TECHNICAL NOTE

DATE:	07 May 2021	**CONFIDENTIALITY:**	Public
SUBJECT:	South West St Helier Waterfront: Roads Review - Opportunities for KOS 7 – Summary Note		
PROJECT:	70070478	**AUTHOR:**	
CHECKED:		**APPROVED:**	

INTRODUCTION

To support future outline planning applications, Jersey Development Company (JDC) has commissioned WSP to conduct a 'Roads Review' relating to the South West St Helier (SWSH) development proposals and Key Opportunity Site 7 (KOS 7).

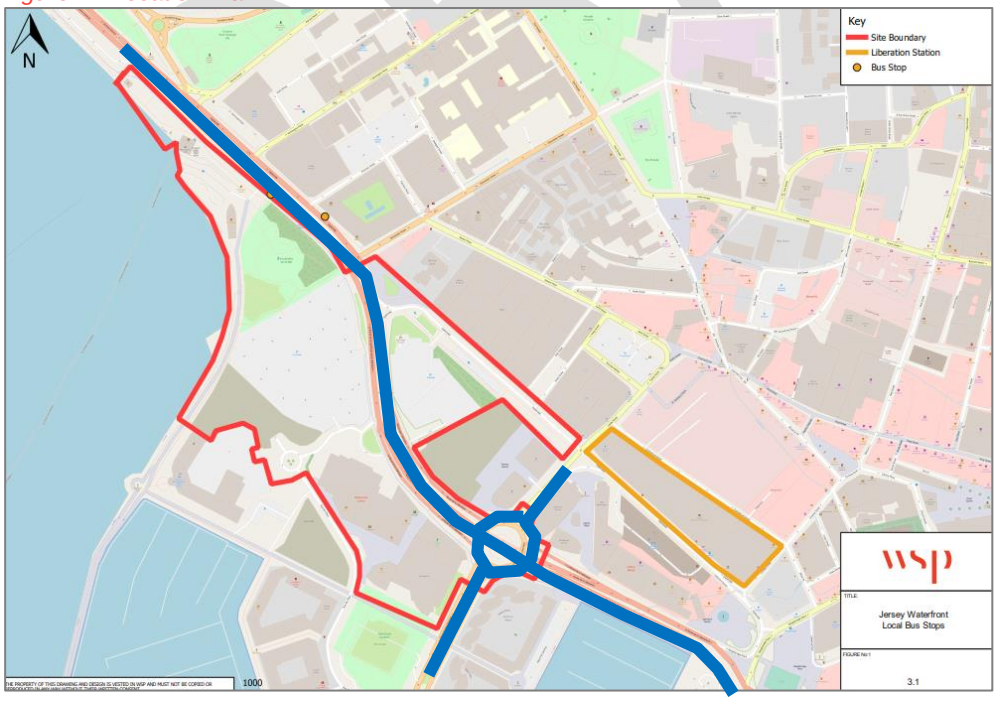
The review assessed the current and forecast transport situation in South West St Helier and in line with aspirations to downgrade the Esplanade and La Route de la Libération including the removal the grade-separated junction at Castle Street/La Route du Port Elizabeth tested the proposals within the strategic Jersey traffic model.

This Technical Note provides a summary of the assessment undertaken for the proposal to downgrade the A1. The full assessment is reported in document JDC-W-KOS7-RR_0.1.

CURRENT TRANSPORT CONDITIONS

Figure 1 shows the red line site boundary of the Jersey Waterfront Proposed Development, in relation to A1 La Route de la Libération, the bus station and local bus stops.

Figure 1 - Location Plan



The existing transport conditions in SWSH and the surrounding area are set out below against the following headings:

- Traffic Volumes;
- Journey Times, Queuing and Delay;
- Severance and Accessibility; and
- Modes of Travel.

The local highway network consists of A classified roads and local roads. The A1 is a dual carriageway that continues onto the A2, A4, A3, A13 and A16, providing connections across the southeast and southwest of the Island. These roads provide further connections to B28, A9 and A12, providing access to the north of the Island. Esplanade provides access to several local streets, including Gloucester Street, Castle Street and Conway Street. These streets give access into the business centre of St Helier where many shops, restaurants and business are located—further connecting the site to the A8 and provide access to the north of the Island.

Traffic Volumes - Automatic Traffic Counters

Using GoJ's traffic monitoring database, the data from permanent Automatic Traffic Counters (ATCs) were analysed to gain insight into patterns and trends. Figure 2 shows all the sites.

Figure 2 shows there are roughly 43,400 vehicle movements to the west, 16,700 vehicle movements to the north, and 55,300 vehicle movements to the east of St Helier. The flows show the high flows through Beaumont, the La Route de la Libération underpass, and the La Route du Fort tunnel. The highest flows are on La Route de la Libération, with over 36,000 vehicles on average per weekday.

Figure 2 - ATC Locations and Flows

Further detailed analysis has been undertaken on the sites located at the A1 at Beaumont, at the A1 La Route de la Libération, and the La Route du Fort tunnel to gain insight into patterns and trends. Analysis has been undertaken using both 2019 and 2020 data to ensure the impact of the Covid-19 pandemic is accounted for, and typical pre-pandemic traffic is understood.

The nearest permanent ATC to the west of the A1 at St. Helier is the A1 at Beaumont. This is approximately 3.2km to the west of the junction of the A1 St. Aubin's Road with the A2 Victoria Avenue.

La Route de la Libération Underpass

Two ATCs are present at the A1 underpass, one for the eastbound flow and one for the westbound flow. The Annual Average Daily Traffic (AADT) flows are shown in Figure 3 and Figure 4. They show Covid-19 has had a limited impact over annual average daily traffic volumes (outside restriction periods), with May -38%, June -16%, July -7%, August -1%, and September -0.1%. June and July are shown to be the busiest months in terms of vehicle trips.

Although the data indicates vehicle trips have returned to similar level pre-Covid-19 by September 2020, it is understood that the transfer of trips away from bus travel due to Covid-19 towards increased private car usage may be masking the overall reduction in travel.

