States of Guernsey Committee for Education, Sport and Culture

Transforming Education Programme: 11-18 Schools Project

Les Beaucamps High School Traffic Impact Assessment

Issue 2 | 3 December 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 271282-00

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ARUP

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Introduction

Ove Arup & Partners Ltd (Arup) was appointed by the States of Guernsey (SoG) Committee for Education, Sport and Culture (CfESC) on 3rd September 2019 to prepare a Traffic Impact Assessment (TIA) in support of a planning application for Les Beaucamps High School (LBHS) as part of the 11-18 Schools Project.

The project, part of the Transforming Education Programme (TEP), is described as a 'one school, two college' model where one secondary school (named Lisia School), including A-levels, will be administered over two college campuses. The college campus proposed on the site of LBHS is proposed to be named de Saumarez College.

By 2025, de Saumarez College. will support a substantial increase in pupils from 489 to around 1,500. In addition, the number of staff on site (including support staff) is expected to increase from 66 to approximately 180. This significant growth in pupils and staff is anticipated to have a corresponding increase in multi-modal demand on the transport network.

The content of this TIA was developed through a Stakeholder Engagement Meeting (dated 18th September 2019) with the SoG Traffic and Highway Services and Planning Services. It was agreed that this study would assess two potential development scenarios:

- A baseline scenario that outlines the impacts of the scheme in the event that current travel behaviours continue; and
- An alternative scenario that seeks to maximise the proportion of journeys by sustainable modes of transport.

LBHS is in Castel parish, approximately 3.9km west of St Peter Port. Whilst the site is sited in an accessible location, there is limited pedestrian infrastructure on some roads near the school.

Baseline Development Proposals

In keeping with best practice, the access strategy for the site seeks to prioritise walking, cycling and mass transit over journeys made by car.

In the context of the planned increase in pupil and staff numbers, a suite of physical and management interventions has been developed. For example, existing pedestrian access routes to the school will be maintained or enhanced; a kerbed footway is proposed on Les Beaucamps between the school and Le Mont d'Aval; and a bus shelter will be provided as part of a horizontal speed reduction feature on Les Beaucamps.

Egress from the site is proposed to be relocated from Ruette des Delisles to Les Beaucamps and will incorporate a new pedestrian link into the site.

A management plan will be required to manage the potential conflicts arising from multi-modal trips accessing the site at the beginning and end of the school day.

Sustainable Travel Interventions

In addition to the well documented health and social benefits associated with active travel, research indicates pupils that walk or cycle to school are more alert, ready to learn and achieve better grades in class.

In addition to the proposals associated with the Baseline scenario, several sustainable transport interventions are proposed which seek to both encourage staff, pupils and visitors to travel by sustainable modes of transport, and discourage journeys made by car.

To encourage travel by active travel, the following interventions are proposed:

- Implement a School Travel Plan;
- Improvements to the school bus journey times; and
- Reduce traffic speeds and volumes on the highways near the school through the introduction of a 20mph traffic management zone, a parking control zone and restrictions to pupil drop-off and collection times.

Highway Capacity Assessment

The capacity of the junctions within the agreed study area have been assessed using the traffic demand arising from each development scenario. The assessment results are summarised in Table 1 below and detailed in Section 8.4, and indicate that all junctions are forecast to operate within capacity in all future-year scenarios.

Table 1: Junction Capacity Assessment Results (Summary)

Junction	2025 Base	2025 with Development (Baseline)	2025 with Development (Sustainable)
Junction 1			
Junction 2			
Junction 3			
Junction 4			
Junction 5			

Whilst Junction 3 (Le Mont d' Aval/Les Beaucamps/Ruette de la Generotte staggered priority junction) is forecast to operate within capacity, SoG Traffic and Highway Services noted some safety concerns with regards to visibility and therefore a signalised junction arrangement is proposed. With the introduction of traffic signals, the junction is forecast to operate within capacity. The proposed arrangement also allows for the footway to be widened on Les Beaucamps at the junction with Le Mont d'Aval.

Summary

The analysis presented in this report demonstrates that the development proposals can be delivered without significant determental impact in terms of transport and movement. Whilst this has been shown for both the Baseline and Sustainable scenarios, it is recommended that the suite of Sustainable Transport Interventions is adopted to fully comply with the policies set out in the Island Development Plan and to shape a better outcome for Guernsey. Furthermore, positive travel behaviours that are encouraged from a young age have the potential to translate to adulthood, resulting in lasting environmental, social and health benefits for Guernsey.

1 Introduction

1.1 Background

Ove Arup & Partners Ltd (Arup) has been appointed by the States of Guernsey (SoG) Committee for Education, Sport and Culture (CfESC) to prepare a Traffic Impact Assessment (TIA) in support of a planning application for Les Beaucamps High School (LBHS) as part of the 11-18 Schools Project.

The project, part of the Transforming Education Programme (TEP), is described as a 'one school, two college' model where one secondary school (named Lisia School), including A-levels, will be administered over two college campuses. The project will see pupils transitioned from four schools - LBHS, St Sampson's High School (SSHS), the Grammar School & Sixth Form Centre and La Mare De Carteret High School – to two college campuses located at SSHS and LBHS. They are proposed to be named Victor Hugo College and de Saumarez College respectively.

The CfESC has developed plans to "*extend and repurpose both existing buildings and approaches to effectively and safely serve the projected pupil population within a transformed educational model*."

The expansion of LBHS will involve additional buildings and refurbishment of existing buildings to accommodate an increase from 489 to around 1,500 pupils and a change in staff from 66 to approximately 180.

The project aims to minimise disruption to existing pupils and will phase the transition, primarily to ensure that pupils in the final year of their GCSEs and A-levels are not disrupted. Details of this phased transition are set out in the TEP Policy Letter[1].

Transitioning to the new education model will significantly increase pupil and staff numbers at de Saumarez College over the level previously recorded at LBHS, resulting in a corresponding increase in multi-modal demand on the transport network.

[1] State of Guernsey Committee for Education, Sport and Culture (July 2019) Transforming Education Programme & Putting Into Effect the Policy Decisions Made by the States in 2018

1.2 Previous Studies and Reports

Several reports and studies have already been undertaken with regards to the 11-18 Schools Project. Arup provided support to the CfESC to inform the site selection process and the following reports were prepared:

- Les Varendes Traffic Assessment (2017);
- Baubigny Schools Traffic Study report (2017); and
- Les Beaucamps School Traffic Assessment (2017).

Following Arup's involvement in 2017, additional traffic studies have been undertaken on behalf of CfESC by an external consultancy for the chosen sites LBHS and SSHS. The following reports have been provided by the CfESC for consideration of the LBHS proposals:

- Sustainable Access Strategy (2019); and
- LBHS Transport Assessment (2019).

It is understood that all the above reports have been prepared in consultation with SoG Traffic and Highway Services.

Arup was subsequently appointed in September 2019 to prepare TIA reports for the proposed expansions to LBHS and SSHS. This TIA for the proposed de Saumarez College therefore builds on previous studies and assessments prepared by others. Given the short time period in which Arup have been involved, we have had limited input towards the development of the masterplan, aside from the preparation of the highway access proposals.

1.3 Scoping and Methodology

The content of this TIA was established through a Stakeholder Engagement Meeting (dated 18th September 2019) with the SoG Traffic and Highway Services and Planning Services.

A Scoping Report (dated 20th September 2019) confirming the outcomes of the Stakeholder Engagement Meeting is included in Appendix A.

The Scoping Report sets out the approach to the preparation of the Traffic Impact Assessments (TIA) for the two college locations. Discussions held concluded that the TIA should describe and assess two potential scenarios:

- A 'Baseline development scenario' that considers the impacts of the scheme without significant sustainable transport interventions. This assessment scenario is therefore based on the assumption that existing travel behaviours continue, with 30-40% of pupils arriving to school by car; and
- A 'With Sustainable Transport Interventions' scenario that prioritises travel by walking, cycling and bus over single occupancy car journeys. A holistic approach is proposed that incorporates both 'carrot' and 'stick' measures' which are underpinned by a Travel Plan. The adoption of an approach which seeks to reduce traffic and encourage active travel will contribute positively towards highway safety and well-being.

It was also agreed that each TIA will be supported by figures, technical drawings and any other documentation required for the planning application.

The study area for this study was agreed, including the key roads and junctions located closets to the site. In addition, it was agreed that there are no committed developments near the site that would impact traffic movements within the defined study area.

1.4 Report Structure

The remainder of this report is structured as follows:

- **Section 2** – Summarises the policy context and provides a review of previous studies relating to the current scheme;
- **Section 3** – Outlines the existing conditions at and within the local surroundings of the site;
- **Section 4** – Summarises existing travel patterns and demand;
- **Section 5** – Provides an overview of the current development proposals, including the access strategy and parking;
- **Section 6** – Presents the proposed sustainable transport interventions;
- **Section 7** – Outlines future travel demand on the network, including traffic growth, assignment and distribution;
- **Section 8** - Presents the results of the capacity assessments undertaken at each junction;
- **Section 9** – Outlines the measures to mitigate the impact of the scheme;
- **Section 10** – Presents the proposed framework School Travel Plan; and
- **Section 11** - Summarises the findings of this report.

2 Policy Context and Review of Previous Studies

2.1 Policy and Guidance

Island Development Plan

The Island Development Plan (IDP) was adopted in November 2016 and sets out the land planning policies for the island. The principle aim of the IDP is to create a socially inclusive, healthy, and economically strong island, whilst protecting the existing natural and built environment. This is underpinned by six objectives:

- *Make the most effective and efficient use of land and natural resources;*
- *Manage the built and natural environment;*
- *Support a thriving economy;*
- *Support a healthy and inclusive society;*
- *Ensure access to housing for all; and*
- *Meet infrastructure requirements.*

The development proposals seek to encourage journeys to and from school by sustainable modes of transport, supporting a healthy lifestyle and contributing positively to the wellbeing of staff and pupils.

Infrastructure proposals have been designed with reference to Guernsey's engineering and technical standards.

A development scenario is also presented which seeks to maximise the potential for journeys to be made by sustainable modes, and this is supported by a Travel Plan. Instilling positive travel behaviour choices in pupils at a young age that are likely to be retained, these proposals should result in wider benefits for Guernsey.

The Spatial Policy (SP1) seeks to concentrate new development in the *main centres* and *main outer areas*, as identified in Figure 1 below.

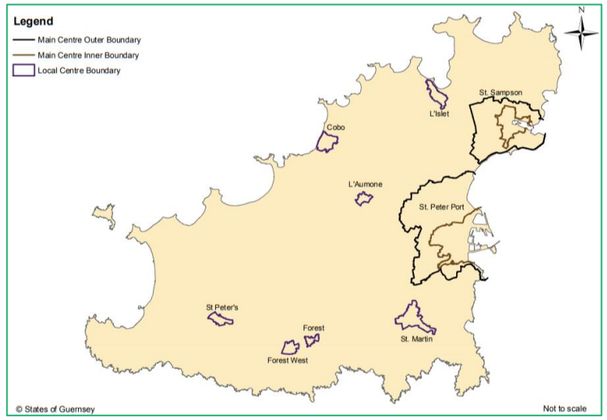


Figure 1: Main and Local Centres Map (source: IDP 2016)

With regards to transport, the IDP indicates that high levels of car ownership and subsequent travel choice remains a significant issue on the island. It therefore seeks to shape travel behaviour by establishing development patterns that compliment public transport provision and reduce car dependence.

Policy IP6, Transport Infrastructure and Support Facilities, states that development proposals will be supported where they encourage a range of travel options. Development proposals located within the Main Centres and Main Centre Outer Areas are expected to be integrated into the existing transport network and include provision for infrastructure that will encourage travel by a range of modes including walking and cycling.

The 'With Sustainable Transport Interventions' assessment scenario seeks to maximise the sustainable accessibility of the site by introducing additional infrastructure for pedestrians and cyclists, reducing traffic volumes and speeds near the school, and reforming the school bus service to reduce journey times.

A Travel Plan is also proposed which will include several 'soft measures' that will seek to further encourage staff and pupils to travel to the school by sustainable modes of transport.

The policy also notes that proposals for public transport infrastructure would be supported. In addition, the Authority will consider the provision of bicycle and motorcycle parking in accordance with the adopted supplementary planning guidance[2].

Policy IP7, Private and Communal Car Parking, states that the Authority will consider the provision of appropriate levels of private and communal car parking in accordance with the adopted supplementary planning guidance.

The proposed parking provision for bicycles, motorcycles and cars has been developed with due consideration of the SoG adopted Supplementary Planning Guidance: Parking Standards and Traffic Impacts Assessments (2016).

Policy IP9, Highway Safety, Accessibility and Capacity, states the Authority will take the following into account when considering development proposals:

- *The existing public road network's ability to cope with any increased demand as a result of the development and may require physical alterations to the highway or the implementation of an operational scheme to manage the impact of the development on the road network (a Traffic Impact Assessment may be required); and*
- *The access requirements of people of all levels of mobility and health.*

When considering proposals for enhancement to the accessibility of developments or improvements to the local highway network, Policy IP9 states that:

"…the Authority will seek to ensure, wherever possible, that they do not result in adverse impacts on the special interest or character or appearance of a Conservation Area, protected building or protected monument, or elsewhere, wherever possible, on the landscape character or distinctive natural or built features that contribute positively to the character of the wider area."

As demonstrated in this TIA, the additional demand arising from these proposals can be accommodated on the highway network.

[2] SoG (2016) Supplementary Planning Guidance: Parking Standards and Traffic Impact Assessments

Supplementary Planning Guidance: Parking Standards and Traffic Impact Assessment

The SoG Supplementary Planning Guidance (SPG): Parking Standards and Traffic Impact Assessment was adopted in December 2016. The SPG is split in to the following two sections:

- Part One: Parking Standards; and
- Part Two: Traffic Impact Assessment.

Part One: Parking Standards

Part One of the SPG sets out the parking standards for Guernsey. The parking standards for the land use to which this TIA relates are summarised Table 2 below.

Table 2: Guernsey Parking Standards

Vehicle	Parking Standards
Car Parking	Assessed on the merits of the proposals
Accessible Parking	1 space where total space is 10-20 2 spaces where total space is 21-50 6% of total spaces, where total is 51-200 4% plus 4 spaces, where total is above 200
Motorcycle Parking	1 space per 5 car parking spaces
Bicycle Parking	1 secure loop (for 2 cycles) per 10 spaces A higher level of provision may be appropriate for facilities likely to attract a high number of trips by bicycle

It is noted in the SPG that the standards are intended to be guidance and are therefore relaxations can be allowed when justification is supported by suitable evidence

The proposed car parking provision for de Saumarez College staff was discussed with SoG Planning and Traffic & Highway Services as part of the scoping exercise and is detailed in Chapter 5.

Demand for motorcycle and bicycle parking is forecast to exceed the required minimum standards. The proposed parking numbers have therefore been based on the estimated peak demand which results in a robust and appropriate provision bespoke to the proposed development.

Part Two: Traffic Impact Assessment

Part Two of the SPD gives a guide to Traffic Impact Assessment on Guernsey, noting traffic refers to all road user groups including:

- Pedestrians;
- Cyclists;
- Horse riders;
- Public Transport;
- Motorcyclists;
- Cars; and
- Lorries

For the land use associated with these proposals, the SPG indicates a Traffic Impact Assessment is required for:

"…*any development that generates additional traffic which, by its scale or nature is likely to affect journey times, the operation of highway junctions or adversely affect people and communities in other ways*."

It is noted that the scope of the Traffic Impact Assessment should be agreed with the Development and Planning Authority, and should normally include the following information:

- *Background;*
- *Base Traffic Conditions;*
- *Site Traffic Generation;*
- *Traffic Distribution;*
- *Off-site Traffic Generation;*
- *Traffic Modelling; and*
- *Summary and Recommendations.*

Additional information may also be required, including potential measures to mitigate the traffic impacts of the proposals such as Travel Plans.

The scope of this Traffic Impact Assessment was discussed and agreed with SoG Traffic and Highway Services at a meeting dated Wednesday 18th September 2019. The Joint TIA Scoping Report for LBHS and SSHS is included in Appendix A.

Engineering and Technical Standards

The highway drawings included in this report have been prepared in accordance with the relevant Guernsey design standards and legislation including the following:

- SoG Development and Planning Authority (2012) Guernsey Technical Standard – The Building (Guernsey) Regulations;
- SoG Traffic Committee (2001) Traffic Engineering Guidelines for Guernsey: Road Hierarchy – Traffic Management Regimes; and
- SoG (1988) The Traffic Signs and Traffic Light Signals Ordinance.

Summary

The policy context against which this Transport Impact Assessment should be considered is presented in this section. Key policy documents have been referenced of which the main points of relevance are:

- The development proposals should seek to encourage a range of travel options, particularly walking, cycling and public transport;
- Infrastructure proposals should be integrated within the existing transport network;
- Parking provision should be in accordance with the adopted supplementary planning guidance;
- The traffic impact of the development proposals on the operation of the public road network may need to be mitigated through physical mitigation; and
- A Traffic Impact Assessment is required to demonstrate the impacts of the proposals will not result in adverse impacts on people and communities.

2.2 Previous Studies

Sustainable Access Strategy

The WSP Sustainable Access Strategy report was commissioned by the States of Guernsey (SoG) with the purpose of informing future travel and access requirements at LBHS and SSHS. The report identifies the existing and future travel needs of staff and students, and investigates opportunities for promoting sustainable travel, alongside managing traffic and parking requirements. The strategy was informed by the examination of existing travel conditions at the schools, and the identification and development of practical options, focusing on promoting and accommodating active travel choices, public transport and vehicular access conditions.

The Strategy Vision Statement is:

"To improve the learning opportunities on the island, St Sampson's and Les Beaucamps High Schools will expand to deliver enhanced services to students. To accommodate this, it will be necessary to accommodate increases in travel demand with new and enhanced infrastructure and services to be delivered in a timely and efficient way, minimising increases in car travel, complementing existing bus services on the island. To ensure the Government offer a sustainable balance of needs, through the schools, it will support sustainable travel choices for students, staff and visitors through the effective management of parking on and off campus."

Chapter 6 outlines a range of mobility management initiatives that could be used to influence travel choice based on existing conditions and survey responses. The initiatives are along the themes of travel information and advice, promoting active travel, shared transport provision, a culture of flexible learning, travel policy, management structure, and managing parking demands. These will be used before determining the extent of highway improvements that might need to be delivered ahead of construction.

Chapter 7 recommends a range of options to influence travel choice between 2020-23. These include supporting opportunities for car-sharing, enhancing bus stop provision close to entrances, providing parking to operational minima and incorporating lesson-plans to influence change. The recommendations are intended to exploit the potential of sustainable travel and therefore minimise the need for highway capacity improvements at/near the schools. A Mobility Management Steering Group, comprised of representatives including the SoG Traffic & Highway Services and school Senior Leadership Teams, was suggested to effectively advance the access strategy.

Chapter 8 identifies a management structure and programme to support the implementation of the sustainable access strategy and offer ways to monitor progress to further refine the strategy and exploit opportunities to further reduce car travel.

Les Beaucamps High School Transport Assessment

The purpose of the WSP Transport Assessment of Les Beaucamps High School was to provide transportation and highways advice to the States of Guernsey (SoG) in relation to the expansion of the school.

The report highlights that the change of schools will lead to a steep increase in local travel demand, 'placing pressure on existing active travel, public transport and highway network'. Informed by the Sustainable Access Strategy, the report identified several areas of change which need mitigation; these forecast changes are likely to adversely affect the active travel infrastructure, public transport provision, parking provision and local highway network capacity.

The report includes several recommendations including the following:

- Introducing highway restrictions, specifically a series of permanent one-way only restrictions on Les Beaucamps (Northbound), Ruette des Effards (Westbound) and Les Vieux Beaucamps (Westbound) in order to re-distribute traffic away from a key pedestrian access route to the school;
- Improving active travel facilities by installing new crossing points at Le Mont d'Aval and Le Villocq to improve the local active travel infrastructure network and segregation measures to create a desirable route for pedestrians and cyclists;
- Seeking to implement an off-site parking/drop-off/pick-up provision at neighbouring facilities to the site to alleviate an increase in parking demand; and
- Improving bus service provision and infrastructure by increasing the availability of school bus services in order to deliver sufficient passenger capacity and the implementation of an advisory lay-by on Les Beaucamps along with the re-design of the existing bus stop on-site to ensure suitable capacity for service growth is in place.

The report suggests that, should these infrastructure and management measures be delivered, the expansion of LBHS will not have a serious impact on the surrounding transport network.

3 Existing Conditions

3.1 Introduction

Audits of the existing LBHS site and the surrounding highway network have previously been undertaken. This chapter of the TIA presents the findings of these audits alongside additional observations made following site visits undertaken during the peak periods on Wednesday 18th September 2019.

3.2 Site Location

The site is located in the Castel parish, approximately 3.9km west of St Peter Port, as presented in Figure 2.

The application site is bounded to the east by Les Beaucamps, to the south by Ruette des Delisles, to the east by Rue des Deslisles and to the north by agricultural land.

The site is occupied by the existing LBHS and accessed via an entrance gate to the south west of the site along Ruette des Delisles. There are additional vehicle access points located on Ruette des Delisles, along with a pedestrian access point on Les Beaucamps to the south east of the site.

Figure 2: Site Location Plan

3.3 Pedestrian Access

The site is located within a rural area and surrounded by a combination of single carriageways and rural lanes. Due to the constrained nature of the local highway network, pedestrian infrastructure near LBHS is limited. Dedicated footways are not provided on some sections of the highway network around the site, resulting in pedestrians being required to walk on the highway. Pedestrian access to LBHS is made via three entrance points:

A. Ruette des Delisles from the west via an existing staff car park;

B. Dedicated pedestrian access from the Les Beaucamps/Queux Lane crossroads; and

C. Dedicated access from Les Beaucamps, adjacent to the school's playing fields/courts.

LBHS is located within walking distance of several local communities. The existing routes to LBHS are summarised in Table 3 and illustrated in Figure 3.

For journeys made to school by foot, guidance indicates that the preferred maximum walking distance is 2,000m, equating to a 25-minute walk.

