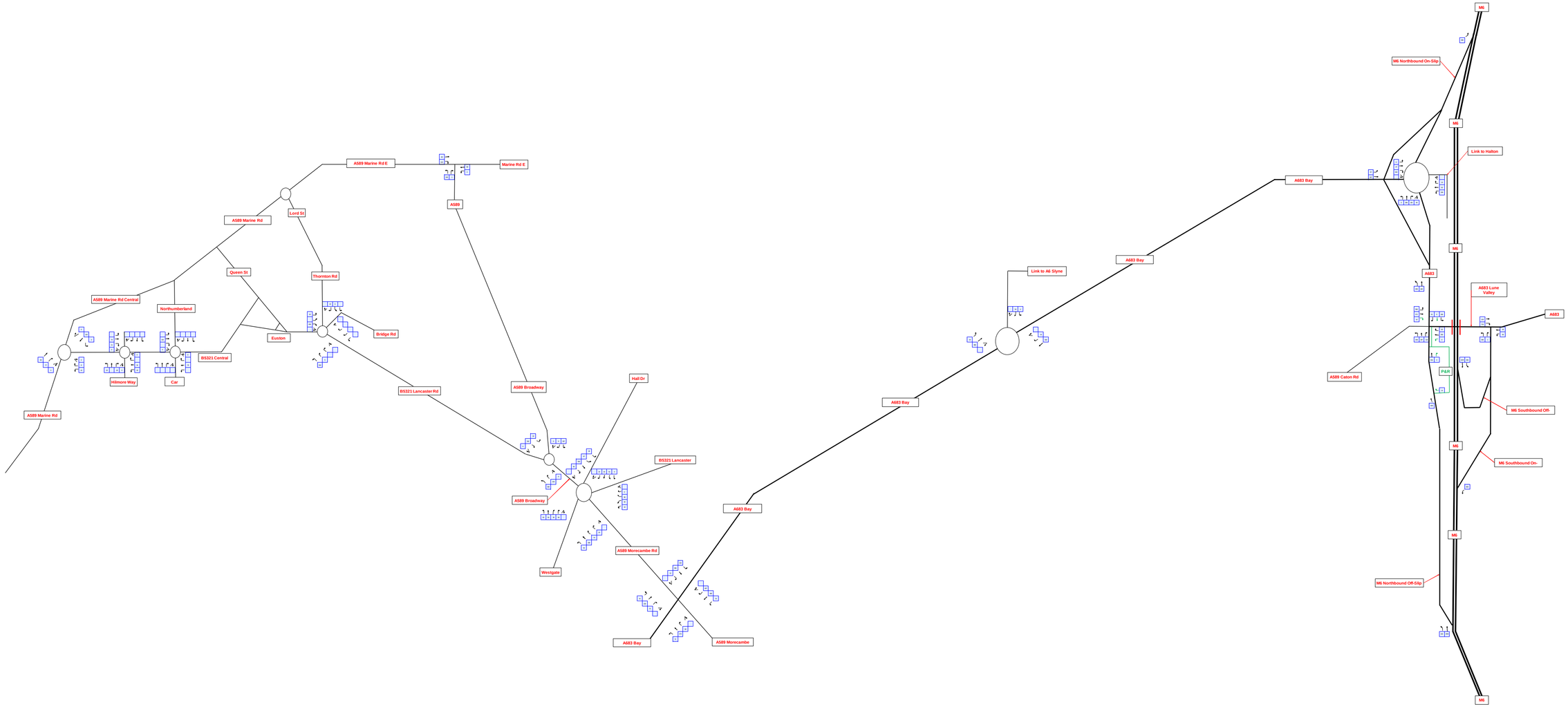
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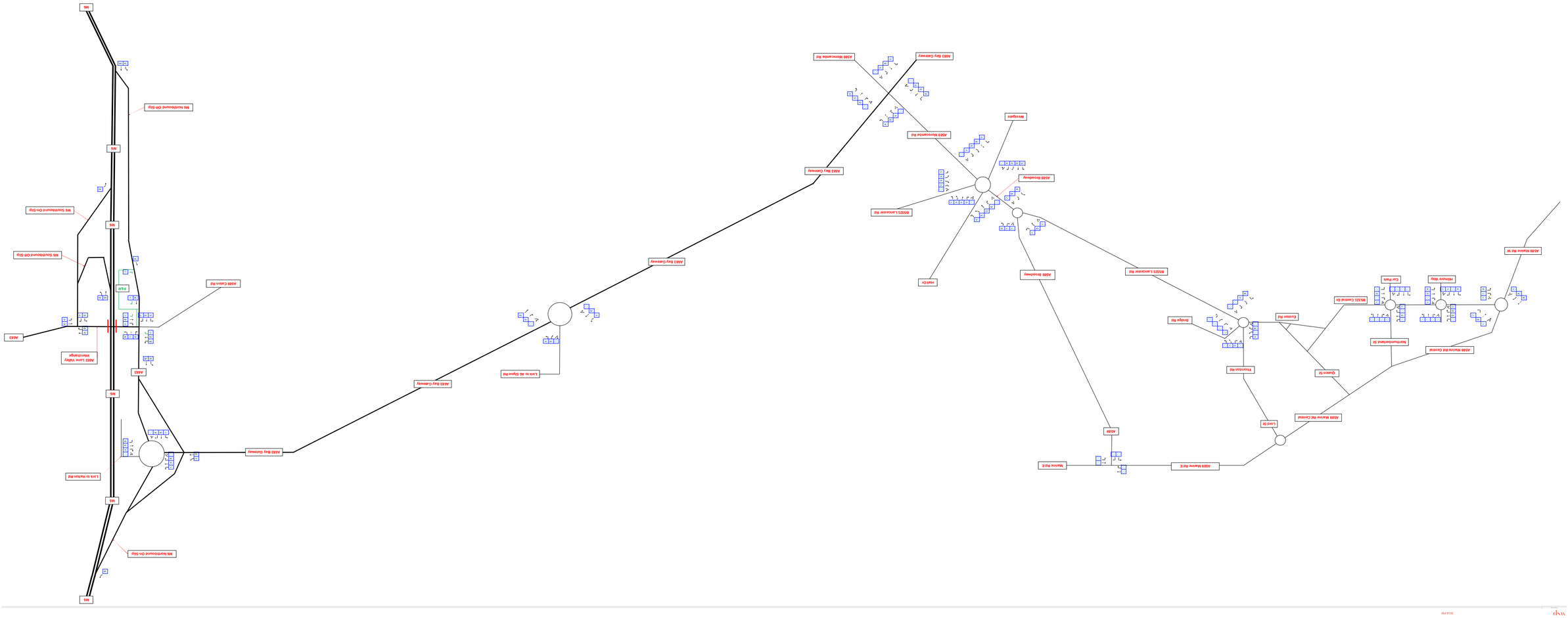
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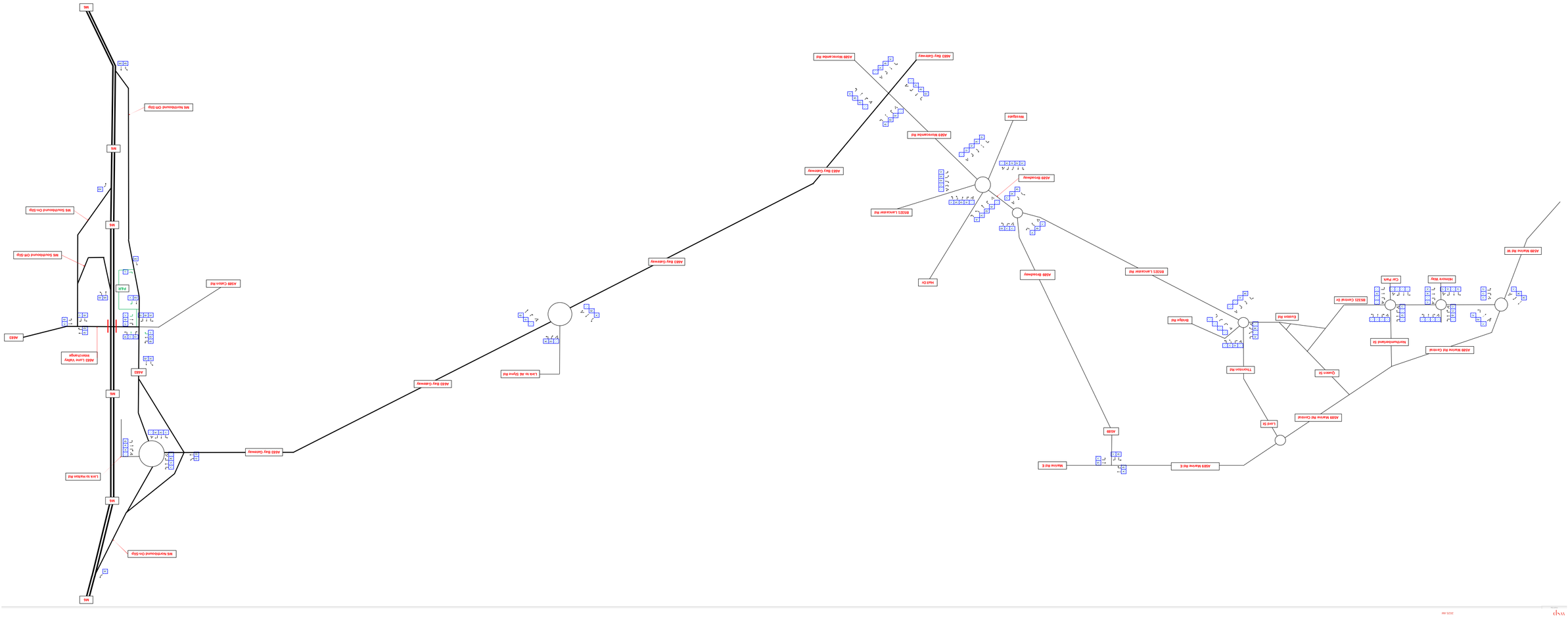
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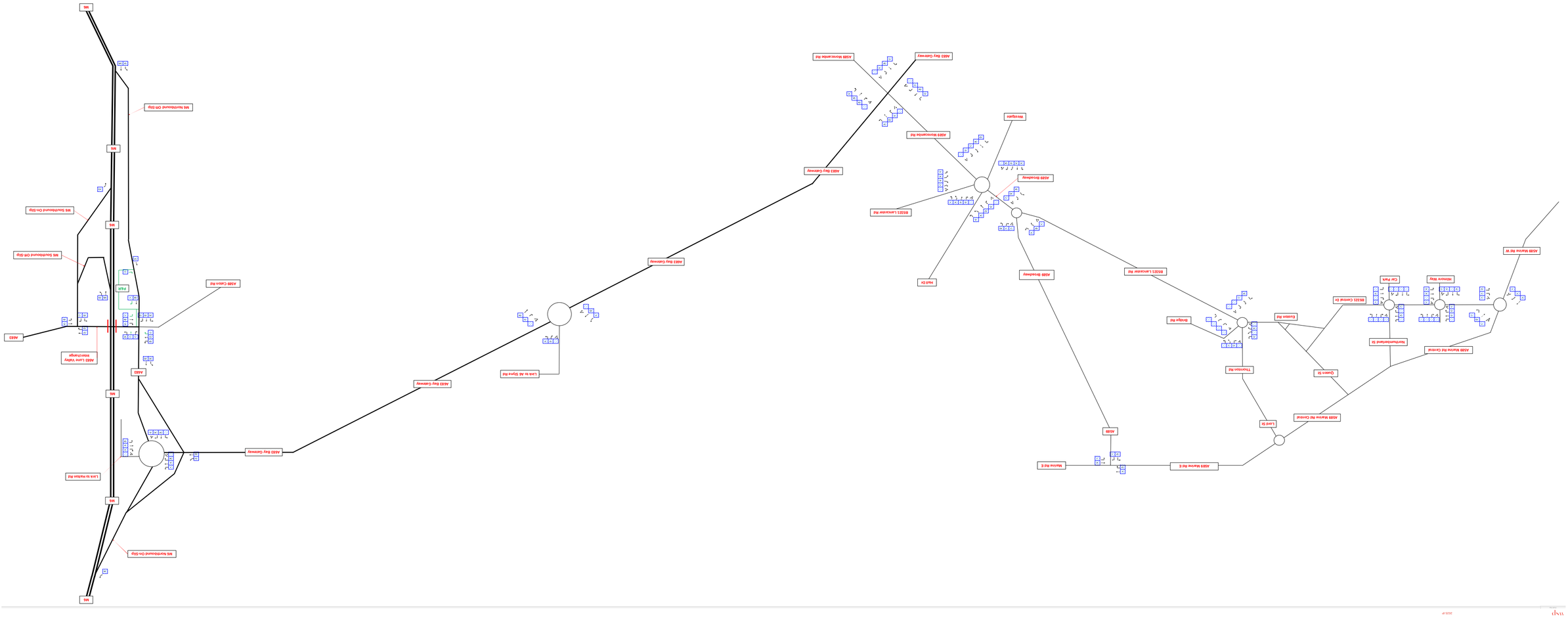
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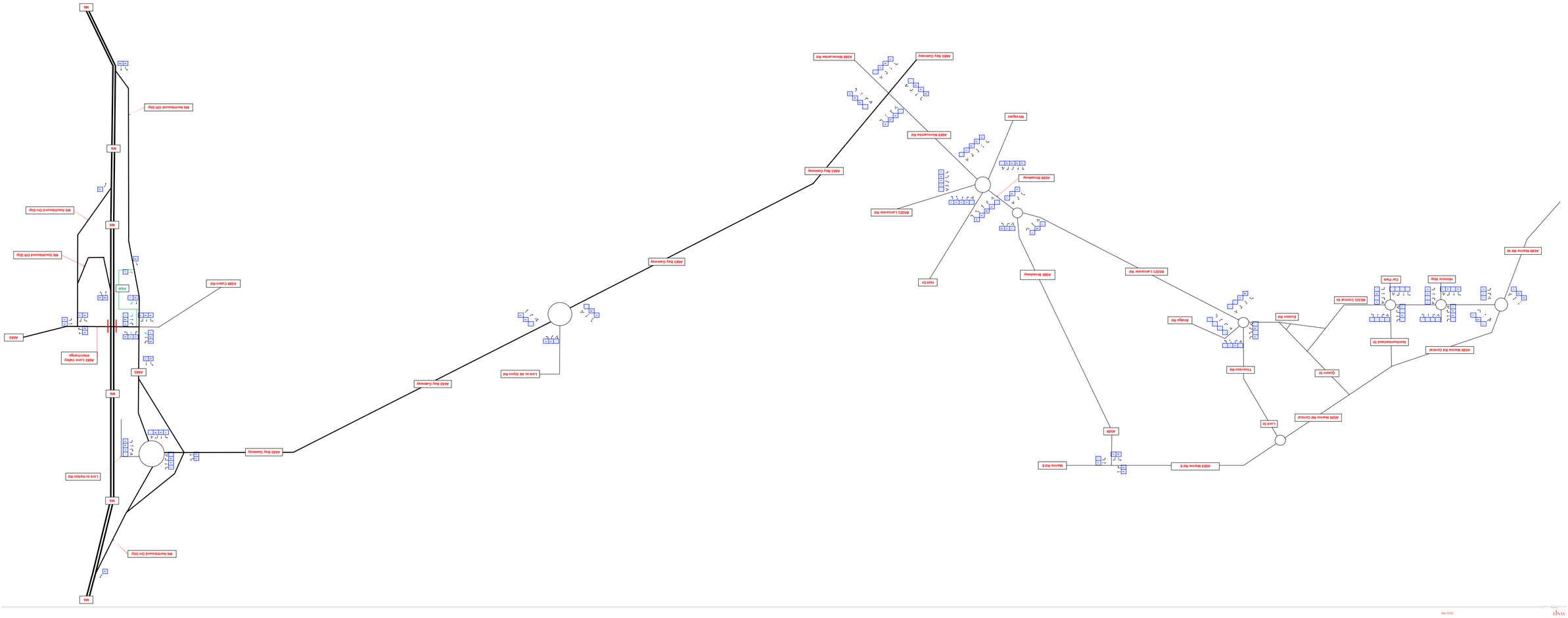

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A689
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Queen St
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Northumberland St
Bridge Rd
Euston Rd
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Hilmore Way
Car Park
B5321 Lancaster Rd
A689 Broadway
Hall Dr
A689 Marine Rd W
B5321 Lancaster Rd
A689 Broadway
Westgate
A689 Morecambe Rd
A683 Bay Gateway
A683 Bay Gateway
A689 Morecambe Rd
Link to A6 Slyne Rd
A683 Bay
A683 Bay Gateway
M6
M6 Northbound On-Slip
M6
Link to Halton Rd
M6
A683
A683 Lune Valley Interchange
A683
P&R
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M6
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M6
M6 Northbound Off-Slip
M6

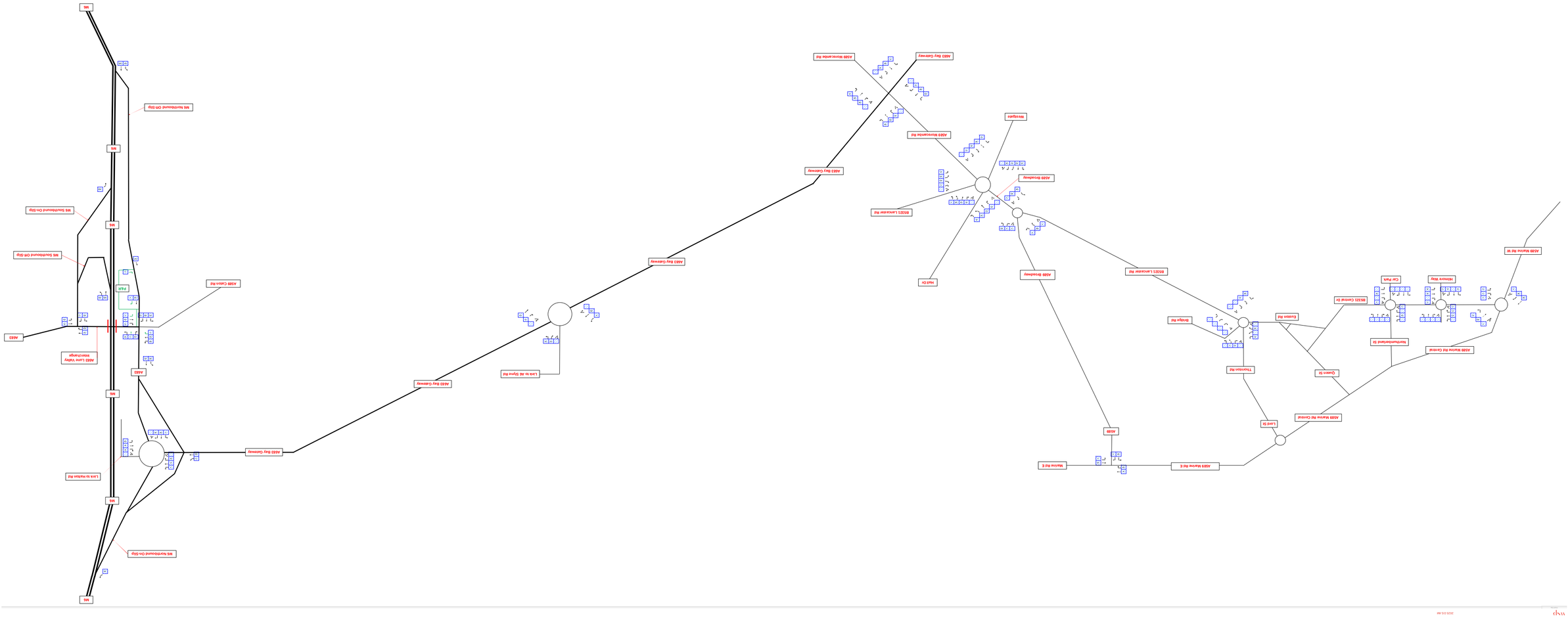

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A589
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Hilmore Way
Car
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A589 Broadway
Hall Dr
B5321 Lancaster
A589 Broadway
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Westgate
A683 Bay
A589 Morecambe
A683 Bay
Link to A6 Slyne
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A683 Bay
M6
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M6
Link to Halton
M6
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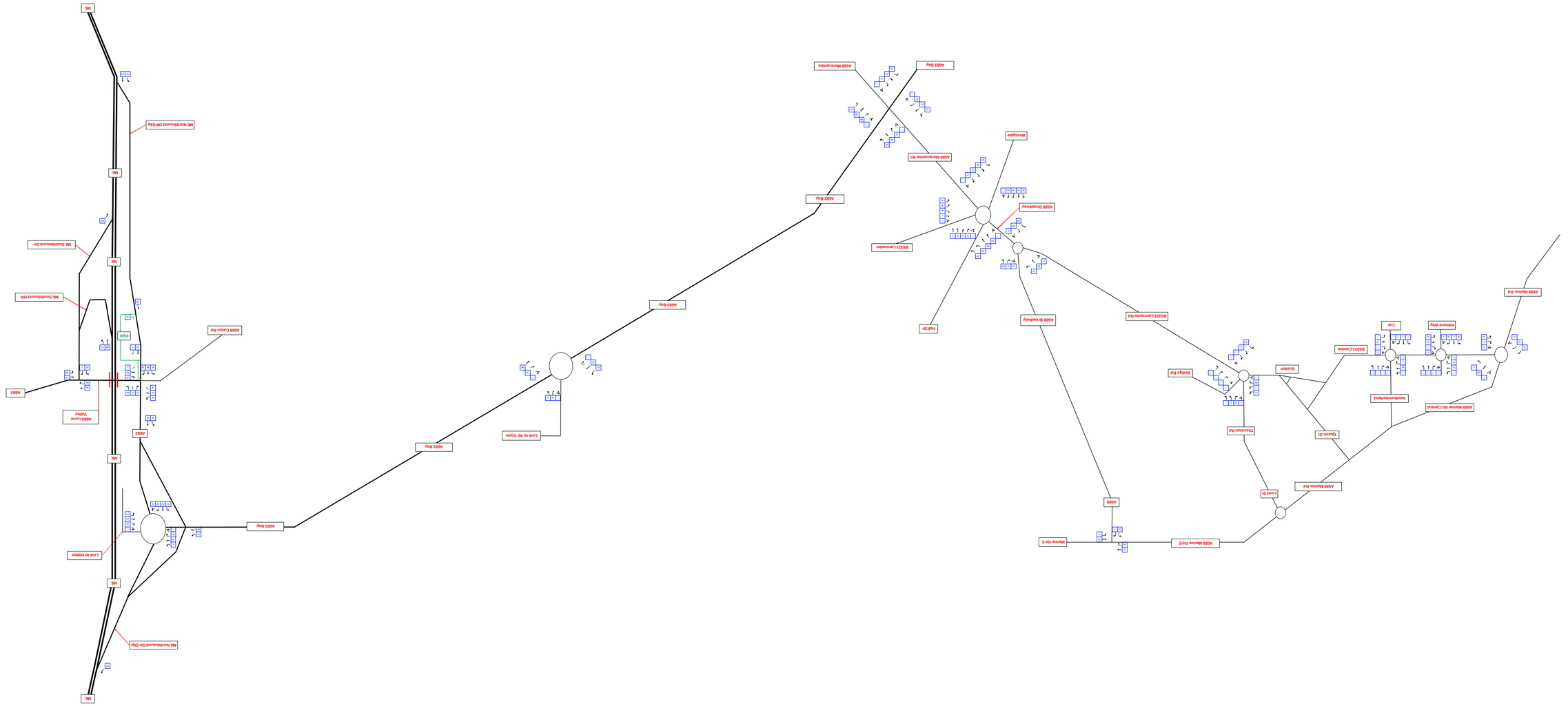