Figure 3 - AADT - Underpass Eastbound

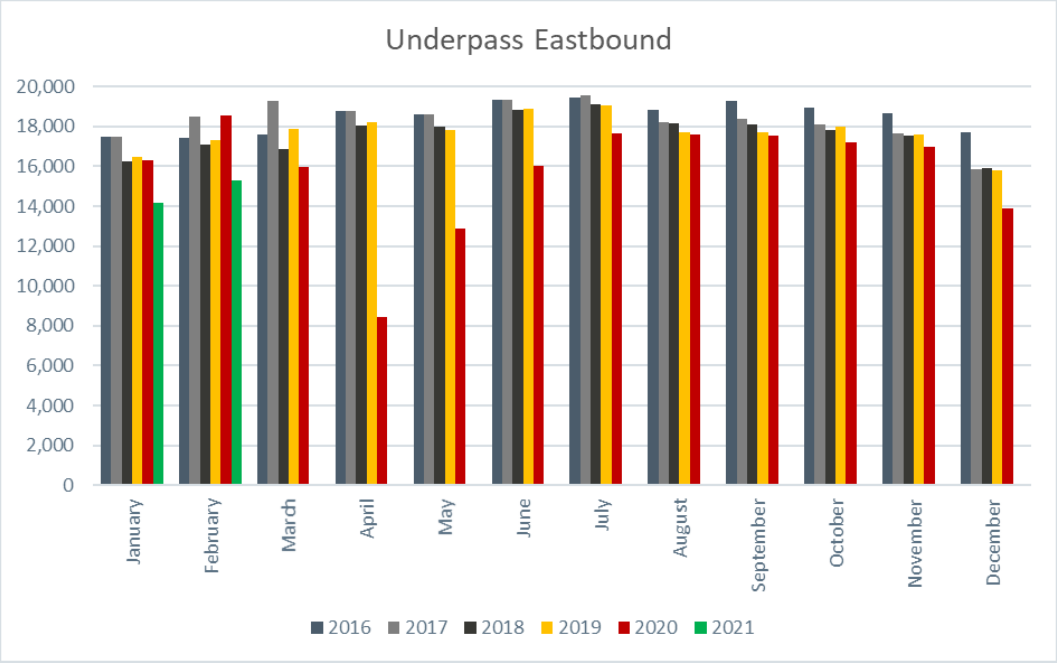
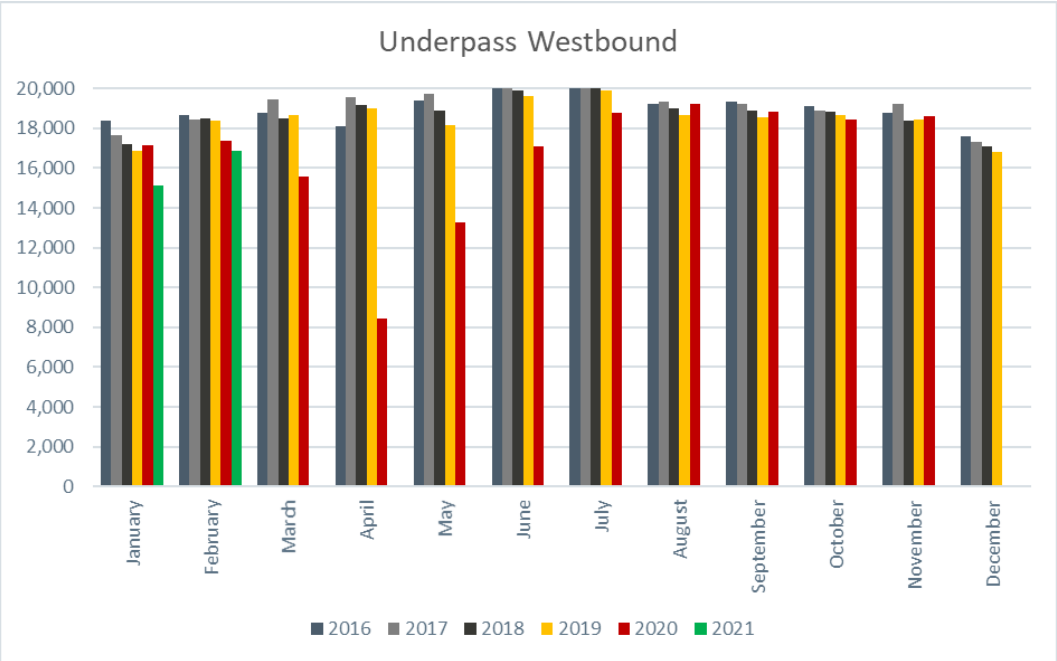


Figure 4 - AADT - Underpass Westbound



Additional details showing the hourly flow profiles are shown in the following section. In terms of the eastbound flow, Figure 5 presents the average weekday flow profile for April, May and June in 2019, while

Figure 6 presents the equivalent for 2020.

Figure 5 - A1 Underpass (Eastbound), Weekday Flows (April, May, June; 2019)

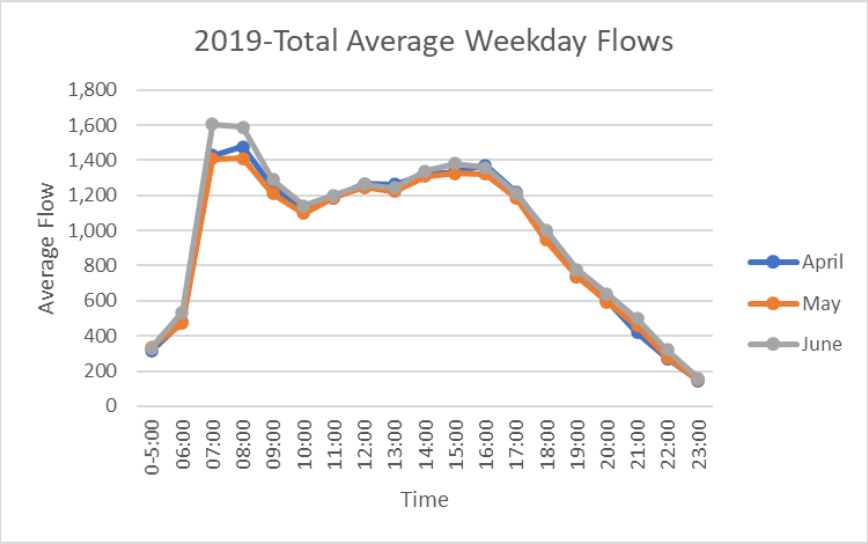
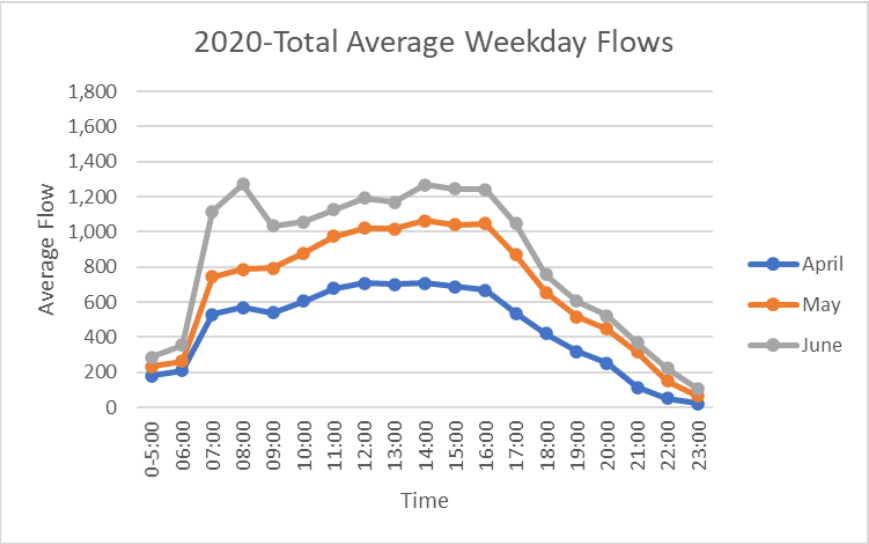


Figure 6 - A1 Underpass (Eastbound), Weekday Flows (April, May, June; 2020)



For the eastbound A1 underpass flows, in 2019, the peak network traffic typically occurs between 08:00-09:00, with around 1,400 (April and May) to 1,600 (June) vehicles per hour during this time. In 2020, taking account of the Covid-19 pandemic, the eastbound flows were significantly reduced in April, with an incremental recovery of flows towards normal levels taking place across May and June. However, June traffic flows were still below pre-pandemic levels, sitting at around 1,300 vehicles per hour between 08:00-09:00.