Table 3: Walking Routes to the Development Site

Route	Walking Distance	Roads and Footpaths
Route from King's Mills	1,300m	• Les Grands Moulins • Rue de la Porte • Rue des Deslisles • Ruette des Delisles
Route from the Albecq area	1,600m	• Rue de la Masse • Ruette des Delisles • Les Beaucamps
Route from Le Villocq	1,000m	• Le Mont d'Aval • Les Beaucamps
Route from La Preel	800m	• Ruette des Effards • Queux Lane • Les Beaucamps
Route from the L'Aumone area	1,700m	• Rue de la Perruque • Les Vieux Beaucamps • Queux Lane

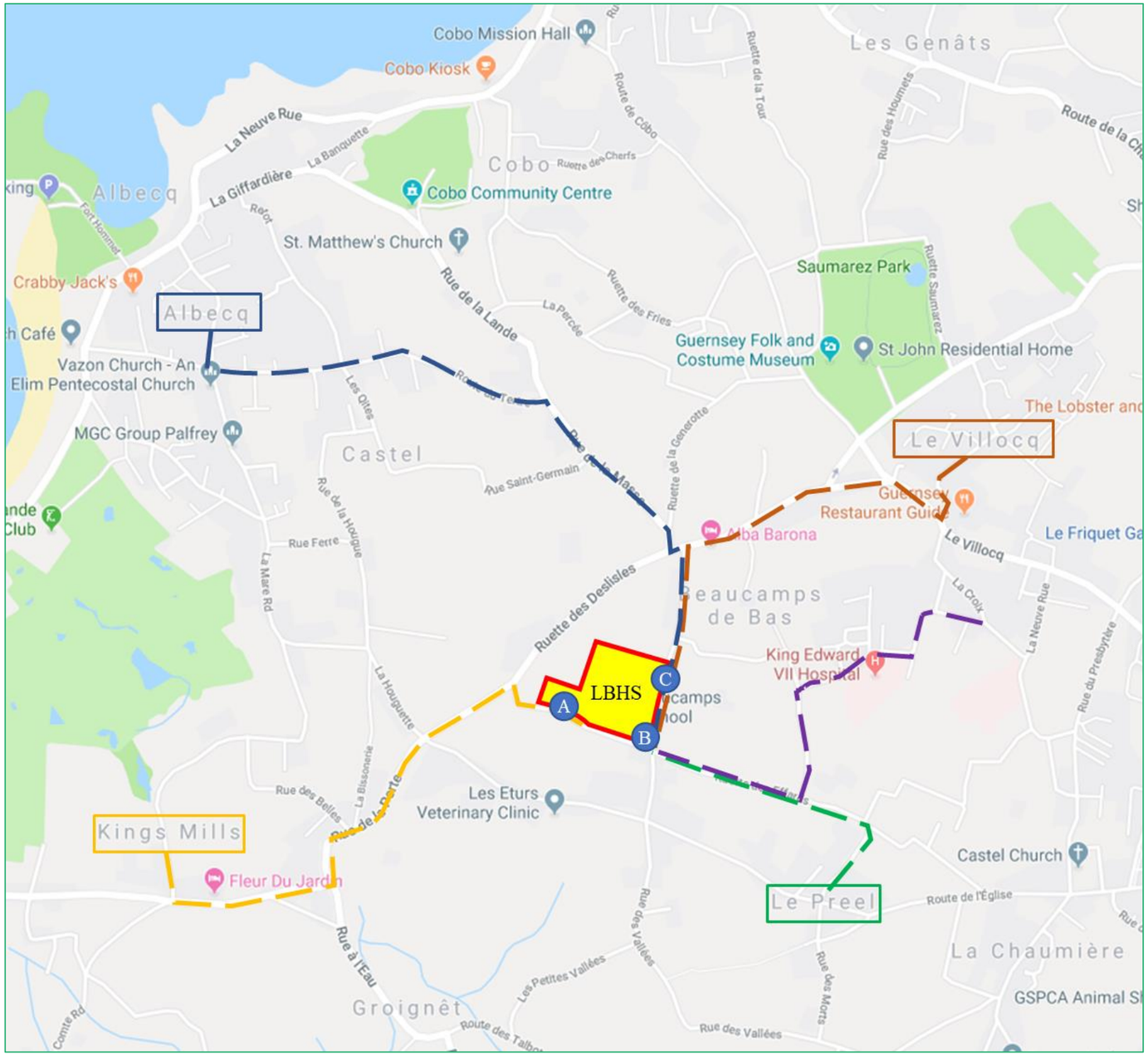


Figure 3: Pedestrian Routes to LBHS

Ruette des Delisles

Ruette des Delisles runs in an east/west alignment to the south of the school.

South of the school, there are no dedicated footways adjoining the carriageway, however there is a segregated footway between LBHS and the junction with Les Beaucamps, as shown in Photograph 1 below.

Photograph 1: Segregated Footway adjacent to Ruette des Delisles

West of the main entrance, Route des Deslisles narrows and traffic is restricted to one-way (eastbound). Whilst the narrow carriageway may encourage lower traffic speeds, there is limited spaces for vehicles and pedestrians to share.

North of the junction with Ruette des Delisles, two-way traffic flow on Rue des Deslisles is hindered by the width of the carriageway. This has resulted in some cars observed to mount the footway (where provided) in order to pass on-coming vehicles.

Les Beaucamps

At the Les Beaucamps/Ruette des Delisles/Queux Lane junction, a special constable controls traffic and pedestrian movements before and after the school day. Priority is given to pedestrians and cyclists, with many crossing to Queux Lane.

There is a marked advisory pedestrian lane on the west side of Les Beaucamps. This lack of physical segregation provides limited protection to pedestrians, however there is a posted speed limit of 25mph.

Approximately 200m north of the Les Beaucamps/Ruette des Delisles/Queux Lane junction, there is a stepped pedestrian access in to the school. This access is pictured in Photograph 2 below.

Photograph 2: Northern Pedestrian Access in to LBHS

The road is bound by walls and hedgerows which could be considered to contribute to an ‘edge’ effect, reducing the perceived width for pedestrians.

Le Mont d’Aval

To the north, Les Beaucamps forms a staggered priority junction with Le Mont d’Aval/Rue des Deslisles and Rue de la Masse. Situated between these priority junctions is a signalised crossing, linking the marked footway on Les Beaucamps with the kerbed footway on the northern side of Le Mont d’Aval.

This is a continuation of the footway on Rue des Deslisles and due to carriageway widths, some vehicles are observed to mount the footway.

Ruette de la Generotte

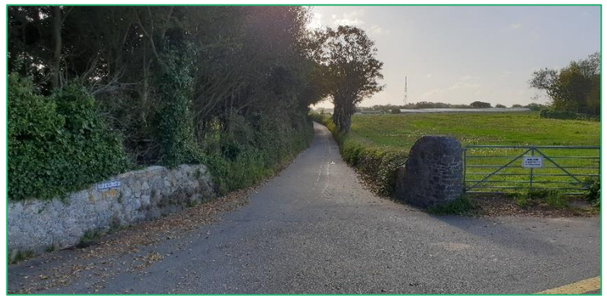
There is a segregated footway adjacent to Ruette de la Generotte that runs from the junction with Rue des Deslisles, linking with the signalised pedestrian crossing.

Photograph 3: Segregated Footway adjacent to Rue de la Masse

The footway routes north to the junction with Ruette de la Generotte. Beyond this junction, Rue de la Masse narrows and there is no segregated footway.

Queux Lane

Queux Lane forms a crossroads with Les Beaucamps and Ruette des Delisles and is designated as a Ruette Tranquille. As detailed further in Section 3.5, Ruettes Tranquilles give priority to pedestrians, cyclist and horse riders over motorists.



Photograph 4: Queux Lane

As shown in Photograph 4 above, Queux Lane is narrow and there are no demarked footways. There is however a recommended speed limit of 15mph which should improve the safety for pedestrians using this road.

3.4 Cycling

There is limited dedicated infrastructure for cycles near the site. Although LBHS has no dedicated cycle routes, cyclists can access the site through the main car park entrance. In addition, younger pupils are observed to use the segregated footway adjacent to Ruette des Delisles at the junction with Les Beaucamps.

A special constable controls traffic at the Les Beaucamps/Ruette des Delisles/Queux Lane junction at the start and end of the school day and gives priority to pedestrians and cyclists crossing at this junction.

As detailed further in Section 3.5, LBHS is located among a network of Ruettes Tranquilles, a network of roads where pedestrians, cyclists and horse-riders have priority over vehicular traffic and there is a recommended speed limit of 15mph.

There is provision for bicycle parking along the front of the school building adjacent to the bus interchange. There are 40 ‘Sheffield’ style cycle stands which can accommodate up to 80 cycles. As shown in Photograph 5 below, the cycle parking is sheltered and observed to be well used.

Photograph 5: LBHS Cycle Parking

Cycling has the potential to replace many journeys up to 10km made by other modes[3]. Figure 4 presents cycling isochrones from LBHS at five-minute intervals based on an assumed cycling speed of 16kph[4]. It can be seen in the figure that most of Guernsey is within a 30-minute cycle of LBHS.

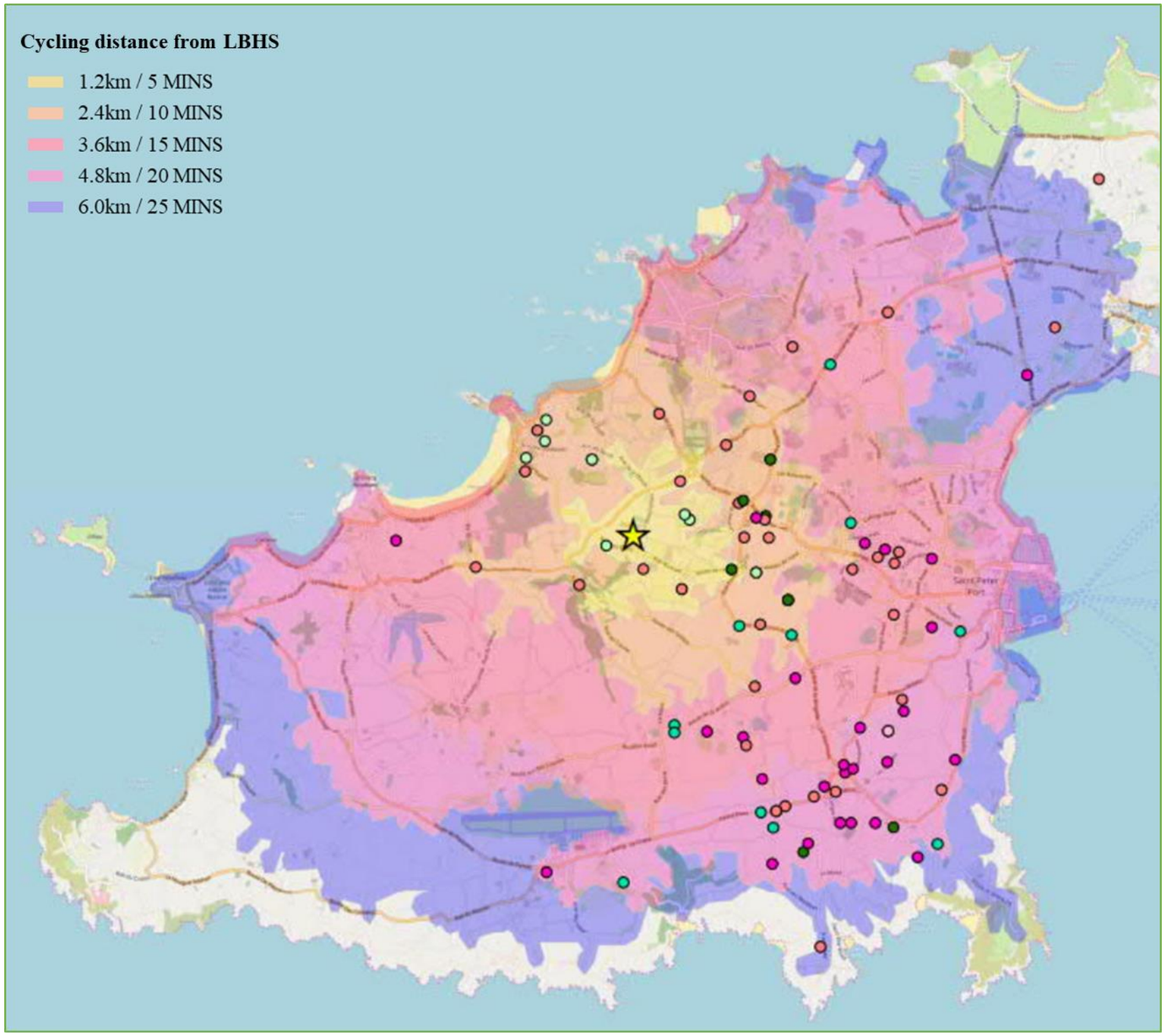


Figure 4: Cycling Isochrones[5]

[3] Department for Transport (2017) Local Walking and Cycling Infrastructure Plans: Technical Guidance for Local Authorities

[4] UK Department for Transport (2007) Manual for Streets

[5] WSP (2019) Sustainable Access Strategy

3.5 Ruettes Tranquilles

Ruettes Tranquilles can be found in several parishes in Guernsey including Castel. They give priority to pedestrians, cyclist and horse riders over motorists on an advisory basis. They are demarked by the green signs, similar to the one shown below in Figure 5 and have a recommended speed limit of 15mph is in place for all motorists.

Figure 5: Example of Ruettes Tranquilles Sign

The network of Ruettes Tranquilles are presented in Figure 6. The closest Ruettes Tranquilles to the site are Queux Lane and Les Vieux Beaucamps, located to the east of LBHS and accessed directly from Les Beaucamps.

A special constable controls traffic and pedestrian movements at the Les Beaucamps/Queux Lane junction before and after school. The special constable gives priority to pedestrians and cyclists crossing between the school and Ruette Tranquille.

The Ruettes Tranquilles were also observed to be used by scooters and mopeds.

Photograph 6: Les Vieux Beaucamps

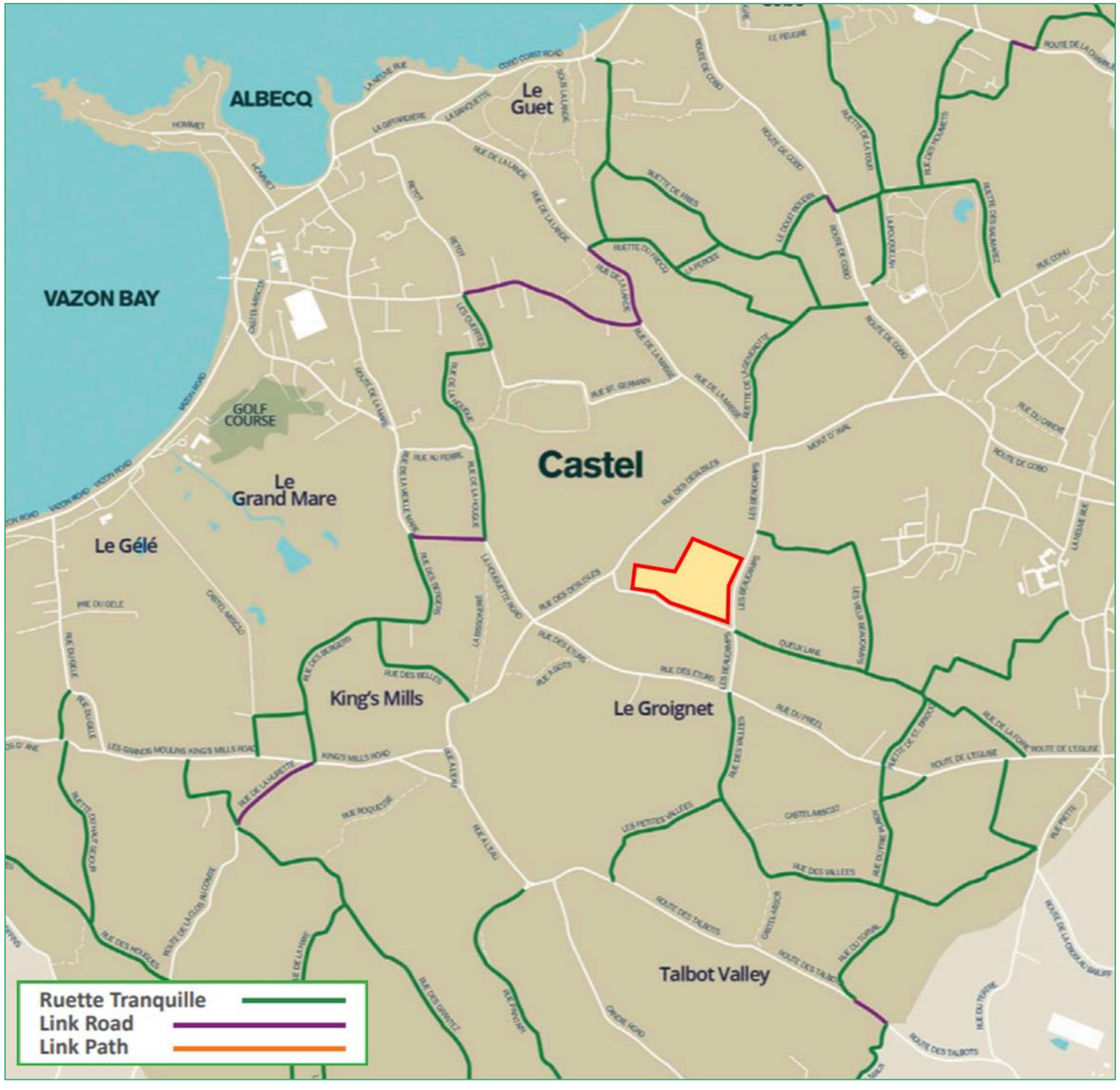


Figure 6: Ruette Tranquille Map

3.6 Public Transport

Public bus services in Guernsey are operated by CT Plus. The existing bus network is made up of 20 bus services, as presented in Figure 7 below.

Figure 7: Existing Bus Network[6]

The closest bus stops to the site area are located on Les Beaucamps and Rue des Deslisles, approximately 180m and 250m from the site respectively.

These stops are served by the Number 42, 60 and 61 services. The routes are detailed in Table 4 whilst Figure 8 illustrates the routes of the services in relation to the school site.

The Number 42 Service operates between Town Terminus and Vazon Bay, linking the site with several neighbourhoods including Le Foulon. The service operates to a half hourly frequency throughout the day.

The Number 60 Service operates between Town Terminus and L'Eree Bunker, linking the site with Perelle Bay and L'Eree. The service operates to a bihourly frequency Monday to Saturday.

The Number 61 Service operates between Town Terminus and Pleinmont, linking the site with neighbourhoods including L'Eree, La Lague, operates to an hourly frequency.

Table 4: Bus Services Operating near LBHS

Service	Route	Operators	Mon - Fri	Saturday	Sunday
42	Town Terminus to Vazon Bay	CT Plus	2 per hour First: 06:45 Last: 20:15	2 per hour First: 07:15 Last: 20:45	1 per hour First: 09:30 Last: 19:30
60	Town Terminus to L'Eree Bunker	CT Plus	1 every 2 hours First: 09:40 Last: 17:40	1 every 2 hours First: 09:40 Last: 17:40	No service
61	Town Terminus to Pleinmont	CT Plus	1 per hour First: 06:10 Last: 20:10	1 per hour First: 07:10 Last: 20:10	1 every 2 hours First: 09:10 Last: 19:10

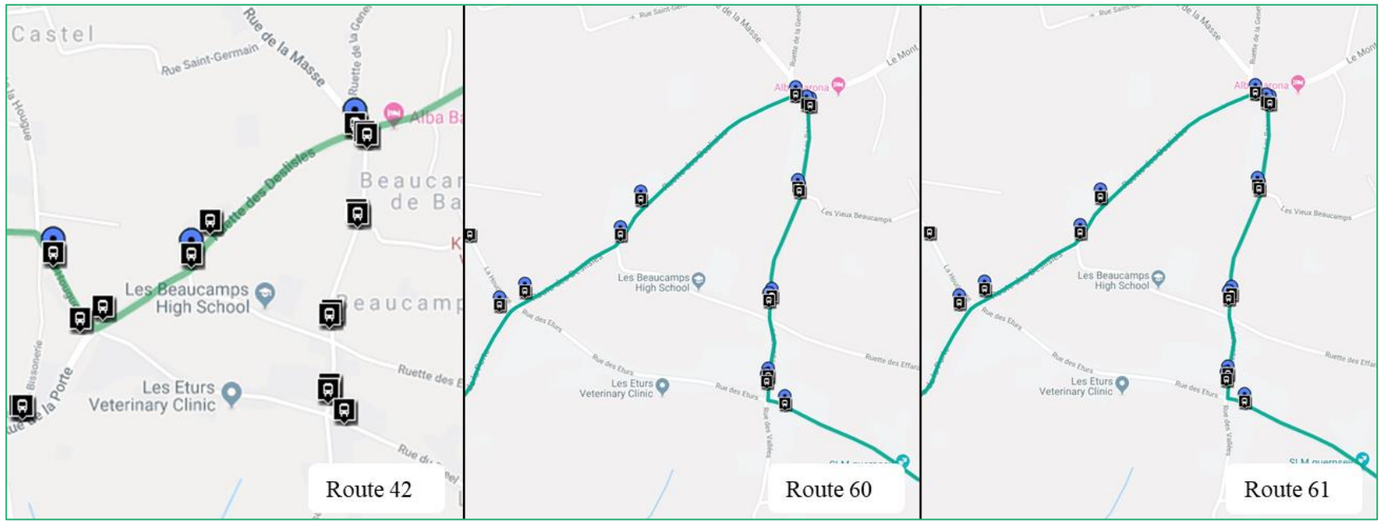


Figure 8: Bus Routes operating near LBHS

[6] Source: www.buses.gg

3.7 School Transport

There are five existing dedicated school bus services for pupils travelling to the LBHS.

School buses drop-off and collect pupils within the main car park. As shown in Photograph 7, there is a covered walkway adjacent to the sport pitches that pupils can use for shelter. The school buses services are operated by CT Plus, Island Coachways and Island Taxis on behalf of the Committee for the Environment and Infrastructure.

Photograph 7: LBHS School Bus Service

The school bus services are provided free of charge to all pupils. In addition, pupils in possession of a 'Puffin Pass' are also able to use public bus services for free.

Table 5 summarises the five school bus services for LBHS. These services are scheduled to arrive at LBHS between 08:20-08:25, ahead of the warning bell and first lesson at 08:50.

The scheduled journey time from the first pick-up location and arrival at the school is also presented in the table. Journey times are shown to be between 25-40 minutes, substantially longer than a direct car trip from these locations.

LBHS is heavily reliant on school bus services as the catchment area includes the area to the south and south-east parts of the island. This creates some pressure on the drop-off/pickup times when other students and staff arrive/depart.

As demand for some services are higher than others, some services are operated with more than one bus to meet the capacity.

Table 5: Summary of LBHS Existing School Bus Services

Route	Operator	First Stop	Pick-up Time	Arrival Time	Bus Journey Duration	Car Journey Duration	Operator	Collection Time from LBHS
Morning Services							**Afternoon Services**	
1A/1B	CT Plus	Old Mill Road	07:55	08:20	25 mins	12 mins	CT Plus	15:05
2A/2B	CT Plus	Les Val des Terres	07:50	08:20	30 mins	12 mins	CT Plus	15:05
3A/3B	Island Coachways	Tramsheds	07:50	08:25	35 mins	14 mins	CT Plus	15:05
4A/4B	Island Taxis	La Fosse de Haut	07:50	08:20	30 mins	12 mins	CT Plus	15:05
5A/5B	CT Plus	La Villette	07:40	08:20	40 mins	12 mins	CT Plus	15:05

3.8 Local Highway Network

The existing local highway network surrounding LBHS is presented on Figure 9. The primary vehicle access into the site is taken from Ruette des Delisles via an entrance gate to the south west of the site. To the west of this access, Ruette des Delisles narrows and is restricted to one-way (eastbound).

Beyond this vehicle access, the site is served by a combination of single carriageways and rural lanes. Most of the local roads near the site are 4-5m wide. In addition, many of the highways do not have designated footways and are often bounded by walls or hedges contributing to an 'edge' effect, thus reducing the perceived carriageway space.

Le Mont d'Aval and Rue du Preel are the school's local traffic priority routes running east-west. These roads are within the 2nd category in the hierarchy of the island's road network.

On many sections of the highway network, two-way traffic is hindered by the width of the carriageway. Hence, some vehicles mount the footway (where provided) in order to pass on-coming vehicles. Occurrences of this have previously been recorded at points along Rue des Deslisles and Le Mont D'Aval.

As mentioned in Section 3.5, the site is located among a network of 'Ruettes Tranquilles', a system of roads where pedestrians, cyclists and horse-riders have advisory priority over vehicular traffic. Vehicles speeds of 15mph are recommended, discouraging vehicles to travel on this network of roads and instead travel on other, wider sections of the local highway network.

Figure 9: Local Highway Network

3.9 Road Traffic Collisions

Road Traffic Collision (RTC) data for the most recent three-year period available (1 March 2016 – 2 June 2019) has been obtained from Traffic and Highway Services for the surrounding highway network.

RTCs are categorised according to their severity:

- Slight – medical attention was required but no hospital stay was necessary;
- Serious – medical attention involving a hospital stay was required; and
- Fatal.

In total, there were six collisions recorded in the LBHS study area – three at junctions and three along roads – in the three-year period. Five of the collisions were categorised as slight personal injury collisions and the other collision was damage only – clipped mirrors – and reported to the police over the counter. This damage only collision is considered to be characteristic for Guernsey and is not considered further.