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M6 Southbound Off-Slip
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A683 Lune Valley Interchange
A683
A589 Caton Rd
A683 Bay Gateway
Link to Halton Rd
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Link to A6 Spur Rd
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A589 Broadway
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Westgate
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Bridge Rd
Thurnham Rd
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Marine Rd E
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Lune St
A589 Marine Rd Central
Queen St
Northumberland St
B6321 Cromwell Dr
Castle Park
Network Way
A589 Marine Rd W


M6
M6 Northbound Off-Slip
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A683 Lune Valley Interchange
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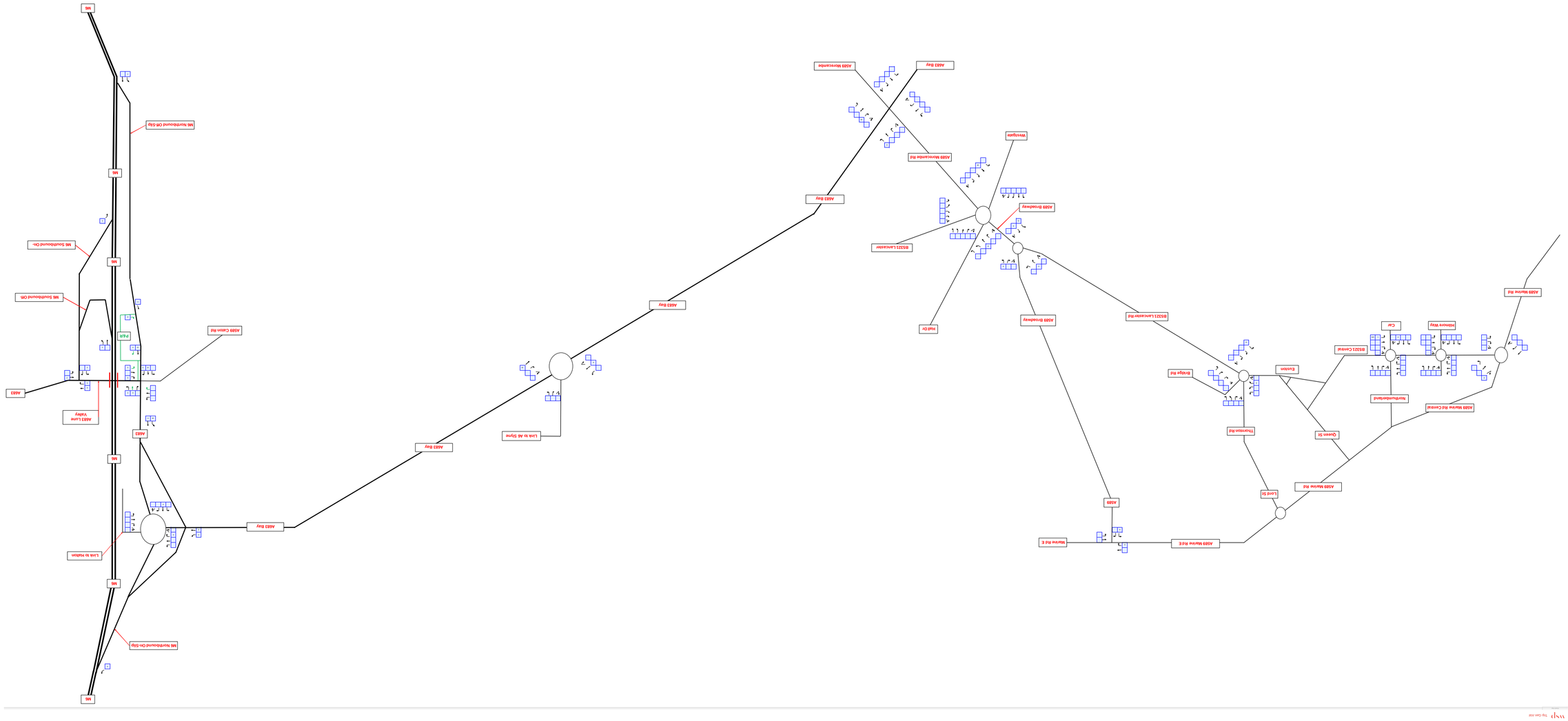

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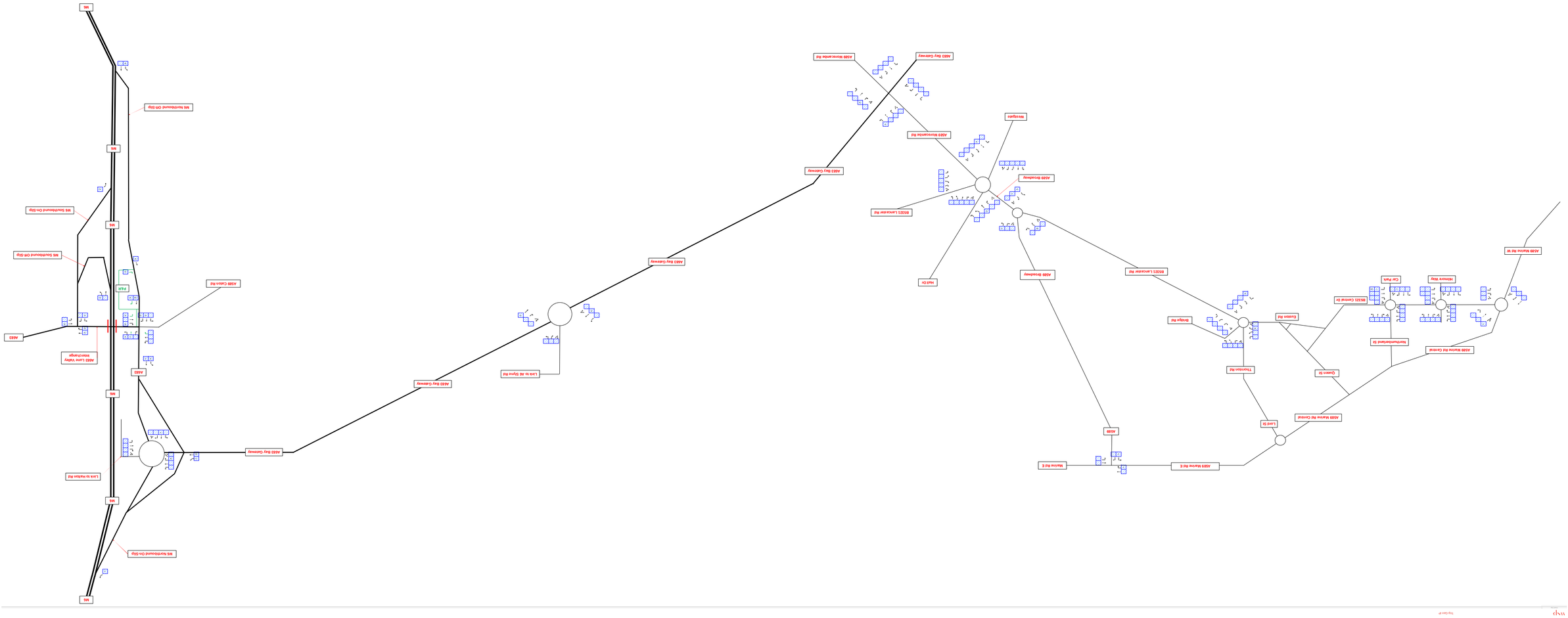

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Link to Euston Rd

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M6

M6 Northbound Off-Slip

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PLR

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A683

A683 Lune Valley Interchange

A683

Link to Halton Rd

A683 Bay Gateway

Link to A6 Spur Rd

A683 Bay Gateway

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Hall Dr

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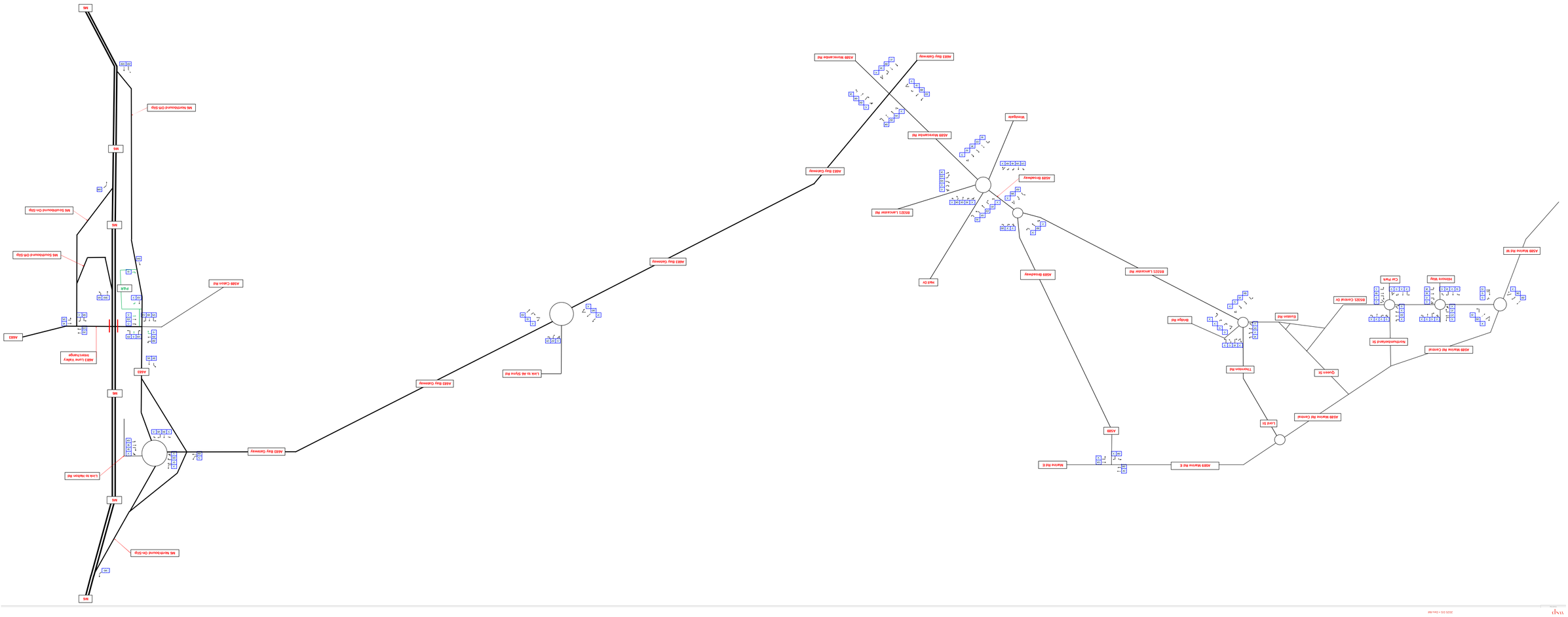
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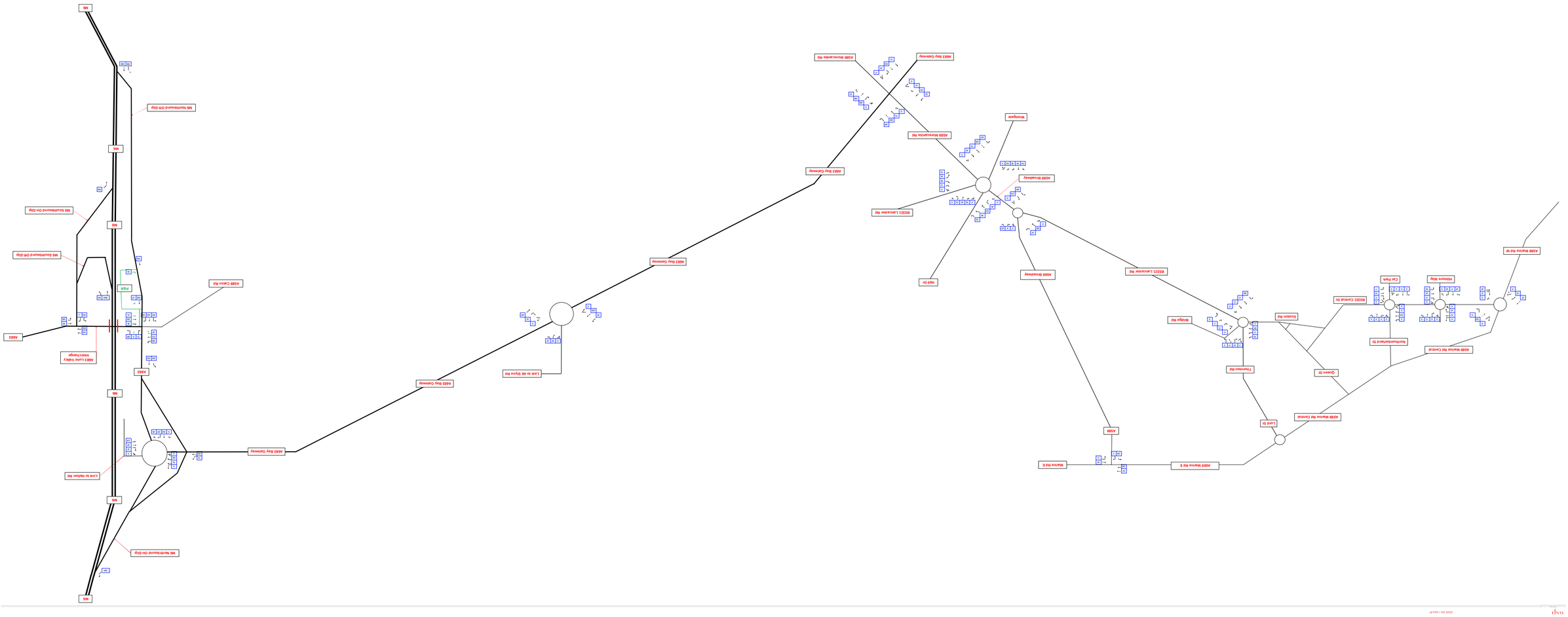
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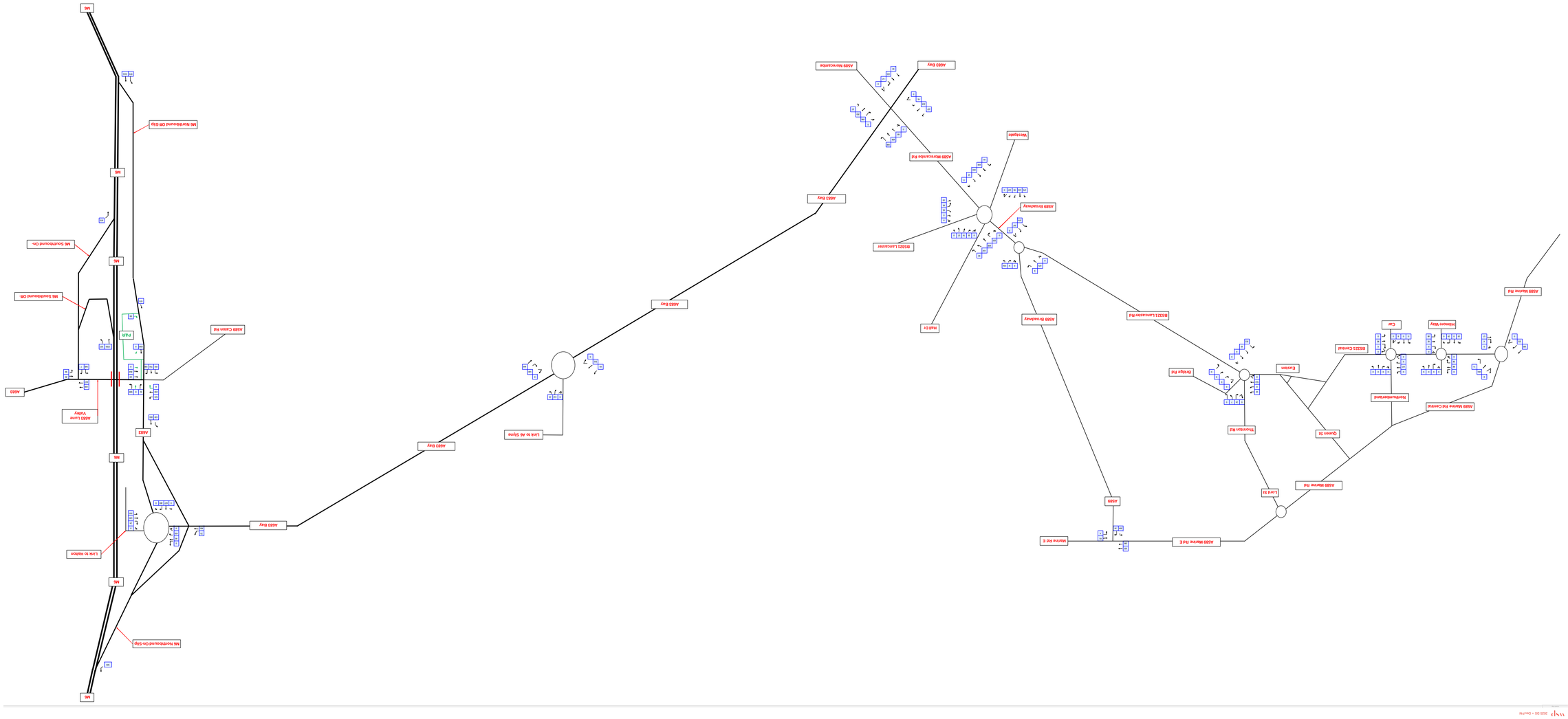
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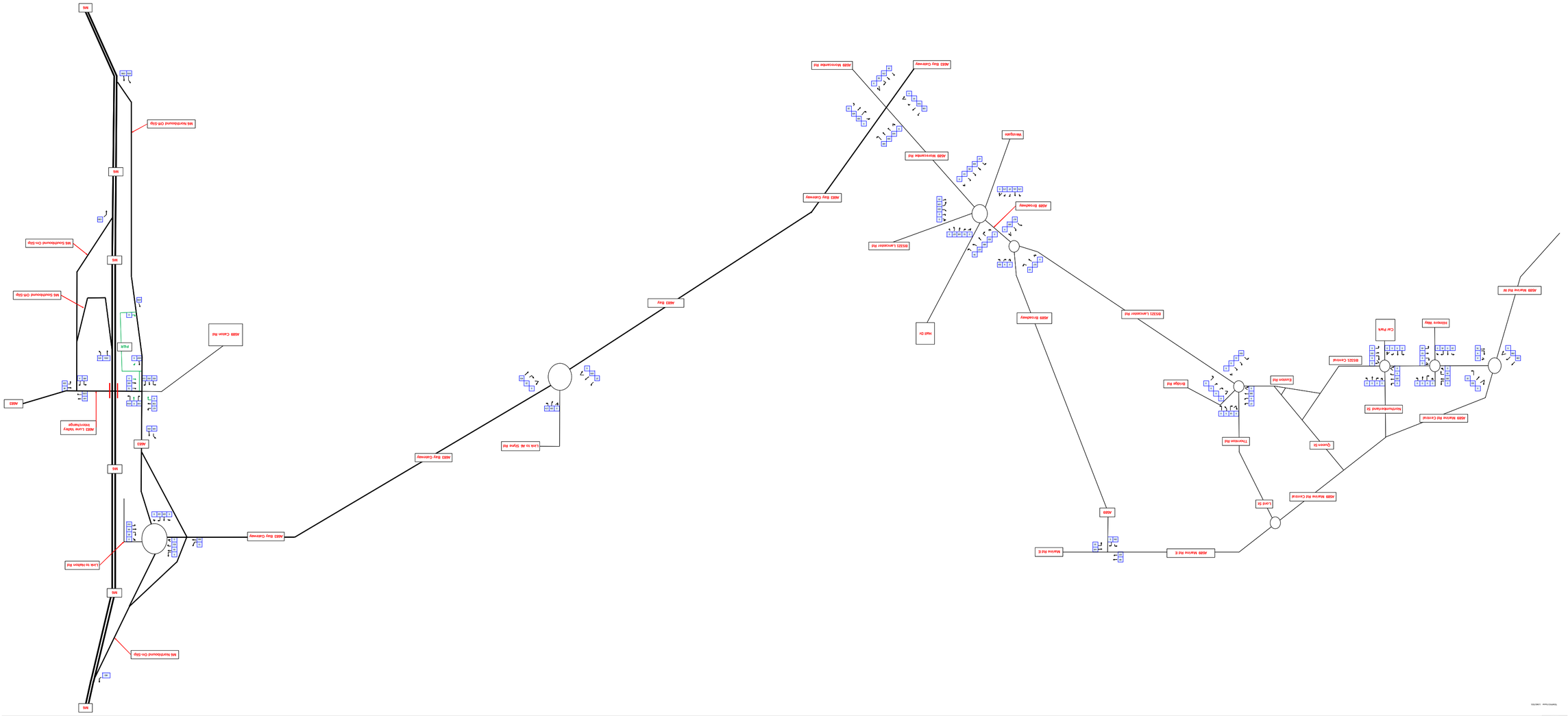
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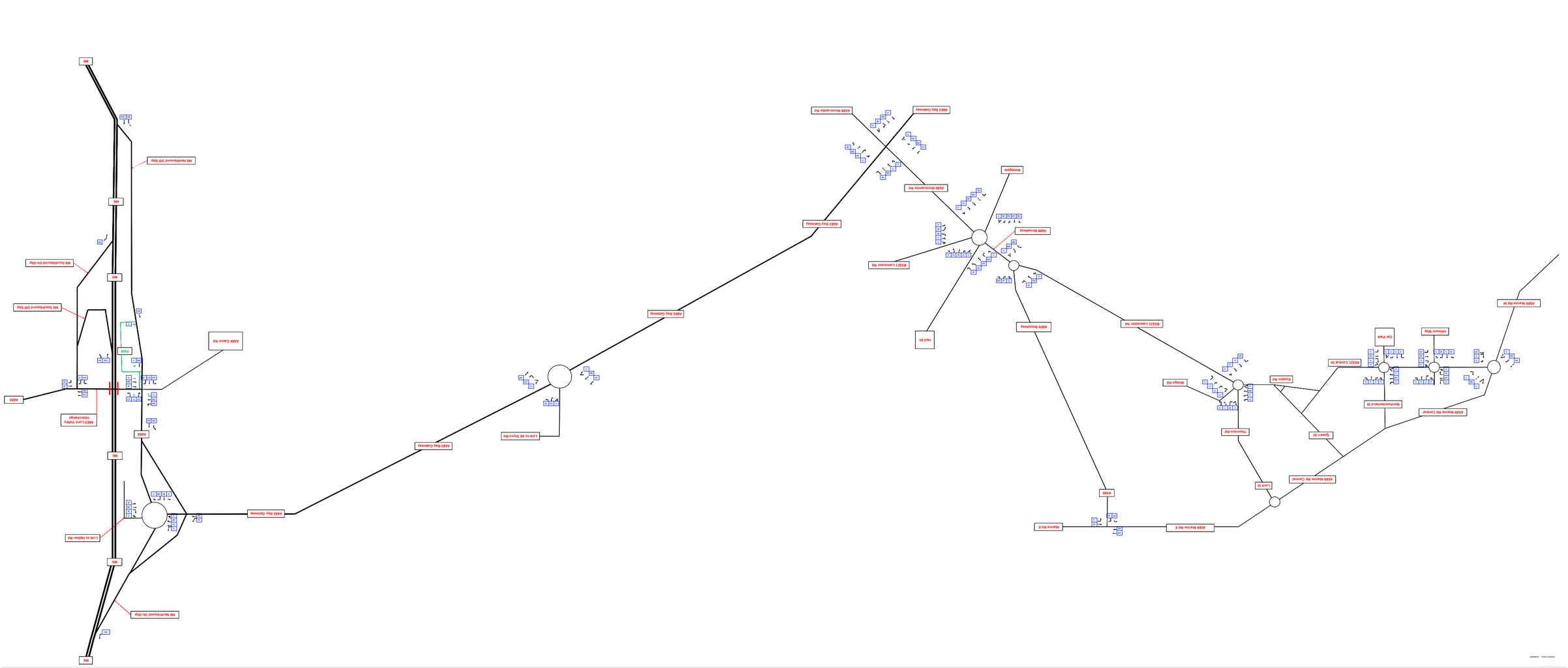