In terms of the westbound flow, Figure 7 presents the average weekday flow profile for April, May and June in 2019, while Figure 8 presents the equivalent for 2020.

Figure 7 - A1 Underpass (Westbound), Weekday Flows (April, May, June; 2019)

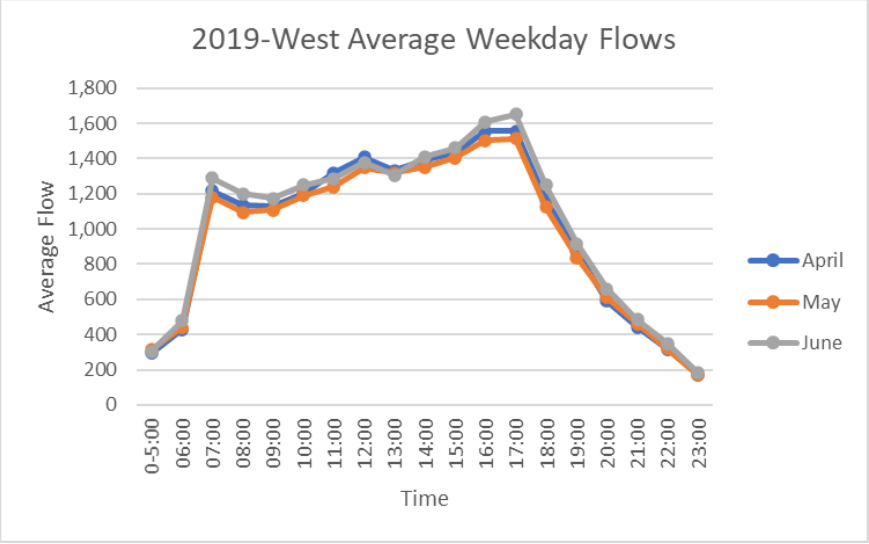
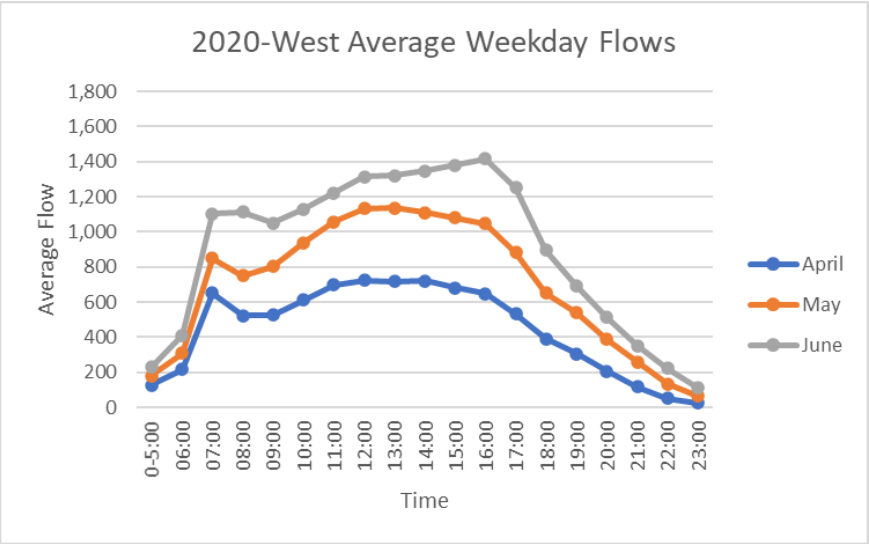


Figure 8 - A1 Underpass (Westbound), Weekday Flows (April, May, June; 2020)



For the westbound A1 underpass flows, in 2019, the peak network traffic typically occurs between 16:00-17:00-between 17:00-18:00, with 1,600 vehicles per hour during these times. In 2020, taking account of the Covid-19 pandemic, the westbound flows were significantly reduced in April, with an incremental recovery of flows towards normal levels taking place across May and June. However, June traffic flows were still below pre-pandemic levels, sitting at around 1,400 vehicles per hour between 08:00-09:00.

In terms of the two-way flow, in the 2019 AM peak (08:00-09:00), this is approximately 2,900 vehicles per hour. In the 2020 AM peak (08:00-09:00), the two-way flow is approximately 2,400 vehicles per hour. This, therefore, represents a reduction of 500 vehicles per hour, or approximately 17% lower, when comparing the two time periods examined.

For the PM peak (16:00-17:00), the two-way flow in 2019 is approximately 3,000 vehicles per hour, whereas for 2020, it is approximately 2,600 vehicles per hour. This, therefore, represents a reduction of 400 vehicles per hour, or approximately 13% lower, when comparing the two time periods examined.

La Route du Fort Tunnel

The ATC at La Route du Fort Tunnel collects data for the eastbound and westbound flows through the tunnel. Figure 9 presents the eastbound average weekday flow profile in the tunnel for April, May and June in 2019, while Figure 10 presents the equivalent for 2020.

Figure 9 - La Route du Fort Tunnel (Eastbound), Weekday Flows (April, May, June; 2019)

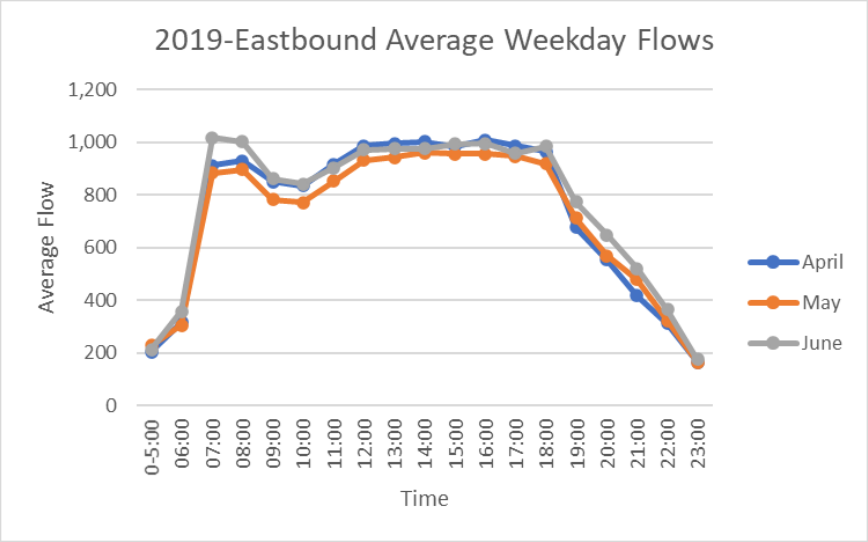
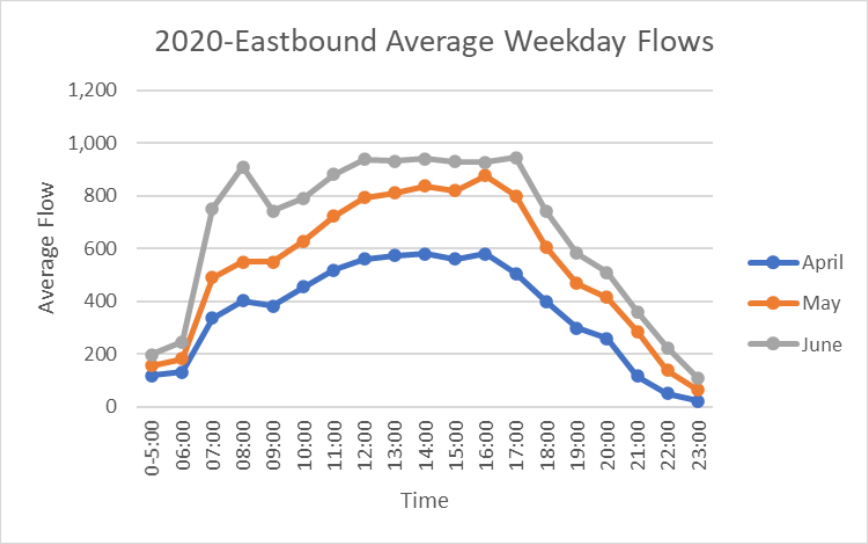