Collisions at Junctions

Two out of the three collisions at junctions occurred at the Les Eturs filter-in-turn junction, both in the hours of darkness on a wet road surface. Both of the collisions were attributed to one or more driver(s) failing to look properly with one due to the weather and the other due to the road layout.

The collision attributed to the road layout involved a motorcyclist and car approaching the filter at the same time, failing to see each other and proceeding at the same time. The officer attending the scene recorded the main cause of the collision to be the road layout. The other collision does not provide a description.

These two collisions in a three-year period suggest that visibility at this junction maybe poor during hours of darkness. We note from our site visits that the junction is unlit and damp weather conditions could exacerbate the poor visibility.

The third collision occurred at the Les Eturs/Rue du Preel junction and was attributed to driver error. Specifically, it was reported that the driver failed to judge the speed of another vehicle. In daylight with fine weather conditions a motorcyclist has turned across the path of another vehicle.

Collisions on Roads

Of the two personal injury collisions on the roads surrounding LBHS, one was on Les Beaucamps and the other on Rue des Deslisles. The record for the collision on Les Beaucamps does not provide any details other than recording a slight injury and cannot be analysed further.

The collision on Rue des Deslisles involved a cyclist having to suddenly brake to avoid a parked car on a blind corner. This collision occurred during daylight in dry conditions.

Summary

Six collisions are recorded in a three-year period, of which one is damage only. The remaining five collision all resulted in a casualty being slightly injured. Two of the collisions involved a motorcyclist and one a cyclist. However, without more details such as time of day or the age of causalities, it is not possible to undertake more detailed analysis.

The collision data suggest that the filter junction at Les Eturs would benefit from street lighting.

In conclusion, the collisions recorded in the LBHS area are not considered to be statistically significant.

4 Existing Travel Demand

4.1 Introduction

This chapter presents the existing traffic flows on the surrounding highway network to provide a basis for quantifying the future changes that could arise because of the outlined proposals.

4.2 Study Area

Early consultation with SoG Traffic and Highway Services indicated that this TIA should include an assessment of five offsite junctions, as summarised in Table 6 below.

Table 6: Local Highway Network - Study Area

Ref	Junction
1	Les Beaucamps/Les Eturs Priority Junction
2	Ruette des Delisles/Les Beaucamps Priority Crossroads
3	Le Mont d' Aval/Les Beaucamps/Ruette de la Generotte Signals
4	Les Eturs/Ruette des Delisles/La Houguette Road
5	Rue des Deslisles/Ruette des Delisles Priority Junction

The location of these junctions can be seen in Figure 10. They reflect the principal routes from the development site to the local highway network.

Figure 10: Local Highway Network - Study Area

4.3 Traffic Data

Classified turning count surveys were undertaken on Wednesday 11th September 2019 during the hours 07:30-09:30 and 15:00-18:00 which cover the typical highway peak hours and school start and finish times. This is considered to represent a neutral weekday, outside of school holidays.

The survey count data is provided for reference within Appendix B.

Peak Period Analysis

Table 7 provides details of the total flows at each junction included within the study area. A peak period analysis has been undertaken for the following school opening and closing times:

- AM Peak Hour (school opening time of 09:05);
- Early PM Peak Hour (school closing time of 15:05); and
- Late PM Peak Hour (school closing time of 16:05).

As presented in Table 7, the following peak hours will be assessed:

- AM Peak Hour 07:45-08:45;
- Early PM Peak Hour 15:00-16:00; and
- Late PM Peak Hour 15:30-16:30.

It should be noted that the peak period analysis includes all vehicle movements recorded at each junction in the study area.

Given the secondary schools were open on the day of the traffic survey, all movements associated with the existing school would have been captured in this peak period analysis.

Table 7: Local Highway Network - Peak Period Calculation

Period	Junction 1	Junction 2	Junction 3	Junction 4	Junction 5	Total
AM Peak Hour						
07:45-08:45	658	459	798	959	446	3320
08:00-09:00	614	445	825	912	418	3214
08:15-09:15	483	325	742	797	369	2715
08:30-09:30	354	160	606	647	309	2075
Early PM Peak Hour						
15:00-16:00	520	340	629	735	336	2560
15:15-16:15	480	238	594	750	341	2401
Late PM Peak Hour						
15:30-16:30	442	166	524	775	344	2251
15:45-16:45	438	144	509	792	348	2231
16:00-17:00	440	145	520	757	340	2202
16:15-17:15	430	157	514	720	310	2131

Traffic Survey Data Validation

The following analysis has been undertaken to understand how average traffic flow in September compares with the other months of the year.

SoG Traffic and Highway Services have provided historic ATC data for several sites situated around Guernsey. As presented in Figure 11, there are three ATCs situated near the study area and include the following:

- Site 1: Rohais, near St Pierre Park Hotel;
- Site 2: Route de Saint Andrew, near Brickfield access; and
- Site 3: Rue des Eturs (near junction with Rue des Deslisles).

A comparison of the most recent 12-month period for which traffic data is available has been undertaken, as summarised in Table 8 below and presented graphically in Figure 12.

Table 8: Variation in Average Peak Hour Traffic Flow

Month	Average Peak Hour Traffic	Variation (%)
Jan	4920	-0.91%
Feb	5113	2.98%
Mar	5181	4.35%
Apr	4664	-6.06%
May	4443	-10.51%
Jun	4706	-5.22%
Jul	5160	3.93%
Aug	4983	0.36%
Sep	4965	0.00%
Oct	5345	7.65%
Nov	4389	-11.60%
Dec	3911	-21.23%

Based on the analysis presented above, September is considered to provide a good reflection of a neutral month.

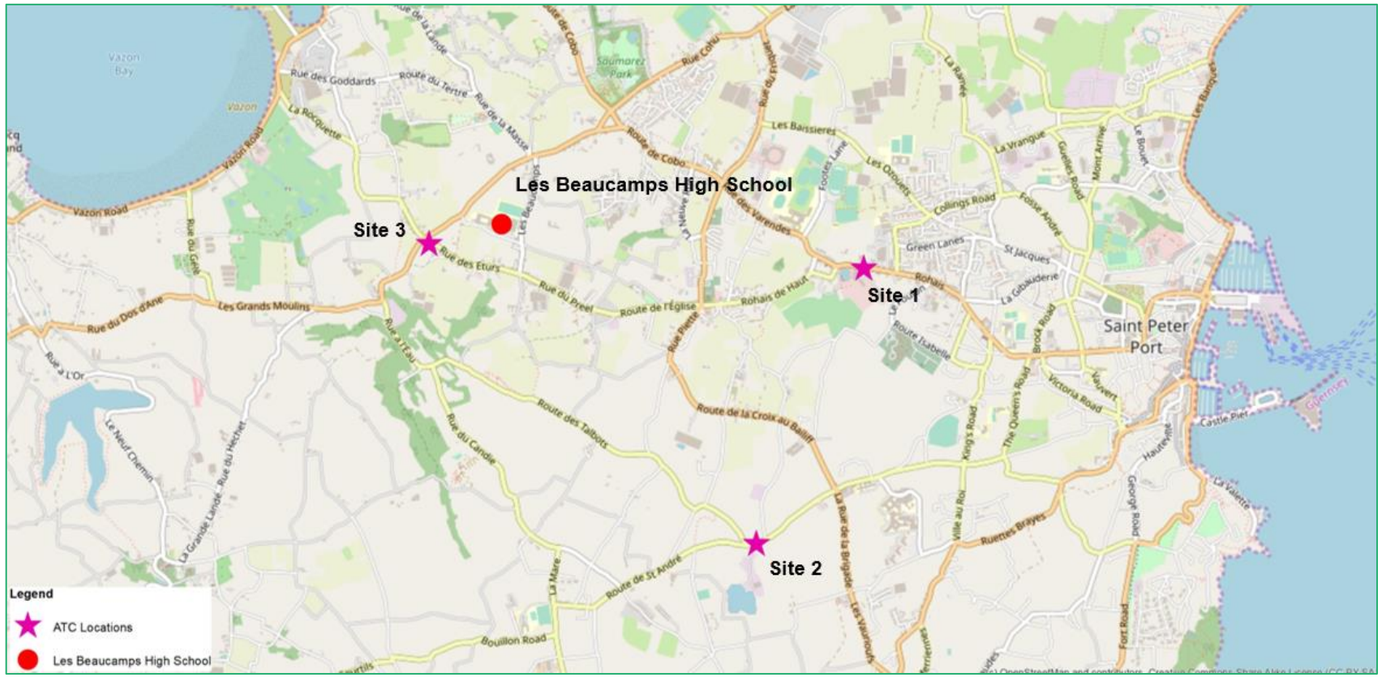


Figure 11: ATC Locations

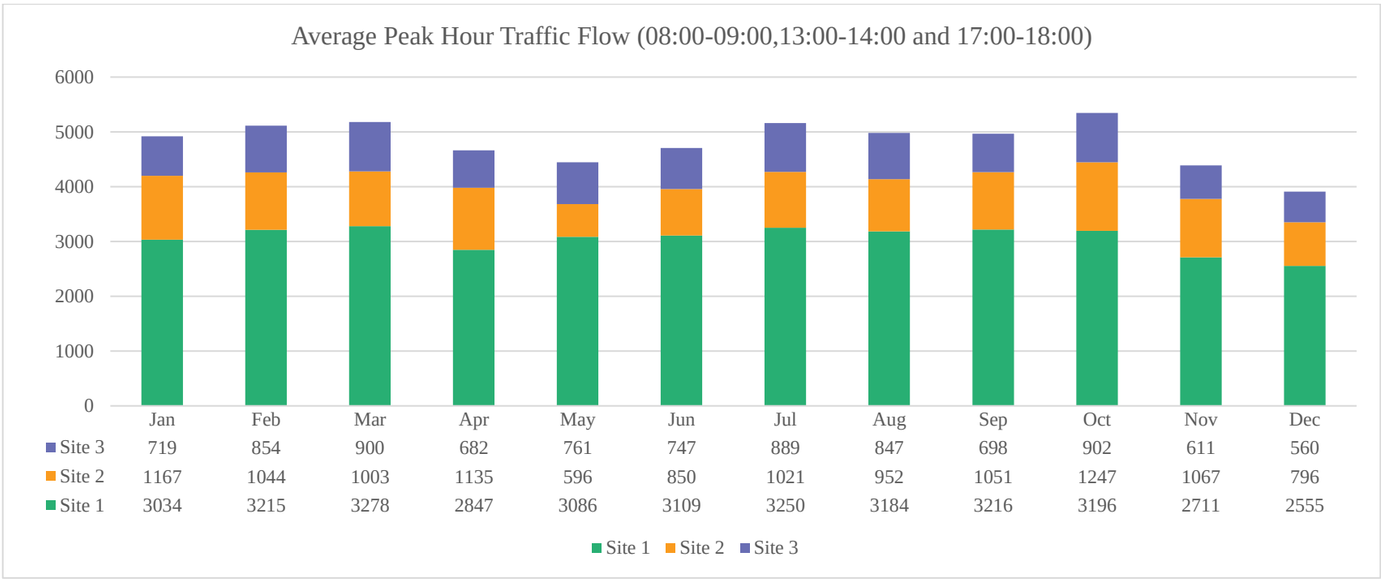


Figure 12: Average Peak Hour Traffic Flow

4.4 School Travel Survey Results

To inform the Sustainable Access Strategy, a school travel survey was developed and agreed between States of Guernsey and their consultant for completion by staff and students at LBHS. Whilst bespoke surveys were developed for both staff and students, the overall structure was similar and included the following topics:

- Travel mode choice and reason;
- Alternative modes of transport that would be considered reasonable;
- Arrival and departure times;
- Place of residence or occupational information; and
- Travel improvement suggestions.

Based on the results of the travel surveys, the Sustainable Access Strategy presents a summary of the likely existing travel demand for LBHS. This is presented in Table 9 below and based on the assumption that staff/pupil attendance is approximately 93% to account for sickness and authorised absences.

Table 9: LBHS Existing Travel Demand (Estimated)

Travel Mode	Mode Share	Demand
Staff		
Foot	0%	0
Cycle	0%	0
Motorcycle/scooter	0%	0
Car (as driver)	88%	54
Car (as passenger)	12%	17
Subtotal (93% of 66)		**61**
Pupil		
Foot	9%	38
Cycle	8%	33
Bus services	38%	169
Scooter parking	12%	68
Car	33%	146
Subtotal (93% of 489)		**455**

The Sustainable Access Strategy indicates that key contributors that influence travel mode choice include the following:

- Personal commitment outside of school;
- Travel time;
- Convenience;
- Comfort; and
- Lack of sustainable travel options.

Other key issues identified by the Travel survey included:

- Limited public bus services are available for staff;
- Pedestrians and cyclists can be required to walk/cycle in the highway on smaller rural lanes; and
- Insufficient segregation between pedestrian/cycle infrastructure and vehicles on the highway.

4.5 Isolating Existing School Trips

To estimate the traffic impact of the proposals on the wider highway network, the existing vehicle movements associated with all secondary schools need to be isolated. This includes:

- Existing staff trips to LBHS;
- Existing pupil trips to LBHS, including the proportion of linked trips (i.e. dropping a child off on the way to work); and
- Existing trips to other secondary schools including the Grammar School, Le Mare de Carteret High School and SSHS.

The methodology for isolating the above existing vehicle movements is presented below.

Existing LBHS Trips

Staff Trips

As set out in the Sustainable Access Strategy, there are 68 staff employed at LBHS of which 89% drive a vehicle to school. Based on the results of the staff travel survey, Table 10 below outlines the assumed arrival and departure profile.

Table 10: Existing LBHS Arrival and Departure Profile

Period	Arrivals	Departures
AM Peak Period		
07:30-08:00	34%	-
08:00-08:30	37%	-
08:30-09:00	8%	-
PM Peak Period		
15:00-16:00	-	28%
16:00-17:00	-	46%
17:00-18:00	-	17%

As summarised above, 45% of teachers arrive in the period 08:00-09:00, whereas 28% depart between 15:00-16:00 and a further 42% leave between 16:00-17:00.

The number of staff trips generated by LBHS in the three peak periods is set out in Table 11 below. It has been assumed that 93% of staff are in attendance, with the remainder either absent or working elsewhere.

Table 11: Existing LBHS Staff Trips

Mode	08:00-09:00		15:00-16:00		16:00-17:00	
	In	Out	In	Out	In	Out
All Modes	28	0	0	18	0	32
Car	25	0	0	16	0	28

The home postcode of staff trips by travel mode is presented in the Sustainable Access Strategy and can be used to define the distribution of vehicle trips to and from the school. The assignment of development traffic has been determined by examination of the highway network. This exercise has been undertaken by attributing each set of trips to the destination via the most likely route.

The distribution of existing LBHS staff vehicle trips is summarised in Table 12 below.

Table 12: Existing LBHS Staff Distribution

Link Assignment	Distribution
Rue de la Porte	10%
Rue du Preel	14%
Rue des Vallees	0%
La Houguette Road	0%
Rue de la Masse	5%
Le Mont d'Aval	71%
Total	**100%**

Pupil Trips

The Sustainable Access Strategy presents a modal split for pupil journeys to school based on the results of the LBHS Travel Survey. A modal split was not however collected for departures in the PM peak hour, which may be different for several reasons such as the work commitments of parents.

To identify whether the proportion of pupil journeys made by car in the AM and PM peak hours are different, traffic survey data collected at the site access has been analysed.

To identify the vehicle trips associated with pupil drop-off, the following movements have been isolated:

- Vehicle movements departing from the school in the AM peak hour to ensure staff trips arriving to the school are not counted; and
- Vehicle movements arriving at the school in the PM peak hour to ensure staff trips departing from the school are not counted.

The findings are presented in Table 13 below.

Table 13: Pupil Drop-Off and Collection in the Peak Hours

Period	Vehicle Movements	Proportion (%)
AM Peak Hour	174	60%
PM Peak Hour	115	40%
Total	**289**	**100%**
Variation	**59**	**20%**

Based on the findings above, a revised modal split has been calculated for the PM Peak Hour when school finishes. It is assumed that any pupils not travelling by car in the PM peak hour would instead use the school bus service (80%) or walk (20%).

Given pupils have been dropped off by car in the AM peak hour, it is considered appropriate to assume that pupils would not have a bicycle of scooter to travel with in the PM peak.

Some pupils arriving to the school by car will be travelling with another pupil. This could be a sibling or a with a friend. The National Travel Survey indicates there is an average car occupancy of 2.1 for the journey purpose *education* (1 parent plus 1.1 pupils). This suggests that one in every ten cars is transporting a second child to school which reflects observations on site.

The revised modal split assumptions, capturing the change in mode share in the PM peak hour and vehicle occupancy of pupil trips, are presented in Table 14.

Table 14: Revised Pupil Modal Split Assumptions

Mode	AM Peak Hour	PM Peak Hour
Foot	9%	10%
Cycle	8%	7%
Bus Services	37%	45%
Scooter/ Moped	12%	15%
Vehicle (Single)	31%	19%
Vehicle (Passenger)	3%	3%
Total	**100%**	**100%**

The revised modal split presented in the table above will be used to inform the trip making assumptions in Section 7.4.

To isolate the number of vehicle movements associated with pupil drop-off, the vehicle movements presented in Table 13 have been utilised.

The distribution of existing pupil trips made by car has been extracted from the Sustainable Access Strategy using the same the methodology as staff trips. The resulting distribution is presented in Table 15 below.

Table 15: Existing LBHS Pupil Distribution (Origin)

Link Assignment	Distribution
Rue de la Porte	22%
Rue du Preel	46%
Rue des Vallees	0%
La Houguette Road	4%
Rue de la Masse	5%
Le Mont d'Aval	23%
Total	**100%**

Many of the vehicle trips to LBHS associated with pupil pick-up and drop-off are linked trips. After dropping off the pupils, many parents will then travel to another location such as work rather than returning home. Similarly, in the PM some parents may be arriving from work and then travel home.

Linked Trips (Pupil Drop-off)

Whilst some parents will return home after dropping pupils off at LBHS, others will continue on to another destination such as their place of employment. These linked trips will impact the distribution of outbound trips in the AM peak hour and inbound trips in the PM peak hour.

Traffic survey data has been interrogated to calculate the distribution of outbound trips from the school in the AM peak hour and inbound trips in the PM peak hour. This has been undertaken by analysing the proportion of traffic turning at the junctions located closest to the school.

The data generally shows more journeys in the outbound direction to larger employment areas such as St Peter Port and to Ruette de la Generotte (presumably to Castel Primary School).

The revised traffic distribution in the outbound direction (shown below in Table 16) has been used within the junction capacity assessment.

Table 16: Revised Outbound Pupil Distribution

Mode	Outbound (AM Peak Hour)	Inbound (PM Peak Hour)
Queux Lane	1%	1%
Rue de la Porte	6%	8%
Rue de Preel	42%	36%
Rue de Vallees	3%	2%
La Houguette Road	10%	7%
Ruette de la Generotte	22%	29%
Le Mont d'Aval	17%	17%
Total	**100%**	**100%**

The distribution of existing of existing vehicle trips associated with LBHS presented diagrammatically can be found in Appendix C.

Existing Secondary Education Trips

The CfESC have provided scatter diagrams which indicate the location of pupils attending other schools. These have been used to estimate the distribution of existing vehicle trips which enter the study area for Les Beaucamps High School.

It should be noted that no personal details regarding any individual has been obtained or shared as part of this exercise.

Grammar School & Sixth Form Centre

The Grammar School & Sixth Form Centre employs 144 staff and is attended by 787 pupils. The following assumptions have been made to estimate the vehicle trips generated by this school:

- Arrival and departure profile of staff is the same as SSHS[7];
- 80% of staff drive to work;
- 40% of pupils are dropped off by parents, of which 15% are linked trips; and
- A further 10% of pupils drive by car to account for the sixth form college with car parking.

Table 17 presents the resulting number of vehicle trips that are estimated to be generated by the Grammar School & Sixth Form Centre .

Table 17: Grammar School & Sixth Form Centre Existing Vehicle Trips

	08:00-09:00		15:00-16:00		16:00-17:00	
	In	Out	In	Out	In	Out
Pupils	366	183	183	366	0	0
Staff	60	0	0	34	0	57
Total	426	183	183	400	0	57

The CfESC have provided scatter diagrams which indicate the location of pupils attending the Grammar School & Sixth Form Centre . The scatter diagram for the Grammar School & Sixth Form Centre diagram relates to all pupils, not just those who travel by car. This has been used to estimate the distribution of vehicle trips to the school. To calculate the distribution of staff trips, the travel survey results of LBHS and SSHS have been used.

The distribution calculation for is presented in Table 18 below.

Table 18: Existing Grammar School & Sixth Form Centre Distribution

Link Assignment	Pupils	Staff
Rue des Eturs	1%	0%
Ruette de la Generotte	3%	9%
La Houguette Road	1%	0%
Rue de la Porte	9%	8%
Ruette des Delisles	0.1%	0%
Other (i.e. Outside of study area)	87%	83%
Total	**100%**	**100%**

St Sampson's High School

The impact of existing vehicle trips associated with SSHS has been tested. This indicated there is minimal traffic within the LBHS study area and therefore the impact on nearby junctions would be negligible.

La Mare de Carteret High School

Following the same methodology outlined above, an assessment of existing journeys to La Mare de Carteret High School indicated there would be minimal traffic impact on junctions within the LBHS study area.

Summary

Existing vehicle movements associated with all secondary schools in Guernsey including LBHS and the Grammar School & Sixth Form Centre have been isolated using scatter diagrams and the results of the LBHS & SSHS Travel Survey.

The traffic movements associated with these schools are presented diagrammatically in Appendix C. The vehicle movements identified in this section will be removed from the future 'with development' assessment scenarios to avoid the double counting of trips associated with secondary education in Guernsey.

[7] Sustainable Access Strategy (2019) WSP

5 Development Proposals

5.1 Introduction

The TEP 11-18 Schools Project will see the population of LBHS increase substantially from 489 to around 1,500 pupils, with staff numbers (including support staff) increasing from 66 to approximately 180, by 2025. Following the proposed expansion to LBHS, the college campus will be named de Saumarez College.

It is proposed that the school day will continue to start at 08:30 every morning. The school day will continue to finish at 15:05 on two days of the week and extended to 16:05 for the other three days[8].

The increase in pupil and staff numbers will increase demand on parking facilities for bicycles, motorcycles/scooters and cars. In addition, there will be an increase in demand for school bus services.

This chapter presents the transport elements of the development proposals. The proposed highway works are presented in the following drawings:

- Drawing 1: Proposed Site Egress; and
- Drawing 2: Offsite Highway Design (Baseline Scenario).

5.2 Access Strategy

The proposed access strategy for de Saumarez College has been developed with reference to the hierarchy of users, as presented in Figure 13 below.

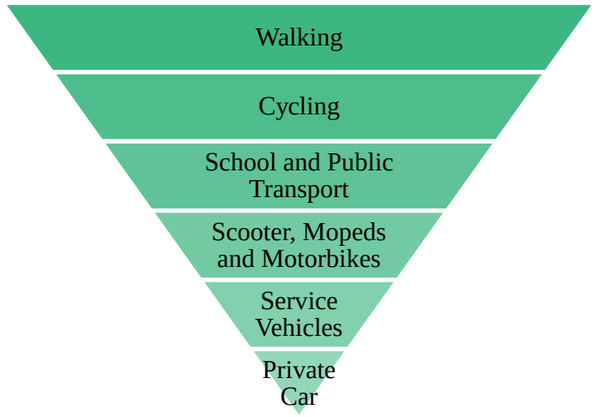


Figure 13: User Hierarchy

This gives priority to pedestrians and cyclists over other road users within the school and, where possible, on the surrounding highway network.