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M4
M4 Northbound Off-Slip
M4
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P&R
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L34a to A6 Spyce Rd
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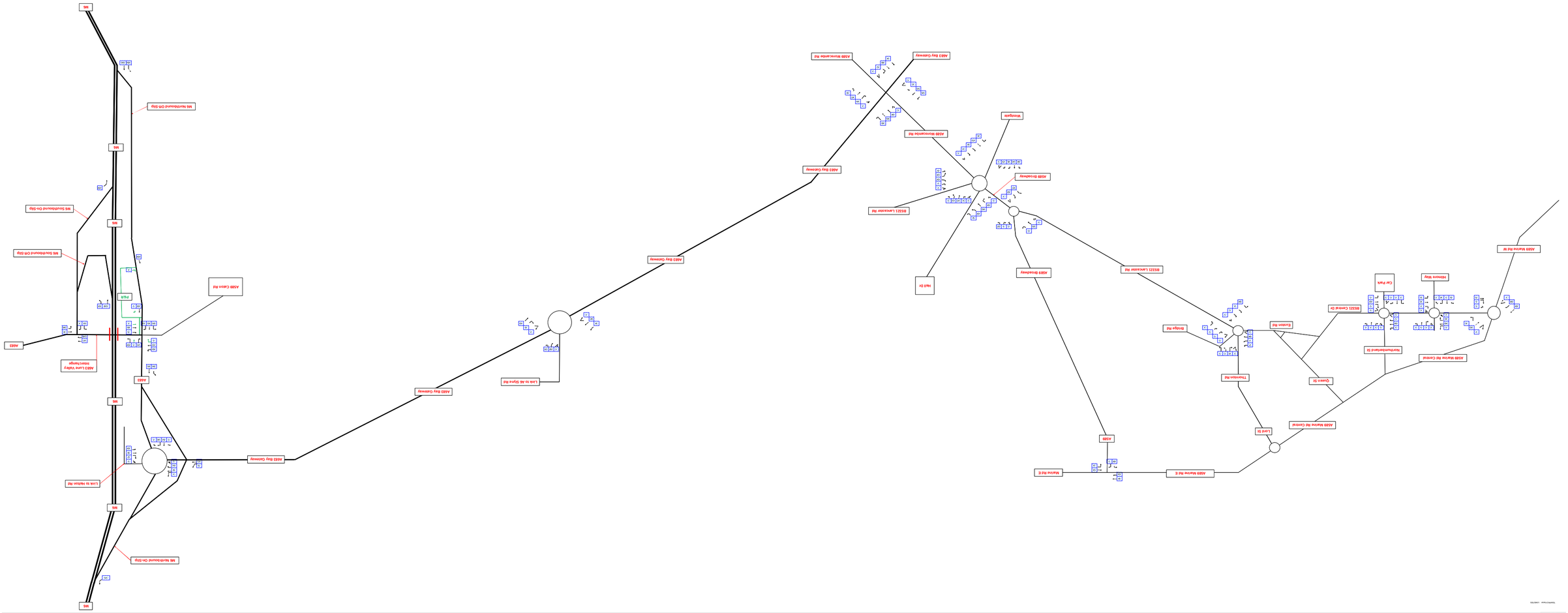

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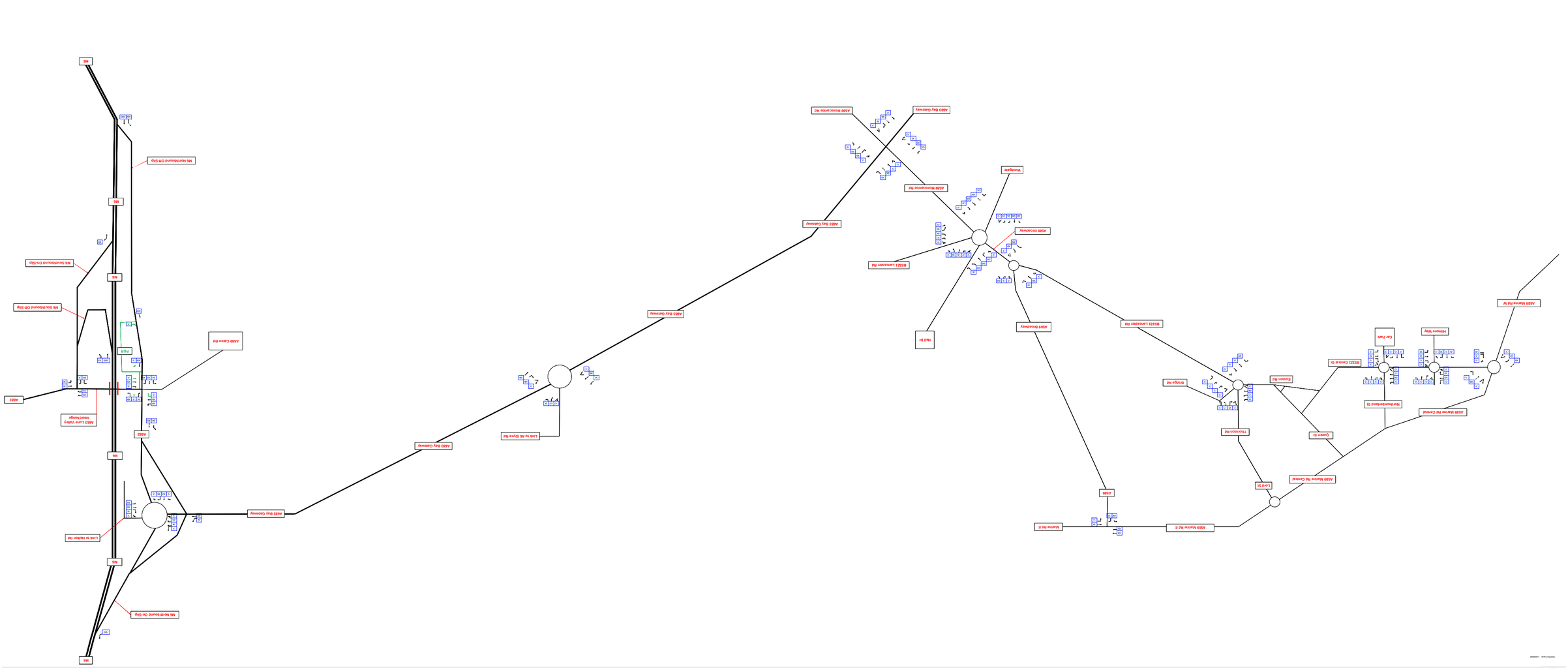

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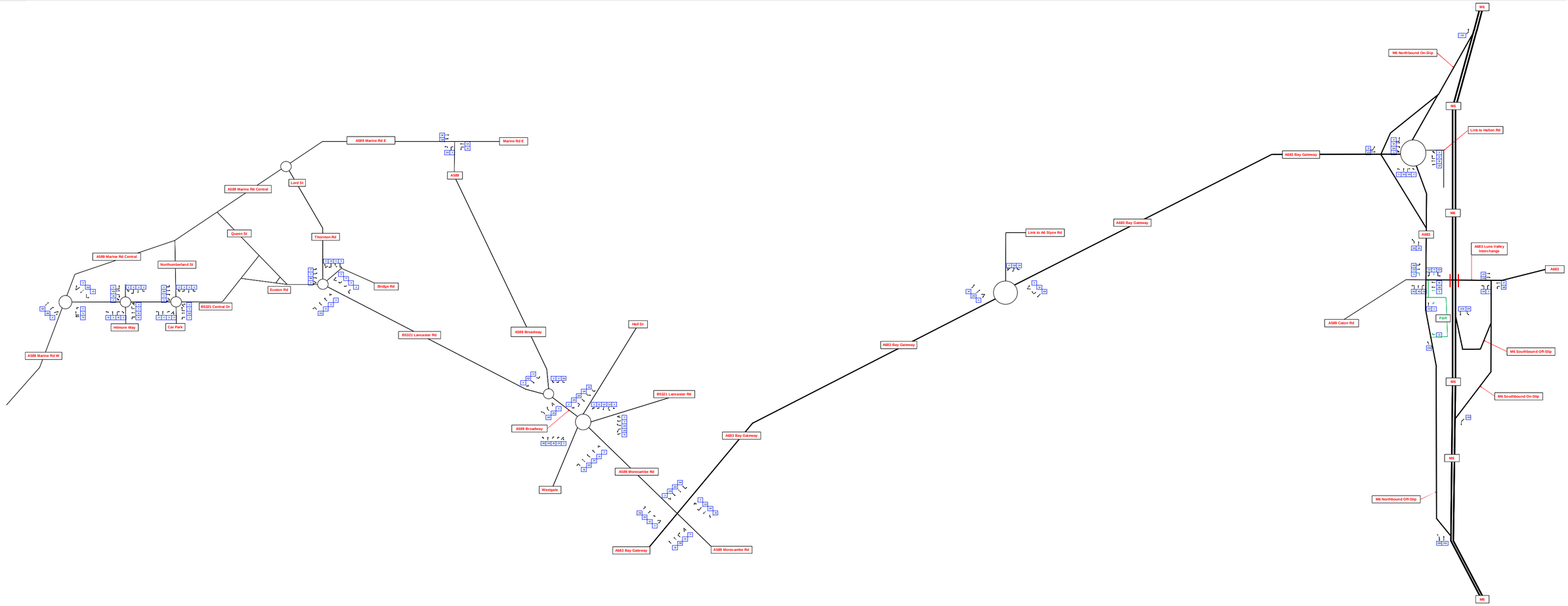
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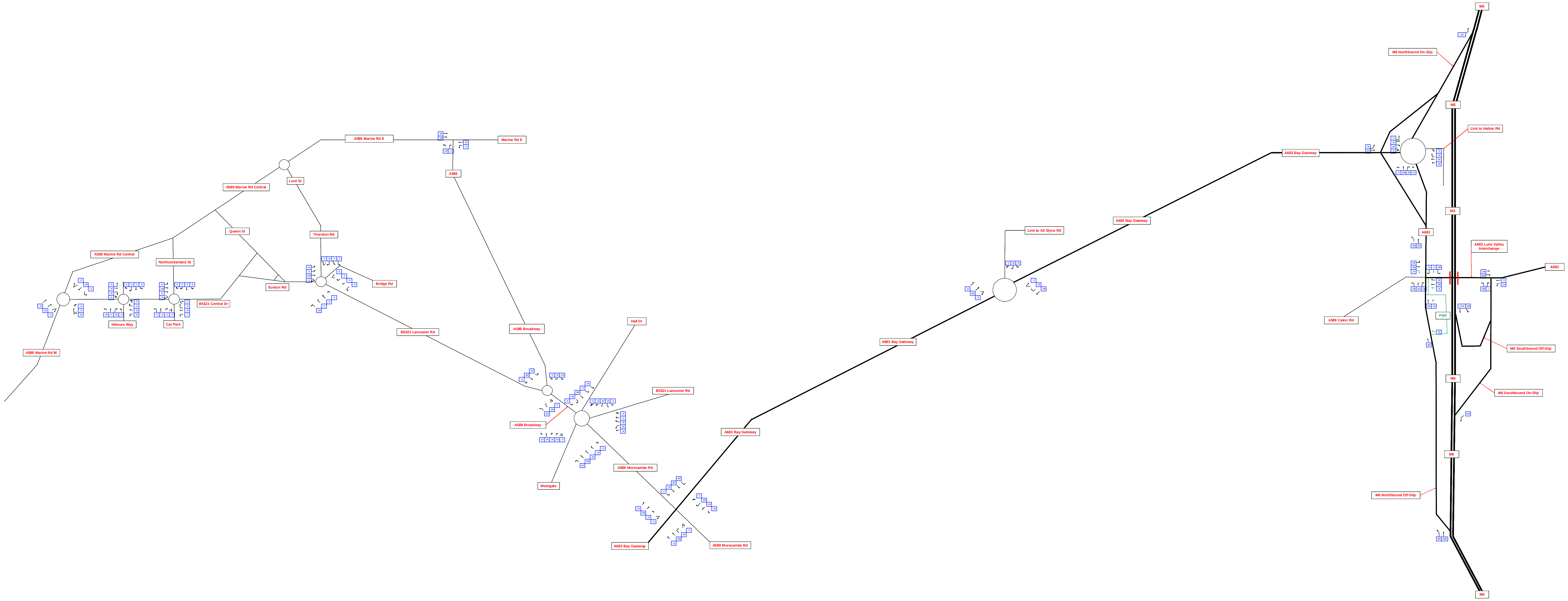

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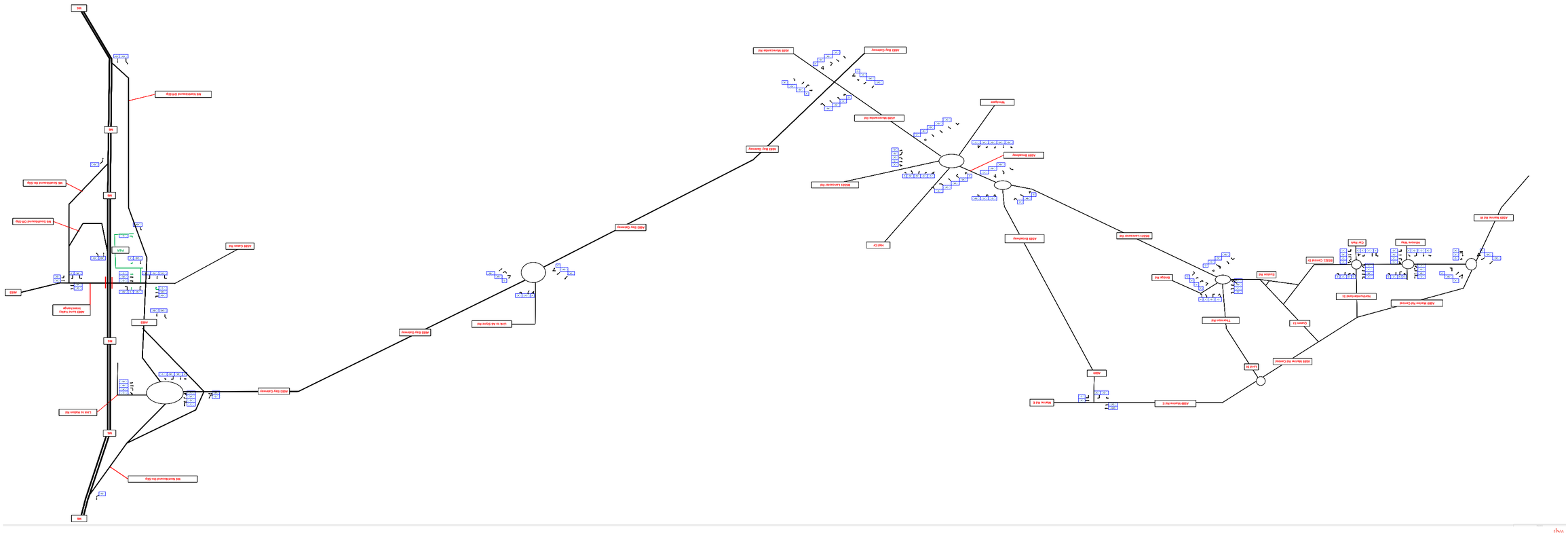

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Lune to Halton Rd
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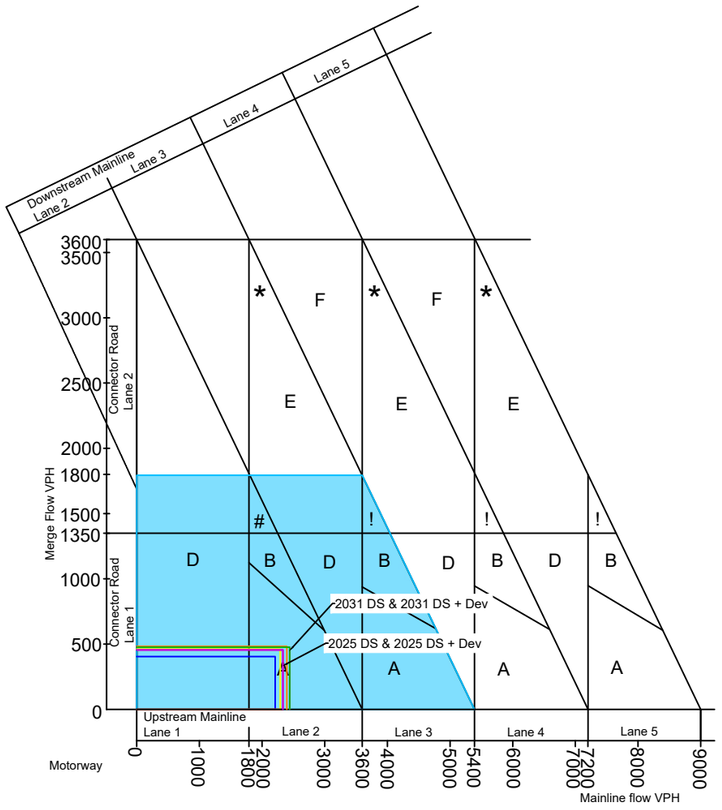

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Link to A6 Spine Rd
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Bridge Rd
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Hall St
Tewsley
A589 Worcester Rd


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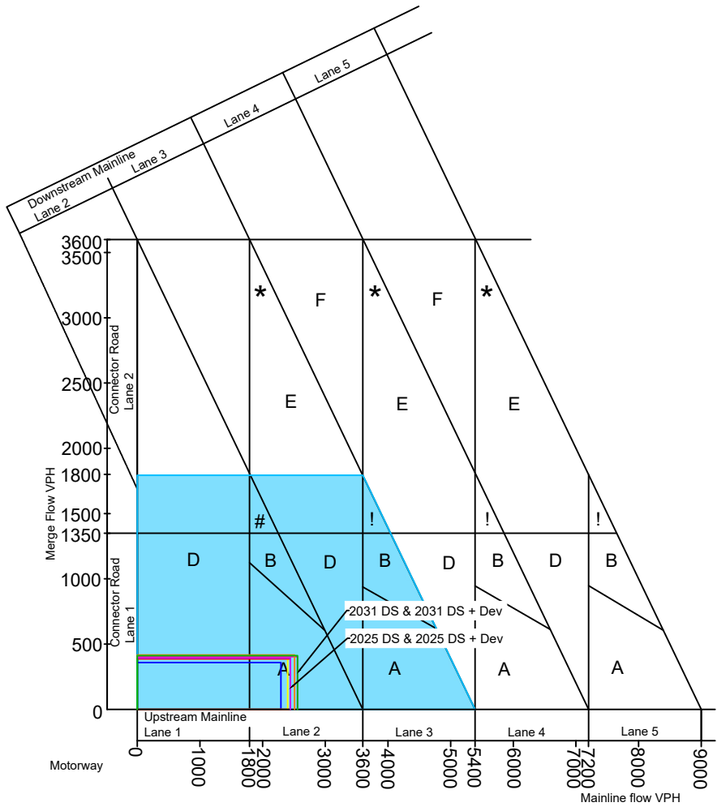

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Link to A6 Slyne Rd
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Link to Halton Rd
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A683
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P&R
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M6
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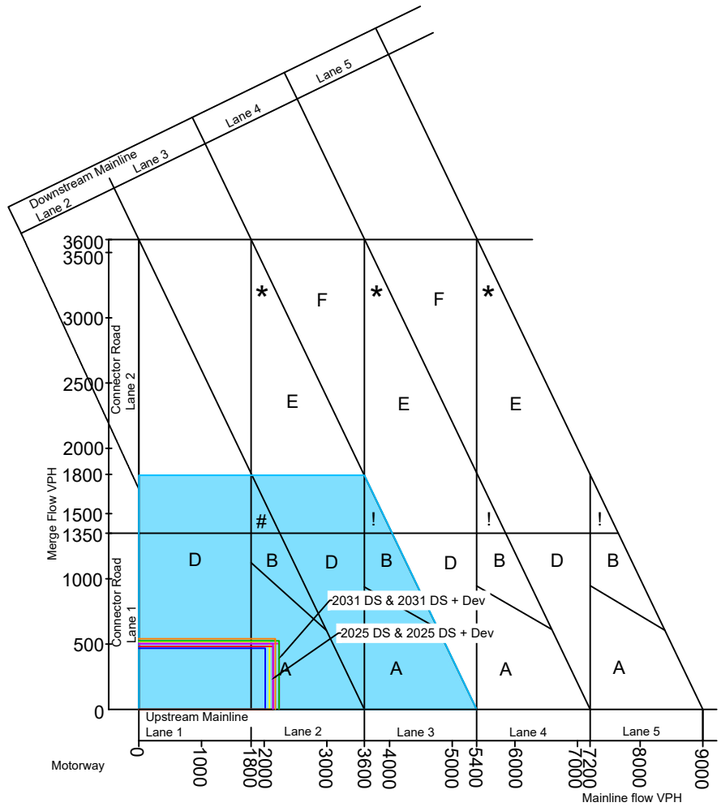
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IP



PM



Key:

- 2018
- 2025
- 2025 DS
- Existing Provision
- 2025 DS + Dev
- 2031
- 2031 DS
- 2031 DS + Dev

wsp

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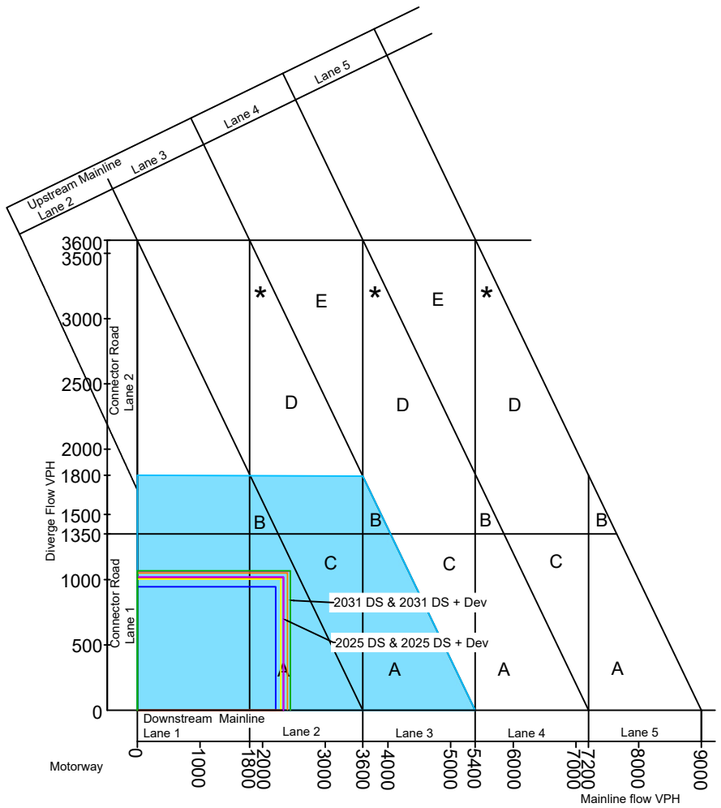
M6 / A683
MERGING-DIVERGING
ASSESSMENT

FIGURE No:

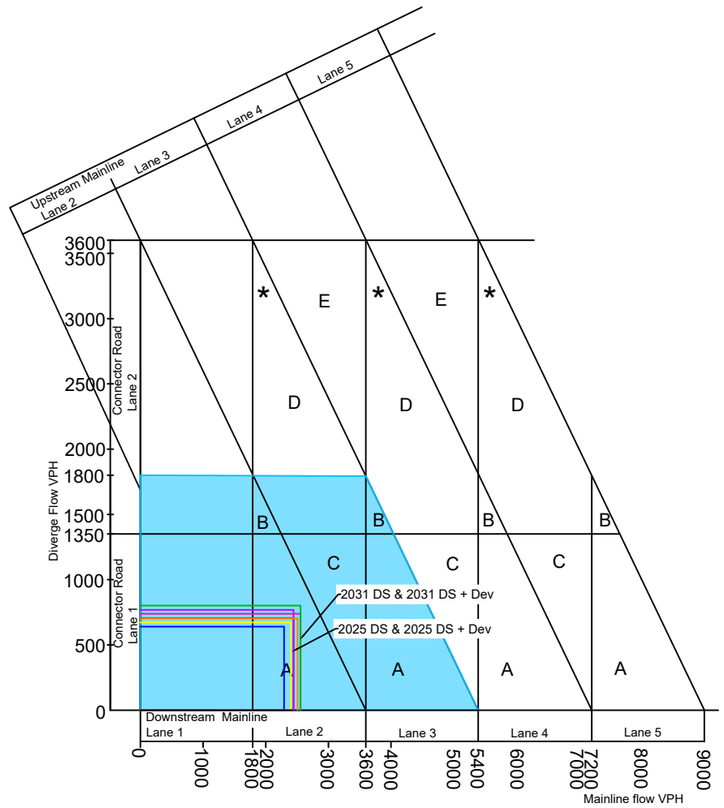
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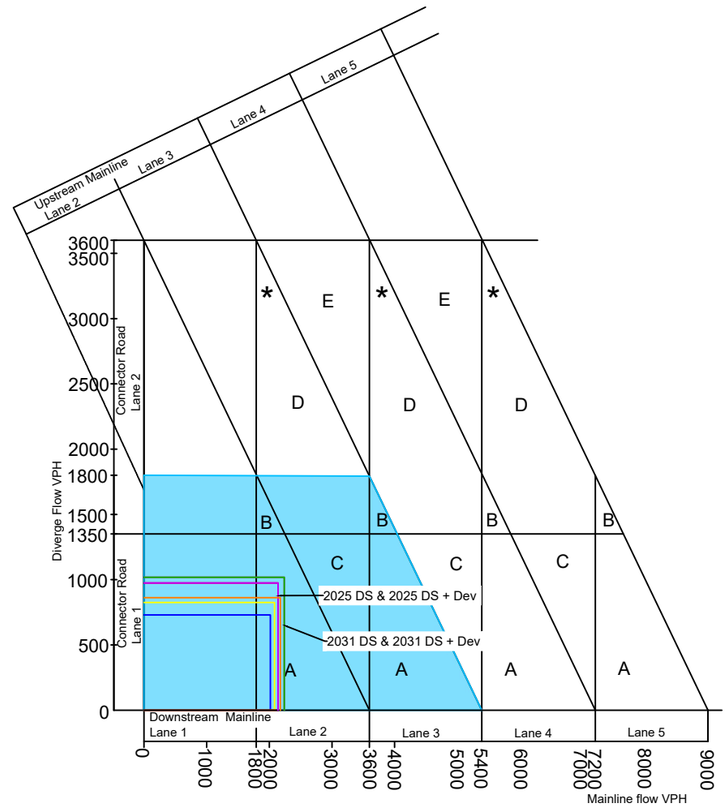
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IP



PM



Key:

- 2018
- 2025
- 2025 DS
- Existing Provision
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- 2031
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M6 / A683
MERGING-DIVERGING
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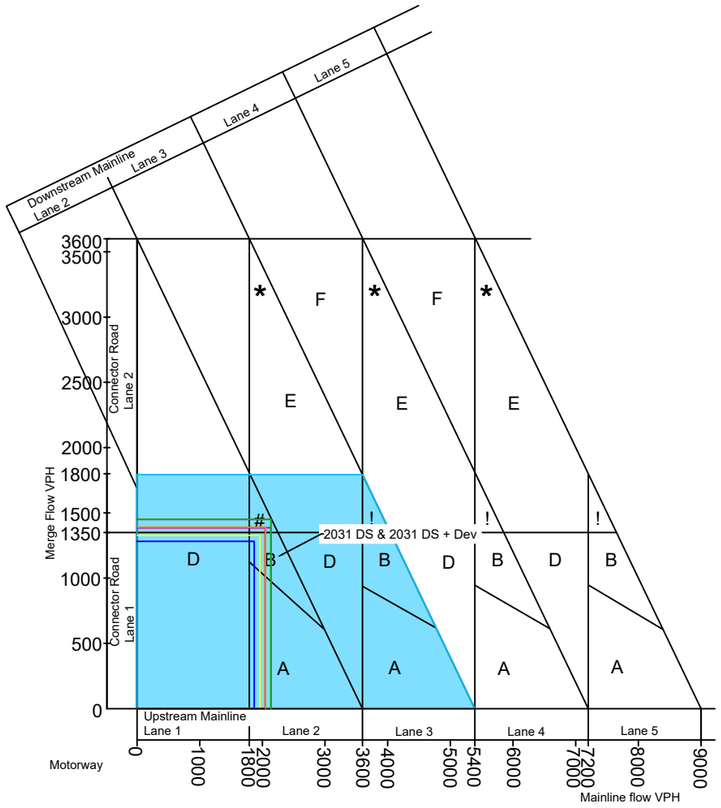
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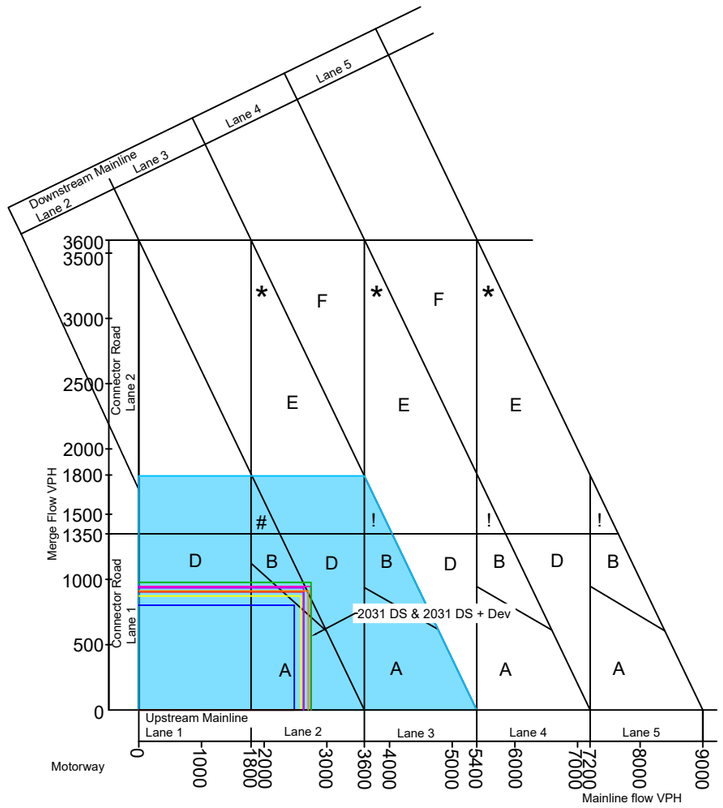
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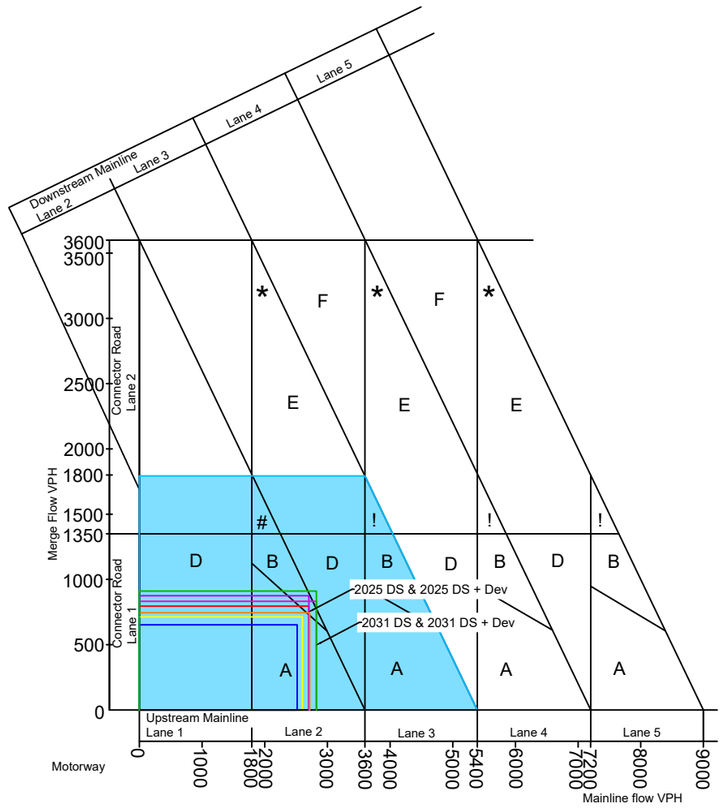
AM



IP



PM



Key:

- 2018
- 2025
- 2025 DS
- Existing Provision
- 2025 DS + Dev
- 2031
- 2031 DS
- 2031 DS + Dev

wsp

TITLE:

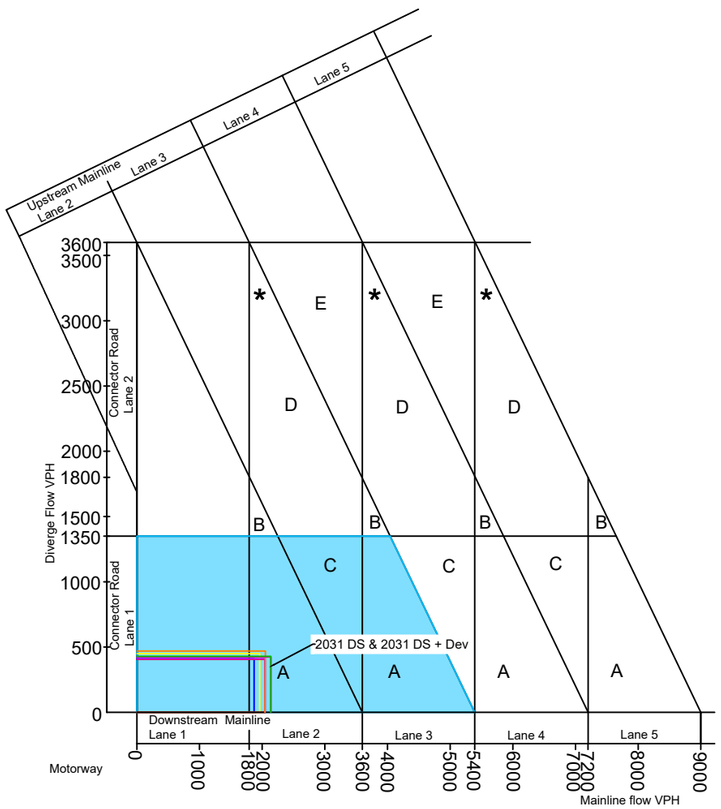
M6 / A683
MERGING-DIVERGING
ASSESSMENT

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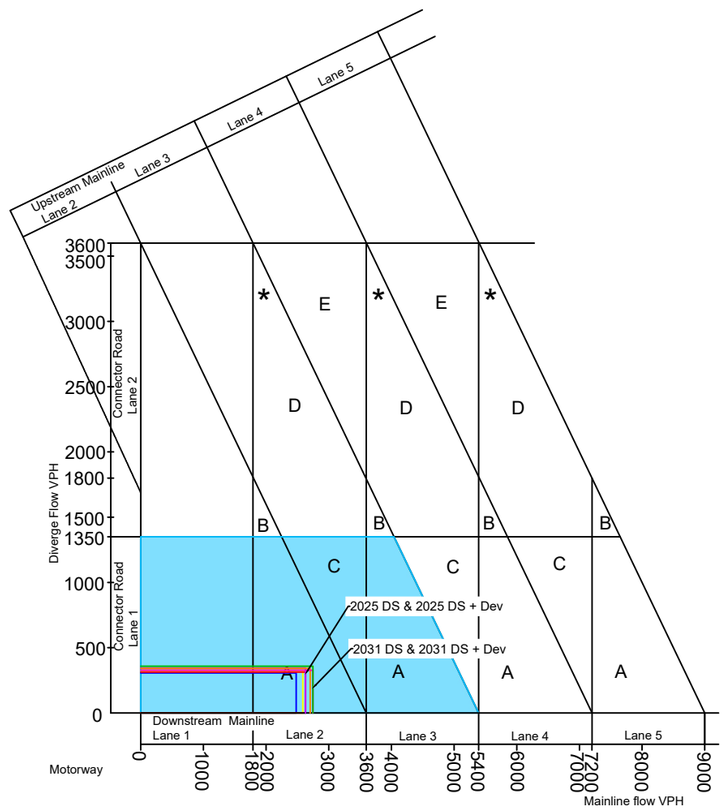
Southbound Merge

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70074SXX\70074551 - EDEN PROJECT NORTH\03 WIP\TP TRANSPORT PLANNING\05 ANALYSIS\03 HIGHWAYS\MERGE AND DIVERGE\EDEN - M6 A638 MERGE-DIVERGE ASSESSMENT\EDEN MERGING-DIVERGING ASSESSMENT V2.DWG, printed on 28 July 2021 16:32:54, by Brooks, Laura

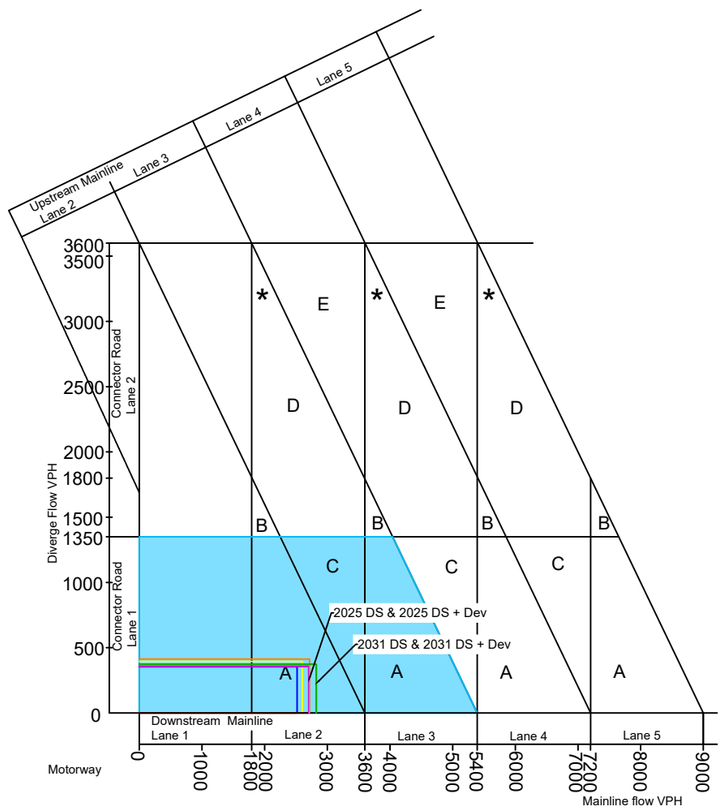
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IP



PM



Key:

- 2018
- 2025
- 2025 DS
- Existing Provision
- 2025 DS + Dev
- 2031
- 2031 DS
- 2031 DS + Dev

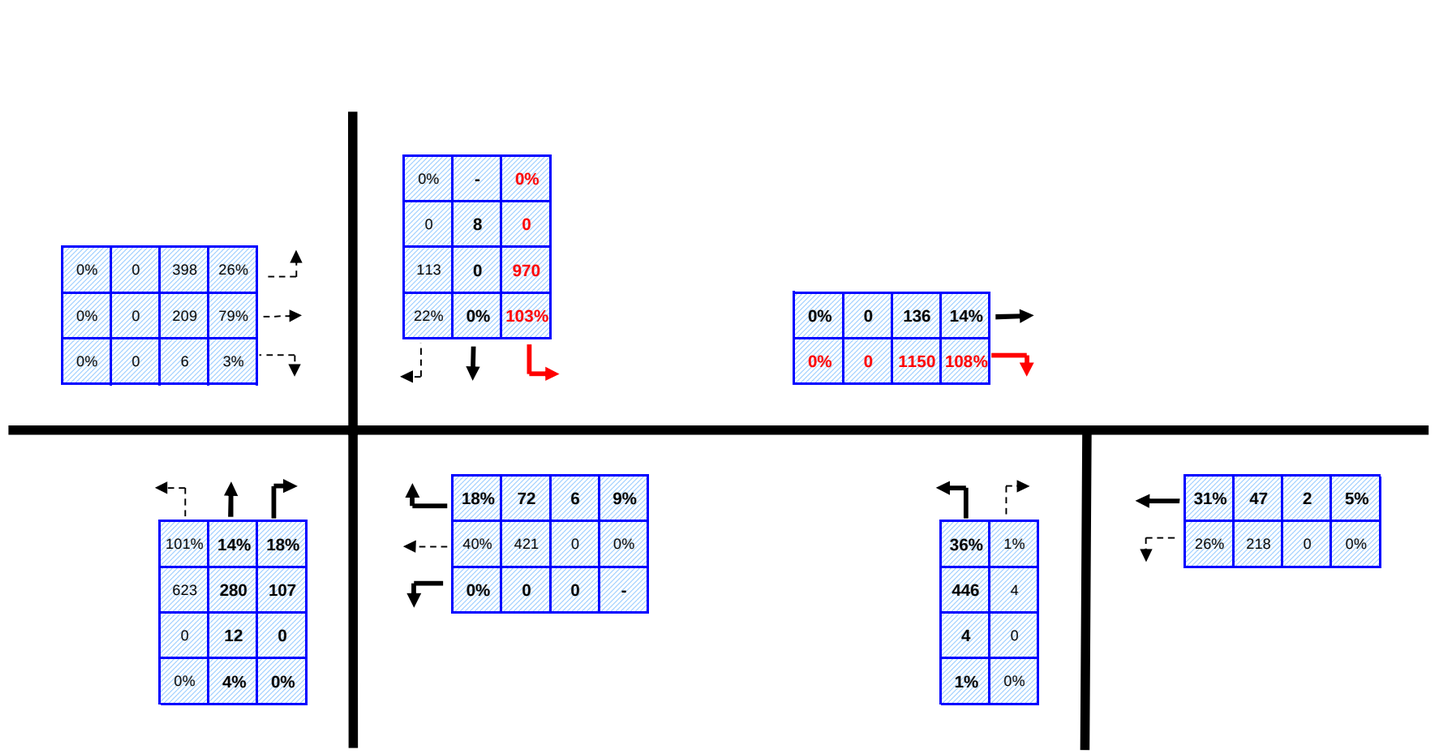
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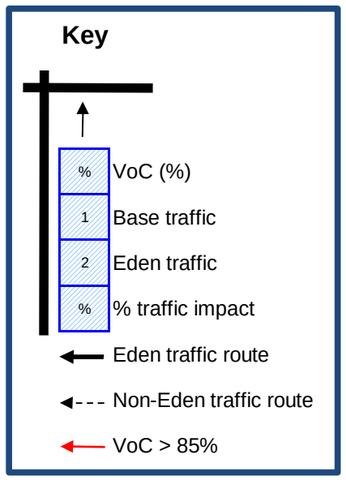
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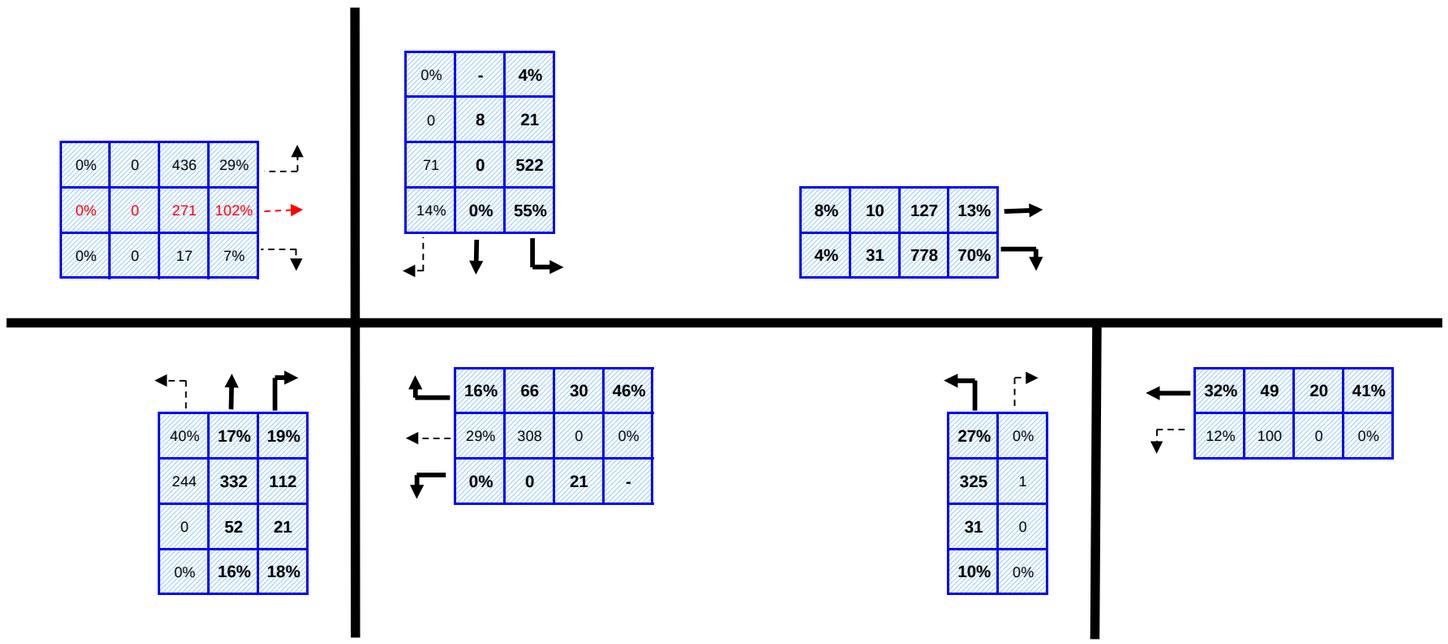
M6 / A683
MERGING-DIVERGING
ASSESSMENT