Figure 10 - La Route du Fort Tunnel (Eastbound), Weekday Flows (April, May, June; 2020)



For the eastbound La Route du Fort tunnel flows in 2019, the peak network traffic typically occurs throughout the working day between 07:00-19:00 (except for a dip between 09:00-12:00) with around 1,000 vehicles per hour during this time. In 2020, taking account of the Covid-19 pandemic, the eastbound flows were significantly reduced in April, with incremental recovery of flows towards normal levels taking place across May and June. It is notable that June traffic flows were nearly at pre-pandemic levels, sitting at around 930 vehicles per hour between 12:00-18:00.

Figure 11 presents the westbound average weekday flow profile in the tunnel for April, May and June in 2019, while

Figure 12 presents the equivalent for 2020.

Figure 11 – La Route du Fort Tunnel (Westbound), Weekday Flows (April, May, June; 2019)

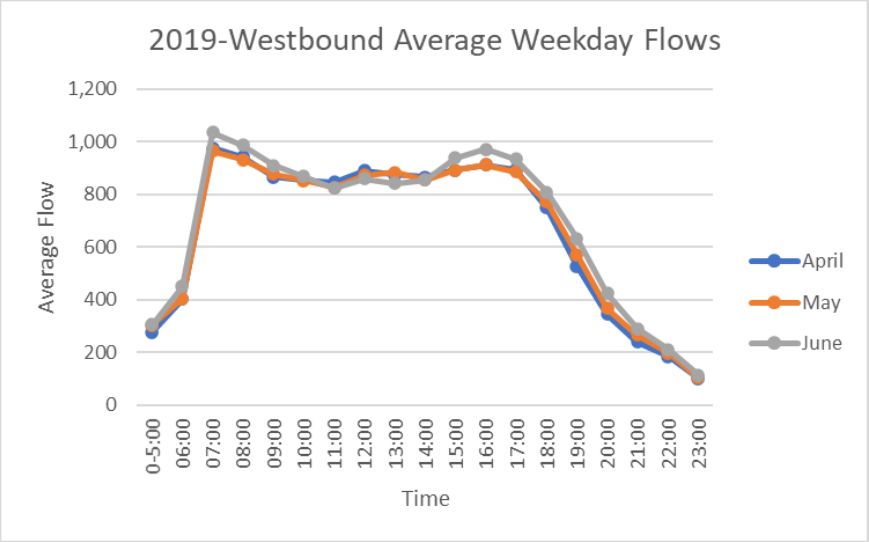
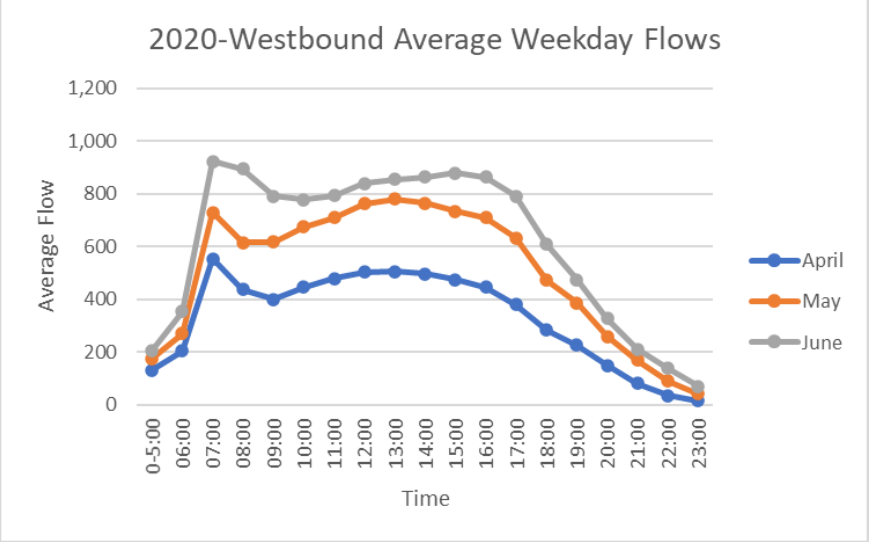


Figure 12 - La Route du Fort Tunnel (Westbound), Weekday Flows (April, May, June; 2020)



For the westbound La Route du Fort Tunnel flows, in 2019, the peak network traffic typically occurs between 07:00-08:00, with approximately 1,000 vehicles per hour during this time. In 2020, taking account of the Covid-19 pandemic, the westbound flows were significantly reduced in April, with an incremental recovery of flows towards normal levels taking place across May and June. Notably, June traffic flows had nearly recovered to pre-pandemic levels, sitting at around 930 vehicles per hour between 07:00-08:00.

As set out previously, the eastbound flow through the tunnel is fairly consistent throughout the workday, between 07:00-19:00, whereas the westbound flow through the tunnel has a more clearly defined peak between 07:00-08:00. The two-way peak flow can therefore be considered to occur between 07:00-08:00, with this representing approximately 2,000 vehicles per hour in 2019 and approximately 1,860 vehicles per hour in June 2020. The June 2020 two-way flows are therefore approximately 7% lower than 2019 flows examined.

The reduction in two-way peak flows because of the pandemic is notably less pronounced at La Route du Fort Tunnel when compared with the reductions at the A1 underpass. This suggests that during normal pre-pandemic times and likely post-pandemic times, the tunnel essentially 'throttles' traffic volumes entering and exiting the eastern end of the A1 La Route de la Libération.

DESIGN STANDARDS

The United Kingdom's Design Manual for Roads & Bridges (DMRB) note TA 79/99, titled *Traffic Capacity of Urban Roads*, although officially withdrawn without replacement, still provides a useful indication of the capacities of different road types as presented in Figure 13.

Figure 13 - Traffic Capacities of Urban Roads: Road Types

Feature	ROAD TYPE				
	Urban Motorway	Urban All-purpose			
	UM	UAP1	UAP2	UAP3	UAP4
General Description	Through route with grade separated junctions, hardshoulders or hardstrips, and motorway restrictions.	High standard single/dual carriageway road carrying predominantly through traffic with limited access.	Good standard single/dual carriageway road with frontage access and more than two side roads per km.	Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Busy high street carrying predominantly local traffic with frontage activity including loading and unloading.
Speed Limit	60mph or less	40 to 60 mph for dual, & generally 40mph for single carriageway	Generally 40 mph	30 mph to 40 mph	30mph
Side Roads	None	0 to 2 per km	more than 2 per km	more than 2 per km	more than 2 per km
Access to roadside development	None. Grade separated for major only.	limited access	access to residential properties	frontage access	unlimited access to houses, shops & businesses
Parking and loading	none	restricted	restricted	unrestricted	unrestricted
Pedestrian crossings	grade separated	mostly grade separated	some at-grade	some at-grade	frequent at-grade
Bus stops	none	in lay-bys	at kerbside	at kerbside	at kerbside

The corresponding traffic capacities for each road type are presented in Figure 14 as vehicles per hour. These capacities are valid, providing that the proportion of HGV traffic is less than or equal to 15% of the overall flow.