In summary, the access strategy includes the following proposals:

- Improvements are proposed to the northern pedestrian access from Les Beaucamps. As presented in Drawing 2, it is proposed to provide a ramped access that will be DDA compliant, rather than the existing stepped path;
- A new pedestrian and cycle access will be introduced as part of the egress proposals on to Les Beaucamps, as shown in Drawing 1;
- In addition, the existing pedestrian and cyclist accesses in to the site via Ruette des Delisles will be maintained;
- A special constable will continue to control traffic movements at the Les Beaucamps/Ruette des Delisles junction, providing priority for pedestrians and cyclists crossing on to Queux Lane.
- School buses will be given priority within the school grounds and permitted to exit before cars. Additional services will be introduced to reflect the revised catchment;
- Waiting facilities for public bus services on Les Beaucamps are proposed to serve staff and pupils;
- The designated motorcycle and scooter access from Ruette des Delisles will be maintained and parking provision will increase to reflect estimated demand;
- Vehicular access to the school will continue to be via Ruette des Delisles, as will egress for student motorcycles/scooters;
- Vehicle egress for all other vehicles, including school buses and service vehicles, will be via a new exit junction onto Les Beaucamps to the north of the Militia Building on the corner of Les Beaucamps/Ruette des Delisles, as presented in Drawing 1; and
- Special Constables will remain in use at the Les Beaucamps/Ruette des Delisles junction to facilitate access for all vehicles. Furthermore, an additional Special Constable will be sited at the proposed junction with Les Beaucamps to facilitate efficient egress from the school.

[8] CfESC (2019) Transforming Education Programme – The Programme Business Case

Pedestrian Provision

Pedestrians will be able to access de Saumarez College from four locations:

- Existing access from the Les Beaucamps/Ruette des Delisles junction;
- Existing access from Ruette des Delisles via the middle car park;
- Improved access from Les Beaucamps to the north east of the site;
- Proposed access from the western (lower) car park; and
- Proposed access from Les Beaucamps as part of the vehicle egress proposals.

The two existing access routes, via the main pedestrian entrance adjacent to the former Militia Building and westbound on Ruette des Delisles, will be maintained. Pedestrians crossing at the Les Beaucamps/Ruette des Delisles junction will continue to be controlled by a Special Constable.

It is proposed to improve the northern pedestrian access from Les Beaucamps. This improved access will be ramped rather than stepped, and will be able to accommodate pedestrians and cyclists, though cyclist will need to dismount. Appropriate signing will be sited in advance of this required manoeuvre. This is presented in Drawing 2. A pedestrian access will also be introduced from Les Beaucamps as part of the vehicle egress proposals and presented in Drawing 1.

It is proposed to introduce a kerbed footway on the western side of Les Beaucamps from the Mont d'Aval junction to the north, to the crossroads with Ruette des Delisles. At the direction of SoG Traffic & Highway services, a minimum kerbed footway width of 1.2m is proposed. Where it is not possible to maintain a 4.8m wide road, a minimum footway width of 1m should be shown, however this will be assessed as part of the detailed design.

It is recommended that on-site measurements are collected to validate the measurements taken from OS mapping to confirm actual road widths.

A kerbed footway has not been shown on Les Beaucamps to the south of the junction with Ruette des Delisles given the reduced highway widths the anticipated limited demand and the ability to deliver a safe crossing at the Les Beaucamps/Rue de Preel junction.

A distribution calculation has been prepared for all pupil properties within an approximate one mile catchment of de Saumarez College, as summarised in Table 19 below.

Table 19: Distribution of Pupil Residing within a mile of de Saumarez College

Route	Pupils	Distribution
Les Beaucamps (S)	22	7%
Ruette des Delisles	24	7%
Les Beaucamps (N)	130	40%
Ruettes Tranquilles	145	46%

The distribution calculation demonstrates that there are limited number of pupils that would journey by foot to the school from the south via Les Beaucamps and therefore a footway demarked with white lining is deemed to be appropriate. Should SoG Traffic and Highway Services disagree, a planning contribution can could be offered for the delivery of a kerbed footway.

Cycle Provision

As noted, in addition to the existing entrances to the site, cyclists will be able to access de Saumarez College using the improved ramped entrance to the north on Les Beaucamps.

Cyclists will also be able to leave the school via the proposed vehicular egress to the north of the former Militia Building using the shared footway/cycleway. It is recommended that a Special Constable is posted at the proposed egress to control traffic and give priority to cyclists exiting the school.

School Transport

School buses will continue to enter the school via Ruette des Delisles and pick up in the existing location to the west of the main entrance into the school building. Buses will then exit the school via the proposed egress to the north of the former Militia Building.

Buses will be given priority over vehicles both within the school and at the junction onto Les Beaucamps.

School buses will be allowed to drop off as close to the school as possible, with vehicular drop off not being allowed in this space.

The bus drop-off/pick-up area designated for school buses will be extended to 108m to accommodate approximately 12 school buses, as shown on the Site Masterplan included in Appendix D.

Section 7.4 sets out the demand for the school bus service in baseline scenario. It is estimated that 520 pupils will use the school bus service in the AM peak hour and 630 pupils in the PM peak hour.

Following conversations with the CfE&I, it is understood that typical buses have a capacity of 42 pupils, including standing. This would result in a minimum of 15 school buses being required at the end of the school day. Alternatively, if school buses with a capacity of 33 pupils are used, a minimum of 20 buses would be required.

Whilst some of these school bus services could be transferred from other secondary schools which are closing, there may be a requirement to source additional buses and drivers. It is understood that the CfESC and CfE&I have started to investigate how these additional services can be introduced.

Initial estimates for the increase in demand on the school bus service indicates that the additional lay-by will provide sufficient space. Should there be no scope to provide an additional lay-by for the school bus service, arrival/departure times may need to be staggered.

If there is the potential for pupils to be waiting for bus services due to staggered arrival and departure times, sheltered waiting area will need to be provided.

Following a review of school bus services and demand, should the number of buses exceed on-site provision, the Management Plan will need to be amended to reflect this. Potential options include double stacking school buses adjacent to the proposed lay-by, or some buses waiting on Ruette des Delisles. Both potential options, alongside any others, need to be explored in detail and agreed with SoG Traffic & Highway Services.

Public Transport

To reduce traffic speeds on Les Beaucamps near the pedestrian access proposed to be improved, a build-out will be introduced with priority given to southbound traffic. The proposed vehicular access and egress, both of which will be controlled with special constables at the start and end of the school day, will reduce traffic speeds at the other pedestrian accesses in to the school from Les Beaucamps.

A new bus shelter is proposed on the proposed build-out for the existing southbound bus service on Les Beaucamps (currently used by bus services 60 and 61), as shown in Drawing 2. There will be a dropped kerb crossing between the western footway and the bus stop, which is proposed to be 2m wide to accommodate the shelter and pedestrians.

A bus shelter is also proposed on Les Beaucamps for the northbound services, as shown in Drawing 2. It recommended that the bus shelter design is cognisant of the available footway width. It is proposed for the design of the bus shelters to be agreed with SoG Traffic and Highway Services in a subsequent design stage.

Initially, these waiting facilities are aimed at providing shelter for staff, however they could also be used by a small number of pupils if required. Should there be an identified demand for pupils to use the public bus services, there could be potential to redirect some bus services into the school.

Vehicle Access

Vehicles will continue to access the school via Ruette des Delisles. Drop-off will not be allowed close to the school entrance, which is to be reserved for school buses.

Egress is proposed via a new junction with Les Beaucamps to the north of the former Militia Building. This junction arrangement is presented in Drawing 1.

To reflect Guernsey design standards[9], a visibility splay of 2.4m x 33m is shown, which is suitable for roads with a design speed of 25-35mph.

The proposed site egress design has been tracked with a single deck bus. The Swept Path Analysis is presented in Drawing 1 and indicates the egress can accommodate a school bus, however both sides of carriageway are required for buses turning left on to Les Beaucamps.

5.3 Parking

In line with the access strategy and hierarchy of users, parking provision for cyclists, motorcycles / scooters and school buses will be increased. At the same time, despite the increase in staff numbers, it is proposed that car parking at the school will be maintained at current levels.

The quantum and location of parking for each mode is outlined below.

Cycle Parking

The adopted SoG Parking Standards for cycle parking provision is outlined below.

Table 20: SoG Cycle Parking Standards

Standard	Resultant Requirement
1 Secure Loop (2 cycles) per 10 car parking spaces	27 cycle spaces

The guidance document suggests that one cycle parking space per five car parking spaces should be provided. Approximately 135 car parking spaces are proposed which results in a minimum requirement of 27 cycle parking spaces (or 14 Sheffield style stands).

LBHS currently has 40 covered Sheffield Stands, providing 80 cycle spaces, located adjacent to the location for school buses. At the time of the site visit, 35 cycles were observed using the cycle parking however it should be noted it was a warm, dry day and demand could be lower on a wet day.

Based on the existing demand as reported in the Travel Survey, 8% of pupils at de Saumarez College are projected to cycle. Applying this to the proposed 1,500 pupils would result in a demand for 120 cycle spaces which could be provided by 60 Sheffield style stands. To accommodate a potential increase in demand, potentially on a dry day, it is recommended that provision is increased by 10%. Therefore, it is proposed to provide 70 Sheffield style stands. Additional cycle parking should therefore be provided to accommodate this additional demand.

[9] SoG Traffic Committee (2001) Traffic Engineering Guidelines for Guernsey – Road Hierarchy Traffic Management Regimes

There is currently no demand for staff cycle parking based on the results of the travel survey. However, as set out in Chapter 6, staff are to be encouraged to cycle to the school and it would be beneficial to locate staff cycle parking away from the students if a suitable area is available. An initial five Sheffield style stands are proposed solely for staff use.

Motorcycle and Scooter Parking

The SoG parking standards for motorcycle/scooter parking provision is outlined in Table 21 below.

Table 21: SoG Motorcycle Parking Standards

Standard	Resultant Requirement
1 space per five car parking spaces	27 motorcycle/scooter spaces

The guidance document suggests that one space per five car parking spaces, resulting in a minimum requirement of 27 motorcycle parking spaces.

LBHS currently has around 65 spaces, located at the western end of the main car park with its own entrance. At the time of the site visit, 51 student motorcycles/scooters were observed.

As detailed in Section 7.4, approximately 15% of pupils are estimated to travel by scooter. Applying this percentage to the future demand of 1,500 pupils results in a demand for 225 motorcycle/scooter parking spaces.

Staff motorcycle parking will be included within the staff car park. If there is sufficient demand from users, staff car parking spaces could be converted to from a single car space to two motorcycle parking spaces. Demand could be monitored as part of the School Travel Plan.

Accessible Parking

The SoG parking standards state that if total provision is between 51-200 car parking spaces, 6% of the total should be designed as accessible parking. This results in a requirement for eight accessible parking spaces.

There are currently two marked accessible spaces close to the school building main entrance, with a further three designed to an accessible standard. Subject to demand, it may be appropriate for some of the accessible parking to not be designated as such.

Car Parking

Car parking provision is not proposed to be increased at the school. There are currently 135 spaces provided at the school in two areas, the main car park and further west along Ruette des Delisles, including two accessible spaces and around six visitor spaces.

Though there will be changes made to the car parks, as shown in the masterplan, the final number of parking spaces will be broadly similar to the existing provision. This results in a provision of around 75% of total staff or 0.75 parking spaces per staff member.

The Travel Survey of LBHS suggests that all staff travel to school by car, 88% as a driver and 12% as a passenger, so most cars are single occupancy. If this trend were to continue, there would not be enough parking within the grounds of de Saumarez College. This will need to be reduced by switching to other modes of travel.

As outlined in the following Chapter, several measures are proposed to encourage staff to travel by alternative modes of transport.

Parent Pick-up and Drop-Off

The Proposed Site Masterplan, included in Appendix D, indicates that pupils will be dropped-off and picked-up via the main car park, adjacent to the school buses.

The forecast number of pupil journeys estimated to be made by car is set out in Section 7.4 and summarised in Table 22 below.

Table 22: De Saumarez College Future Pupil Trips by Car (baseline)

Period	Pupils	Vehicles
Morning Drop-off	450	409
Afternoon Pick-up	257	234

It is estimated that approximately 410 cars will access the school via Ruette des Delisles to drop pupils off in the AM peak hour. In the PM peak hour, it is estimated that 234 vehicles access the site to collect pupils.

The high volume of traffic accessing the site before and after the school day could increase potential conflict between users. It is therefore proposed to control all vehicular and non-vehicular movements within the site at the beginning and end of the school day with a management plan. This will be implemented by the special constables that will be in operation at the beginning and end of the school day.

It should be noted that the estimated number of pupil journeys made by car presented in Table 22 is based on a scenario without sustainable transport interventions and therefore represents a very worst-case scenario. The number of pupil journeys made by car is likely to be far less.

The CfESC have indicated that the proposed parking for parent pick-up will be sufficient to meet demand as on-site observations indicate most parents arrive after the school buses have departed and therefore don't park. To avoid the potential for over-providing parent parking which goes against the sustainable credentials of this scheme, a parallel parking arrangement has been proposed, as presented on the Masterplan.

Events and Parents Evening

There will be periodic school and community events at de Saumarez College that will result in an increase in demand on car parking, including parents evening when teachers and parents will both be parked at the school.

For these events, the bus lay-by and parent drop-off parking spaces can be used for additional car parking and this will need to be controlled with a management plan.

6 Sustainable Transport Interventions

6.1 Introduction

This Chapter sets out a range of sustainable transport interventions which are proposed to encourage all users of de Saumarez College, including pupils, staff, parents and visitors to travel to and from the site by sustainable modes of transport.

Research indicates that pupils that walk or cycle to school are more alert, ready to learn and achieve better grades in class[10]. Active travel also contributes towards a healthy lifestyle and the opportunity to increase social interaction. Furthermore, positive travel behaviours that are encouraged from a young age have the potential to translate to adulthood, resulting in lasting environmental, social and health benefits for Guernsey.

The benefits of encouraging trips to be made by sustainable modes of transport therefore extend beyond localised traffic reductions. It is widely recognised that the car is the favourable mode of transport in Guernsey. The Island Development Plan indicates that high levels of car ownership and travel choice remain a significant issue on the island. In addition to measures that encourage travel by sustainable modes of transport, other interventions are therefore required that seek to make travel by car less convenient. This 'carrot' and 'stick' approach is recognised as the most effective way of changing travel behaviours[11].

These proposals form the basis of the trip making assumptions for this scenario. To demonstrate that the proposed interventions could influence travel behaviour, the findings of the travel survey have been referenced. In addition, case studies are included which indicate the extent to which similar proposals have been successful elsewhere.

Outlined below are a set of initial measures to reduce car use for trips to/from de Saumarez College and a set of further measures should the required reduction not be met. The initial measures form the basis of this planning application.

6.2 Proposed Interventions

Introduction

This section sets out the range of proposed sustainable transport interventions to encourage positive travel behaviours. Figure 14 below presents the measures proposed to encourage travel by sustainable modes and discourage the car.

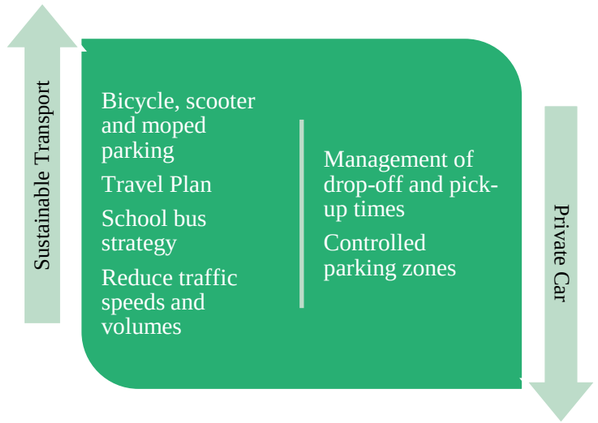


Figure 14: Proposed Sustainable Transport Interventions

The proposed interventions set out in this chapter are presented in the following drawings:

- Drawing 3: Offsite Highway Design (with Sustainable Transport Interventions) (1 of 2); and
- Drawing 4: Offsite Highway Design (with Sustainable Transport Interventions) (2 of 2).

Travel Plan

A School Travel Plan (STP) will be introduced outlining a list of soft measures aimed at encouraging staff and pupils to travel by sustainable modes of travel. These measures could include cycle training and walk to school week. Further details on the proposed School Travel Plan can be found in Chapter 10.

A study of 15 primary schools and 15 secondary schools in England was undertaken to assess the benefits of introducing a School Travel Plan. [12] Of the 30 schools, ten were in rural areas, eighteen were on the outskirts of a town or city, and two were in a city centre location.

The key findings of the study included the following:

- School Travel Plans contributed to an average total reduction in car use of 23%, with some high performing schools cutting car use by more than 50%;
- All schools achieved levels of walking, cycling or bus use that is significantly higher than the national average;
- Two-thirds of schools said that congestion was cut at the school entrance, a key objective of School Travel Plan;
- Improvements to highway safety were recorded alongside pupil's attendance, punctuality readiness to learn; and
- The fitness and overall health of students were recorded to have improved.

The report suggested that between 60-90% of schools can be expected to achieve some positive modal shift in the travel choices of students following the introduction of a School Travel Plan.

[10] Department for Children, Schools and Education (2007) Effective Teaching and Learning for Pupils in Low Attaining Groups

[11] Journal of Planning Education and Research (2017) Carrots versus Sticks: Assessing Intervention Effectiveness and Implementation Challenges for Active Transport

[12] Transport for Quality of Life (2010) Making School Travel Plans Work - Experience from English Case Studies

The study refers to other examples where local authorities have seen improvements at sizeable groups of schools they have worked with, including;

- Eight schools in Cambridgeshire reducing car use by an average of 22%; and
- Nine schools in Devon achieved an average car use reduction of 28%.

Annual Travel Surveys will be conducted at LBHS to monitor the success of the School Travel Plan and identify whether additional measures are required.

School Bus Strategy

As set out in Section 3.7, there is significant disparity in journey times between the school bus service and by car, with the school bus service shown to take up to twice as long.

A review of the existing and proposed school bus routes is therefore proposed to rationalise the services with the aim of maximising reliability and reducing journey times. The review will also explore providing pupils with bus passes for specific services to better manage demand and improve service quality.

It has been agreed that all pupils residing more than one mile from the school will have free access to the school bus service[13].

The results of the LBHS School Travel Survey indicated that 30% of pupils would consider bus as an alternative mode of transport to school. There is therefore potential for a higher proportion of pupils to travel by bus, providing drop-off/pick-up by car is less convenient.

As set out in Section 7.4, with the improvements to the school bus service it is estimated that approximately 628 pupils would travel by this mode in the morning and 656 in the afternoon. Given the average bus accommodates around 42 pupils, there would need to be a minimum of 16 school buses operating at the end of the school day. If school buses with a capacity of 33 pupils are used instead, a minimum of 20 buses would be required.

To improve journey times and remove any convoluted bus routes, additional school buses may be required. Any additional demand will be identified as part of the School Bus Strategy which will be developed over the next couple of years.

Cycle and Motorcycle / Scooter Parking

The Travel Plan will seek to increase the proportion of journeys made by bicycle, motorcycle and scooter. Therefore, the amount of parking for these modes will need to be increased accordingly.

The scale and type of provision of cycle parking is a critical factor in encouraging cycling at schools. Placing cycle shelters close to the school's main entrance will add to the convenience of cycling whilst also raising the profile of cycling, encouraging more pupils to travel by bike.

To encourage a modal shift towards cycling in Stoke-on-Trent, a series of measures were introduced including the installation of appropriate cycle parking infrastructure. The project, covering 21 primary schools and seven secondary schools, resulted in an increase in the number of students regularly cycling to school from 8.5% to 12.7% in just one year[14]. With the proposed measures set out in this TIA, there is potential for a similar shift in mode share towards cycling for trips to de Saumarez College.

The demand for cycle and scooter parking will be monitored as part of the School Travel Plan and provision can be increased if required. The impacts on other parking provision would need to be considered through reference of the School Travel Plan Surveys.

Traffic Management Zone

A 20mph traffic management zone is proposed for the following roads, as partially illustrated in Drawing 3 and Drawing 4:

- Ruette des Delisles (up to junction with Rue des Deslisles);
- Les Beaucamps, up to the junction with Le Mont d'Aval; and
- Rue de la Masse up to the junction with Route du Tertre

The 20mph zone will start at the southern end of Les Beaucamps just after the junction with Rue des Eturs, and from the Rue des Deslisles junction with Ruette des Delisles up to Les Beaucamps, along Les Beaucamps through the junction with Mont d'Aval. The zone is also proposed to extend to Castel Primary School along Rue de la Masse.

The road signs shown in Figure 15 should be used at the start and end of the zone. The place name (lower panel) in the entry sign could display the school crest and name or be removed completely. Any colours can be used in this lower panel, with the exception of red, for background, symbol and text.

Figure 15: 20mph Zone Traffic Signs

The zone entry signs could be accompanied by 20mph repeaters if necessary.

As shown on Drawing 2, a build-out is proposed on Les Beaucamps to reduce traffic speeds near the improved pedestrian access in to the school. The proposed vehicular access and egress, both of which will be controlled with special constables at the start and end of the school day, will reduce traffic speeds at the other pedestrian accesses in to the school from Les Beaucamps.

Speed Indicator Devices (SIDs) will be installed on roads around the school. SIDs can be used to influence driver speeds, record speeds (though without any vehicle details) and, using this data, can inform the need for further enforcement or interventions.

Furthermore, the recorded speeds can be shared with parents to demonstrate whether proposals to improve highway safety have been successfully implemented.

[13] CfESC (2019) Secondary and Post-16 Transformation – Transport Areas for Future Secondary Sites: Updated

[14] Transport for Quality of Life (2010) Making School Travel Plans Work - Experience from English Case Studies

Figure 16: Example Speed Indicator Device

It is anticipated that the CFESC would provide a suitable contribution to SoG Traffic and Highway Services to install and maintain these devices.

A review of 250 20mph zones in England, Scotland and Wales conducted by TRL stated that traffic flow in 20mph zones reduced on average by 27%.[15]

Les Beaucamps/Les Eturs Junction

The potential to introduce a reduced speed limit of 25mph on Les Eturs in the vicinity of the junction with Les Beaucamps will be explored with SoG Traffic and Highway Services. New speed limit signs would be sited a minimum of 20m from the junction on all approaches. Reducing the speed limit at this junction may facilitate safer egress from Les Beaucamps, along with the proposed signalised junction arrangement presented in Drawing 5.

School Drop Off

To reduce traffic on the local highway network near the school, parents will be required to arrive 15 mins before school starts/ends. Parents will not be allowed to leave until all school buses have left, typically around 10 minutes after the end of the school day. This will apply to all parent parking within and adjacent to the school.

This 25-minute window allows priority to be given to pedestrians, cyclists and buses. Pedestrians and cyclists should be able to clear the immediate surroundings of the school before the buses and cars are ready to leave.

[15] RSPA (2017) Road Safety Fact Sheet – 20mph Zones and Speed Limits Factsheet

To avoid parents parking on roads close to the school, a controlled parking zone is proposed, and this is described further below.

The results of School Travel Survey indicated that travel mode choice was heavily influenced by convenience and journey time. Controlling the times when parents can arrive and leave the school will make the car less convenient which should contribute to a shift towards travel by more sustainable modes of transport.

Controlled Parking Zone

As shown in in Drawing 3 and Drawing 4, a controlled parking zone (Clearway) is proposed on roads near the school including Les Beaucamps and Ruette des Delisles. This on-street parking restriction would not impact off-street car parking associated with the school.

Parking will be prohibited on these roads between the hours of 08:00-09:00 and 14:30-16:30 every weekday. This could be enforced by Guernsey Police, however due to resourcing constraints it is likely that the Special Constables will need be required to perform the enforcement role.

The road sign shown in Figure 17 should be placed at the start of the controlled parking zone. Where the start or end of the parking and traffic management zones coincide, both signs can be combined, however the speed sign should be above the controlled parking zone sign on a grey background.