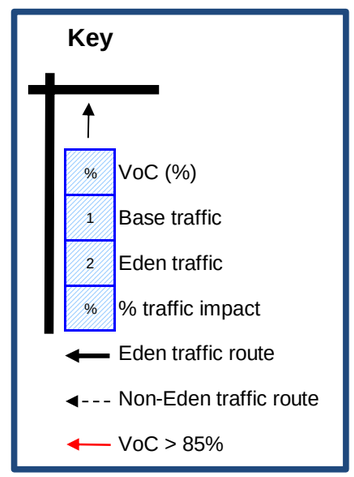
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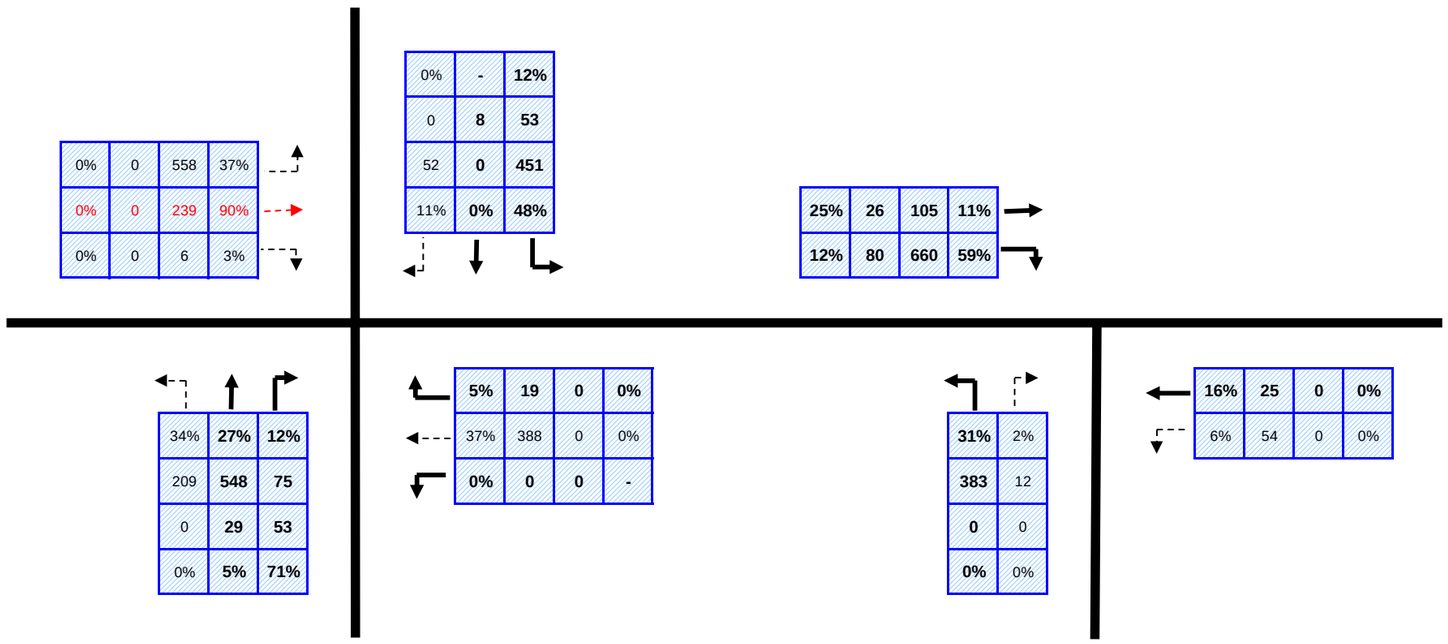
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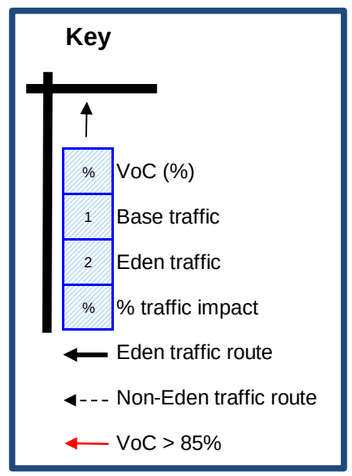

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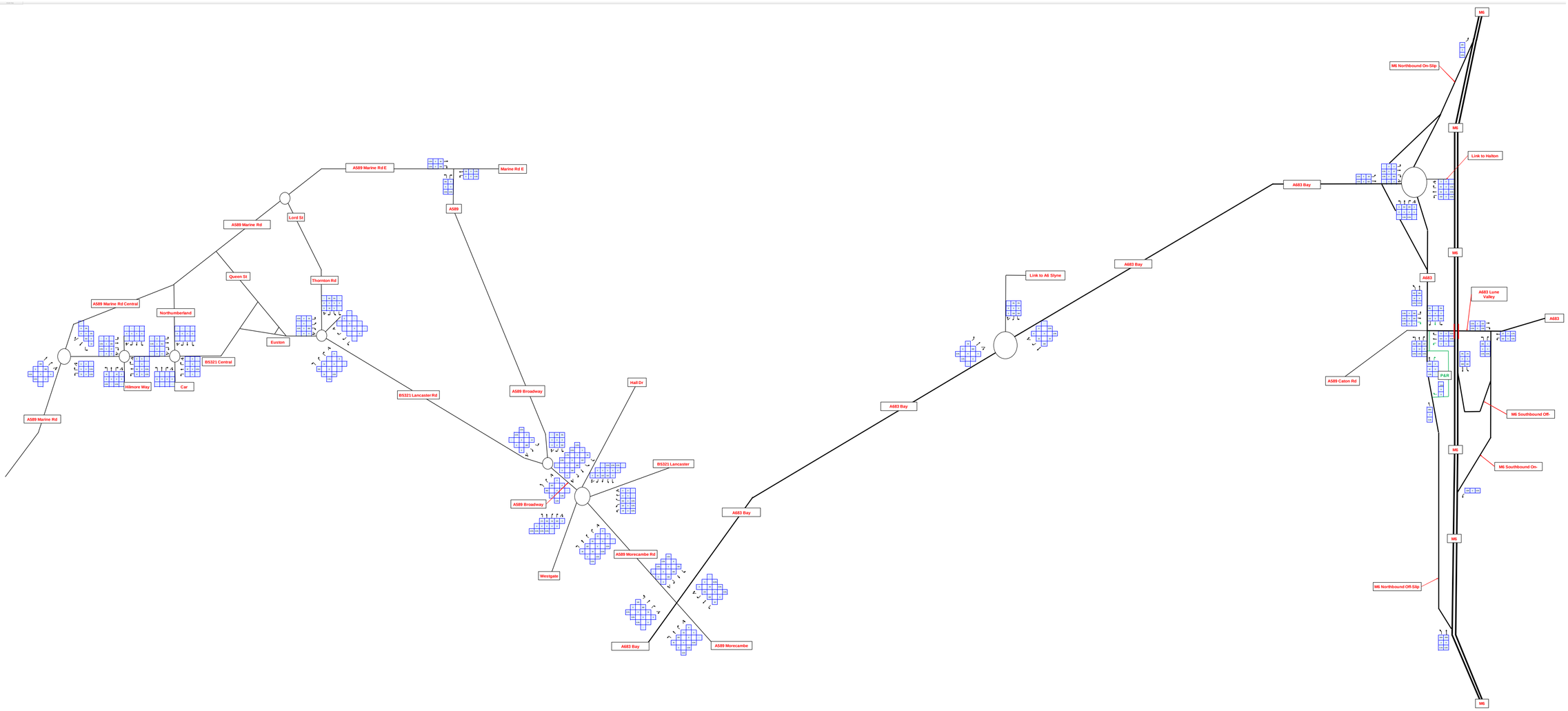

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2 Eden traffic
% % traffic impact
Eden traffic route
Non-Eden traffic route
VoC > 85%

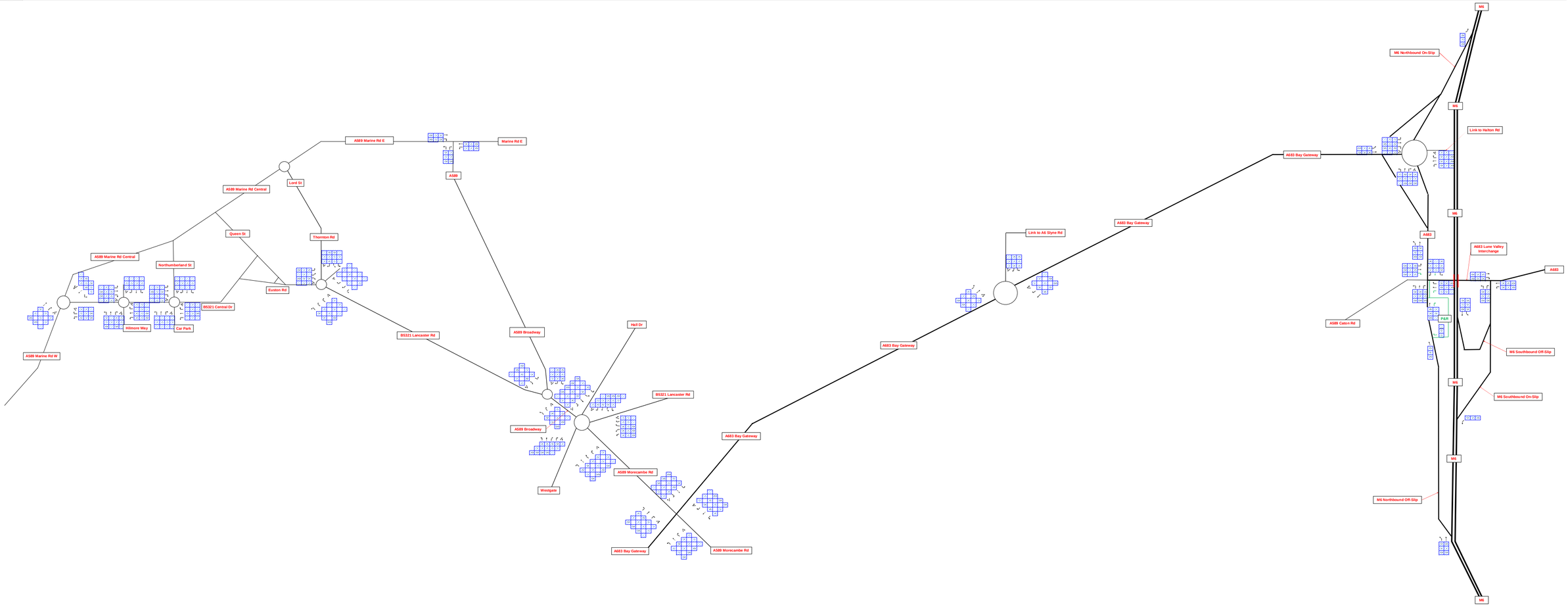

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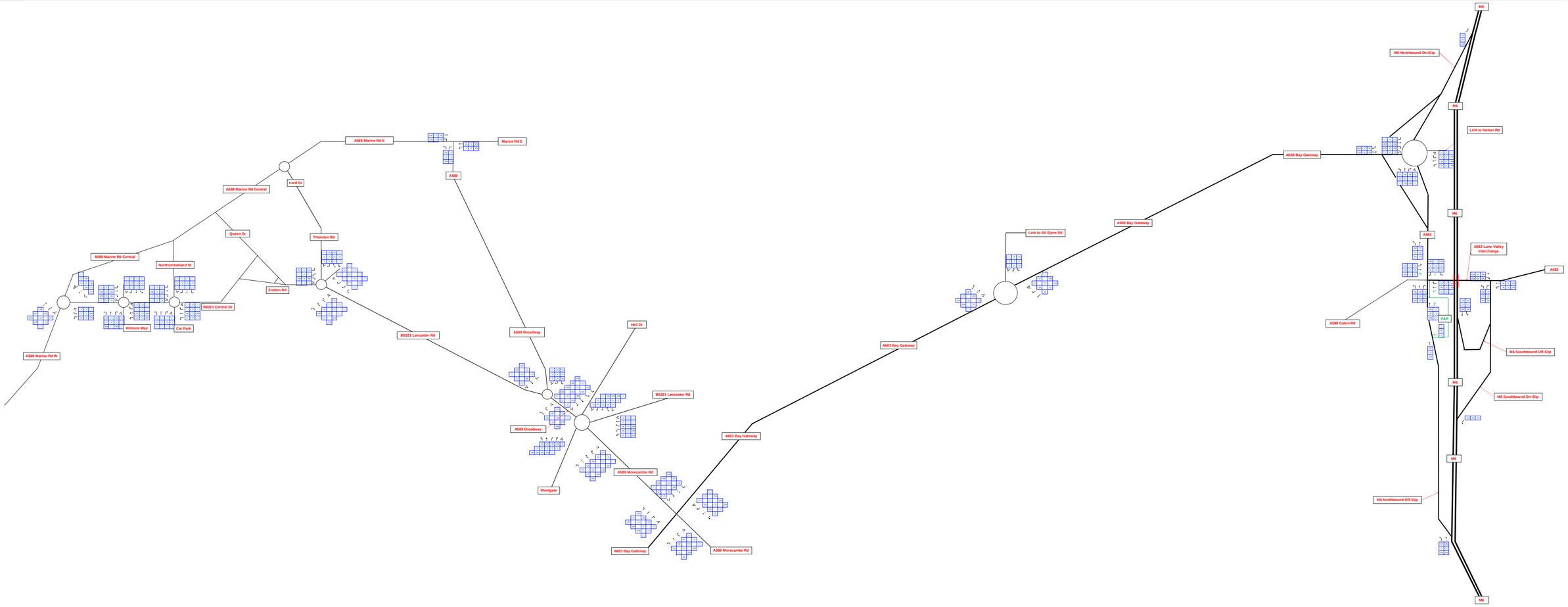

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Eden traffic route
Non-Eden traffic route
VoC > 85%

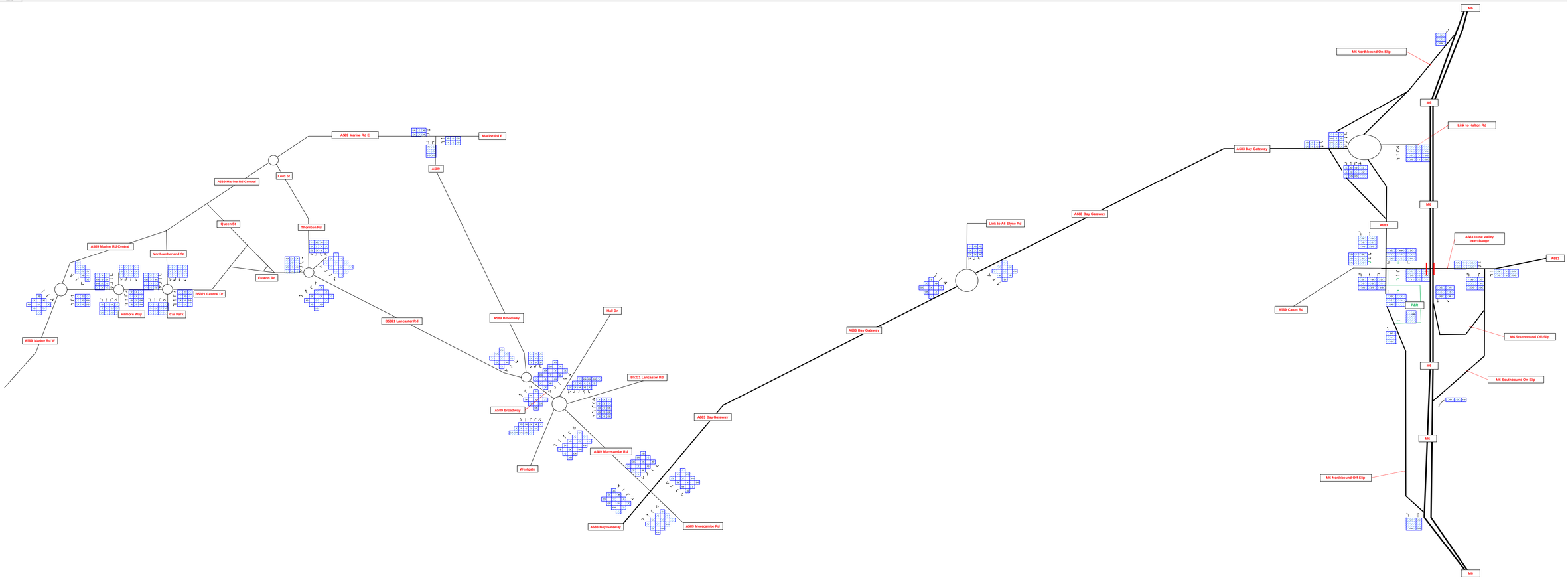

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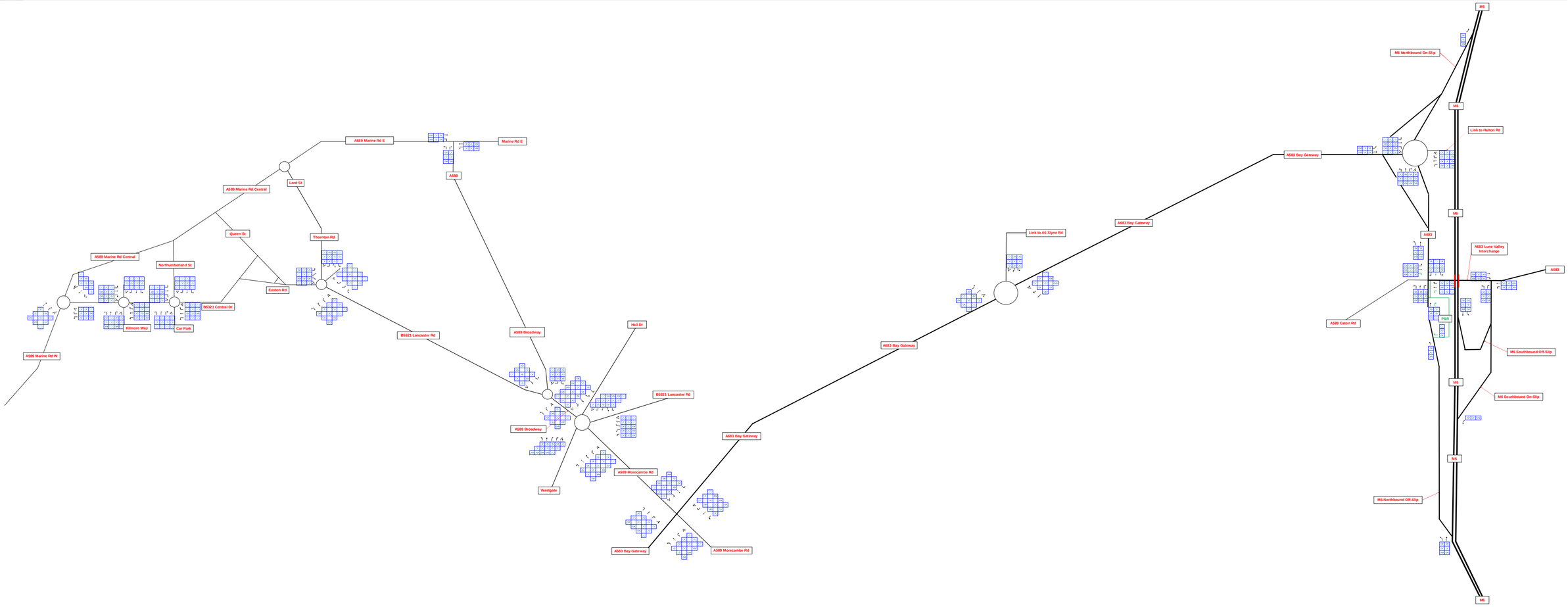

Key
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VoC (%)
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Base traffic
2
Eden traffic
%
% traffic impact
Eden traffic route
Non-Eden traffic route
VoC > 85%

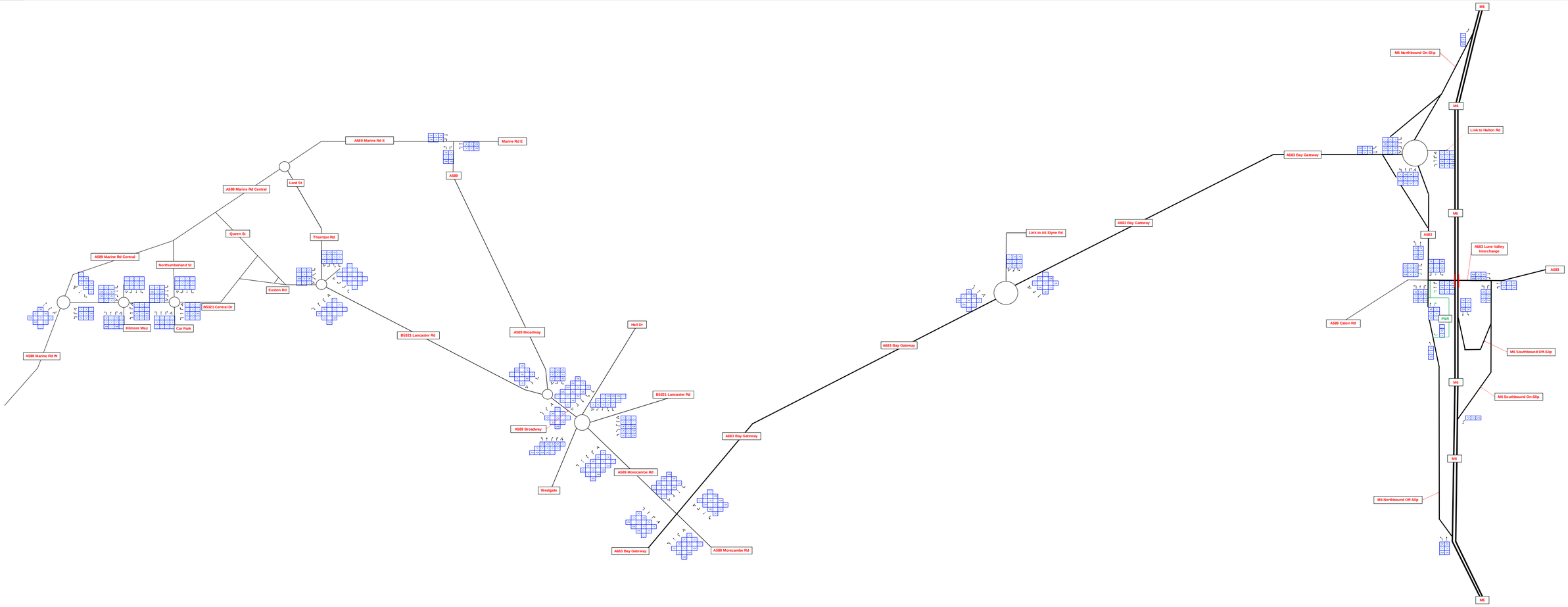

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Queen St
Thornton Rd
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Euston
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Car
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B5321 Lancaster Rd
A589 Broadway
Hall Dr
B5321 Lancaster
A589 Broadway
Westgate
A589 Morecambe Rd
A683 Bay
A589 Morecambe
A683 Bay
Link to A6 Slyne
A683 Bay
A683 Bay
M6
M6 Northbound On-Slip
M6
Link to Halton
M6
A683
A683 Lune Valley
A683
P&R
A589 Caton Rd
M6 Southbound Off-
M6
M6 Southbound On-
M6
M6 Northbound Off-Slip
M6