Figure 14 - Traffic Capacity of Urban Roads

		Two-way Single Carriageway- Busiest direction flow (Assumes a 60/40 directional split)									Dual Carriageway			
		Total number of Lanes									Number of Lanes in each direction			
		2				2-3	3	3-4	4	4+	2		3	4
Carriageway width		6.1m	6.75m	7.3m	9.0m	10.0m	12.3m	13.5m	14.6m	18.0m	6.75m	7.3m	11.0m	14.6m
Road type	**UM**	**Not applicable**										4000	5600	7200
	UAP1	1020	1320	1590	1860	2010	2550	2800	3050	3300	3350	3600	5200	*
	UAP2	1020	1260	1470	1550	1650	1700	1900	2100	2700	2950	3200	4800	*
	UAP3	900	1110	1300	1530	1620	*	*	*	*	2300	2600	3300	*
	UAP4	750	900	1140	1320	1410	*	*	*	*	*	*	*	*

Table 2 Capacities of Urban Roads
One-way hourly flows in each direction

Notes
1. Capacities are in vehicles per hour.
2. HGV ≤ 15%
3. (*) Capacities are excluded where the road width is not appropriate for the road type and where there are too few examples to give reliable figures.

The A1 in St. Helier can be broadly categorised as UAP2, due to it being a good standard dual carriageway road carrying predominantly through traffic yet having more than two side roads per km at its western end. For the most part, the A1 in St. Helier has three lanes in each direction. As a dual carriageway, and per Figure 15, this means the road has a potential two-way capacity of 9,600 vehicles per hour, equivalent to 4,800 vehicles in each direction or if assuming a 60%/40% split, 5,760 vehicles in one direction and 3,840 vehicles in the other direction.

However, if categorised as UAP3, taking account of the in-carriageway bus stop and frontage access, albeit limited, sees a potential two-way capacity of 6,600 vehicles per hour, equivalent to 3,300 vehicles in each direction.

In the AM peak (08:00-09:00), the two-way ATC flows at the A1 underpass recorded in 2019 are approximately 2,900 vehicles per hour. For the spreadsheet model flows presented previously, the greatest two-way flow location in the AM peak (08:00-09:00), of 3,840 PCUs, is between the junction with A2 Victoria Avenue and the junction with Kensington Place.

In the PM peak (16:00-17:00), the two-way ATC flows at the A1 underpass recorded in 2019 are approximately 3,000 vehicles per hour. For the spreadsheet model flows presented previously, the greatest two-way flow location in the PM peak (16:00-17:00), of 3,804 PCUs, is between the junction with Gloucester Street and the junction with Esplanade.

Figure 15 - A1 Esplanade Typical View

Oct 2010 © Google Maps, 2021. Screenshot: 30/04/2021.

As set out previously, La Route du Fort Tunnel appears to act as a 'throttle' for traffic at the eastern end of the A1 La Route de la Libération, with two-way flows through the tunnel essentially capped at around 2,000 vehicles per hour due to the capacity of the link.

Figure 14 indicates the capacity of a UAP2 two-way single carriageway road, is per La Route du Fort Tunnel, would potentially be 1,020 – 1,260 vehicles per hour per direction – a total of 2,040 – 2,520.

This analysis indicates that the A1 between St. Aubin's Road and La Route du Fort Tunnel potentially has some spare capacity at present, with the tunnel, the Commercial Buildings road and associated junction at Liberation Square/Weighbridge Place operating as a limiting factor to higher flows on the A1.

Journey Times, Queuing and Delay

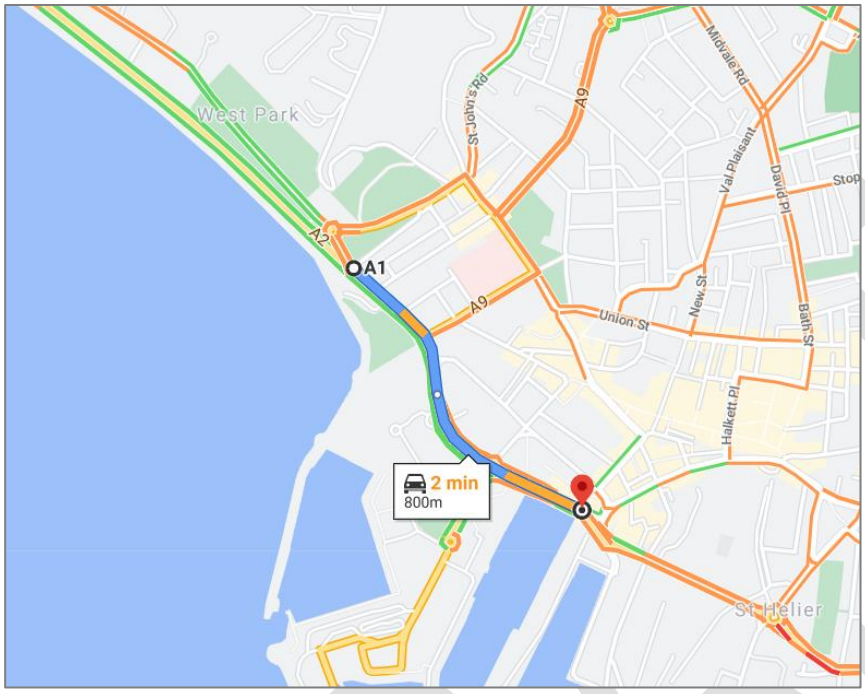
To ascertain the approximate existing journey times, Google Maps typical traffic data has been examined for a typical Wednesday at 08:45 for the AM peak hour (08:00-09:00) and at 16:45 for the PM peak hour (16:00-17:00). Wednesday was chosen as the peak traffic flows are less likely to be influenced by travel patterns of workers who have extended weekends, for instance, due to contracted arrangements or annual leave.

The eastbound journey times have been measured from the junction of A1 Esplanade and Peirson Road (i.e. where the three-lane section of A1 commences), through the grade-separated junction underpass and up to the point at which the nearside lane turns left towards Esplanade (i.e. where the three-lane A1 ends). The westbound journey times have been measured from the pedestrian crossing of the A1, south of Liberation Square, to the junction of A1 Esplanade and Peirson Road.

AM Peak Hour (08:00-09:00)

The typical eastbound journey time on the A1 at St. Helier for the AM peak hour (08:00-09:00) is presented in Figure 16.