Figure 17: Controlled Parking Zone Road Signs

The zone entry signs can be accompanied by yellow repeater signs indicating the times of the restriction, though these are not required and typically used to denote a difference to the general restrictions. SoG Traffic and Highway Services have advised that the appropriate signage can be agreed as part of the detailed design stage.

It is understood that sewage carts empty on Les Beaucamps and therefore further discussions with SoG Traffic and Highway Services are required to understand how these vehicles can be made exempt from the Clearway restrictions.

Active Travel

The combination of the 20mph traffic management zone, controlled parking zone and managed school pick-up/drop-off will reduce traffic volumes and encourage lower speeds. This will contribute to highway safety improvements and create an environment that gives greater priority to pedestrians and cyclists.

Following comprehensive improvements to the cycle network serving the school, 17% of students began travelling by bike to Nottingham Emmanuel School in Nottingham[16]. This demonstrates improved infrastructure and highway conditions for cyclists can result in a positive change in travel behaviour.

A scatter diagram provided by the CfESC that presents the revised catchment for de Saumarez College and has been used to identify the estimated number of pupils that will be within walking or cycling distance of the site. This is presented in Table 23 below.

Table 23: Pupils in Walking Distance of de Saumarez College

Distance	Pupils (Cumulative)	Journey Time	
		Walking	Cycling
800m	61	10 minutes	3 minutes
1,200m	166	15 minutes	4.5 minutes
1,600m	269	20 minutes	6 minutes

There are approximately 270 pupils that will be located within 1,600m of de Saumarez College which equates to a walking distance of up to 20 minutes. Based on approximately 1,500 pupils attending de Saumarez College, this suggests that 18% of pupils will be within walking distance of the site.

[16] Making school travel plans work Experience from English case studies https://www.transportforqualityoflife.com/u/files/Making_School_Travel_Plans_Work_Nov_2010.pdf

6.3 Additional Interventions

Introduction

As part of the School Travel Plan, the mode share of journeys to and from the school will be surveyed. Should the proposed suite of sustainable transport interventions not achieve the desired shift in mode share away from the private car, further measures will be required.

This section outlines a series of further interventions that could be introduced. As with the proposed measures set out in the previous section, further interventions have been identified that encourage travel by sustainable modes and discourage the car.

Travel Plan

Additional measures will be introduced through the School Travel Plan. These could include the following:

- 'Life and Death' school access initiative which involves a fire appliance turning up unannounced to demonstrate the importance of maintaining a clear access near a school, particularly during drop-off/collection time where congestion levels are high;
- Controlled Parking Zone banner campaign which outlines the potential road safety hazards that could arise from illegal parking outside of schools;
- Exclusion zone initiative to give pupils, staff, parents and the wider community a glimpse of what the area outside of the school could look like if it was traffic free.

School Drop Off

Parents are required to arrive at least 20 mins before school starts/ends. In the morning, no parent will be able leave within 20 mins of school starting. This means that any parent who wishes to leave the school between 08:10 and 08:30 will be unable to and will be held in the drop off area. Parents will be able to leave after the school bell has rung or the final bus has departed, whichever is later.

In the afternoon, in addition to arriving 20 minutes before the end of school, no parents will be able to leave until all school buses have left. This provides priority to pedestrians, cyclists and buses and reduces traffic on the network.

Late parents in either restricted period must use the car park adjacent to chapel at the western end of Ruette des Delisles. The access/egress of this car park will also be controlled to limit traffic on highway when pedestrians and cycles leave the school.

Either soft (cones) or hard (kerbed) infrastructure could be introduced to create a formal pick-up/drop-off zone for cars. Buses will be parked closest to the school and physically segregated from other vehicles. Parents will be able to drop off/pick up in the remaining space which will continue to provide access to the car parking. The exit of the parent drop-off space and car parking will be barrier controlled to fully control egress.

Offsite Bus Infrastructure Improvements

A comprehensive review will be undertaken of offsite "bus stops" – locations where school buses pick up/drop off pupils as not all are actual bus stops – to identify well used locations. Where possible, these locations will be upgraded to create high quality waiting spaces that can serve as focal points for parent drop off.

Traffic Management Zone Extension

The 20mph Traffic Management Zone outlined in the Initial Measures will be expanded to include all roads near to the school.

Exclusion Zone

A full exclusion zone restricting access to all vehicles excepts buses, motorcycles and scooters will be introduced to replace the controlled parking zone outlined in the previous section. This zone would be enforced for a 40-minute period as follows:

- 30 minutes before and 10 minutes after the start of the school day; and
- 10 minutes before and 30 minutes after the end of the school day.

Summary

This section outlines a series of additional measures that could be adopted should the proposed sustainable interventions not deliver the desired shift in mode share away from the private car.

The results of the Travel survey that will be undertaken as part of the Travel Plan should be used to identify which additional measures are most appropriate to adopt.

7 Future Travel Demand

7.1 Introduction

This chapter presents future travel demand forecasts that are expected to be generated by the proposed development. These form the basis for understanding how demand will be spread across the traffic and transport networks. The development vehicular trip forecasts will also enable the impact of the proposed development at each of the key junctions to be quantified.

As set out in this chapter, separate trip making assumptions have been made for the 'Baseline Scenario' and the 'With Sustainable Transport Interventions scenario'.

7.2 Key Methodology Assumptions

The following key methodology assumptions were agreed as part of the Scoping Exercise for projecting the travel demand arising from the proposals:

- Future assessment year of 2025 is appropriate to correspond with the peak in pupil demand;
- Pupil demand will be spread evenly across both college locations and will peak at approximately 1,500 pupils per college;
- A maximum of 180 staff members will work at each college;
- To reflect scheduled absentees and days of for illness, 93% of staff and pupils will attend school on a typical day;
- Separate trip making assumptions will be developed for the 'Baseline Scenario' and the 'With Sustainable Transport Interventions' scenario.
- Three peak hours will be assessed to reflect the proposed extension to school days on Monday, Tuesday and Thursday;
- Pupil and staff arrival and departure profiles will be based on the School Travel Survey of LBHS;
- Multi-modal trips will be calculated using pupil and staff projections and the modal split presented in the Sustainable Access Strategy; and
- The distribution of pupil and staff trips will be calculated using the scatter diagrams prepared by the CfESC and data collected as part of the School Travel Survey of LBHS.

7.3 Background Traffic Growth

Following discussions with SoG Planning Services and SoG Traffic and Highway Services, it understood that there are no committed developments that will have a material impact on the study area for this TIA.

To account for the potential increase in background traffic between 2019 and 2025, an annual growth factor of 0.5% has been applied to the traffic survey counts. This approach has been agreed with Traffic and Highway Services as part of the scoping exercise. This approach is robust and appropriate for the assessment of the proposed development.

The traffic growth factor for the six-year period is set out in Table 24 below.

Table 24: Background Traffic Growth Factor

Period	Growth Factor
2019-2025	1.0304

The factor presented above has been applied to the 2019 base traffic counts as presented in the traffic flow diagrams included in Appendix F.

7.4 Trip Making Assumptions

Extended School Days

As previously noted in this TIA, it is proposed to extend school days by one hour from 15:05 to 16:05 on three days of the week.

Staff traffic Movements

The existing departure profile for LBHS staff in the PM peak period is detailed in Section 4.5 and summarised as follows:

- 29% of staff depart between 15:00-16:00;
- 42% of staff will depart between 16:00-17:00;
- 15% of staff will depart between 17:00-18:00; and
- The remaining staff will depart outside of the PM peak period.

If the school day is extended to 16:05, it is considered that no staff would leave before 16:05, aside from those currently leaving before 15:05 (i.e. during the lunch period).

To reflect the travel pattern that some staff choosing to wait at least one hour after pupils leave before departing, it has been estimated that an additional 21% of teachers would leave between 17:00-18:00, reflecting 50% of teachers currently departing 16:00-17:00.

The resulting departure profile for teachers is assumed to be as follows:

- No staff depart between 15:00-16:00;
- 50% of staff will depart between 16:00-17:00;
- 36% of staff will depart between 17:00-18:00; and
- The remaining staff will depart outside of the PM peak period.

Pupil Traffic Movements

The extended school days are proposed to enable a comprehensive programme of enrichment activities and additional option subjects to be made available to all pupils. This is anticipated to remove typical after-school activities as these will now be captured within the extended school days.

All pupils are therefore expected to leave school at 15:05 on Wednesday and Friday and 16:05 on Monday, Tuesday and Thursday.

Baseline

In the baseline scenario, the current travel patterns of staff and pupils are expected to continue. The trip making assumptions for these proposals in the baseline scenarios is based on the following:

- 1,500 pupils and 180 staff;
- 93% pupil and staff attendance;
- The existing modal split for LBHS[17]; and
- Arrival and departure profiles as set out previously in this section.

Staff

The trip making assumptions for staff in the Baseline scenario are summarised in Table 25. The multi-modal trips are presented both for the full site and the net increase beyond existing movements generated by the school.

In the AM peak hour, staff are forecast to generate 66 vehicle trips, representing an increase of 42 additional vehicles. In the early and late PM peak hours, staff are anticipated to generate 43 vehicle trips and 74 vehicle trips respectively. This would result in an additional 27 vehicles in the early PM peak hour and 47 vehicles in the late PM peak hour.

Table 25: Forecast Multi-Modal Staff Trips in the Baseline Scenario

Travel Mode	AM Peak Hour (08:00-09:00)	Early PM Peak Hour (15:00-16:00)	Late PM Peak Hour (16:00-17:00)
Full Site (180 Staff)			
Foot	0	0	0
Cycle	0	0	0
Scooter/ Moped	0	0	0
Vehicle (Driver)	66	43	74
Vehicle (Passenger)	9	6	10
Total	**75**	**49**	**84**
Net Increase (114 Additional Staff)			
Foot	0	0	0
Cycle	0	0	0
Scooter/ Moped	0	0	0
Vehicle (Driver)	42	27	47
Vehicle (Passenger)	6	4	6
Total	**48**	**31**	**53**

[17] WSP (2019) Sustainable Access Strategy

Pupils

The LBHS travel survey results have been used to inform the trip making assumptions for pupil trips that will be generated by the proposed development

The modal split of pupil journeys to LBHS is based on the current student entry forms of Year 7-11. Given the legal age to ride a scooter in Guernsey is 14, only 50% of pupils have the option to travel by scooter.

Whilst the results of the travel survey indicate 12% of students travel by scooter, the mode share of pupils who have the option (aged 14-16) to travel by scooter is 24%. Given de Saumarez College will cater pupils from Year 7-13, there will be an increase in the proportion of pupils that can legally travel to school by scooter.

A total of 225 pupils are therefore expected to arrive by scooter, equating to 15% of all pupil journeys. The mode share has been amended pro-rata to account for this, as presented in Table 26 below.

Table 26: Revised Pupil Modal Split (Scooter)

Mode	AM Peak Period		PM Peak Period	
	Existing	Baseline	Existing	Baseline
Foot	9%	8%	12%	10%
Cycle	8%	7%	8%	7%
Bus Services	38%	37%	49%	45%
Scooter/ Moped	15%	15%	15%	15%
Vehicle (Single)	31%	29%	19%	19%
Vehicle (Passenger)	3%	3%	3%	3%
Total	**100%**	**100%**	**100%**	**100%**

The multi-modal trips estimated to be generated by pupils in the baseline scenario are presented in Table 27. This includes trips that will be generated by the site in the future and the net increase on existing trips.

Table 27: Forecast Multi-Modal Pupil Trips in the Baseline Scenario

Travel Mode	AM Peak Hour (07:45-08:45)	Early PM Peak Hour (15:00-16:00)	Late PM Peak Hour (15:30-16:30)
Full Site (1,500 Pupils)			
Foot	115	143	143
Cycle	101	101	101
Bus Services	520	630	630
Scooter/ Moped	209	209	209
Vehicle (Single)	409	271	271
Vehicle (Passenger)	41	41	41
Total	**1395**	**1395**	**1395**
Net Increase (1,025)			
Foot	78	96	143
Cycle	68	68	101
Bus Services	350	425	630
Scooter/ Moped	141	141	209
Vehicle (Single)	276	183	271
Vehicle (Passenger)	28	28	41
Total	**940**	**940**	**1395**

In the AM peak hours, pupil trips to de Saumarez College is forecast to generate 409 vehicle movements to and from the school associated with pupil drop-off. This equates to an increase of 276 vehicle movements.

In the PM peak hour, pupil pick-up is estimated to generate 271 vehicle trips, representing an increase of 183 additional cars in and out of the school.

With Sustainable Transport Interventions

Chapter 6 outlines several sustainable transport interventions which seek to reduce the proportion of vehicle trips to the school by car. This includes hard and soft measures to encourage the use of sustainable modes of transport, alongside initiatives which seek to make the perception of car travel less attractive.

The proposals have been developed following a study of existing travel behaviour, informed by a travel survey of existing pupils and staff at LBHS. Using a combination of the findings of the travel survey and benchmarking from other schemes, a revised modal split has been calculated with a shift away from the car.

The extent to which these measures influence travel behaviour will be monitored as part of the proposed Travel Plan. Should the proposed interventions not deliver the estimated mode shift, further interventions have been identified.

Staff

In the scenario with Sustainable Transport Interventions, the introduction of a School Travel Plan is anticipated to result in a shift in staff travel behaviour away from trips made by car. Specifically, an increase in the uptake of car sharing is expected because of the following:

- Introduction of a car share database that will identify members of staff that have travel requirements from a similar location;
- Priority car parking spaces are proposed to be reserved for car sharers; and
- A significant increase in the number of staff employed at de Saumarez College, increasing the likelihood of multiple staff traveling from similar locations at similar times.

The proposed amendments to the modal split for staff journeys are presented in Table 28 below.

Table 28: Staff Modal Split (with Sustainable Transport Interventions)

Mode	Baseline	Sustainable
Foot / Cycle	0%	5%
Motorbike/Scooter	0%	2%
Vehicle (Driver)	88%	75%
Vehicle (Passenger)	12%	18%
Total	**100%**	**100%**

Based on the results of the SSHS travel survey, it is considered reasonable to assume that some staff would consider walking, cycling or using a motorbike to get to de Saumarez College. The revised trip making assumptions for de Saumarez College in the scenario with 'Sustainable Transport Interventions' is presented in Table 29 below.

Table 29: Forecast Multi-Modal Staff Trips (with Sustainable Transport Interventions)

Travel Mode	AM Peak Hour (08:00-09:00)	Early PM Peak Hour (15:00-16:00)	Late PM Peak Hour (16:00-17:00)
Full Site (180 Staff)			
Foot/Cycle	4	2	4
Motorbike/ Scooter	2	1	2
Vehicle (Driver)	56	36	63
Vehicle (Passenger)	13	10	15
Total	**75**	**49**	**84**
Net Increase (112 Additional Staff)			
Foot/Cycle	4	2	4
Motorbike/ Scooter	2	1	2
Vehicle (Driver)	32	21	36
Vehicle (Passenger)	10	7	11
Total	**48**	**31**	**53**

In the scenario with 'Sustainable Transport Interventions', the proposals are forecast to generate 32 additional staff vehicle trips in the AM peak hour.

In the early and late PM peak hours, staff are anticipated to generate 36 vehicle trips and 63 vehicles trips respectively. This would result in an additional 21 vehicles in the early PM peak hour and 36 vehicles in the late PM peak hour.

Pupils

The existing and revised modal split assumptions for pupils are presented in Table 30 below. To reflect existing travel behaviour, a lower proportion of pupil journeys are anticipated to be made by car after school.

The revised modal split assumptions reflect the range of sustainable transport interventions proposed in Chapter 6, responses to the school travel survey and benchmarking data collected from UK examples.

Table 30: Revised Pupil Modal Split (with Sustainable Transport Interventions)

Mode	AM Peak Period		PM Peak Period	
	Baseline	Revised	Baseline	Revised
Foot	8%	10%	10%	11%
Cycle	7%	10%	7%	10%
Bus Services	37%	45%	45%	47%
Scooter/ Moped	15%	15%	15%	15%
Vehicle (Single)	29%	18%	19%	15%
Vehicle (Passenger)	3%	2%	3%	2%
Total	**100%**	**100%**	**100%**	**100%**

Based on the modal split assumptions set out above, Table 31 presents the modal trips estimated to be generated by pupils in the 'With Sustainable Transport Interventions' scenario.

Based on the revised modal split assumptions presented in this section, it is estimated that 140-160 pupils will walk either to or from school. Given 269 pupils live within a 1.6km (1 mile) radius of the school, this is considered to be a robust assumption.

Similarly, it is estimated that approximately 140 pupils will cycle to school. This is based on a 3% increase in the proportion of journeys made by cycle. This is considered to be achievable given the sustainable transport interventions to reduce traffic speeds and volumes near the school, alongside 'softer' measures that will be introduced as part of the Travel Plan.

With the proposed improvements to the school bus service that will seek to reduce journey times, it is estimated that approximately 630 pupils will use the bus service to arrive to school and 660 will use this service to travel home. This is based on a similar proportion to the existing number of pupils estimated to use the bus service to travel home.

Table 31: Forecast Multi-Modal Pupil Trips (with Sustainable Transport Interventions)

Travel Mode	AM Peak Hour (07:45-08:45)	Early PM Peak Hour (15:00-16:00)	Late PM Peak Hour (15:30-16:30)
Full Site (1,500 Pupils)			
Foot	140	153	153
Cycle	140	140	140
Bus Services	628	656	656
Scooter/ Moped	209	209	209
Vehicle (Single)	254	216	216
Vehicle (Passenger)	25	22	22
Total	**1395**	**1395**	**1395**
Net Increase (1,025)			
Foot	102	107	153
Cycle	107	107	140
Bus Services	458	450	656
Scooter/ Moped	141	141	209
Vehicle (Single)	120	127	216
Vehicle (Passenger)	12	8	22
Total	**940**	**940**	**1395**

In the AM peak hours, pupil trips to de Saumarez College is forecast to generate 279 vehicle movements to and from the school associated with pupil drop-off. This equates to an increase of 188 vehicle movements.

In the PM peak hour, pupil pick-up is estimated to generate 216 vehicle trips, representing an increase of 127 additional cars in and out of the school.

7.5 Trip Assignment and Distribution

To inform the highway capacity assessment, the additional vehicle trips generated by the proposed development need to be distributed onto the local highway network in a manner which is likely to represent the movement patterns from the site.

Trips to the proposed development are likely to be dominated by the following:

- Commuting patterns associated with teachers and other staff travelling to and from school; and
- Pupils traveling to and from de Saumarez College at the beginning and end of the school day.

It has been assumed that the staff and pupil distributions will remain consistent in both the 'Baseline' and 'With Sustainable Transport Interventions' scenarios.

Staff

The distribution of staff trips has been estimated by reference to the scatter diagrams presenting the location of staff residences for existing SSHS and LBHS[18]. A combination of staff residences from both schools has been adopted given some teachers at de Saumarez College will be transferring from other secondary schools in Guernsey.

The assignment of development traffic has been determined by examination of the highway network. This exercise has been undertaken by attributing each set of trips to the destination via the most likely route. Where multiple feasible routes could be used, the development trips have been split accordingly.

The distribution of de Saumarez College staff vehicle trips is summarised in Table 32 below and shown spatially in Appendix E.

Table 32: Proposed de Saumarez College Staff Distribution

Link Assignment	Distribution
Rue de la Porte	14%
Rue du Preel	38%
Rue des Vallees	0%
La Houguette Road	8%
Rue de la Masse	6%
Le Mont d'Aval	35%
Total	**100%**

Pupils

The CfESC have provided a scatter diagram which presents the location of residence for all pupils that will be attending de Saumarez College. This has been used to inform the distribution calculation for pupil vehicle trips (drop-off/pick-up).

The scatter diagram relates to all pupils, not just those who travel by car. Pupils living within proximity of the school (less than 800m walking distance) have therefore been excluded from the calculation as they are highly likely to walk or cycle.

The distribution calculation for pupils in the baseline Scenario is presented in Table 33 below. The distribution of outbound trips has been finessed to reflect the potential for linked trips, following the same methodology presented in Section 4.5.

[18] WSP (2019) Sustainable Access Strategy

Table 33: Pupil Distribution

Link Assignment	Inbound AM Outbound PM	Outbound AM	Inbound PM
Queux Lane	0%	1%	1%
Rue de la Porte	17%	6%	8%
Rue du Preel	30%	42%	36%
Rue des Vallees	18%	3%	2%
La Houguette Road	5%	10%	7%
Rue de la Masse	10%	22%	29%
Le Mont d'Aval	20%	17%	17%
Total	**100%**	**100%**	**100%**

Traffic flow diagrams presenting the distribution of the pupil vehicles spatially can be found in Appendix E.

7.6 Assessment Scenarios

In agreement with SoG Traffic and Highway services, the following assessment scenarios have been assessed:

- 2019 Base
- 2025 Base;
- 2025 with Proposed Development (Baseline); and
- 2025 with Proposed Development (with Sustainable Transport Interventions).

Traffic flow diagrams for each of the future year scenarios can be found in Appendix F.

7.7 Summary

This section has presented the future travel demand forecasts for the development proposals for a baseline scenario and an alternative scenario with sustainable transport interventions. The following conclusions can be drawn:

- An annual growth factors of 0.5% has been assumed to estimate background traffic in 2025;
- The methodology for projecting travel demand has been agreed through a scoping exercise with SoG Traffic and Highway Services;
- In the Baseline Scenario, the proposed development is forecast to generate a net increase in two-way vehicle trips of 884 in the AM peak hour, 586 in the early PM peak hour and 617 in the late PM peak hour;
- With the proposed of Sustainable Transport Interventions, a net increase in two-way vehicle trips of 594 is anticipated in the AM peak hour, 393 in the early PM peak hour and 589 in the late PM peak hour; and
- Development trips have been distributed through reference to pupils and staff residence information collected as part of the School Travel Survey and information provided by CfESC in the form of Scatter diagrams.

8 Highway Capacity Assessment

8.1 Introduction

This chapter presents the results of the capacity assessment undertaken at each of the junctions within the assessed network. They provide a basis for determining whether the additional traffic generated by the development and committed developments can be accommodated. Where appropriate, mitigation is identified at locations where highway improvements are likely to be necessary.

Three peak hours have been identified to reflect the early and late finish times for the school and include the following:

- AM Peak Hour (07:45-08:45)
- PM Early Peak Hour (15:00-16:00)
- PM Late Peak Hour (15:30-16:30)

The following assessment scenarios will be assessed with all three peak hours identified above:

- 2019 Base;
- Base with Committed Development;
- Base with committed development and proposed development (Baseline); and
- Base with committed development and proposed development (with Sustainable Interventions).

8.2 Percentage Impact

Following scoping discussions with SoG Traffic and Highway Services, it was agreed that a percentage impact of the development proposals would be assessed at each junction in the study area.

The percentage impact of the development proposals for both scenarios with and without the sustainable transport interventions has been assessed and is presented in Appendix G. The traffic impact of the development has been assessed for each turning movement and the junction overall that it relates to.

It was agreed with SoG Traffic and Highway Services that all junctions would need to be assessed for all ‘with development’ assessment scenarios. However, mitigation would not be required at a junction if the traffic impact was below 5% on each turning movement.

Given the relatively low background traffic, the traffic impact is above 5% at all junctions in both the Baseline and with Sustainable Transport Interventions scenarios. The capacity of all junctions within the study area has been assessed in detail, as set out in the remainder of this Chapter.

8.3 Method of Assessment

The junctions have been tested using the industry standard Junctions 9 (PICADY) software for priority-controlled junctions (except for filter-in-turns) and LinSig for traffic signal-controlled junctions.

Junction capacity in the above software packages is measured as the Ratio of Flow to Capacity (RFC) (PICADY) and Practical Reserve Capacity (PRC) (LinSig). RFC is a measure of the volume of traffic making a turning movement at the junction, divided by the capacity of that movement; ascertained from the geometric measurements of the junction. The generally agreed operational capacity of a junction is at a ratio of 0.85 for priority junctions. Junctions can still operate within capacity with an RFC value of up to 1.00, however as practical capacity is approached delays will increase. PRC is a measure of how much additional traffic could pass through a junction and is calculated from the maximum degree of saturation on each lane.