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Marine Rd E
A589
A589 Marine Rd Central
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Queen St
Thornton Rd
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Euston Rd
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Car Park
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Hall Dr
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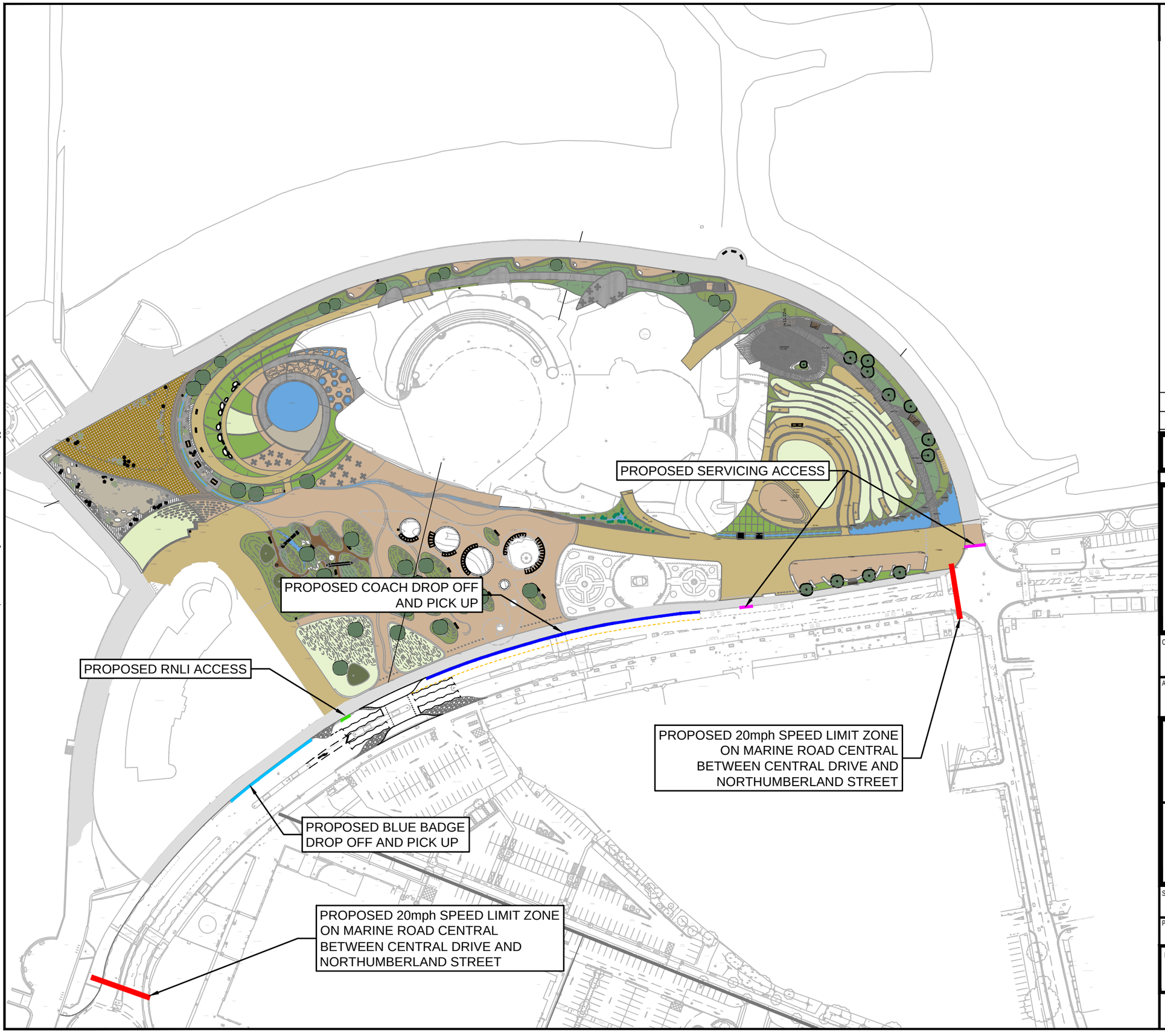

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M6 Southbound On-Slip
M6
M6 Northbound Off-Slip
M6

Appendix M

TRO PLANS

PUBLIC



DO NOT SCALE

Key:

- PROPOSED SERVICING ACCESS POINTS
- PROPOSED COACH DROP OFF & PICK UP
- PROPOSED BLUE BADGE DROP OFF & PICK
- PROPOSED RNLI ACCESS
- PROPOSED 20mph SPEED LIMIT ZONE

REV	DATE	BY	DESCRIPTION	CHK	APP
A	10/08/2021	APF	FIRST ISSUE	APF	APF

DRAWING STATUS: S2 - FOR INFORMATION

8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT: EDEN PROJECT INTERNATIONAL

ARCHITECT: GRIMSHAW / TEP

PROJECT: EDEN PROJECT NORTH

TITLE: TRO PROPOSALS

SCALE @ A3:	CHECKED:	APPROVED:
1:1,500	APF	APF

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70083611	APF	APF	July 21

DRAWING No: 3611-SK-102 REV: A

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DO NOT SCALE

Key:

- DOUBLE YELLOW LINES
- BUS STOP
- BUS LAYOVER BAY
- TAXI PARKING BAY
- DISABLED PARKING BAY

REV	DATE	BY	DESCRIPTION	CHK	APP
A	21/07/2021	APF	FIRST ISSUE	APF	APF

DRAWING STATUS:
S2 - FOR INFORMATION

wsp

8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:
EDEN PROJECT INTERNATIONAL

ARCHITECT:
GRIMSHAW / TEP

PROJECT:
EDEN PROJECT NORTH

TITLE:
EXISTINGS TROs

SCALE @ A3:	CHECKED:		APPROVED:
1:1,500	APF		APF
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70083611	APF	HJ	July 21

DRAWING No:	REV:
3611-SK-104	A

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Appendix N

CONSTRUCTION MANAGEMENT PLAN INFORMATION

PUBLIC

Item 1.2

Logistics Requirements: Other Main Contractor Facilities – Off site Logistics Hub



Item 1.2

Logistics Requirements: Other Main Contractor Facilities – Contractor travel / Car Parking



Notes

Travel to site will be via a mix of Public transport, Crew buses, car sharing and single user cars. No car parking will be provided on site. Parking options;
Public car parks
Within off-site logistics hub if available.

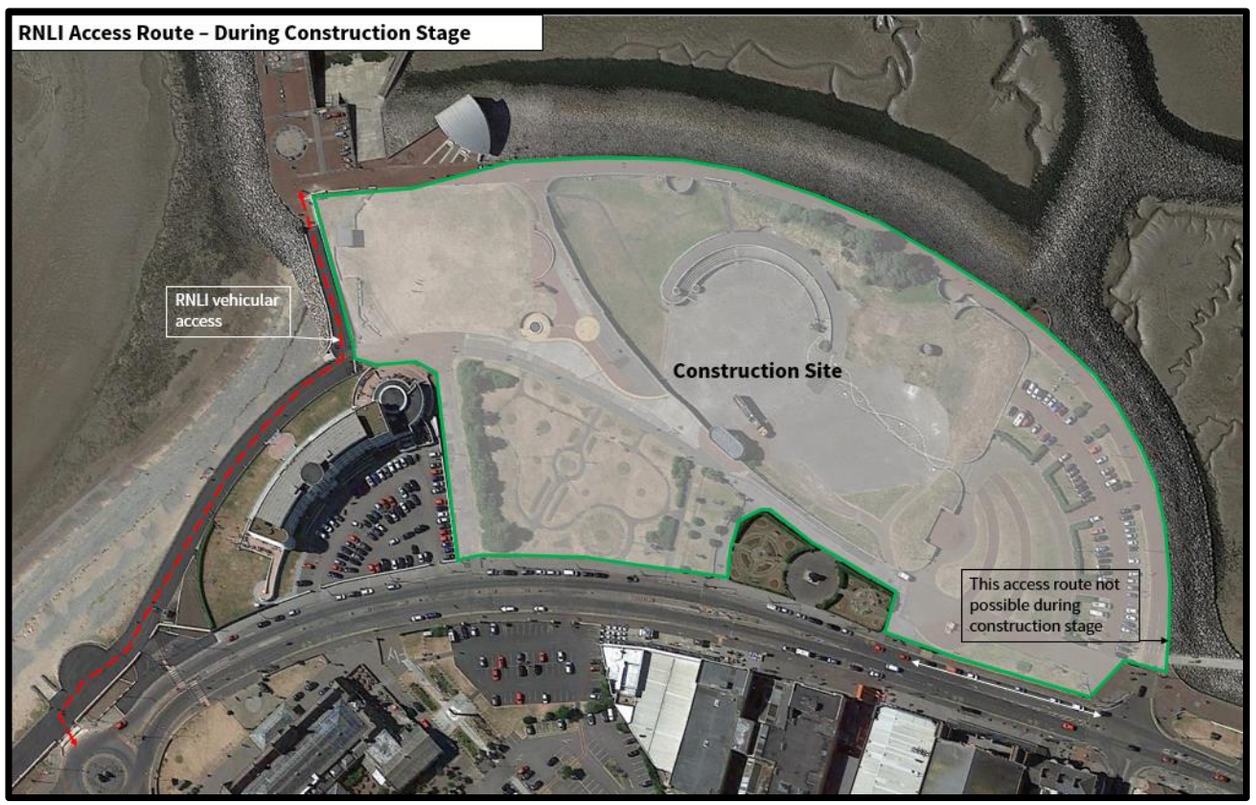
Logistics Requirements: RNLI Access

Item 3.2

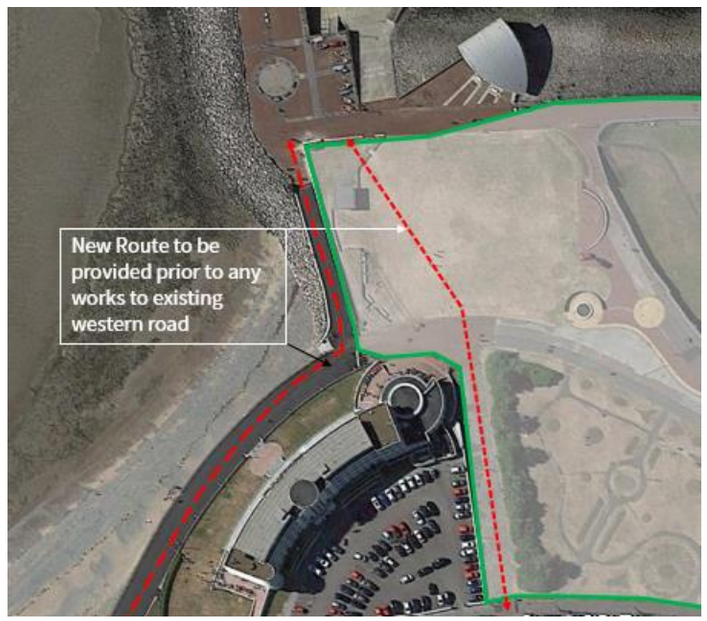
Access to RNLI

During the course of the Project where the northern promenade is unavailable for vehicular traffic, the most practical route for vehicles to access the RNLI area looks to be via the approach from the west accessed from the roundabout at the junction of Marine Road West & Marine Road Central.





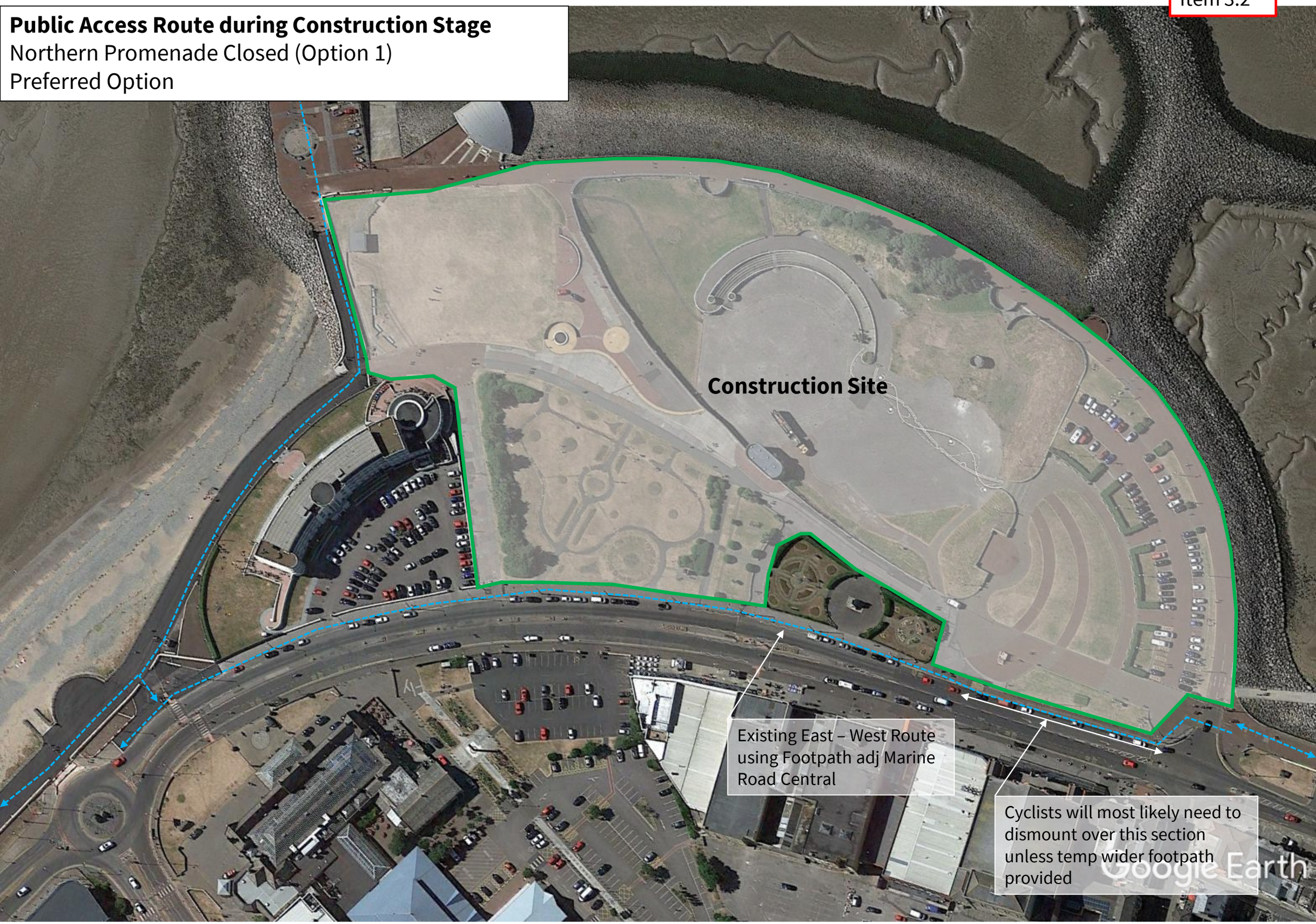
There is a section of this west route leading up to the RNLI building which falls within the Planning Application boundary so there will need to a phased arrangement whereby the new proposed RNLI route is made available in order for the hard landscaping works on the western approach to be carried out.



Public Access Routes - Existing

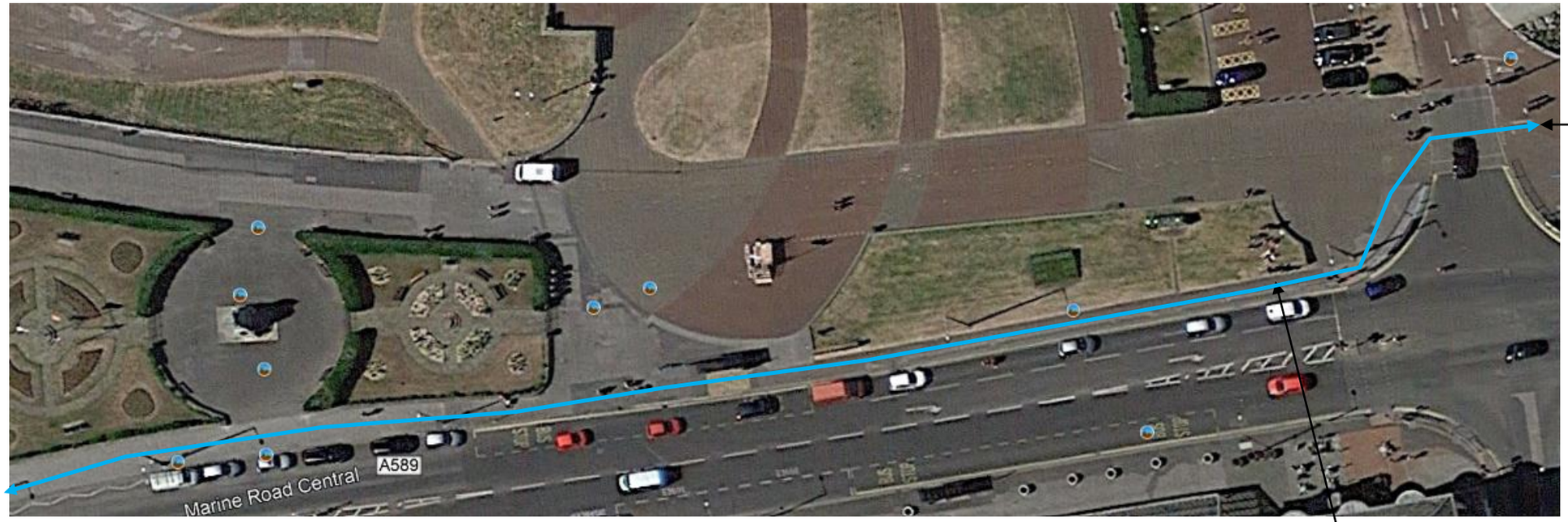


Public Access Route during Construction Stage
Northern Promenade Closed (Option 1)
Preferred Option



Item 3.2

Public Access Route during Construction Stage
Southern Footpath on Marine Road



This route kept open at all times





Logistics Requirements: Site Haul Roads & Material Storage

Preferred option with closure of Promenade

Construction access from highway

Haul road to building perimeter

One way route

RNLI Building

Materials storage Area

Soil storage option (volume?)

Rhythm Machine

Natural Observatory

Four Seasons Garden

Visitor Centre

Bay Hall

Bay Glade

Rhythm Garden

Materials storage Area

Arena Stage

Gate control

RNLI access route

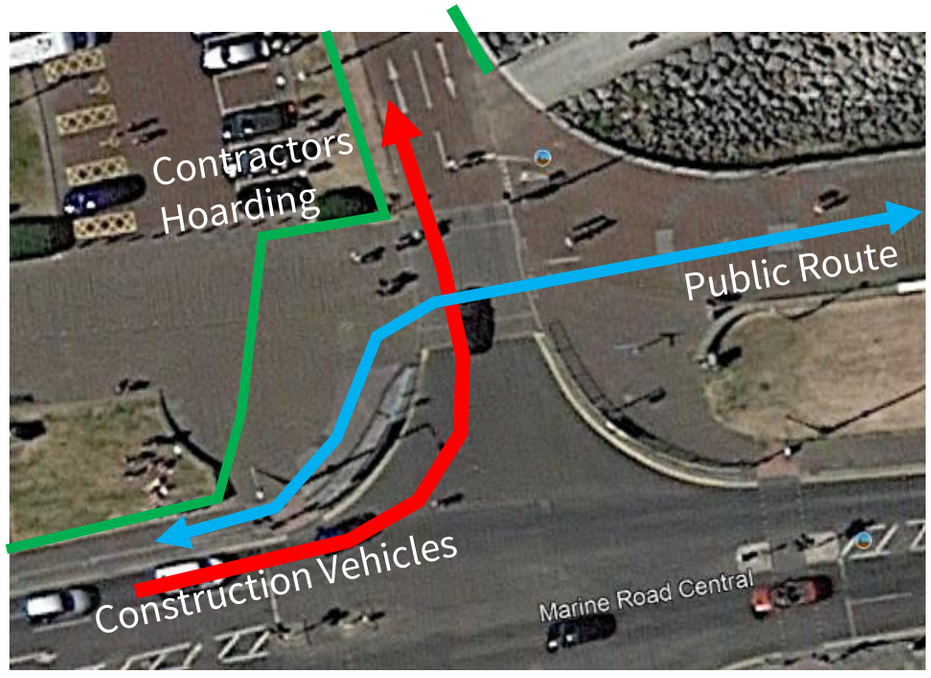
Soil storage option (volume?)

Complete mounding once on site accommodation removed (if on site)

Midland Hotel

Winter Garden

Logistics Requirements: Management of the Vehicular Access Gate / Public Crossing point



There will be one construction vehicular access gate for all incoming and outgoing construction vehicles located at the East boundary of the site using the existing formed access off the highway. This will be separate from the construction pedestrian access into the site which will be provided at the West of the site. The proposed vehicular access into the site crosses the path of Public East – West access along Marine Road. Construction vehicular access into the site from the highway will be controlled via the existing traffic light system however the existing public crossing is not controlled by the traffic control system with fading give way line markings present to advise pedestrians to give way to traffic.

Management of the construction vehicle access

- Ensure contractors operate the CLOCS (Construction Logistics and Community Safety) standard
- Contractor to produce comprehensive construction logistics plan (CLP)
- Delivery management carried out by Gate control operative who will be present at all times whilst the site is open
- The surface condition and cleanliness of the entry gate will be maintained and checked at the start and completion of every working day.
- Pull off area provided within the site boundary for checking vehicles into site, removing the potential for vehicles to block the pedestrian crossing.
- Contractor to implement a booking in system for deliveries ensuring that all deliveries are planned and spread out during the working day to avoid any backing up on the highway.
- Potential to utilise an off-site logistics hub for storing materials which could be delivered into site out of peak public movement periods.
- Delivery instructions to suppliers and sub-contractors to reinforce the need for caution at the site entry position.
- On entering the site, delivery driver inductions will be given which will reinforce rules for accessing and exiting the site.
- Strict zero tolerance towards any driver / supplier seen as not operating to the required standard.
- White lining on the existing crossing to be re-painted and supplemented with contractor signage leading up to and at the public crossing point.

Enabling Works

Scope

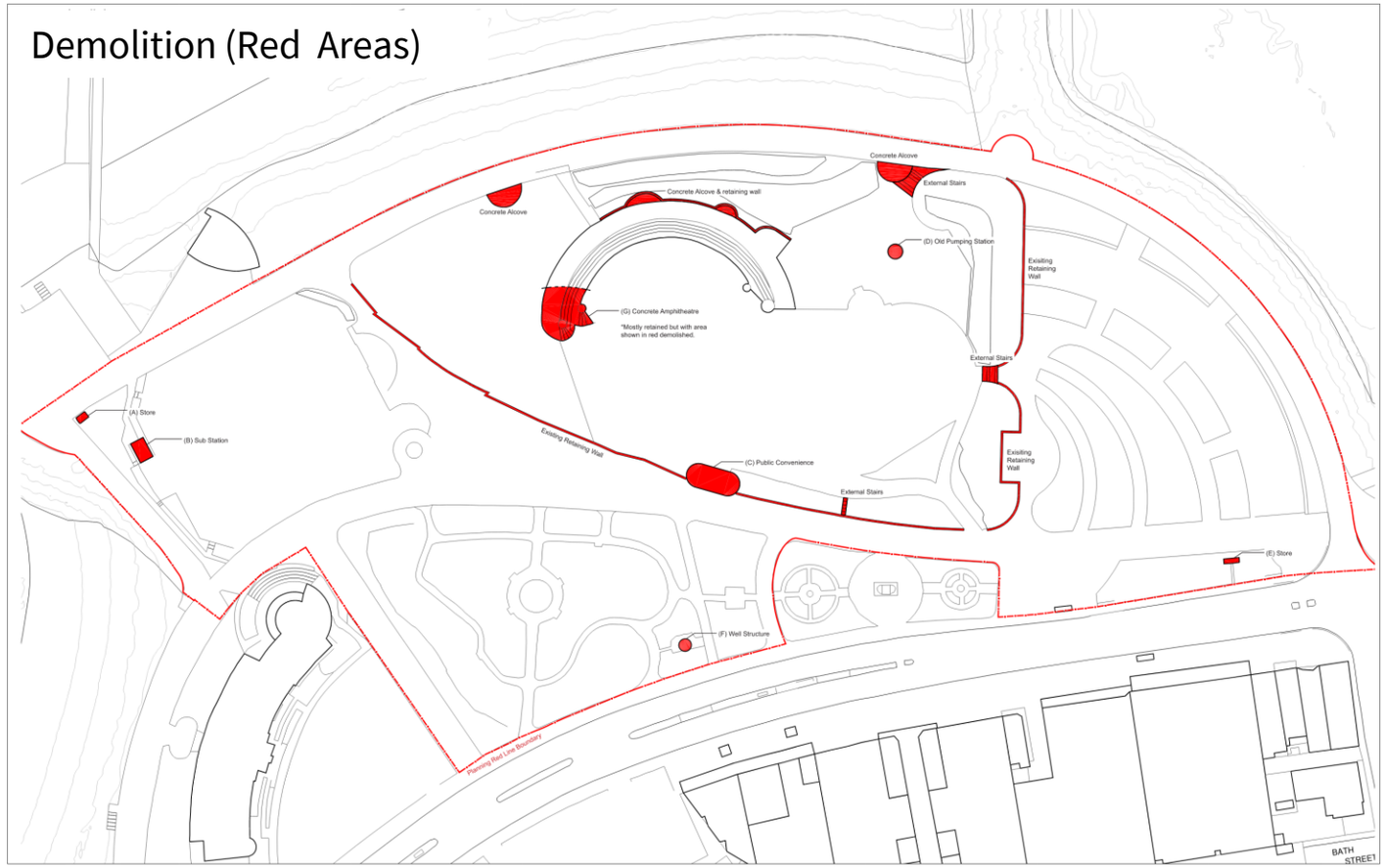
Site Establishment
- Erect site hoardings inc vehicular and pedestrian access gates.
- Establish pedestrian diversions off-site inc signage
- Prepare for main contract office, messing and welfare facilities.