Figure 16 - Eastbound Journey Time (AM Peak Hour 08:00-09:00)

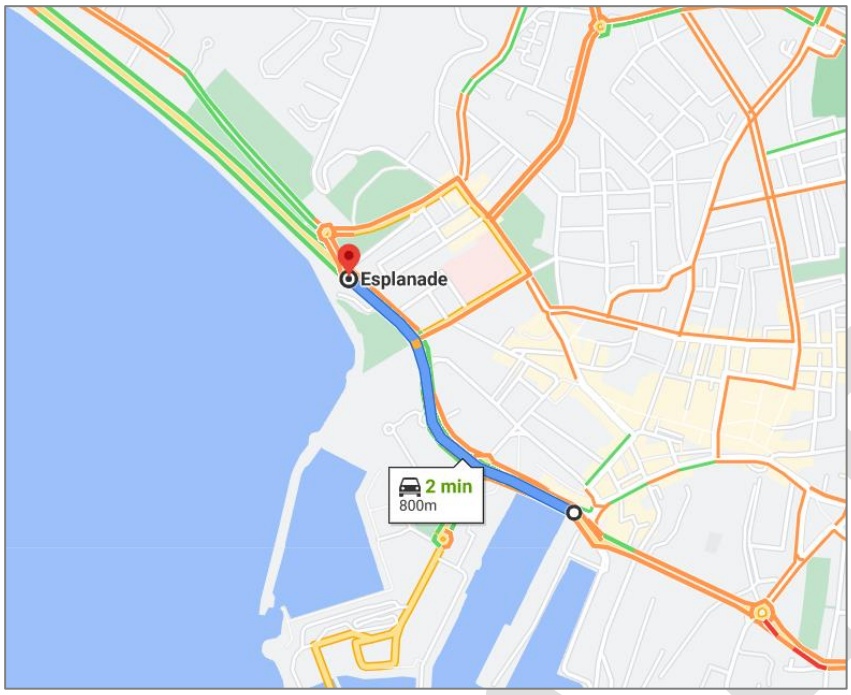


© Google Maps, 2021. Screenshot: 02/02/2021

The eastbound travel time through this section in the AM peak hour (08:00-09:00) is estimated to be 2 minutes. Some congestion and the associated delay appear to occur at the A1 eastbound approaches to the Gloucester Street and La Route du Fort junctions.

The typical westbound journey time on the A1 at St. Helier for the AM peak hour (08:00-09:00) is presented in Figure 17.

Figure 17 - Westbound Journey Time (AM Peak Hour 08:00-09:00)

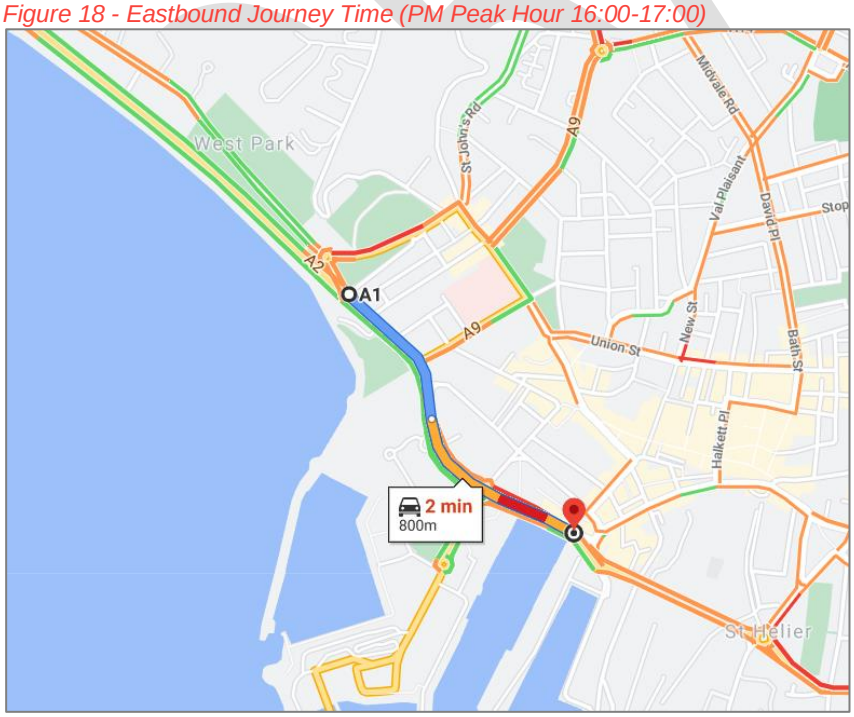


The westbound travel time through this section in the AM peak hour (08:00-09:00) is estimated to be 2 minutes. Minimal congestion and delay is present.

PM Peak Hour (16:00-17:00)

The typical eastbound journey time on the A1 at St. Helier for the PM peak hour (16:00-17:00) is presented in Figure 18.

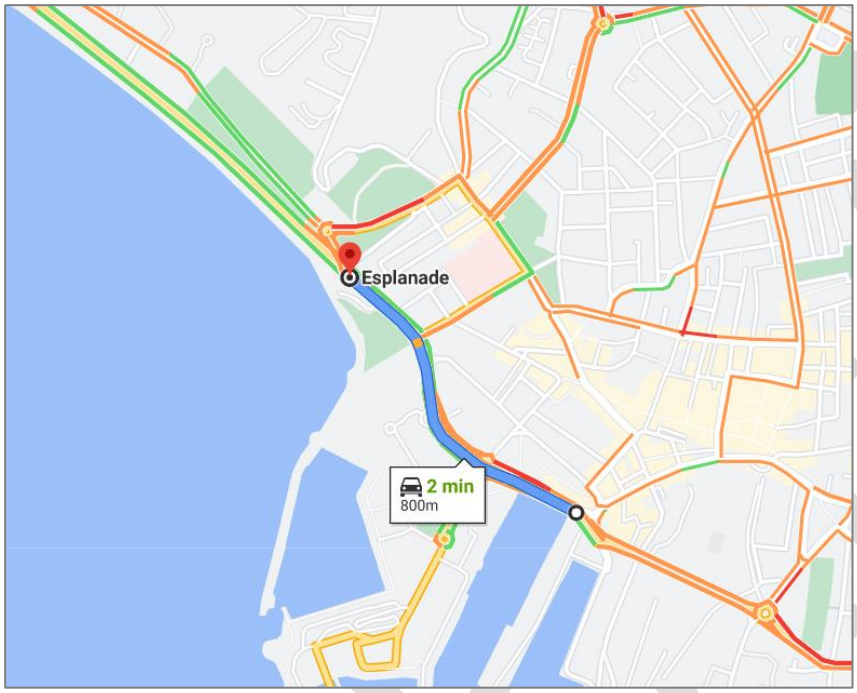
Figure 18 - Eastbound Journey Time (PM Peak Hour 16:00-17:00)



The eastbound travel time through this section in the PM peak hour (16:00-17:00) is estimated to be 2 minutes. Severe congestion and associated delay appear to occur on the A1 eastbound through the underpass and to the point at which the eastbound A1 on-slip road joins the main route. Congestion continues to the La Route du Fort junction.

The typical westbound journey time on the A1 at St. Helier for the PM peak hour (16:00-17:00) is presented in Figure 19.

Figure 19 - Westbound Journey Time (PM Peak Hour 16:00-17:00)



The westbound travel time through this section in the PM peak hour (16:00-17:00) is estimated to be 2 minutes. Minimal congestion and delay are present.

La Route du Fort Tunnel

In each peak and flow direction assessed, La Route du Fort Tunnel has moderate traffic levels. This corresponds to the capacity limitations as discussed previously in this Review, when examining traffic volumes.

Notably, congestion is greater on the eastern section of the eastbound A1 in both the AM peak and PM peak hours, supporting the tunnel acting as a constraint to free-flowing traffic. By contrast, westbound A1 flows appear relatively unconstrained, which is likely due to the dispersal of westbound traffic at the A1 / St. Aubin's Road / Peirson Road junction.