These parameters have been used to summarise the operational effectiveness of individual junctions in accordance with the following pre-determined thresholds:

	Within Practical Capacity – *junctions with an RFC below 0.85 or PRC above 0% have been deemed to operate within practical capacity.*
	Over Practical Capacity, Approaching Theoretical Capacity – *junctions with an RFC of between 0.85-0.99 or a PRC of between -10% and 0%.*
	Over Theoretical Capacity - *junctions with an RFC over 1.00 or PRC below -10% have been deemed to operate over theoretical capacity with substantial queuing delays.*

Interaction between the junctions has been considered because of the predicted queues; some of the junctions are located close to one another, and as a result of which excessive queues may affect the operation of adjacent junctions by ‘blocking back’. The mean maximum queue forecast to occur on each arm of the junction has been monitored for this reason.

The geometric parameters used for the junction models have been measured from OS mapping data.

Queue lengths predicted by the model have been compared with the observed queue lengths that were measured at each of the junctions on the same day traffic flows were surveyed.

Differences between model and survey queue lengths were corrected by calibrating model junction arms, which involved applying a capacity adjustment. The percentage applied considers site-specific conditions once all geometric features have been calculated for a junction arm. Such conditions, which are not considered and may require a correction could include driver behaviour, changes in signage, re-marking of the junction or complete resurfacing.

Filter-in-Turn Assessment Methodology

A bespoke method of assessment has been developed to assess the Les Eturs/Rue des Deslisles/La Houguette Road filter-in-turn junction.

The assessment of Filter-in-Turn junctions has been conducted using M/M/1 Queue Theory to derive the average queues, wait time and delay for the junction. The M/M/1 denotes the arrival profile (the first M means a random arrival profile) and departure profile (the second M means a First-in First-out departure profile). The number 1 denotes, in this case, the number of vehicles that can be “serviced” or leave the junction at a time.

Arrival Profile

The arrival profile is determined by the peak 15-minute flow, as recorded in the traffic surveys, divided by 15 to give a peak minute flow. The distribution over the minute is random as denoted in the M/M/1 calculations.

Departure Profile

The departure profile is determined by the observed use of the Vale Rd/Les Banques junction (known as the Halfway junction). During a site visit a short (19 seconds) video was recorded at the junction, though this was recorded outside of the peak period in unsaturated conditions.

During this time 10 vehicles used the junction resulting in a departure rate of 0.53 vehicles per second or 32 vehicles per minute. It was noted that vehicles travelling along Les Banques did not have to stop unless there was a vehicle approaching from Vale Rd. Therefore, Les Banques has a much higher departure rate than vehicles from Vale Rd. Of the 10 recorded vehicles, three were from Vale Road who each took around three seconds to depart the junction once they reached the stop line. This results in a departure rate of 0.33 vehicles per second or 20 vehicles per minute.

As noted during the site visit, the design of the Les Eturs filter junction results in every vehicle having to slow down and be cautious on approach. Therefore, the departure rate of 20 vehicles per minute is applied to this junction.

Limitations of the Methodology

M/M/1 queue theory can only be utilised when the departure rate is higher than the arrival rate. When the arrival rate is higher the formulas return a meaningless negative result. Therefore, for the purposes of this assessment, where the arrival rate in the future year scenarios is higher than the departure rate in the corresponding base year a higher departure rate has been used.

For example, in the 2025 AM with Development scenario at the Les Eturs junction the arrival rate is 21 vehicles per minute with a departure rate of 20 vehicles per minute. This results in an average queue length of -38 vehicles. However, using a departure rate of 22 (the arrival rate plus 1) results in an average queue of 21 vehicles which seems reasonable given the expected increase in traffic at this junction.

The actual increase in queue is unknown for the 2025 AM with Development scenario but this methodology does show that, in comparison, the with Sustainable Transport scenario can reduce the impact at this junction.

Crossing Guard Controlled Junction

The Les Beaucamps/Ruette des Delisles junction is currently controlled by a special constable. It is proposed that this level of control is to be maintained in the future to facilitate access by all modes and egress by pedestrians, cyclists and motorcycles/scooters.

In scoping discussions with SoG Traffic and Highway Services it has been agreed that a LinSig model can be used to replicate this control method. The LinSig model has been set up so that the fours arms operate independently with a fifth movement for pedestrians and cyclists crossing between the school and Queux Lane. The cycle time and intergreens have been kept to a minimum to reduce the wait time for pedestrians and cyclists.

8.4 Junction Assessment Results

The full output files for the PICADY and LinSig junction models can be found attached as Appendix H and Appendix I respectively. Table 34 overleaf presents a summary of the capacity assessment results, detailing the PRC for signal-controlled junctions, the highest RFC for priority-controlled junctions and the longest average queue for filter-in-turn junctions.

The remainder of the section presents a summary of the junctions that are forecast to exceed practical capacity in any of the future year scenarios.

Results for all junctions except Filter-in-Turn junctions are presented in terms of RFC/PRC, average maximum queue (PICADY), Mean Max Queues (MMQ) for LinSig models (expressed in PCUs), and average delay per PCU.

MMQ represents the maximum queue within a typical cycle averaged over all the cycles within the modelled period. In effect, MMQ can be expressed as the average queue that a driver would experience at the junction during the modelled period. The average maximum queue reported by PICADY can be expressed in the same way. Similarly, the average delay in seconds is what a driver would expect to experience at the junction.

A Passenger Car Unit (PCU) is a unit of measurement where vehicles are defined by size in relation to a car with a car being one PCU and a bus, for example, generally being defined as two PCUs.

Table 34: Junction Assessment Results (without Mitigation)

Ref	Junction	Model	2019 Base			2025 Base			2025 Proposed Development (Baseline)			2025 with Proposed Development (Sustainable Transport Interventions)		
			AM	EPM	LPM	AM	EPM	LPM	AM	EPM	LPM	AM	EPM	LPM
1	Les Beaucamps/Les Eturs Priority Junction	Junctions 9	0.38	0.65	0.14	0.40	0.32	0.15	0.72	0.64	0.64	0.50	0.49	0.49
2	Ruette des Delisles/Les Beaucamps Priority Crossroads	Bespoke LinSig (Special Constable)	39.6%	29.5%	14.5%	40.7%	30.4%	14.8%	80.8%	55.4%	59.5%	58.9%	41.9%	46.9%
3	Le Mont d' Aval/Les Beaucamps/Ruette de la Generotte Priority Staggered Junction	Junctions 9	0.31	0.29	0.15	0.32	0.30	0.15	0.53	0.40	0.42	0.38	0.34	0.34
4	Les Eturs/Rue des Deslisles/La Houguette Road Filter-in-turn	Bespoke (Filter-in-Turn)	9	3	3	12	3	3	18	3	7	8	2	5
5	Rue des Deslisles/Ruette des Delisles Priority Junction	Junctions 9	0.04	0.03	0.00	0.04	0.03	0.00	0.06	0.07	0.07	0.05	0.05	0.05

Junction 1: Les Beaucamps/Les Eturs/Rue du Preel Priority Crossroads

The Les Beaucamps/Les Eturs/Rue du Preel priority crossroads junction has been assessed using the PICDY module of Junctions 9.

The Les Beaucamps/Les Eturs/Rue du Preel priority crossroads is modelled in the PICADY module of Junctions 9. To validate the model, the 2019 Baseline modelled queues are compared against the peak hour average observed queues from the traffic surveys, as shown in Table 35. The queue comparison shows that the model validates well with the observed queues.

The results of the PICADY analysis for the Les Beaucamps/Les Eturs/Rue du Preel priority crossroads are presented in Table 36. The results indicate that the junction is expected to operate within practical capacity for all scenarios.

Table 35: Les Beaucamps/Les Eturs/Rue de Preel Priority Crossroads Model Validation

Arm		AM Peak Hour (08:00-09:00)		PM Peak Hour (15:00-16:00)		PM Peak Hour (15:30-16:30)	
		Observed Queue	Modelled Queue	Observed Queue	Modelled Queue	Observed Queue	Modelled Queue
Les Beaucamps	Arm B	3	1	2	1	2	0
Rue du Preel	Arm C	1	0	1	0	0	0
Rue des Vallées	Arm D	1	0	0	0	0	0
Rue des Eturs	Arm A	0	0	0	0	0	0

Table 36: Les Beaucamps/Les Eturs/Rue de Preel Priority Crossroads Capacity Assessment Results

Arm		AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)			PM Peak Hour (15:30-16:30)		
		MMQ	Delay	RFC	MMQ	Delay	RFC	MMQ	Delay	RFC
2019 Base										
Les Beaucamps	Arm B	1	12	0.38	1	12	0.38	0	7.93	0.14
Rue du Preel	Arm C	0	5	0.01	0	5	0.01	0	5	0.01
Rue des Vallées	Arm D	0	10	0.03	0	10	0.03	0	0	0.00
Rue des Eturs	Arm A	0	7	0.20	0	7	0.20	0	5	0,07
2025 Base										
Les Beaucamps	Arm B	1	12	0.40	1	10	0.32	0	8	0.15
Rue du Preel	Arm C	0	5	0.01	0	5	0.00	0	5	0.01
Rue des Vallées	Arm D	0	10	0.03	0	0	0.00	0	0	0.00
Rue des Eturs	Arm A	0	7	0.20	0	6	0.12	0	5	0.08
2025 with Development (Baseline)										
Les Beaucamps	Arm B	3	26	0.72	2	20	0.64	2	21	0.64
Rue du Preel	Arm C	0	5	0.01	0	5	0.00	0	6	0.01
Rue des Vallées	Arm D	0	12	0.16	0	9	0.02	0	9	0.03
Rue des Eturs	Arm A	1	9	0.37	0	7	0.22	1	7	0.27
2025 with Development (with Sustainable Transport Interventions)										
Les Beaucamps	Arm B	1	14	0.50	1	14	0.49	1	14	0.49
Rue du Preel	Arm C	0	5	0.01	0	5	0.00	0	6	0.01
Rue des Vallées	Arm D	0	10	0.07	0	8	0.01	0	9	0.02
Rue des Eturs	Arm A	0	8	0.27	0	6	0.17	0	6	0.21

Junction 2: Les Beaucamps/Ruette des Delisles/Queux Lane Crossroads

The Les Beaucamps/Ruette des Delisles/Queux Lane crossroads is usually a priority junction with Les Beaucamps operating as the major road and having priority over the two minor arms. However, for around 30 minutes in both the AM peak and school PM peak the junction is controlled by a Special Constable to facilitate access to and egress from the school for all modes of travel.

The Les Beaucamps/Ruette des Delisles/Queux Lane crossroads is modelled in LinSig to replicate the control method employed by a Special Constable. To validate the model, the 2019 Baseline modelled queues are compared against the peak hour average observed queues from the traffic surveys, as shown in Table 37. The queue comparison shows that the model validates well with the observed queues.

The results of the LinSig analysis for the Les Beaucamps/Ruette des Delisles/Queux Lane crossroads are presented in Table 38. The results indicate that the junction is expected to operate within practical capacity for all scenarios, though the 2025 with Development scenario AM peak is approaching theoretical capacity on both Les Beaucamps arms.

Special Constables will still be required to operate this junction in the future year scenarios. The level of resource required to manage this junction should be monitored.

Table 37: Les Beaucamps/Ruette des Delisles/Queux Lane Special Contestable Controlled Crossroads Model Validation

Arm		AM Peak Hour (08:00-09:00)		PM Peak Hour (15:00-16:00)		PM Peak Hour (15:30-16:30)	
		Observed Queue	Modelled Queue	Observed Queue	Modelled Queue	Observed Queue	Modelled Queue
Les Beaucamps (N)	Arm A	1	2	1	2	0	1
Queux Lane	Arm B	0	0	0	0	0	0
Les Beaucamps (S)	Arm C	2	2	1	1	0	1
Ruette des Delisles	Arm D	0	3	0	2	1	1

Table 38: Les Beaucamps/Ruette des Delisles/Queux Lane Special Contestable Controlled Crossroads Capacity Assessment Results

Link		AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)			PM Peak Hour (15:30-16:30)		
		MMQ	Delay	DoS	MMQ	Delay	DoS	MMQ	Delay	DoS
2019 Base										
Les Beaucamps (N)	Arm A	2	30	38.2%	2	30	29.1%	1	24	14.0%
Queux Lane	Arm B	0	35	11.5%	0	35	4.2%	0	35	3.7%
Les Beaucamps (S)	Arm C	2	26	37.1%	1	34	29.4%	1	28	14.5%
Ruette des Delisles	Arm D	3	26	39.6%	2	21	29.5%	1	24	13.7%
2025 Base										
Les Beaucamps (N)	Arm A	2	30	39.4%	2	30	29.7%	1	24	14.3%
Queux Lane	Arm B	0	35	11.5%	0	35	4.2%	0	35	3.7%
Les Beaucamps (S)	Arm C	2	30	38.3%	1	34	30.2%	1	28	14.8%
Ruette des Delisles	Arm D	3	26	40.7%	2	21	30.4%	1	24	13.7%
2025 with Development (Baseline)										
Les Beaucamps (N)	Arm A	9	35	80.8%	6	23	55.4%	6	23	58.1%
Queux Lane	Arm B	0	35	11.5%	0	35	4.2%	0	35	3.7%
Les Beaucamps (S)	Arm C	7	57	84.0%	3	40	53.5%	3	42	59.5%
Ruette des Delisles	Arm D	0	30	2.0%	1	32	16.3%	1	31	11.5%
2025 with Development (with Sustainable Transport Interventions)										
Les Beaucamps (N)	Arm A	5	25	56.7%	4	20	41.9%	4	22	46.9%
Queux Lane	Arm B	0	35	11.5%	0	35	4.2%	0	35	3.7%
Les Beaucamps (S)	Arm C	4	37	58.9%	2	36	41.4%	2	34	42.2%
Ruette des Delisles	Arm D	0	30	2.0%	1	32	16.3%	1	31	11.5%

Junction 3: Rue des Deslisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval Staggered Priority Junction

The Rue des Deslisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval junction is a staggered priority junction with a signalised pedestrian crossing sited between the staggered minor arms. This is considered to be an important pedestrian link as it connects LBHS to the south with Castel Primary School in the north. During the peak hours the crossing is very well used.

The Rue des Deslisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval staggered priority junction is modelled in the PICADY module of Junctions 9. To validate the model, the 2019 Baseline modelled queues are compared against the peak hour average observed queues from the traffic surveys, as shown in Table 39. The queue comparison shows that the model validates well with the observed queues.

The results of the PICADY analysis for the Rue des Deslisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval staggered priority junction are presented in Table 40. The results indicate that the junction is expected to operate within practical capacity for all scenarios.

Table 39: Rue des Deslisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval Staggered Priority Junction Model Validation

Arm		AM Peak Hour (08:00-09:00)		PM Peak Hour (15:00-16:00)		PM Peak Hour (15:30-16:30)	
		Observed Queue	Modelled Queue	Observed Queue	Modelled Queue	Observed Queue	Modelled Queue
Les Beaucamps	Arm B	3	0	2	0	0	0
Le Mont d'Aval	RT to Arm D	1	1	0	0	0	0
Ruette de la Generotte	Arm D	2	0	2	0	1	0
Rue des Deslisles	RT to Arm B	1	0	1	0	0	0

Table 40: Ruette des Delisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval Staggered Priority Junction Capacity Assessment Results

Arm		AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)			PM Peak Hour (15:30-16:30)		
		MMQ	Delay	RFC	MMQ	Delay	RFC	MMQ	Delay	RFC
2019 Base										
Les Beaucamps	Arm B	0	11	0.29	0	11	0.25	0	9	0.15
Le Mont d'Aval	RT to Arm D	1	7	0.28	0	6	0.19	0	6	0.15
Ruette de la Generotte	Arm D	0	10	0.31	0	9	0.29	0	7	0.12
Rue des Deslisles	RT to Arm B	0	6	0.16	0	6	0.14	0	6	0.06
2025 Base										
Les Beaucamps	Arm B	0	12	0.30	0	11	0.25	0	9	0.15
Le Mont d'Aval	RT to Arm D	1	7	0.29	0	6	0.19	0	6	0.15
Ruette de la Generotte	Arm D	1	10	0.32	0	9	0.30	0	7	0.13
Rue des Deslisles	RT to Arm B	0	6	0.17	0	6	0.15	0	6	0.07
2025 with Development (Baseline)										
Les Beaucamps	Arm B	1	18	0.53	1	15	0.40	1	15	0.42
Le Mont d'Aval	RT to Arm D	1	8	0.39	0	6	0.17	0	6	0.21
Ruette de la Generotte	Arm D	1	11	0.35	1	11	0.39	0	10	0.31
Rue des Deslisles	RT to Arm B	0	7	0.21	0	7	0.21	0	7	0.18
2025 with Development (with Sustainable Transport Interventions)										
Les Beaucamps	Arm B	1	13	0.38	1	13	0.32	1	13	0.34
Le Mont d'Aval	RT to Arm D	1	7	0.32	0	6	0.16	0	6	0.19
Ruette de la Generotte	Arm D	0	10	0.31	1	10	0.34	0	9	0.25
Rue des Deslisles	RT to Arm B	0	6	0.18	0	6	0.17	0	6	0.14

Junction 4: Les Eturs/Rue des Deslisles/La Houguette Road Filter-in-turn

The Les Eturs/Rue des Deslisles/La Houguette Road junction is a crossroads controlled by a Filter-in-turn arrangement giving equal priority to all of the entries. Rue des Deslisles (to the north) and Rue de la Porte (to the south) would usually be considered to be the major road were this a standard crossroads. All footways around this junction are kerbed.

The results of the analysis using M/M/1 Queue Theory for the Les Eturs/Rue des Deslisles/La Houguette Road Filter-in-turn are shown in Table 41. The results show the average queue and delay for the peak 15-minutes within the peak hour in each scenario. The peak hour traffic demand is shown to illustrate that, as the traffic increases so do queues and delays.

The results suggest that the Les Eturs/Rue des Deslisles/La Houguette Road junction would operate within capacity as the traffic in the sustainable transport scenario is actually less than the committed development scenario in the AM peak

Table 41: Les Eturs/Rue des Deslisles/La Houguette Road Filter-in-turn Junction Assessment Results

Scenario	AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)			PM Peak Hour (15:30-16:30)		
	Traffic Demand	Average Queue	Average Delay	Traffic Demand	Average Queue	Average Delay	Traffic Demand	Average Queue	Average Delay
2019 Baseline	959	9	29	750	3	11	792	3	11
2025 with Committed Development	988	12	40	757	3	12	830	3	12
2025 + Development	1,014	18	58	760	3	12	936	7	23
2025 + Sustainable Transport	954	8	28	728	2	10	903	5	19

Junction 5: Rue des Deslisles/Ruette des Delisles Priority Junction

The Rue des Deslisles/Ruette des Delisles junction is a priority T-junction with the minor Ruette des Delisles arm providing access to a chapel car park and residential properties before becoming a one-way road leading up to LBHS.

The Rue des Deslisles/Ruette des Delisles priority junction is modelled in the PICADY module of Junctions 9. To validate the model, the 2019 Baseline modelled queues are compared against the peak hour average observed queues from the traffic surveys, as shown in Table 42. The queue comparison shows that the average observed, and modelled queues are zero due to the low traffic demand at the junction.

The results of the Junctions 9 analysis for the Route des Deslisles/Ruette des Delisles priority junction are presented in Table 43. The results indicate that the junction is expected to operate well within practical capacity for all scenarios.

Table 42: Les Beaucamps/Ruette des Delisles/Ruette des Effards Special Contestable Controlled Crossroads Model Validation

Arm		AM Peak Hour (08:00-09:00)		PM Peak Hour (15:00-16:00)		PM Peak Hour (15:30-16:30)	
		Observed Queue	Modelled Queue	Observed Queue	Modelled Queue	Observed Queue	Modelled Queue
Ruette des Delisles	Arm B	0	0	0	0	0	0
Rue des Deslisles	RT to Arm B	0	0	0	0	0	0

Table 43: Route des Deslisles/Ruette des Delisles Priority Junction Capacity Assessment Results

Arm		AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)			PM Peak Hour (15:30-16:30)		
		MMQ	Delay	RFC	MMQ	Delay	RFC	MMQ	Delay	RFC
2019 Base										
Ruette des Delisles	Arm B	0	7	0.01	0	8	0.03	0	0	0.00
Rue des Deslisles	RT to Arm B	0	5	0.04	0	5	0.03	0	5	0.00
2025 Base										
Ruette des Delisles	Arm B	0	7	0.01	0	8	0.03	0	0	0.00
Rue des Deslisles	RT to Arm B	0	5	0.04	0	5	0.03	0	5	0.00
2025 with Development (Baseline)										
Ruette des Delisles	Arm B	0	8	0.01	0	9	0.04	0	9	0.02
Rue des Deslisles	RT to Arm B	0	6	0.06	0	6	0.07	0	6	0.07
2025 with Development (with Sustainable Transport Interventions)										
Ruette des Delisles	Arm B	0	8	0.01	0	9	0.04	0	9	0.02
Rue des Deslisles	RT to Arm B	0	6	0.05	0	6	0.05	0	6	0.05

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8.5 Summary

The junction modelling assessment suggests that all five junctions around the site would operate within capacity in both development scenarios and mitigation would not be required.

Though the results for the junctions with bespoke modelling methodologies should be treated with appropriate caution, they do suggest that the methods of control would be suitable for the future year scenarios.

The Special Constable controlled junction of Les Beaucamps/Queux Lane has been observed to operate well, with queues and delays on Les Beaucamps not considered to be significant at any time. Vehicles are held within the school grounds to avoid blocking on the public highway and priority can be given to pedestrians and cyclists between the school entrance and Ruette des Effards.

The Filter-in-turn junction of Les Eturs/Rue des Deslisles/La Houguette Road appears to operate well in the future years with queues averaging at around eight PCUs in the sustainable transport scenarios, a reduction when compared to the committed development scenario.

The three other junctions operate within capacity in all scenarios, with the 2025 AM with Development scenario resulting in a maximum RFC of 0.72 at the Les Beaucamps/Les Eturs/Rue du Preel junction.

9 Mitigation

Although Chapter 7 advises that no mitigation would be required at any of the junctions, the increase in traffic passing through the Les Beaucamps/Le Mont d'Aval junction, predominantly travelling between Le Mont d'Aval and Les Beaucamps, suggests that upgrading the junction to deal with visibility issues would be prudent.

At the same time, upgrading the junction provides an opportunity to improve the pedestrian facilities in the area. Therefore, it is proposed to introduce traffic signals to this junction incorporating a pedestrian crossing.

The proposal is to move the existing pedestrian crossing and western stopline on Rue des Deslisles around 15m to the east towards Les Beaucamps. The stop line on Le Mont d'Aval is located to allow a bus to turn right from Les Beaucamps and straighten before reaching the stop line. This should reduce any need for right turning vehicles to mount the kerb and footway.

The stopline on Les Beaucamps would need to allow sufficient space for left turning buses from Mont d'Aval to complete the manoeuvre and is located around 20m from the junction. this allows the footway to be built out providing more space for pedestrians and linking with the proposed footway on Les Beaucamps.

Ruette de la Generotte would continue to operate as a priority T-junction but with additional space to the eastbound stopline.

These arrangements are shown in Drawing 5.

The proposed junction has been modelled in LinSig. Priority has been given to minimising the delay to pedestrians using the crossing. Therefore, the cycle time has been kept to 60 seconds in the model – though this could be adjusted on site after installation.

The results show that the junction as proposed would operate within capacity in all future year scenarios the 2025 with Development AM peak scenario is approaching the theoretical capacity.