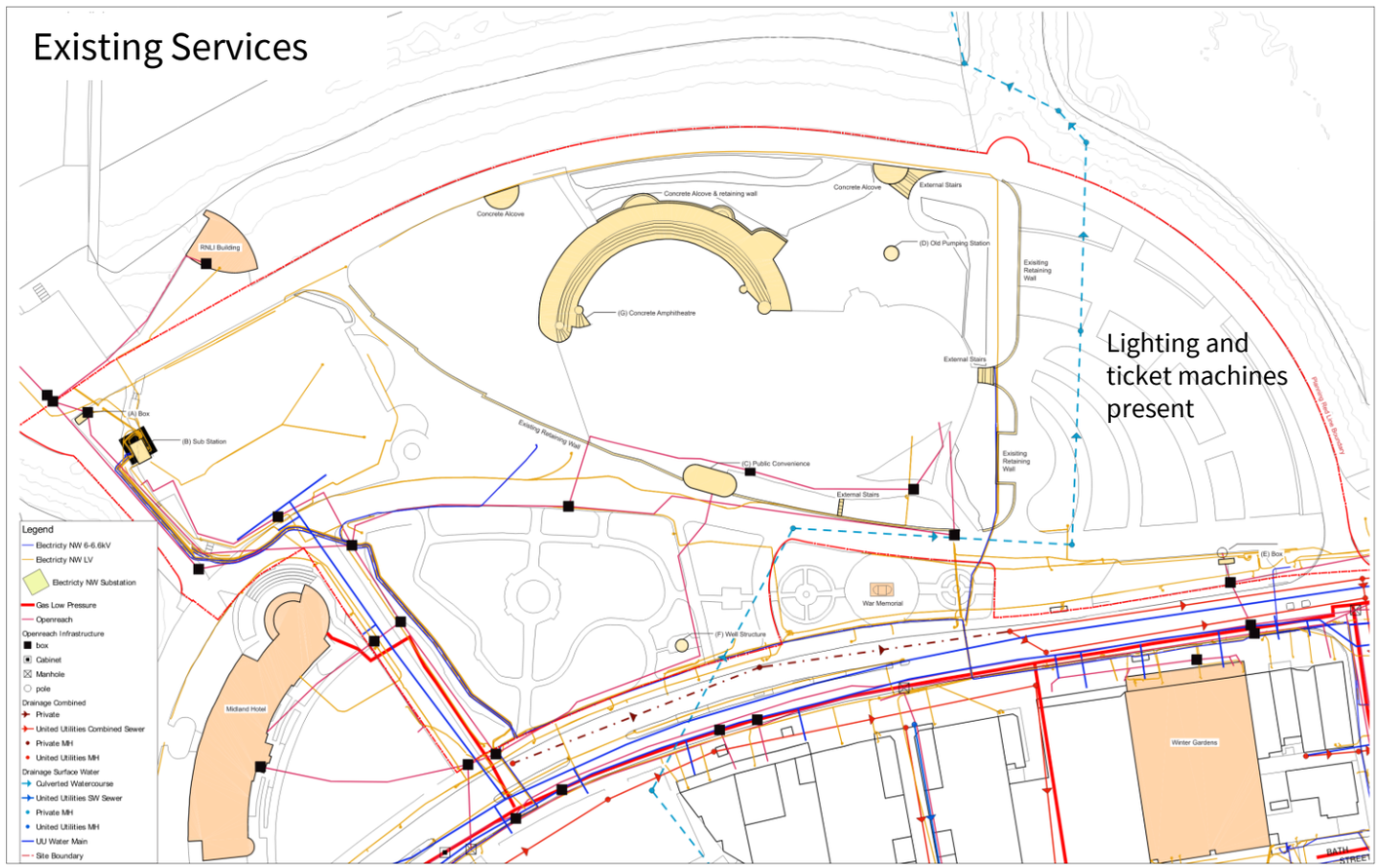
Demolition
- A number of small structures across the site
- Existing redundant retaining walls
- Hard pavings

Service Diversions
- SW Culvert
- Isolations of LV supplies / re-routing off site of supplies feeding other buildings.
- Isolations of comms / re-routing off site.
- Re-routing of Gas supply to Midland Hotel off-site?

Earthworks
- Tree & Shrub removal (may have ecological constraints?)
- Site strip across the site
- Earthworks to formation levels
- Preparation of Piling Platforms

Programme Duration
We would suggest a programme period of **16 weeks** to cover the above works with a minimum of 3 weeks Mobilisation period + possible advance orders for statutory service diversions.
Service isolations to demo areas to precede commencement of demo and excavations.
Culvert diversion works should be able to commence immediately working at the east of the site although services to car park lighting and ticket machines will need to identified and isolated (not shown on existing utilities drawing).
If culvert diversion works are not required there is scope to reduce the Enabling Works phase by 2 weeks.



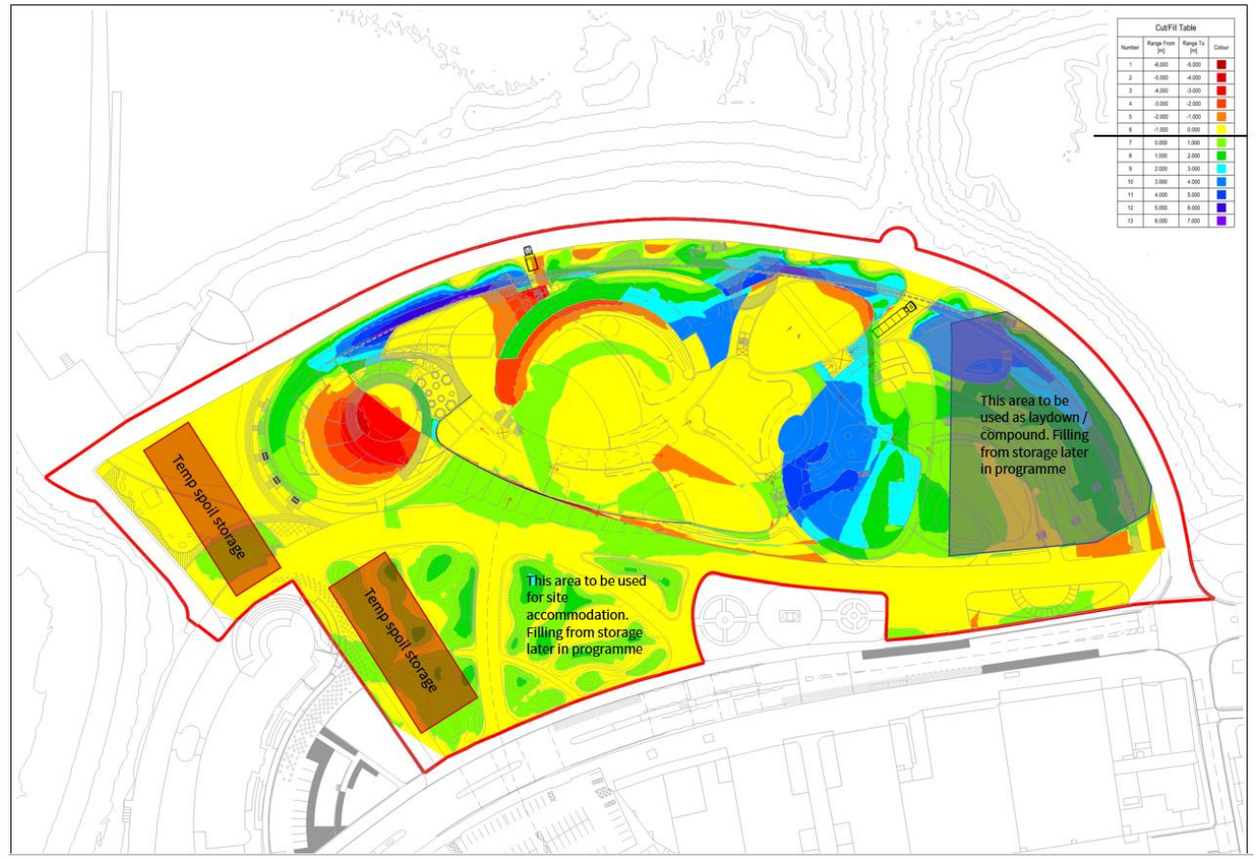


Cut & Fill Operation

Drawing CSK100 notes;
Cut Volume of 11,300m3
Fill volume of 23,900m3
= Shortfall of 12,600m3

Note: 300mm Site strip across the site has not been factored into the above calculation. This totals 12,400m3 of material which is billed as being kept on site however some of this material will need to be removed if not suitable for re-use.

Potential available fill material
From the cost estimate the volume of concrete within the substructures is;
Foundations: 6,016m3
Piles: 6,429m3
In addition to the arisings from these there will be drainage arisings from general site drainage and the Culvert diversion (although the redundant section of culvert will need filling).



Western areas of the site appear to be most suitable for storing arisings for later re-use following the initial cut & preparation of the Pile platforms. More detailed interrogation of the movement of materials aligned with the programme to be carried out to ensure that site won fill material are available to suit the programme.

NOTES:
1. THE EXISTING TOPOGRAPHICAL SURVEY HAS BEEN DONE BY SURVEY OPERATIONS DATA DATED AUGUST 2019 (DRAWING NUMBER 19E214/001).
2. A SITE STRIP OF 300mm HAS BEEN ASSUMED THROUGHOUT THE ENTIRE SITE TO ACCOUNT FOR TOPSOIL AND VEGETATED MATERIAL CLEARANCE. THE VOLUME ASSOCIATED WITH THIS CLEARANCE CAN BE SEEN IN THE VOLUMES TABLE.
3. THE PROPOSED PLATFORMS ARE BASED ON INFORMATION RECEIVED FROM GRIMSHAW EDEN PROJECT NORTH LAYOUT DATED 18.06.21 (DRAWING NUMBER SK2-22_Rev 1).
4. THE PROPOSED LEVELS SHOWN ARE FORMATION LEVELS. THE FORMATION LEVELS HAVE BEEN ASSUMED AS 500mm BELOW THE PROPOSED FINISHED PLOT LEVEL.
5. AT THIS STAGE THE USABILITY AND BULKING FACTORS OF MATERIAL HAVE NOT BEEN EXPLORED IN DETAIL THEREFORE NO BULKING FACTORS HAVE BEEN APPLIED AND ALL MATERIALS HAVE BEEN DEEMED ENTIRELY RE-USABLE.
6. THE EARTHWORKS VOLUMES AND DEPTHS SHOWN HAVE BEEN GENERATED VOLUMISING BETWEEN THE SITE STRIP AND FORMATION LEVEL SURFACE.

Formation level should account for Pile platforms (where required) and floor slab build up.
Floor slabs noted as 350mm. Pile platforms generally 500 – 600mm. The cut could be between 350 – 450mm more than the current calculation off FFL –500mm in areas where a Pile platform is required.

Cut/Fill Table			
Number	Range From [m]	Range To [m]	Colour
1	-6.000	-5.000	
2	-5.000	-4.000	
3	-4.000	-3.000	
4	-3.000	-2.000	
5	-2.000	-1.000	
6	-1.000	0.000	
7	0.000	1.000	
8	1.000	2.000	
9	2.000	3.000	
10	3.000	4.000	
11	4.000	5.000	
12	5.000	6.000	
13	6.000	7.000	

Temp spoil storage

Temp spoil storage

This area to be used for site accommodation. Filling from storage later in programme

This area to be used as laydown / compound. Filling from storage later in programme

Item 1.3

Vehicle Movements during Enabling works

Demolition
There will be 1278m3 of concrete demolition material from the retaining walls and part of the Amphitheatre + existing ground slabs & Stairs which are being removed. There is also masonry in the existing toilet block that is to be demolished.
It is unlikely that it would be commercially viable to utilise an on site crusher so this material will be removed from site over a number of weeks of the demolition period.

Earthworks
All materials will be re-used on site with the exception of trees, shrubbery, surface materials that cannot be re-used and contaminated materials not suitable for re-use.
There will be deliveries to site of hardcore for sub-base and Pile platform preparation. Where possible deliveries of hardcore will be made by wagons removing material from site to reduce the number of vehicles required.
At the peak we would anticipate the number of vehicle movements to be max 24 (in then out) in any given day again subject to the proximity of the tips / recycling centres used.

The cut and fill operation will be carried out within the confines of the site. There will be excavation plant and large dumpers used to move material around the site. We would suggest that the number of large plant being used on site would be in the region of 5 – 10 over a 10 week period.

Vehicle Movement Numbers
The demolition and earthworks activities will overlap across the site. There is ample room on site for the contractor to create a processing area for demolition and excavated material and for storage of hardcore as it arrives on site which will help level out the number of vehicle movements over the anticipated 12 week duration of demolition and earthworks. Given that the project requires a net fill the 'cart away' operation will be limited to materials unsuitable for re-use. The movement of demolition and earthworks material on and off-site will be via 20t road wagons and in terms of numbers of HGV vehicle movements in any given day we would anticipate that this would not exceed 50 with a peak of 24 vehicles inbound then outbound per day.

Plant on Site
During the enabling works there will be a mix of excavators, dumpers and compaction plant. We would anticipate that this would be in the band of 5-10 large items of plant

Item 1.3

Vehicle Movements over the duration of the project

The number of large Vehicle delivery movements will vary across the project depending on the activities taking place. The graph on the following page represents the approx. number of daily movement at each key stage of the project.

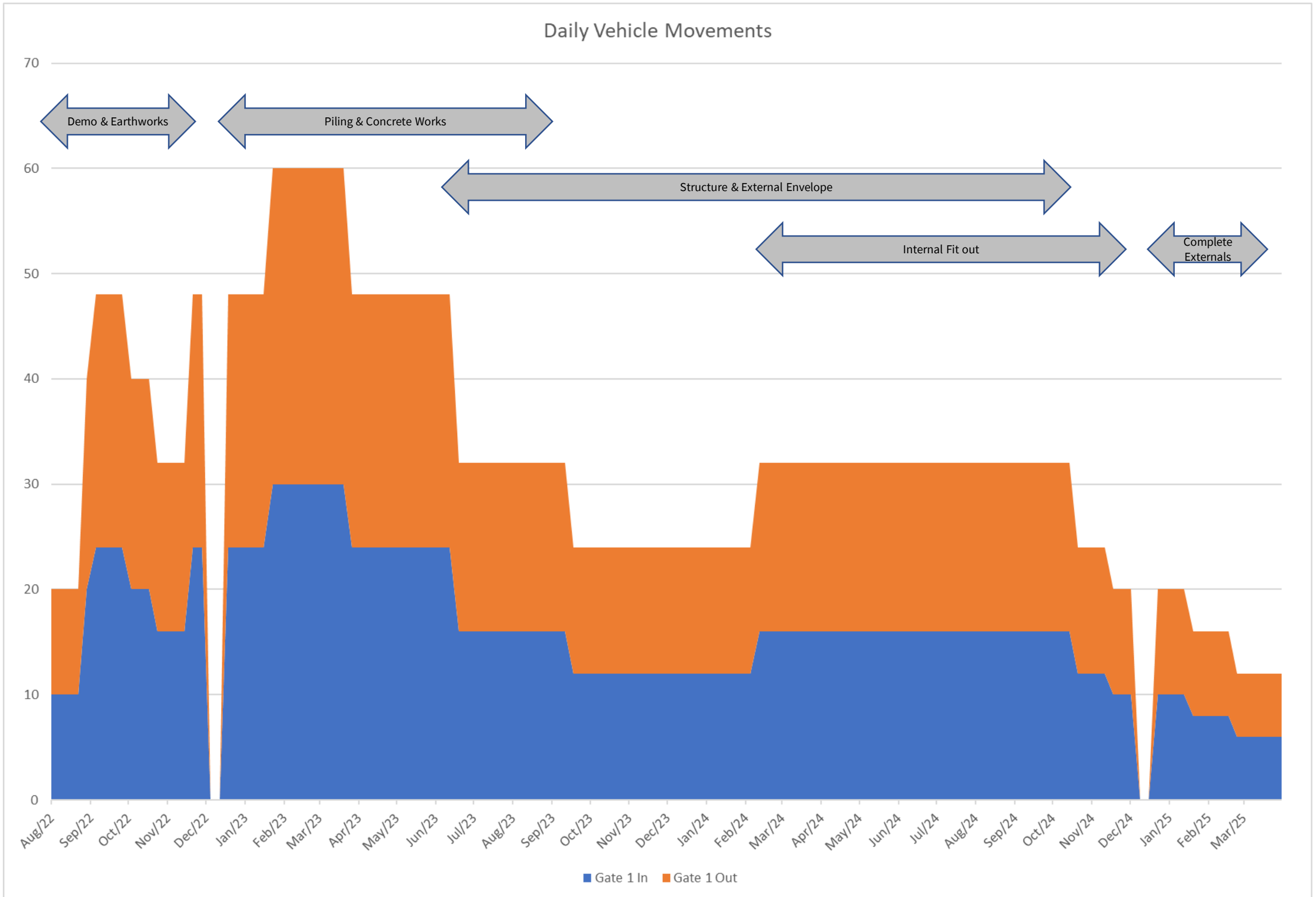
The most severe stage of the project in terms of frequency of deliveries will be during the Piling, Groundworks & Concrete frame activities which will require large numbers of daily concrete deliveries over a period of 7 months with at the peak in the region of 30 deliveries in a given day during large concrete pours. This number will drop to 16 once the bulk of the concrete work is complete and the timber frame commences.

Although infrequent, during the timber frame erection this period will see the largest sized articulated vehicles allowed on the local roads being delivered into site. The frequency of deliveries will increase again once the internal fit out works commence whilst the roof and envelope works are still in progress.

As the main build reaches completion the numbers will drop to less than 12 per day until project completion.

Item 1.3

Vehicle Movements over the duration of the project

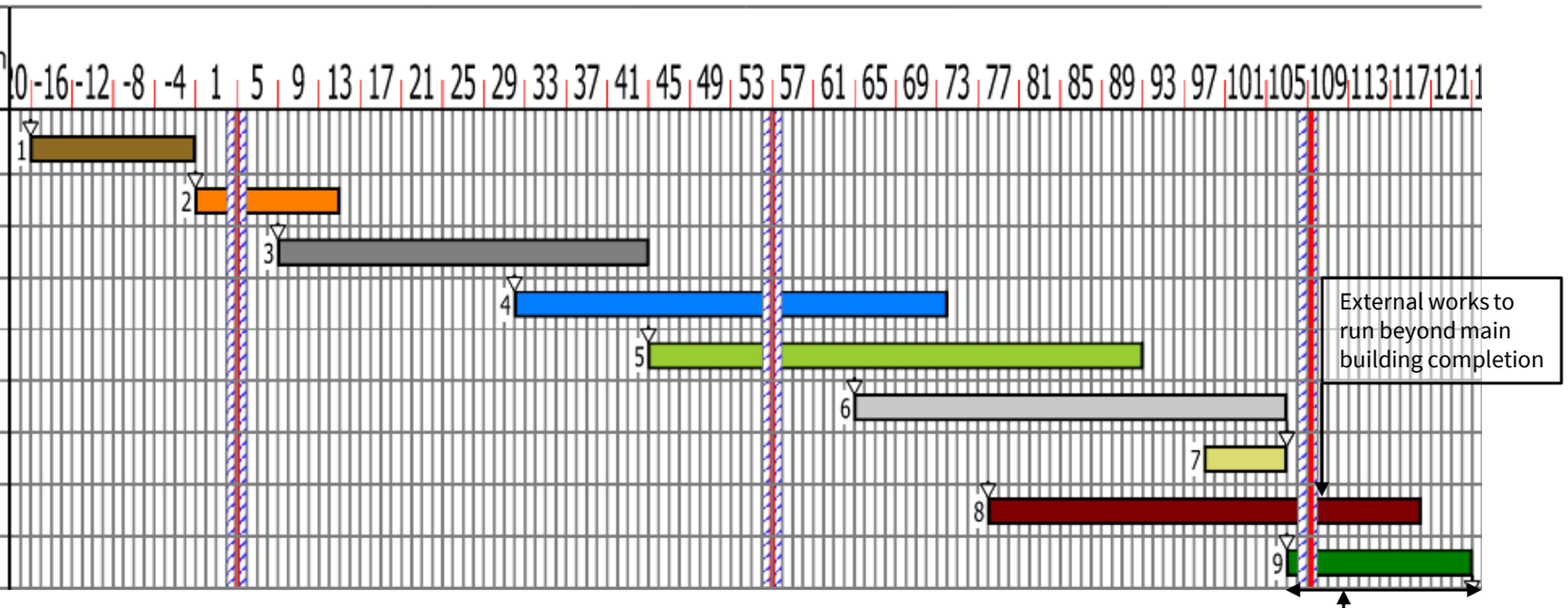


Item 1.1

Summary Construction Programme

SRM Assessment

Line	Name	Duration
1	Enabling Works (Service Diversions / Demolition / Earthworks)	16w
2	Piling	12w
3	Groundworks & RC Cores	36w
4	Timber Frame & Gridshell Structures	40w
5	Roof & External Envelope	46w
6	Internal Services / Finishes inc FOH & F&B Fit Out	42w
7	Final Test & Commission of Building Services	8w
8	External Works	40w
9	Final End User Fit Out / Trial Events	16w



Looking at the 3 different stages of the project we have assessed the programme duration as follows

Enabling works:	16 calendar weeks
Main construction period:	106 calendar weeks (excluding completion of external works)
Allowance for Eden final fit out following the main building completion:	18 calendar weeks (8 weeks less than Trivandi programme)
Overall assessment from commencement to building open for business:	**140 calendar weeks**

Notes

The main construction period includes allowances for the fit out works to the Front of House & Food & Beverage outlets.

The External Works (Line 8) continues after the building completion, overlapping with the final end user fit out period. This will include works outside of access routes into the building and main entrance, mainly completing hard and soft landscaping where on site compounds had been located.

Some measures to assist towards reducing this overall period / providing programme certainty;

- Potential of reducing RC Cores through pre-fabrication.
- Potential for a slightly improved Timber frame period as the design and methodology is developed.
- Potential for slightly improved ETFE programme period through collaborative working with timber frame contractor.
- Overlap the end user fit out with the main construction / F&B fit out to extend into end user fit out period.