Severance and Accessibility

The La Route de la Libération and Esplanade causes severance in various forms. For pedestrians, severance is caused by a lack of crossing facilities and/or poor quality of the crossing facilities which are available.

From and including the A1 / A2 junction at the western end of the A1 corridor at St. Helier to and including the A1 La Route de la Libération / A17 La Route du Fort junction, there are seven formal non-motorised user crossing points of the A1:

- **A2 Victoria Avenue:** At the western end of the St. Helier A1 corridor, there is an at grade pedestrian crossing route connecting the Waterfront to Victoria Gardens. The crossing is split across three carriageways: firstly, the two lanes of the westbound A2 Victoria Avenue, secondly, the three lanes of the eastbound A2 Victoria Avenue and thirdly, the three lanes of the single carriageway A1. A refuge area is provided in the centre of the A2 Victoria Avenue dual carriageway. The total crossing distance from the southern side of A2 Victoria Avenue to the Victoria Gardens is approximately 40m.
- **Kensington Place:** Approximately 115m to the east of the previous crossing is a pedestrian crossing route at the junction of the A1 Esplanade with Kensington Place. This crossing is staggered into two parts, one for the three-lane westbound A1 carriageway and one for the three-lane eastbound A1 carriageway. The total crossing distance is approximately 26m. Footway space on the northern side of the A1 is limited, and this is particularly the case into Kensington Place too.
- **Gloucester Street:** Approximately 170m to the east of the previous crossing is a pedestrian crossing route at the junction of the A1 Esplanade with Gloucester Street is staggered into two parts, one for the three-lane westbound A1 carriageway and one for the three-lane eastbound A1 carriageway. The total crossing distance is approximately 30m. On the southern side of the A1, there are steps and a ramp to traverse the level difference from the road. This may deter some users from crossing at this location.
- **Car Park Exit Tunnel:** Approximately 185m to the east of the previous crossing is a crossing route that utilises the car park exit tunnel. This provides a link for pedestrians between the Esplanade side of the A1 corridor, to the south side of the A1 and onwards to Rue de L'Etau.
- **Port Roundabout (Western Side):** Approximately 120m to the east of the previous crossing is a pedestrian route across the A1 using the grade-separated roundabout. This connects Castle Street and La Route du Port Elizabeth via a zebra crossing on each slip road and a central path connecting these arms of the junction. The total crossing distance, encompassing both zebra crossings and the central path, is approximately 40m.
- **Port Roundabout (Eastern Side):** Approximately 65m to the east of the previous crossing, is a pedestrian route across the A1 using the grade-separated roundabout. This connects Castle Street and La Route du Port Elizabeth via a zebra crossing on each slip road and a central path connecting these arms of the junction. The total crossing distance, encompassing both zebra crossings and the central path, is approximately 40m.
- **Liberation Square:** Approximately 65m to the east of the previous crossing is a pedestrian route crossing the A1 at Liberation Square where the A1 La Route de la Libération meets the A17 La Route du Fort. This crossing provides connectivity between Liberation Square and the marina area, including the Steam Clock and Maritime Museum, and beyond. The crossing comprises a staggered arrangement, with a central waiting area between the two directions of the dual carriageway. At the location of the crossing, there are two lanes westbound and three lanes eastbound on the A1. The total crossing distance is approximately 25m.

Travel between the areas north and south of La Route de la Libération by sustainable modes is therefore made undesirable by indirect pedestrian routes, lack of formal cycle crossing facilities, and the fact the La Route de la Libération / Castle Street roundabout has a poor safety record for cyclists. The width of the A1, three lanes in each direction, for the most part, means that informal crossings of the road are less likely and potentially less safe.

For public service (buses), businesses and residents, the congestion and delay, especially on the side roads, severely inhibits their ability to travel east/west. Significant journey time variation occurs during the peak periods.

Modes of Travel

2011 JERSEY CENSUS

The primary modes of travel in Jersey, other than private modes such as cars and motorcycles, are walking, cycling and buses.

Data is available from the 2011 Jersey Census, with Chapter 6 of the corresponding report on the census covering transport specifically, which can be examined to determine whether there is likely to be demand for alternative modes of travel, including:

- Place of work;
- Mode of travel to work; and
- Proportion of cars/vans per household.

In terms of place of work, nearly seven in ten (68%) of all workers in the Island worked in St Helier, a fifth (19%) worked in rural parishes, and 13% worked in semi-urban parishes. The usual mode of travel to work from the census report is reproduced in Table 1.

Table 1 – Usual Mode of Travel to Work (Working Adults Aged 16 or Over)

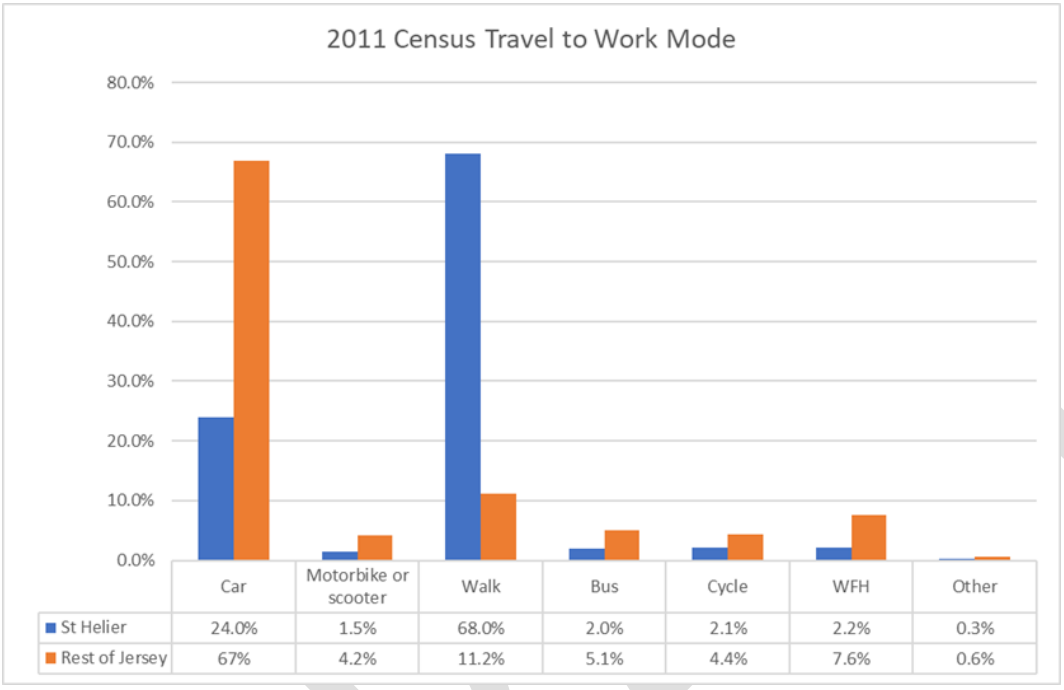
Usual Mode of Travel	Workers	Percent of Working Adults
Private Car (Alone)	21,139	40%
Private Car (with Passenger)	4,840	9%
Private Car (as Passenger)	3,577	7%
Motorcycle or Scooter	1,835	3%
Walk	13,300	25%
Bus	2,264	4%
Cycle	2,083	4%
Work Mainly at or from Home	3,159	6%
Other (including taxi)	273	1%
All Workers	**52,470**	**100%**

Table 6.5, 2011 Jersey Census Report

Based on the data, approximately 6 in 10 people in semi-urban areas travelled to work by car, whilst 7 in 10 people in rural areas travelled to work by car. In contrast, nearly half of workers living in St. Helier walked to work.