Table 44: Rue des Deslisles/Ruette de la Generotte/Les Beaucamps/Le Mont d'Aval junction Capacity Assessment Results (with Mitigation)

Arm		AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)			PM Peak Hour (15:30-16:30)		
		MMQ	Delay	PRC	MMQ	Delay	PRC	MMQ	Delay	PRC
2025 Base										
Le Mont d'Aval	Arm A	5	19	47.6%	3	17	34.0%	3	17	33.2%
Les Beaucamps	Arm B	2	37	47.0%	2	35	38.4%	1	33	25.1%
Rue des Deslisles	Arm C	6	31	70.4%	4	23	51.9%	3	20	39.9%
Ruette de la Generotte	Arm D	0	4	24.8%	0	4	23.7%	0	3	10.1%
2025 with Development (Baseline)										
Le Mont d'Aval	Arm A	6	21	59.7%	4	18	39.9%	4	19	42.4%
Les Beaucamps	Arm B	6	65	83.9%	3	38	56.8%	3	37	53.7%
Rue des Deslisles	Arm C	9	58	88.8%	5	27	59.8%	4	24	50.6%
Ruette de la Generotte	Arm D	0	4	25.1%	0	4	24.5%	0	3	11.9%
2025 with Development (with Sustainable Transport Interventions)										
Le Mont d'Aval	Arm A	6	20	53.8%	4	18	38.3%	4	19	40.8%
Les Beaucamps	Arm B	4	45	65.9%	3	36	51.6%	3	35	47.0%
Rue des Deslisles	Arm C	7	39	78.4%	5	26	57.7%	4	24	50.1%
Ruette de la Generotte	Arm D	0	4	23.8%	0	4	24.0%	0	3	11.6%

10 Mitigation Strategy

This section of the report summarises the mitigation strategy for de Saumarez College, outlining the full suite of measures that will need to be delivered.

Table 45: Summary of Proposals

Mode	Description
Pedestrians	Management strategy proposed to control movements within and close to de Saumarez College. To be implemented with Special Constables.
Pedestrian	Proposed improvements to the access from Les Beaucamps
Pedestrian/ cycle	Appropriate crossing facilities to be introduced as part of the vehicle egress proposals
Pedestrian/ cycle	Footway on Les Beaucamps
Cycle	Increase cycle parking provision
Scooter	Increase scooter parking provision
School bus	Increase in capacity for school buses
School bus	Additional school bus services and review of routes to reduce journey times
Public bus	Proposed bus shelters on Les Beaucamps
Car	Proposed egress from de Saumarez College
Car	Additional on-site car parking
Car	Traffic management zone (20mph) on roads near de Saumarez College with traffic calming (build-out) proposed on Les Beaucamps.
Car	Clearway on roads near de Saumarez College restricting access to permitted vehicles only at specified times.
Car	Restricted arrival and departure times for pupil collection and drop-off
Car	A minimum of two Park & Stride sites, preferably located to the north and south of de Saumarez College
Car	Signalisation of the Les Beaucamps/Le Mont d'Aval junction
All	School Travel Plan, including all measures set out in Table 46

11 School Travel Plan

11.1 Introduction

This section outlines the framework of the proposed School Travel Plan and the potential measures that could be introduced. In agreement with the CfE&I, the School Travel Plan will be secured via a planning condition.

A Travel Plan provides a developer with the opportunity to actively commit towards creating a development that encourages modal shift towards sustainable transport.

School Travel Plans set achievable targets for schools to pursue within a defined timescale. The most successful Travel Plans are live documents that evolve and are monitored over time and in which several stakeholders including staff, pupils, parents and relevant SoG members have a role in developing and monitoring.

A Framework Travel Plan represents the first stage in sustainable travel planning. Whilst it has a format similar to a full plan, this Framework will consider the objectives and targets, outline potential measures and set out monitoring proposals and strategy. A Framework is prepared in anticipation of a full Travel Plan, to be undertaken following occupation of the new development.

11.2 Benefits of a Travel Plan

Travel Plans can be an important tool in reducing the number of single occupancy car trips, made to and from a school, in favour of more sustainable modes of transport such as walking, cycling or school/public transport.

A reduction in the number of private vehicle journeys has the potential to reduce the type and volume of pollutants released into the atmosphere, which are contributing to climate change and having a detrimental effect on health. Travel Plans seek to influence travel behaviour and achieve an increased use of sustainable transport modes including car-sharing. They are tailored to reflect the needs and aspirations of the school.

Travel Plans also aim to benefit the staff, pupils and local community by supporting Policy IP6 of the Island Development Plan to provide a range of travel options. A modest reduction in single occupancy car trips can result in a reduction in peak period traffic congestion.

It is considered that modal shift away from reliance on the private car would also result in a reduction in road traffic accidents, reduced stress, healthier lifestyles, better productivity, environmental protection, improved access for employees/visitors/deliveries and reduction in social exclusion through the provision of choice between modes of transport.

Travel Plans are important mechanisms for instigating and maintaining travel behaviour change. Figure 18 provides examples of some of the benefits of implementing a School Travel Plan.

Staff

- Health improvements from increased cycling and walking; and
- Time savings due to shorter journey times which enables more time for increasing work productivity or leisure.

Pupils

- Health and lifestyle improvements from increased walking and cycling;
- More alert, ready to learn and achieve better grades;
- Cleaner air and improvements to the local environment;
- Improvements to accessibility and travel choice; and
- Providing opportunities for safe, active and healthy travel.

School

- Reduced congestion at the school entrance and the neighbouring roads;
- Improvements to highway safety; and
- Improved pupil attendance, punctuality and readiness to learn.

Local Community

- Reduced congestion on the local highway network surrounding the school;
- Cleaner air surrounding the school;
- Active travel boosts footfall for local businesses; and
- Sets an example to the wider community; and
- Improved image socially for the wider community.

Figure 18: Benefits of a School Travel Plan

11.3 Objectives and Goals of the Travel Plan

The overall objectives of the School Travel Plan for de Saumarez College should be to achieve a situation where staff, pupils and visitors can make informed travel decisions based on comprehensive information about a range of transport modes.

Those travelling to and from the site can be categorised as either staff, pupils, parents or visitors. The School Travel Plan objectives for these users can be summarised as follows:

- Maximising transport choice through innovative measures;
- Encouraging sustainable travel choices among users of the site;
- Maximising accessibility for walking, cycling and school/public transport as sustainable travel modes;
- Increasing awareness of the environmental and health implications of different travel choices;
- To manage vehicle movements so that conflicts with pedestrians and cyclists can be reduced; and
- Reducing travel by the private car, particularly single occupancy car journeys

11.4 Measures

In addition to the physical improvements outlined in Chapters 5 and 6 , it is proposed to introduce a series of 'softer' measures to ensure staff, pupils, parents and visitors of the site are informed about the travel options available and are encouraged to travel by sustainable modes.

Walking

Several proposals are suggested to provide safer walking routes by introducing footway and reducing traffic speeds and volume near the school. This will be achieved through the introduction of a 20mph traffic management zone, controlled parking zone and restrictions to the times when parents can drop-off/pick-up.

In addition to the above, the following softer measures can be explored as part of the Travel Plan to encourage journeys to school by foot:

- Introduce and promote 'Walk to School Week' where all pupils and staff are encouraged to walk part of, or all their journey to de Saumarez College. This can be introduced alongside more stringent highway proposals such as an exclusion zone around the school to demonstrate to staff, pupils and parents the benefits of fewer people travelling by car;
- Separate to the above, the introduction of a weekly scheme such as 'Walk on Wednesday' which seeks to encourage pupils to walk at least one-day a week
- Provide a travel information pack that outlines safe routes to school, including the network of Ruettes Tranquilles;
- Introducing adequate locker space for staff and pupils so that they can better manage their books and belongings, reducing the need to carry potentially heavy bags;
- Special Constable controlling traffic near the school entrance to improve pedestrian safety during busy periods; and
- Offer vouchers or a similar incentive to pupils that regularly walk to school.

Cycling

Several measures are proposed as part of the Sustainable Transport Interventions scenario that seeks to reduce traffic volume and speeds near the site. These measures should improve road safety which in-turn will likely encourage more staff and pupils to travel to school by bicycle.

In addition to the above, the following measures are proposed to be delivered as part of the School Travel Plan to encourage cycle journeys:

- Bicycle training courses, such as Bikeability, could be offered to pupils to improve confidence and road safety awareness;
- Cycle to school day/week to encourage pupils and staff to travel by bicycle;
- Travel information pack outlining safe cycle routes to school;
- Introducing adequate locker space for staff and pupils to store equipment such as helmets;
- Regular surveys of the bicycle parking to ensure there is sufficient storage to meet demand; and
- Encourage a bike train, which similar to a walking bus, encourages pupils to cycle in a group together improving road safety and increasing social interaction
- Local bike shop discounts etc; and
- SoG "Bike to School" grants or similar.

Motorbikes and Scooters

Similar to cycling, pupils and staff choosing to travel by motorbikes and scooters will benefit from the road safety measures introduced to reduce traffic flow and speeds.

Travel information packs will be provided to staff, pupils and their parents which will identify safe routes to school, including the network of Ruettes Tranquilles.

Regular surveys of the motorbike and scooter parking will also be conducted to ensure there is enough provision to meet demand.

Additional training will also be offered with the aim of improving user confidence, safety awareness and usage.

School and Public Transport

In the scenario with 'Sustainable Transport Interventions', it is proposed to reform the school bus service with the intention of improving service quality by reducing travel time.

A new bus stop is proposed on Les Beaucamps for the public bus services, providing a safe, sheltered area for staff and pupils.

To further encourage pupils and staff to travel by bus, the following measures are proposed to be introduced as part of the School Travel Plan:

- Biannual survey to enable pupils and staff to provide their views on the bus service, particularly the school bus service to identify if/where improvements are required;
- Monitor school bus journey times and advise on new routes should buses regularly get stuck in congestion;
- Intermittently survey buses when they arrive/depart to school to make sure there are sufficient seats and the quality of the buses are acceptable;
- Obtain and review passenger numbers from school bus operators to understand trends and identify less popular services/routes;
- Negotiating season ticket discounts with the bus operator for staff, or explore the potential to offer free bus travel;
- Advertising the benefits of public transport to staff, such as not needing to own a car/second car;
- Displaying a map of key bus routes, stops, journey durations and frequency of services on noticeboards for pupils and staff; and
- Identify improvements that might be made to the on-board experience of vehicles serving school bus routes. This could potentially include on-board infotainment and WiFi provision.

Cars Sharing

Car sharing is when two or more people share a car for their journey. It promotes sustainable travel patterns by increasing car occupancy, with a consequential reduction in car movements. It also provides an opportunity for positive social interaction. Car sharing can be encouraged by:

- Introducing separate car sharing databases for pupils (Parents) and staff and encouraging participation;
- Car share parking spaces in optimal locations;
- Advertising the cost savings of car sharing on notice boards; and
- Car share morning for staff to match journeys.

Staff

The following measures could be used to encourage staff at de Saumarez College to travel sustainably:

- The circulation of a bi-annual newsletter to all site employees, which would detail Travel (Plan) information and updates;
- The provision of a welcome pack for existing and new employees in conjunction with local/green travel recruitment policy, which will detail the various travel options available to them and highlight the Travel Plan's measures and targets will be introduced at the site to encourage staff to travel by sustainable modes; and
- Offer priority car parking for car sharers and staff with compact and low emission vehicles.

Pupils

The measures presented below will be introduced to encourage pupils to travel by sustainable modes of transport:

- Include the benefits of suitable travel in to the curriculum.
- Pupils can get involved with collecting the travel survey data by surveying bicycle and scooter parking areas. In addition, pupils could analyse the statistical data as part of their mathematics class;
- Encourage pupils who live close together to travel to school in groups, increasing social interaction and making the journey safer;
- Offer suggestions in the class room about how to make active travel journeys more exciting through fun and creative games. These can contribute to improvements in road safety awareness, memory and a willingness to learn; and
- A sustainable travel prize draw and awards could also be introduced as an incentive to encourage sustainable travel.

Parents

It is important that some measures are geared towards parents to both encourage them not to drop their children off by car, but to also to support the overarching targets of the School Travel Plan.

The following measures could be used to encourage parents not to drive to de Saumarez College and get their children to travel by sustainable modes of transport.

- Provide a travel information pack identifying safe routes to schools;
- Disseminate information regarding the health and educational benefits for children travelling to school by active travel modes; and
- For younger pupils, encourage parents to create walking/cycling groups and take turns escorting a group of pupils to and from school
- Safety adverts and statistics, media campaign etc.

11.5 Implementation and Management

To be successful, the School Travel Plan will need to facilitate an understanding of the travel patterns relating to de Saumarez College through Travel Surveys and co-ordinate transport measures which contribute to increasing sustainable travel by staff, pupils and parents. Travel Surveys should be undertaken annually, preferably within winter and summer so that any proposed measures can be tailored based on seasonality. In addition, to maximise the chances of success, it is important to have a clear implementation strategy that identifies roles and responsibilities for stakeholders to maintain the momentum of the Travel Plan.

It is important to remember that the Travel Plan will be a living document, which means that additional measures could be introduced at any time in the future. It is recognised that travel patterns may change, or new measures could become available. It is therefore encouraged that the Travel Plan is reviewed on a frequent basis to ensure that the objectives are up to date, and targets are being achieved. This should be done twice a year, in line with the Travel Surveys to be undertaken within the winter and summer.

Travel Plan Coordinator

Quantitative, realistic and achievable targets will be set for de Saumarez College based on the results of the annual travel survey. A Travel Plan Coordinator will be appointed by de Saumarez College to undertake periodic reviews of targets and take responsibility for the following:

- Implementation and day-to-day running of the School Travel Plan, demonstrating full commitment and enthusiasm;
- Establishing a Travel Plan Steering Group to assist in taking initiatives forward;
- Promoting and encouraging the use of travel modes other than the car to staff, pupils, parents and visitors;
- Taking ownership of the Travel Plan targets and implementing the necessary measures;
- Maintaining a list of travel plan representatives for staff and pupil year groups;
- Providing a point of contact for travel information for staff, pupils, parents and visitors;
- Developing and disseminating appropriate Travel Plan marketing information, and to ensure that all relevant and up to date material is clearly displayed on Travel Plan notice boards around the school;
- Arranging for travel surveys to be undertaken when necessary;
- Updating the key milestones, deliverables and the programme outlined in the Travel Plan Action Plan;
- Communicating the School Travel Plan, including promoting of the benefits of travel planning, acting as a point of contact for staff, pupils, parents and visitors based at the site requiring information, and updating the website as required;
- Periodically reviewing the Travel Plan, updating the document as necessary; and
- To organise meetings of the various working groups.
- Point of contact;
- Organise recognition events and be the first to offer praise for good practice.

Travel Plan Steering Group

A Travel Plan Steering Group will be formed to coordinate the ongoing review and development of the School Travel Plan targets towards the overarching goal of increasing sustainable travel of all staff and pupils to and from de Saumarez College. The steering group will be made up of key stakeholders including the Travel Plan Coordinator, teachers, parents, pupils, representatives from the SoG and the Travel Plan Coordinator for de Saumarez College.

The Travel Plan Coordinator will chair the steering group and work to identify appropriate mitigation measures that are required in response to monitoring of the targets for agreement with the group. In this way, the Steering Group will be responsible for overall delivery of the School Travel Plan targets, and agreeing appropriate mitigation measures, where necessary.

Cross site working and sharing of success and failures of initiatives etc.

11.6 Targets, Monitoring and Review

Targets

In order to meet the overarching aim of reducing unsustainable travel to and from de Saumarez College, the Travel Plan will set out a series of targets. It should be recognised that for the targets to be effective in reducing unsustainable travel, they need to be ‘SMART’ as set out in Figure 19 below.

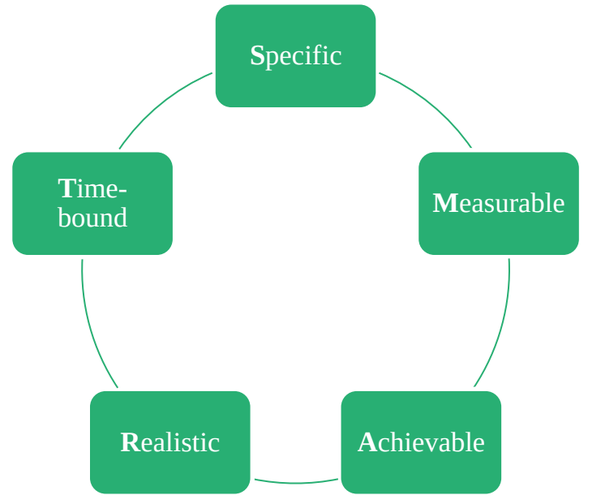


Figure 19: SMART Targets

The Travel Plan Coordinator for the site should endeavour to develop overview targets, which would be subject to periodic reviews and should reflect the targets set out in SoG policy guidance.

Monitoring

An important part of any Travel Plan document is the continual monitoring and review of its effectiveness. It is essential that a Travel Plan document is not a one-off event but evolves over time. Regular monitoring and review led by the Travel Plan Coordinator will help to gauge progress towards targets and objectives set for each site and the development overall. If necessary, this will enable the Travel Plan document to be refined and adapted to improve its progression and ultimate take up by all stakeholders.

As a living document, there will be the need to update the Travel Plan as required. This requirement should be linked to the monitoring of the Travel Plan which will take place biannually following implementation of the plan. The criteria for monitoring will need to understand the travel needs of staff, pupils, parents and visitors so that transport measures can be adapted or added to provide for their needs.

The monitoring will be the responsibility of the Travel Plan Co-ordinator and will review:

- Travel patterns (via a travel survey) to include comprehensive travel surveys undertaken with a commitment to review the Travel Plan targets at the end of each monitoring phase. This review will identify elements of the Plan that are not working as well as others, and allow the plan coordinator to further strengthen the measures that are performing well;
- A Full Site audit will be undertaken by the Travel Plan Steering Group, the audit will identify any barriers that obstruct walking, cycling and using school/public transport and make recommendations for improvements; and
- Parking provision counts (all vehicles including bicycles, scooters and motorbikes).

11.7 Action Plan

Table 46 overleaf summarises the proposed specific actions which need to be undertaken to deliver the Travel Plan objectives. The list of Travel Plan measures outlined in Section 11.4 is wide-ranging and therefore the Action Plan specifically focuses on measures that have been identified as a priority to help the school achieve its Travel Plan targets.

This timetable will be reviewed with stakeholders and updated as required. As stated previously, the Travel Plan is an evolving document and as such will be reviewed over time and adapted where necessary to accommodate changing demands and guidance on encouraging sustainable travel.

Table 46: Action Plan

Mode	Measure	Action	Responsibility	Timescale
All	Travel Plan Coordinator	To be appointed	School/CfESC	Prior to full occupation
All	Travel Plan Steering Group	To be established	Travel Plan Coordinator	Prior to full occupation
All	Launch Travel Plan / Promote Travel Plan Brand	Establish marketing strategy	Travel Plan Coordinator	Prior to full occupation
Cycle	New cycle parking facilities	To be installed	School/CfESC	Prior to full occupation
All	Travel information packs – mapping, timetables, location of facilities, information on travel choices – tailored pack to be provided to all parents, staff and pupils	To be prepared and distributed	Travel Plan Coordinator	Prior to full occupation
All	Notice boards to include active travel and public transport information	To be established	Travel Plan Coordinator	Year 1
Walk	Introduce an annual and/or weekly walk to school scheme for pupils	To be established	Travel Plan Coordinator	Year 1
Walk	Introducing adequate locker space for staff and pupils so that they can better manage their books and belongings, reducing the need to carry potentially heavy bags	To be installed	School/CfESC	Year 1
Cycle	Cycle to school day/week to encourage pupils and staff to travel by bicycle	To be established	Travel Plan Coordinator	Year 1
Cycle	Local bike shop discounts	To be investigated	Travel Plan Coordinator	Year 1
School Bus	Monitor school bus journey times and advise on new routes should buses regularly get stuck in congestion	Undertake monitoring surveys	Travel Plan Coordinator	Year 1, bi-annual
Public Transport	Negotiating season ticket discounts with the bus operator for staff, or explore the potential to offer free bus travel	To be investigated	Travel Plan Coordinator	Year 1
Car	Introducing separate car sharing databases for pupils (Parents) and staff and encouraging participation	To be established	Travel Plan Coordinator	Year 1
Car	Offer priority car parking for car sharers and staff with compact and low emission vehicles	To be established	Travel Plan Coordinator	Year 1
All	Monitor Travel Plan	Undertake monitoring surveys	Travel Plan Coordinator	Year 1, bi-annual
All	Check site infrastructure including parking utilisation for all modes	Undertake monitoring surveys	Travel Plan Coordinator	Year 1, bi-annual

12 Summary and Conclusions

Summary

Ove Arup & Partners Ltd (Arup) has been appointed by the States of Guernsey (SoG) Committee for Education, Sports and Culture (CfESC) to prepare a Traffic Impact Assessment (TIA) in support of a planning application for Les Beaucamps High School (LBHS) as part of the 11-18 Schools Project.

The project, part of the Transforming Education Programme (TEP), is described as a 'one school, two college' model where one secondary school (named Lisia School), including A-levels, will be administered over two college campuses. The project will see pupils transitioned from four schools - LBHS, St Sampson's High School (SSHS), the Grammar School & Sixth Form Centre and La Mare De Carteret High School – to two college campuses located at SSHS and LBHS. They are proposed to be named Victor Hugo College and de Saumarez College respectively.

By 2025, de Saumarez College will support a substantial increase in pupils from 489 to around 1,500. In addition, staff on site (including support staff) is expected to increase from 66 to approximately 180. This growth in pupils and staff is anticipated to have a corresponding increase in multi-modal demand on the transport network.

The study has considered two potential scenarios, as agreed with representatives from the CfESC, Planning Services and Traffic and Highway Services, as outlined below:

- A baseline scenario that outlines the impacts of the scheme if current travel behaviours remain consistent; and
- An alternative scenario that seeks to maximise the proportion of journeys by sustainable modes of transport.

The site is in an accessible location, situated near several communities and within a network of Ruette Tranquilles. However, pedestrian infrastructure near the site is limited in places and dedicated footways are not provided on some sections of the highway network around the site.

Findings

Baseline

The access strategy for the site seeks to prioritise walking and cycling over journeys made by car. Several improvements are proposed to improve the accessibility of the site by active travel modes including a footway on Les Beaucamps, additional pedestrian and cycles accesses in to the school and an increase in cycle parking provision.

Bus waiting facilities including a shelter are also proposed on Les Beaucamps, primarily to serve staff but this could potentially be used by some pupils in the future.

A vehicle egress is proposed on Les Beaucamps and has been designed to reflect Guernsey technical standards. Relocating the existing egress from to Les Beaucamps is anticipated to reduce potential conflict between different road users on Ruette des Delisles.

In the Baseline scenario, the development proposals are estimated to generate a net increase in two-way vehicle trips of 648 in the AM peak hour, 373 in the early PM peak hour and 393 in the late PM peak hour. Many of these car journeys are associated with pupil drop-off and pick-up.

The capacity assessment indicates that all junctions within the study area will operate within capacity.

Whilst the Le Mont d'Aval/Les Beaucamps/Ruette de la Generotte staggered priority junction is forecast to operate within capacity, SoG Traffic and Highway Services noted some safety concerns with regards to visibility and therefore a signalised junction arrangement is proposed. This proposed junction arrangement is forecast to operate within capacity.

Nevertheless, it is recommended that further physical and behavioural measures are introduced that seek to reduce traffic speeds and volumes, improve highway safety and encourage travel by active and other sustainable modes of travel.

With Sustainable Transport Interventions

In addition to the proposals associated with the Baseline scenario, several sustainable transport interventions are proposed which seek to both encourage staff, pupils and visitors to travel by sustainable modes of transport, and discourage journeys made by car.

Research indicates that pupils that walk or cycle to school are more alert, ready to learn and achieve better grades in class. Active travel also contributes towards a healthy lifestyle and the opportunity to increase social interaction.