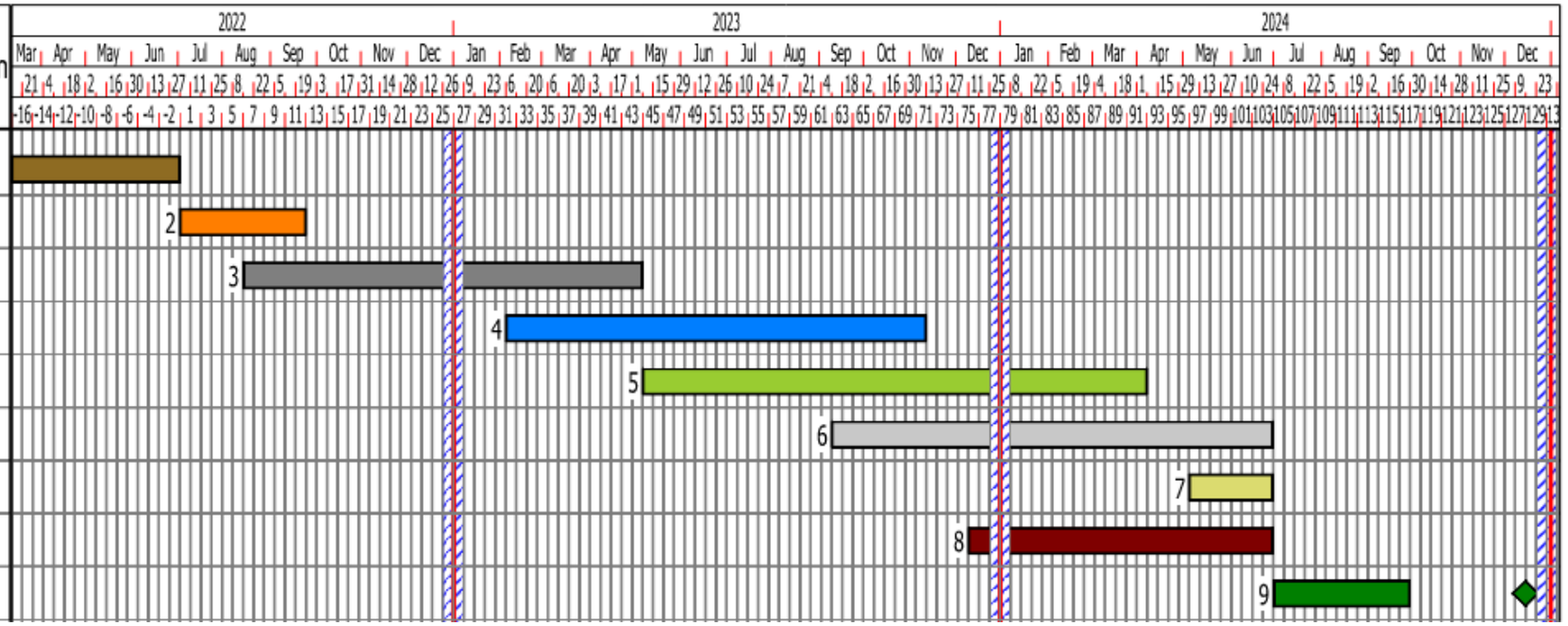
- The construction programme is based on a standard 5 day working week with working hours of 8am to 6pm although we would suggest in the planning application working hours of 7am to 6pm Mon to Fri and 8am to 4pm on Saturday are advised to give the contractor the opportunity to utilise extended working hours.

Item 1.1

Summary Construction Programme

As Identified on Trivandi Option 1 Master Programme (to be used in Planning Application?)

Line	Name	Duration
1	Enabling Works (Service Diversions / Demolition / Earthworks)	16w
2	Piling	12w
3	Groundworks & RC Cores	36w
4	Timber Frames & Gridshell Structures	40w
5	Roof & External Envelope	46w
6	Internal Service / Finishes inc FOH & F&B Fit Out	40w
7	Final Test & Commission of Building Services	8w
8	External Works	27w
9	Final End User Fit Out / Opening	13w



The Trivandi Option 1 Programme shows

Enabling works:	16 calendar weeks
Main construction period:	104 calendar weeks (inclding completion of external works)
Allowance for end user fit out following the main construction completion:	13 calendar weeks
Allowance for post fit out to opening date:	13 calendar weeks
Overall assessment from commencement to building open for business:	**146 calendar weeks**

Notes

The main construction period includes allowances for the fit out works to the Front of House & Food & Beverage outlets.

The External Works (Line 8) continues after the building completion, overlapping with the final end user fit out period. This will include works outside of access routes into the building and main entrance, mainly completing hard and soft landscaping where on site compounds had been located.

Some measures to assist towards reducing this overall period could include;

- Potential of reducing RC Cores through pre-fabrication.
- Potential for a slightly improved Timber frame period as the design and methodology is developed.
- Potential for slightly improved ETFE programme period through collaborative working with timber frame contractor.
- Overlap the end user fit out with the main construction / F&B fit out to extend into end user fit out period.

- The construction programme is based on a standard 5 day working week with working hours of 8am to 6pm although we would suggest in the planning application working hours of 7am to 6pm Mon to Fri and 8am to 4pm on Saturday are advised to give the contractor the opportunity to utilise extended working hours.

Item 1.1

Summary SRM Construction Programme comparison with Trivandi Construction Period (Using Option 2 Master programme)

1	Trivandi Construction Period (as Shown on Option 2 Master Programme	124w
2	Construction Period	101w
3	Eden Fit Out	38w
4	Construction (SRM Assessment)	126w
5	Piling Mobilisation	8w
6	Construction Stage	113w
7	Piling Works	12w
8	Groundworks & Concrete Cores	36w
9	Timber Superstructure	40w
10	Roof & External Envelopes	46w
11	Internal Services / Finishes inc FOH & F&B Fit Outs	42w
12	External Works	40w
13	Final Eden Fit Out Works (Following Building Completion)	16w



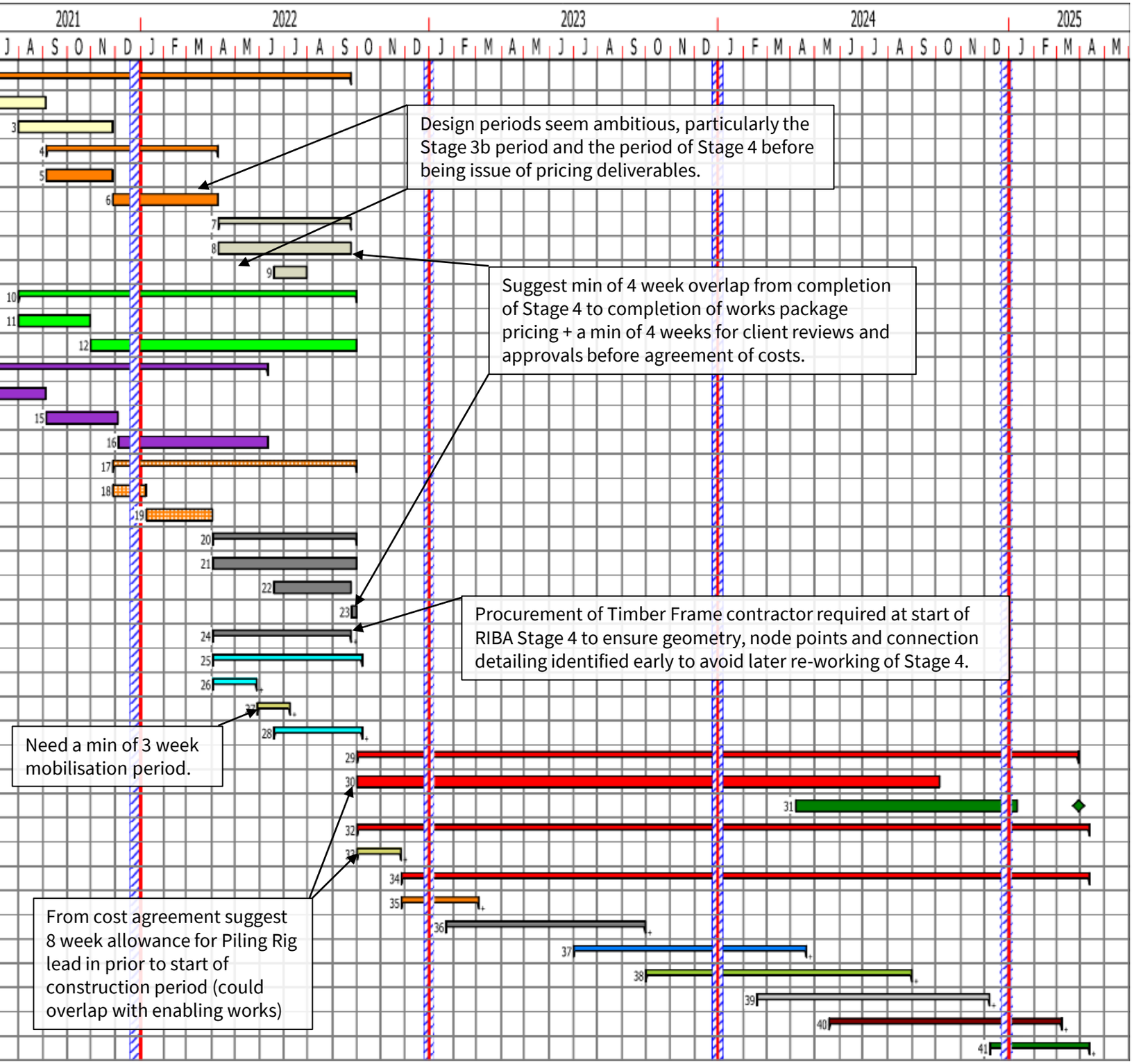
The overall Programmes do not appear too dissimilar however there are some key differences which need to be considered;

- Following completion of the enabling works, the first main construction activity will be Piling therefore there needs to be an allowance for Piling Rig lead in before construction commencement which could be in the region of 6-8 weeks from agreements of costs / contract. It may be possible to book the Piling rig prior to full cost agreement but this will need a financial commitment. Alternatively, the enabling works could overlap with the Piling Rig lead in.
- The SRM programme shows the External works running beyond the building completion date which we feel will be required to complete the external works to areas of the site used for access, materials laydown and storage and the site compound however it should be possible to run these works in parallel with the final Eden fit out works.
- The Trivandi Programmes generally show 6 months of Eden fit-out works & activities leading up to the opening date following construction completion. SRM programme currently only shows 16 weeks so there may be 10 weeks short in the SRM assessment however this can be firmed up once the scope of works included in this period is understood.

SRM Comments on PCSA period

(Based on Option 2 Master Programme but comments apply to all options)

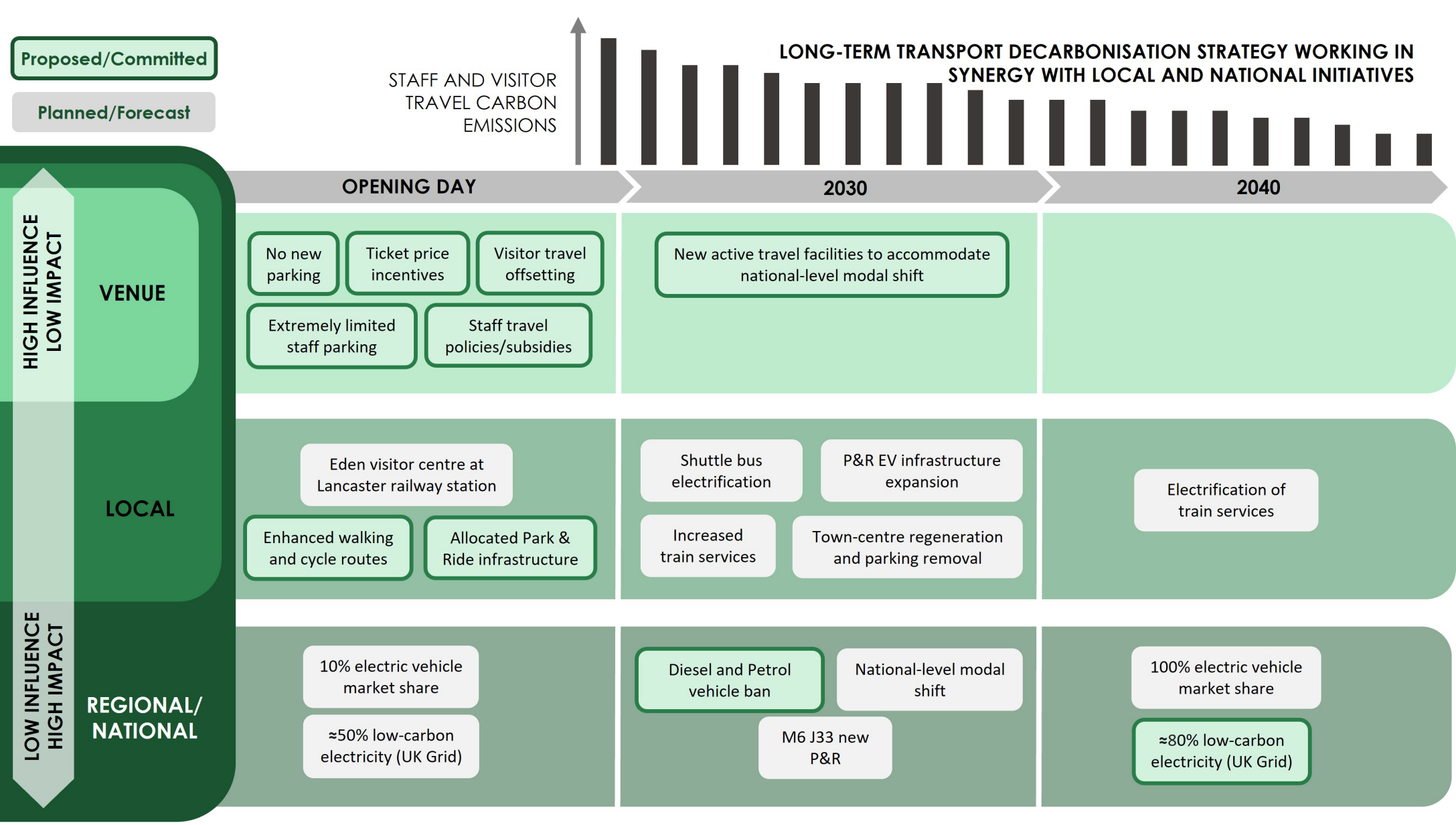
Line	Name	Start	Duration	Finish
1	**Design**	**05/07/2021**	**62w**	**23/09/2022**
2	Concept Design (RIBA Stage 2 & 3A)	05/07/2021	9w	03/09/2021
3	Consultant Tender	02/08/2021	17w	26/11/2021
4	**RIBA Stage 3 Spacial Co-ordination**	**06/09/2021**	**29w**	**08/04/2022**
5	Surveys	06/09/2021	12w	26/11/2021
6	Spacial Coordination (RIBA Stage 3b)	29/11/2021	17w	08/04/2022
7	**RIBA Stage 4 Technical Design**	**11/04/2022**	**24w**	**23/09/2022**
8	Stage 4	11/04/2022	24w	23/09/2022
9	Design Team to Issue Pricing Deliverables	20/06/2022	6w	29/07/2022
10	**Experience**	**02/08/2021**	**59w**	**30/09/2022**
11	Concept Design	02/08/2021	13w	29/10/2021
12	Design	01/11/2021	46w	30/09/2022
13	**Planning**	**05/07/2021**	**47w**	**10/06/2022**
14	Pre-App / Public Consultation / EIA Production / Review	05/07/2021	9w	03/09/2021
15	Planning Submission / Determination	06/09/2021	13w	03/12/2021
16	Discharge Pre-Commencement Conditions	06/12/2021	25w	10/06/2022
17	**D&B Contractor Procurement**	**29/11/2021**	**42w**	**30/09/2022**
18	PQQ	29/11/2021	4w	07/01/2022
19	1st Stage Tender inc Review & Appointment of Preferred Contractor	10/01/2022	12w	01/04/2022
20	**2nd Stage Tender**	**04/04/2022**	**26w**	**30/09/2022**
21	2nd Stage Tender (PCSA Period)	04/04/2022	26w	30/09/2022
22	Pricing Period	20/06/2022	14w	23/09/2022
23	Main Contract Costs Agreed / Instruction to Proceed	26/09/2022	1w	30/09/2022
24	**Timber Frame Procurement & Stage 4 Design**	**04/04/2022**	**25w**	**23/09/2022**
25	**Enabling Works**	**04/04/2022**	**27w**	**07/10/2022**
26	**Pricing & Costs Agreement**	**04/04/2022**	**8w**	**27/05/2022**
27	**Mobilisation / Lead In Periods**	**30/05/2022**	**6w**	**08/07/2022**
28	**Siteworks**	**20/06/2022**	**16w**	**07/10/2022**
29	**Trivandi Construction Period (as Shown on Option 2 Master Programme**	**03/10/2022**	**124w**	**31/03/2025**
30	Construction Period	03/10/2022	101w	04/10/2024
31	Eden Fit Out	08/04/2024	38w	31/03/2025
32	**Construction (SRM Assessment)**	**03/10/2022**	**126w**	**11/04/2025**
33	**Piling Mobilisation**	**03/10/2022**	**8w**	**25/11/2022**
34	**Construction Stage**	**28/11/2022**	**118w**	**11/04/2025**
35	**Piling Works**	**28/11/2022**	**12w**	**03/03/2023**
36	**Groundworks & Concrete Cores**	**23/01/2023**	**36w**	**29/09/2023**
37	**Timber Superstructure**	**03/07/2023**	**40w**	**19/04/2024**
38	**Roof & External Envelopes**	**02/10/2023**	**46w**	**30/08/2024**
39	**Internal Services / Finishes inc FOH & F&B Fit Outs**	**19/02/2024**	**42w**	**06/12/2024**
40	**External Works**	**20/05/2024**	**40w**	**07/03/2025**
41	**Final Eden Fit Out Works (Following Building Completion)**	**09/12/2024**	**16w**	**11/04/2025**



Appendix O

NET ZERO STRATEGY

PUBLIC


Proposed/Committed
Planned/Forecast
STAFF AND VISITOR TRAVEL CARBON EMISSIONS
LONG-TERM TRANSPORT DECARBONISATION STRATEGY WORKING IN SYNERGY WITH LOCAL AND NATIONAL INITIATIVES
HIGH INFLUENCE LOW IMPACT
LOW INFLUENCE HIGH IMPACT
OPENING DAY
2030
2040
VENUE
LOCAL
REGIONAL/ NATIONAL
No new parking
Ticket price incentives
Visitor travel offsetting
Extremely limited staff parking
Staff travel policies/subsidies
New active travel facilities to accommodate national-level modal shift
Eden visitor centre at Lancaster railway station
Enhanced walking and cycle routes
Allocated Park & Ride infrastructure
Shuttle bus electrification
P&R EV infrastructure expansion
Increased train services
Town-centre regeneration and parking removal
Electrification of train services
10% electric vehicle market share
≈50% low-carbon electricity (UK Grid)
Diesel and Petrol vehicle ban
National-level modal shift
M6 J33 new P&R
100% electric vehicle market share
≈80% low-carbon electricity (UK Grid)

Carbon Consult Ltd
Camerton Inn
28 Meadgate
Camerton
Bath
BA2 0NW

21 June 2021

For the attention of Fleur Baguley,

Eden Project North - BREEAM TRA01

I confirm that a Travel Plan has been developed as part of the feasibility and design stages. This has been site specific and structured to meet the needs of this site.

The Travel Plan has included the necessary information for BREEAM including the following:

a) Existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified;

b) Travel patterns and transport impact of future building users;

c) Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children);

d) Reporting of the number and type of existing accessible amenities within 500m of the site;

e) Disabled access (accounting for varying levels of disability and visual impairment);

f) Calculation of the existing public transport Accessibility Index (AI); and

g) Current facilities for cyclists.

The Travel Plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use.

I confirm that the occupier is known and has been involved in the development of the Travel Plan as evident in the emails attached.

8 First Street
Manchester
M15 4RP
Tel: +44 161 200 5000
wsp.com

WSP UK Limited | Registered address: WSP House, 70 Chancery Lane, London WC2A 1AF
Registered in England and Wales No. 01383511

I confirm that the Travel Plan will be implemented post construction and supported by the building's management during building operation.

Following amenities are within the proximity of the site:

- Appropriate food outlet;
- Access to cash;
- Access to an outdoor open spaces (public and private, suitably sized and accessible to building users);
- Access to a recreation or leisure facility for fitness or sports;
- Publicly available postal facility; and
- Over the counter services associated with a pharmacy.

As a minimum, the following measures have been considered as part of the Travel Plan for development:

- Provision of a dedicated service, such as a bus route or service (Tra 02 Sustainable transport measures: option 2)
- Provision of a public transport information system in a publicly accessible area (Tra 02 Sustainable transport measures: option 3)
- Provision of electric recharging stations (Tra 02 Sustainable transport measures: option 4)
- Provision of parking priority spaces for car sharers (Tra 02 Sustainable transport measures: option 5)
- Consultation with the local authority on the state of the local cycling network and on improvements (Tra 02 Sustainable transport measures: option 6)
- Provision of dedicated and convenient cycle storage (Tra 02 Sustainable transport measures: option 7)
- Provision of cyclists' facilities (Tra 02 Sustainable transport measures: option 8)
- Lighting, landscaping and shelter to create pleasant pedestrian and public transport waiting areas
- Restrictions or charging for car parking
- Pedestrian and cyclist friendly (for all types of user regardless of the level of mobility or visual impairment) with the provision of cycle lanes, safe crossing points, direct routes, appropriate tactile surfaces, good lighting and signposting to other amenities, public transport nodes and adjoining off-site pedestrian and cycle routes
- Provision of suitable taxi drop-off or waiting areas

A copy of the Transport Assessment, Travel Plan, calculations, transport timetables, meeting minutes, drawing, plans etc are provided to support the above.

Yours sincerely,

Alberto Poltz Faggiani
Consultant – Transport Planning
WSP

The following information is required for BREEAM assessments where the team is, or will be, required to meet the requirements of Tra 02: Sustainable transport measures.

Please complete this proforma document as follows;

1. Read the requirements on the following page and complete as appropriate.
2. Complete and sign the declaration below.
3. Provide additional evidence to confirm commitments made in the table.

Confirmation of credit criteria compliance

We hereby confirm that the following demonstrates our commitment under BREEAM credit Tra 02: Sustainable transport measures.

Project name: Eden Project North

Date: 21/06/2021

Name: Alberto Poltz Faggiani

Position: Transport Planner

Signature:

Company: WSP

Note: This form must be completed by the client or by a designated representative working on their behalf (eg client's agent or project manager) and returned to the BREEAM assessor in PDF format.

Where a commitment is made at the Design Stage regarding this credit responsibility for complying with the credit requirements must be formally transferred to the contractor in order that it is also achieved at Post Construction Stage.

Credit 1: Project sustainable transport measures points:

Assessment Option	Public Transport Measures	Applicable Building Types	Yes/No
1	The existing AI calculated in Tra 01 achieves the following: ≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3 ≥ 8 for all other building types	All	*Yes (14.6)* *1 point*
2	Demonstrate an increase over the existing Accessibility Index through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development; OR	All	-
	Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions. OR		-
	Provide a dedicated service, such as a bus route or service.	All	*Yes* *3 points*
3	Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.	All	*Yes* *1 point*
Assessment Option	**Private Transport Measures**	**Applicable Building Types**	**Yes/No**
4	Provide electric recharging stations of a minimum of 3kw for at least 10% of the total car parking capacity for the development.	All	No
5	Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme with marketing and communication materials. Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.	All	Yes 1 point
Assessment Option	**Active Travel Measures**	**Applicable Building Types**	**Yes/No**

Assessment Option	Public Transport Measures	Applicable Building Types	Yes/No
6	During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public.	All	Yes 2 points
7	Install compliant cycle storage spaces to meet the minimum levels set out in Table 7.5.	All	Yes 1 point
8	Option 7 has been achieved. Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type) – see Definitions for the scope of each compliant facility: • Showers • Changing facilities • Lockers • Drying spaces.	All	Yes 1 point
9	Existing amenities: At least three existing accessible amenities are present, see Table 7.6, where relevant for a Building Group.	All	Yes 1 point
10	Enhanced amenities: Ensure a minimum of one new accessible amenity, in accordance with Table 7.6, for the relevant Building Group, is provided. OR		Yes 2 points
	Ensure more than one new accessible amenity, in accordance with Table 7.6 for the relevant Building Group, is provided.		No 3 points
11	Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	All	No



8 First Street
Manchester
M15 4RP

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