A 20mph traffic management zone and a controlled parking zone is proposed on highways near the school which is anticipated to reduce traffic volumes and speeds. These physical measures will make the surroundings more attractive for journeys to be made by active travel modes.

A Framework Travel Plan has also been prepared which sets out a series of 'softer' measures to encourage journeys to be made by sustainable modes of travel.

With the proposed Sustainable Transport Interventions, a net increase in two-way vehicle trips of 196 is anticipated in the AM peak hour, 271 in the early PM peak hour and 286 in the late PM peak hour.

The capacity assessment indicates the junctions are forecast to operate within practical capacity, with limited queuing and delay.

The analysis presented in this report demonstrates that the development proposals can be delivered without significant determental impact in terms of transport and movement. Whilst this has been shown for both the Baseline and Sustainable scenarios, it is recommended that the suite of Sustainable Transport Interventions is adopted to fully comply with the policies set out in the Island Development Plan and to shape a better outcome for Guernsey. Furthermore, positive travel behaviours that are encouraged from a young age have the potential to translate to adulthood, resulting in lasting environmental, social and health benefits for Guernsey.

Drawings

A3

Proposed footway on Les Beaucamps (see drawing 271282-ARP-LBHS-DR-CH-0003)

Dropped kerb required to facilitate access to service vehicle parking spaces. A Management Plan should be implemented to control any reverse movements.

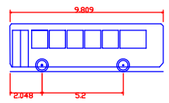
Dropped kerb access to car park

Proposed build-out to reduce crossing width and improve visibility for pedestrians and cyclists pedestrian and cycle

It is recommended that all traffic movements at the proposed egress are controlled by a Special Constable at the beginning and end of the school day.

Dart SLF 10.00m

Dart SLF 10.00m



Dart SLF 10.00m	
Overall Length	9.809m
Overall Width	2.360m
Overall Body Height	3.367m
Min Body Ground Clearance	0.302m
Track Width	2.300m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	8.592m

N

Notes

1. Base mapping provided by States of Guernsey. Dated 12-09-2019.
2. All dimensions are in metres unless specified otherwise.
3. All dimensions are approximate and should be verified following a topographical survey.
4. Exact locations of all signs and road markings to be agreed during detailed design.
5. Any carriageway / footway resurfacing required to allow for new road markings to be agreed during detailed design.

Legend

- Site Boundary
- Proposed kerb
- Proposed white road markings
- Visibility Splays (2.4 x 33m*)

*As per Guernsey Technical Standard P1- Layout, design & Construction, The Building (Guernsey) Regulations - 2012.

Issue	Date	By	Chkd	Appd
02	28/11/19	BS	AW	DW

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Client
States of Guernsey Committee for Education, Sports and Culture

Job Title
11-18 Schools Project
Les Beaucamps High School

Key Plan

Drawing Title
Proposed Site Egress

Scale at A3
1:400

Discipline
Consultancy

Job No
271282-00

Drawing Status
Information

Drawing No
ARP-LBHS-DR-CH-0001

Issue
01

Do not scale

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A1

N

Maintain existing road marking.

Proposed egress (see drawing 271282-ARP-LBHS-DR-CH-0001)

Tie in to access design.

Proposed give way to oncoming vehicles sign.

Proposed traffic calming feature with bus shelter.

Dropped kerbs at uncontrolled crossing.

Existing stairs to be replaced with a access ramp. Approximate location of a 1:15 ramp shown for information, design to be clarified during detailed design.

Dropped kerbs at hammer head access.

Proposed bus shelter.

Proposed priority over oncoming vehicles sign.

Approximate location of sewage emptying point.

Dropped kerbs.

Dropped kerbs.

Dropped kerbs.

Dropped kerb.

See drawing 271282-ARP-LBHS-DR-CH-0005

Car Park

Recreation Area

Frame

CHY

Notes

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5. Any carriageway / footway resurfacing required to allow for new road markings to be agreed during detailed design.
6. Type and location of bus shelter to be agreed with the States of Guernsey.

Legend

- Site Boundary
- Proposed kerb
- Proposed white road markings
- Proposed yellow bus stop road markings
- Proposed signage
- Uncontrolled tactile paving (buff colour)

Rev	Date	By	Chkd	Appd
01	07/10/19	AMcK	AW	DW
Issued for Information.				

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Project Title
11-18 Schools Project
Les Beaucamps High School

Drawing Title
Off Site Highway Design (Baseline Scenario)

Scale at A1: 1:500

Role: Consultancy

Suitability: For Information

Arup Job No: 271282-00

Rev: 02

Name: 271282-ARP-LBHS-DR-CH-0002

Do not scale

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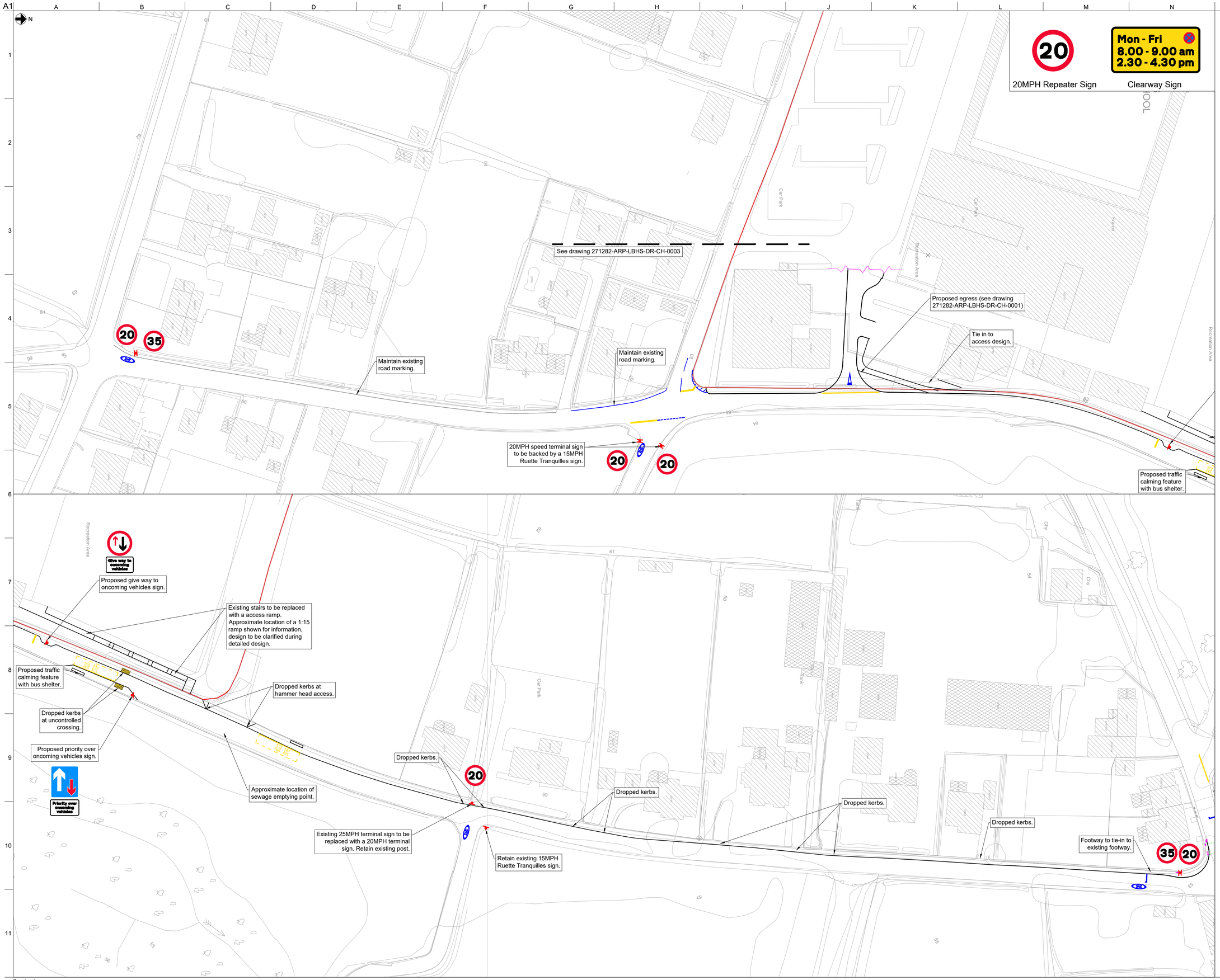
A1



20MPH Repeater Sign

Mon - Fri
8.00 - 9.00 am
2.30 - 4.30 pm

Clearway Sign

Notes

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5. Any carriageway / footway resurfacing required to allow for new road markings to be agreed during detailed design.
6. Type and location of bus shelter to be agreed with the States of Guernsey.
7. 20MPH repeater speed signs to be added during detailed design.
8. Waiting restriction signs to be installed and repeated along the yellow markings. Signs to be installed on existing lighting columns, posts or walls. Placement to be decided during detailed design.
9. See drawing 271282-ARP-LBHS-DR-CH-0003 for Sheet 2 of design.

Legend

- Site Boundary
- Proposed kerb
- Proposed white road markings
- Proposed yellow waiting restriction road markings
- Proposed yellow bus stop road markings
- Proposed signage
- Uncontrolled tactile paving (buff colour)

Rev	Date	By	Chkd	Appd
02	28/11/19	BS	AW	DW
	Updated Masterplan			
01	07/10/19	AMcK	AW	DW
	Issued for Information.			

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Project Title
11-18 Schools Project
Les Beaucamps High School

Drawing Title
Off Site Highway Design (with Sustainable Transport Interventions)
Sheet 1 of 2

Scale at A1: 1:500

Role: Consultancy

Suitability: For Information

Arup Job No: 271282-00

Rev: 02

Name: 271282-ARP-LBHS-DR-CH-0003

Do not scale

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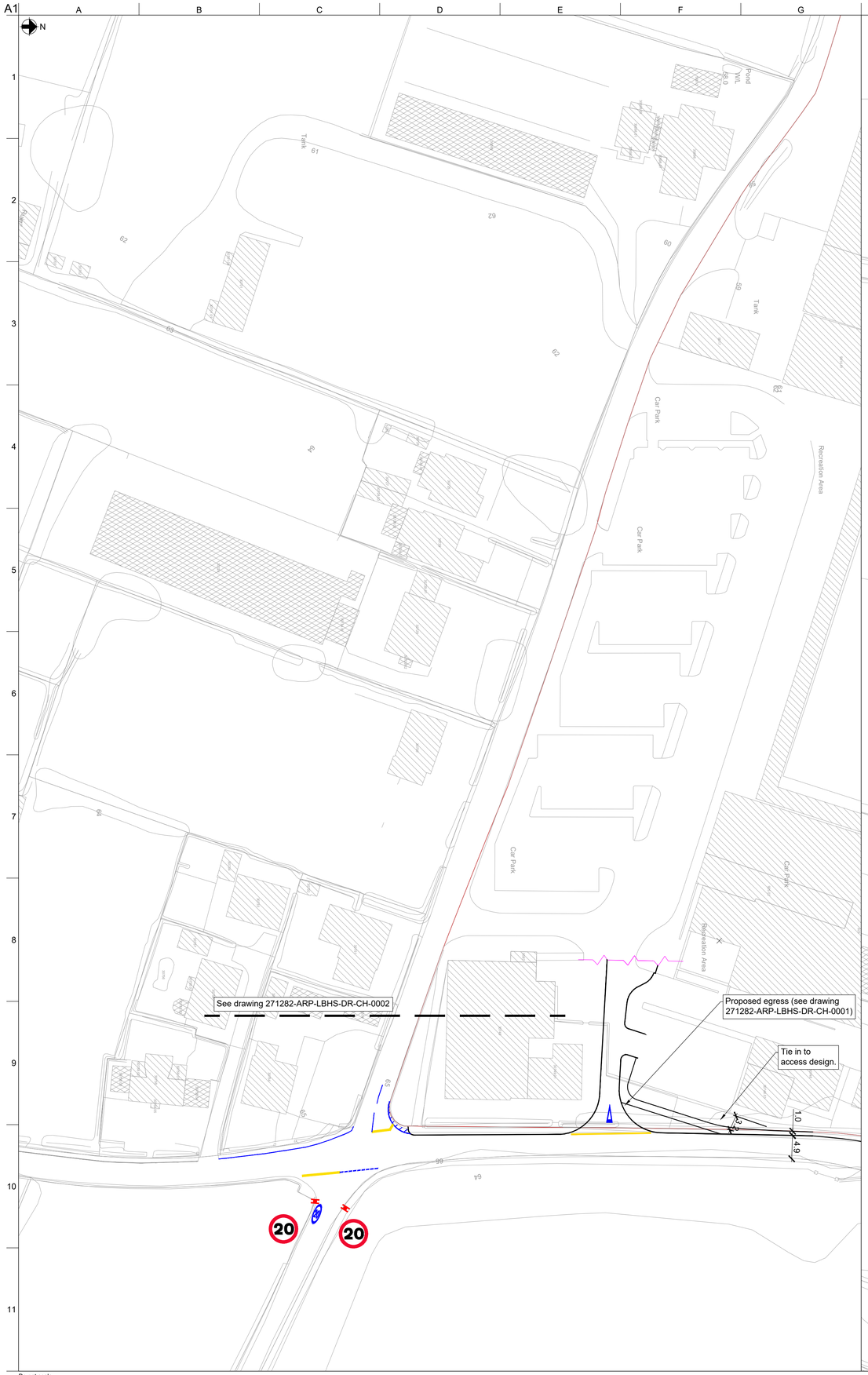
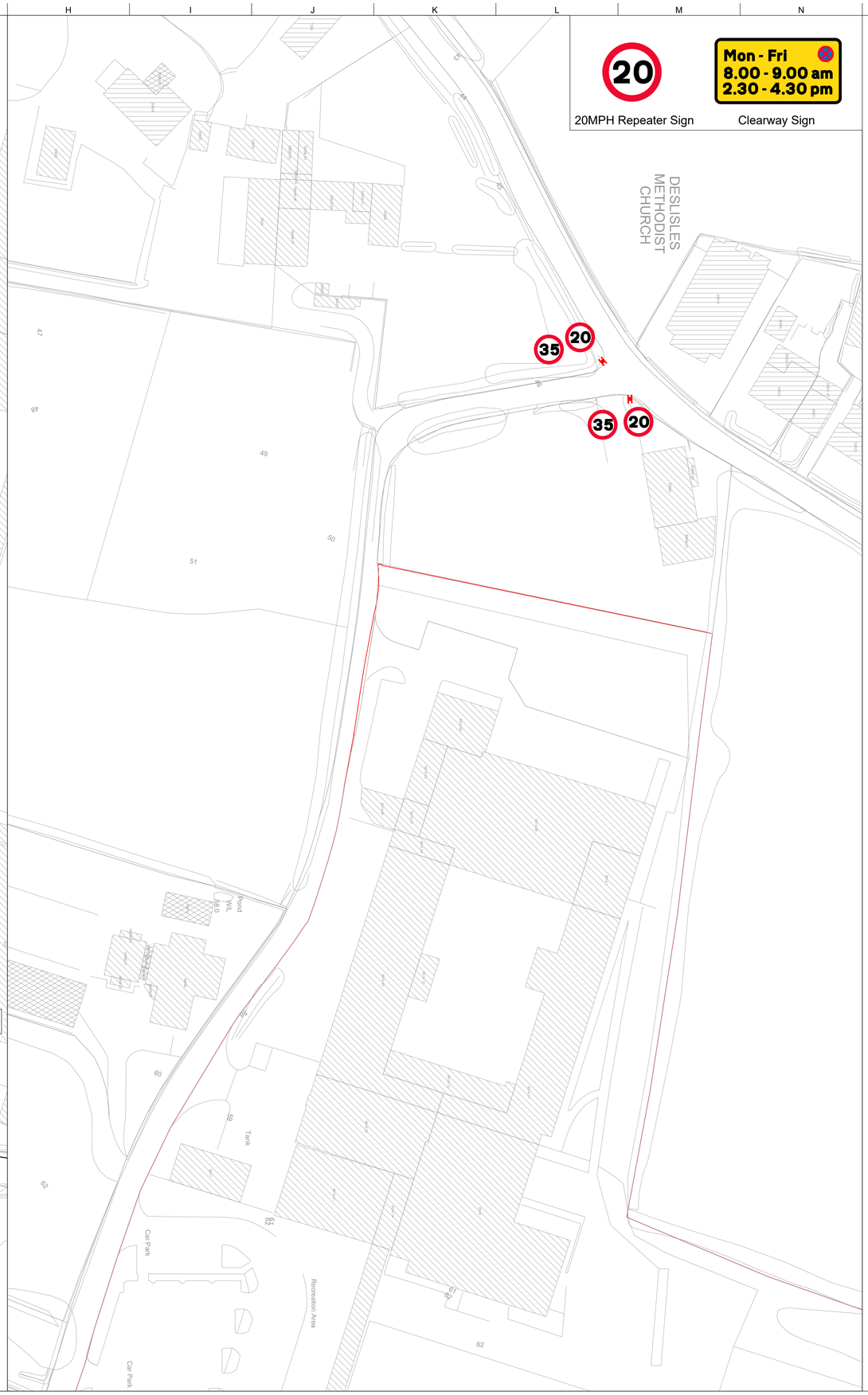
A1





Notes

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8. Waiting restriction signs to be installed and repeated along the yellow markings. Signs to be installed on existing lighting columns, posts or walls. Placement to be decided during detailed design.
9. See drawing 271282-ARP-LBHS-DR-CH-0002 for Sheet 1 of design.

Legend

- Site Boundary
- Proposed kerb
- Proposed white road markings
- Proposed yellow waiting restriction road markings
- Proposed yellow bus stop road markings
- Proposed signage
- Uncontrolled tactile paving (buff colour)

Rev	Date	By	Chkd	Appd
02	28/11/19	BS	AW	DW
	Updated masterplan			
01	07/10/19	AMcK	AW	DW
	Issued for Information.			

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Project Title
11-18 Schools Project
Les Beaucamps High School

Drawing Title
Off Site Highway Design (with Sustainable Transport Interventions)
Sheet 2 of 2

Scale at A1: 1:500

Role: Consultancy

Suitability: For Information

Arup Job No: **271282-00**

Rev: **02**

Name: **271282-ARP-LBHS-DR-CH-0004**

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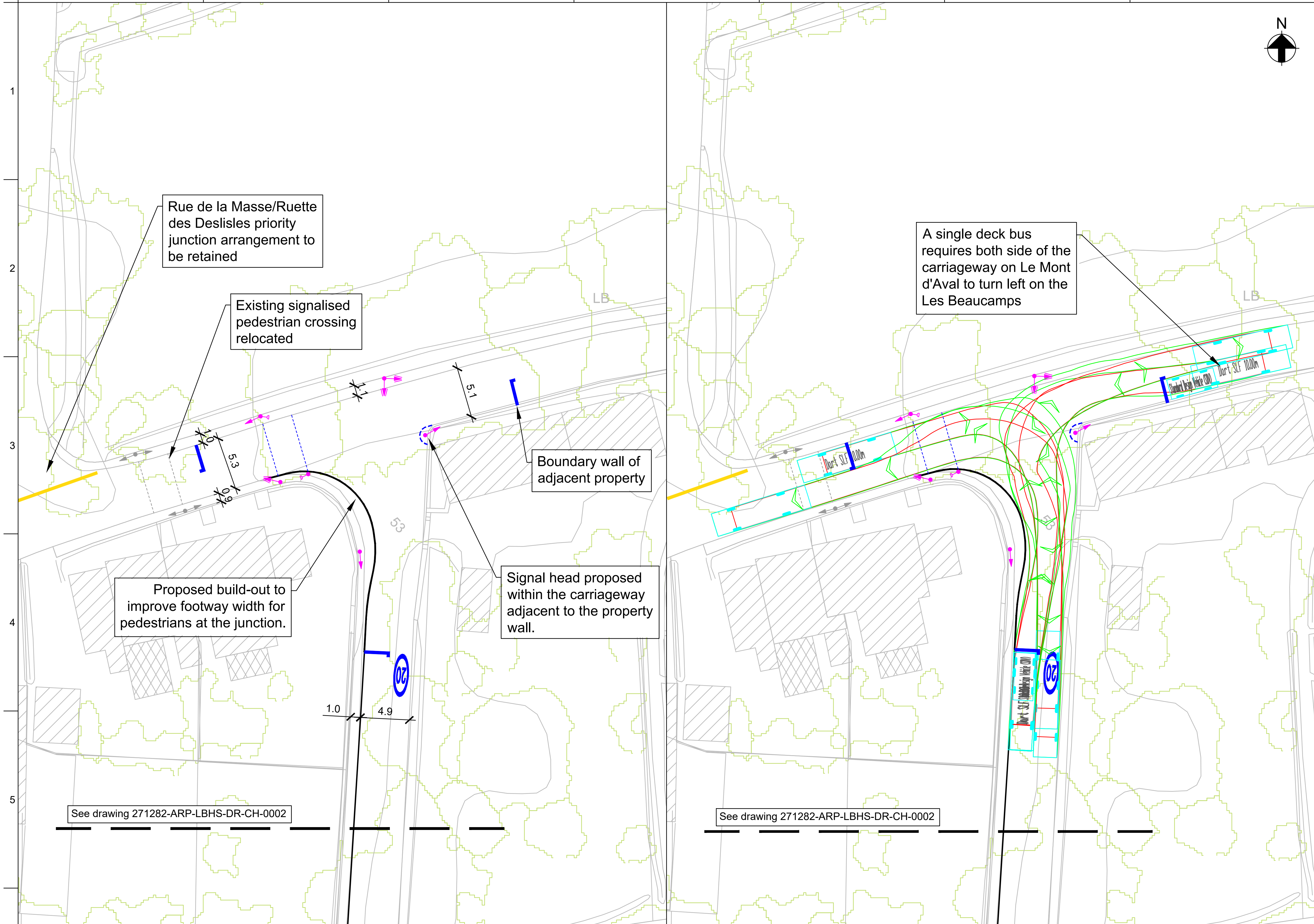
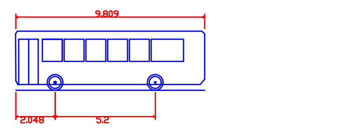
A3





Dart SLF 10.00m

Overall Length	9.809m
Overall Width	2.360m
Overall Body Height	3.067m
Min Body Ground Clearance	0.302m
Track Width	2.300m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	8.592m

Legend

- Site Boundary
- Proposed kerb
- Proposed white road markings
- Proposed Primary Signal Head
- Proposed Secondary Signal Head
- Proposed Pedestrian Display Unit

Issue	Date	By	Chkd	Appd
01	07/10/19	BS	AW	DW

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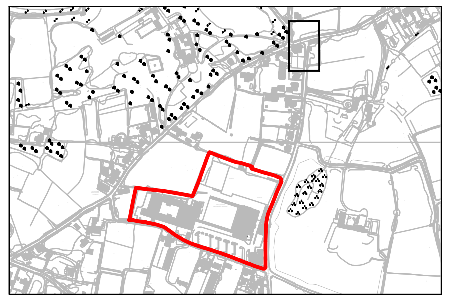
Client
States of Guernsey Committee for Education, Sports and Culture

Job Title
11-18 Schools Project
Les Beaucamps High School

Key Plan



Drawing Title
Proposed Le Mont d' Aval/ Les Beaucamps Traffic Signals

Scale at A3: 1:400

Discipline: Consultancy

Job No: 271282-00

Drawing Status: Information

Drawing No: ARP-LBHS-DR-CH-0005

Issue: 01

Notes

1. Base mapping provided by States of Guernsey. Dated 12-09-2019.
2. All dimensions are in metres unless specified otherwise.
3. All dimensions are approximate and should be verified following a topographical survey.
4. Exact locations of all signal heads, signs and road markings to be agreed during detailed design.
5. Any carriageway / footway resurfacing required to allow for new road markings to be agreed during detailed design

Do not scale

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