The usual mode of travel to work data has been examined for St. Helier parish alone, plus the remaining parishes combined, with this data presented in Figure 20.

Figure 20 - 2011 Jersey Census; Mode of Travel to Work for St. Helier and Rest of Jersey



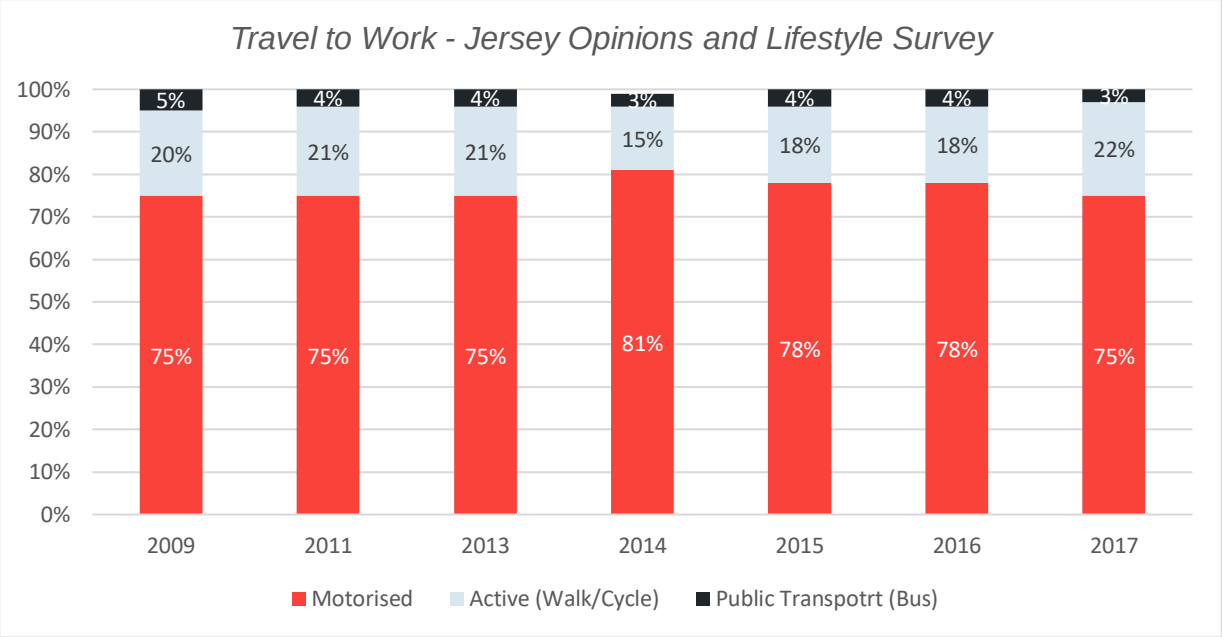
	Car	Motorbike or scooter	Walk	Bus	Cycle	WFH	Other
St Helier	24.0%	1.5%	68.0%	2.0%	2.1%	2.2%	0.3%
Rest of Jersey	67%	4.2%	11.2%	5.1%	4.4%	7.6%	0.6%

When the census was carried out, in the parish of St. Helier, just under a quarter of trips to work were undertaken by car, whilst in the rest of Jersey, the majority of the travel to work was undertaken by car. Although smaller proportions overall, the same is true of motorbike/scooter trips, with the rest of Jersey having a greater proportion of travel by this mode than St. Helier. In contrast, walking comprised nearly 7 in 10 trips to work in St. Helier, whereas this was closer to 1 in 10 trips in the rest of Jersey.

Travel by bus and cycle were both over two times greater in the rest of Jersey, compared with St. Helier, which may be accounted for because the majority of the Island's residents (including those in St. Helier) work in St. Helier.

The Jersey Opinions and Lifestyle Survey has also been reviewed, which provides newer data on travel patterns since the 2011 census. The results are presented in Figure 21, showing the use of motorised, active mode, and public transport over a seven-year period. It indicates despite population growth, the split between travel modes has remained relatively consistent.

Figure 21 - Travel to Work - Jersey Opinions and Lifestyle Survey



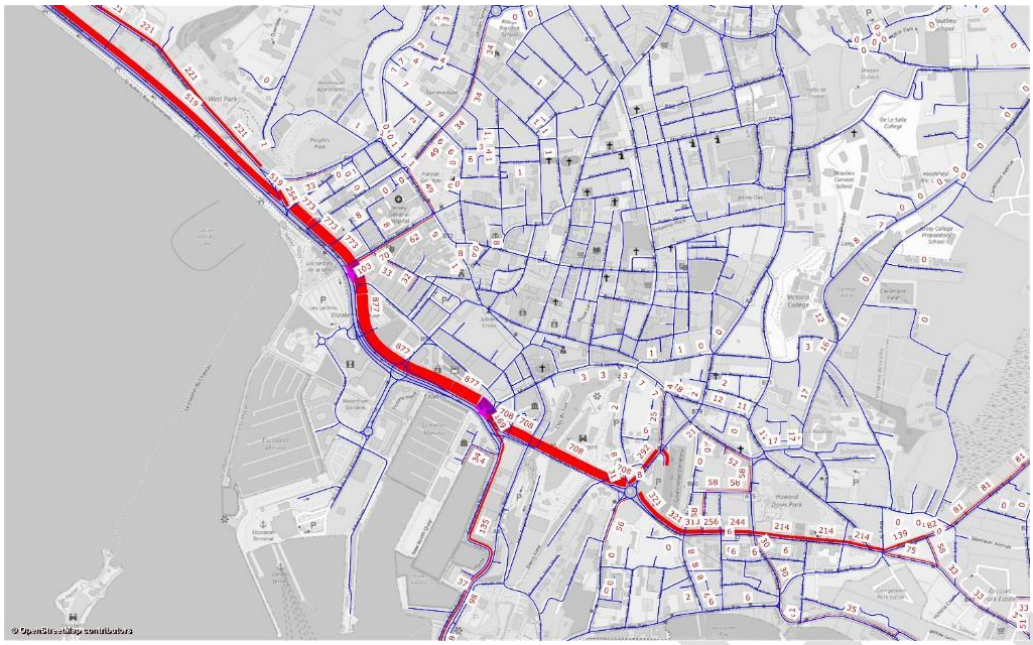
Travel data also indicates that the average car occupancy for Jersey is around 1.40, which is low compared to the UK average car/van occupancy of 1.60, indicating a high greater number of single-occupancy vehicle trips than the UK. Jersey is also shown to have higher car ownership at 1.50 cars/vans per private household compared to the UK at 1.2 cars/vans per private household.

JERSEY STRATEGIC TRAFFIC MODEL

Data from the Jersey strategic traffic model has been examined by direction in terms of the through trips that occur on the A1 between the A1 / Gloucester Street junction and the A1 / La Route du Fort junction in the AM peak hour (08:00-09:00).

For the eastbound flow, this output is illustrated in Figure 22, with the volume of trips indicated by the thickness of the line plotted on the map.

Figure 22 - Strategic Model Eastbound A1 Analysis



The model output suggests that 877 eastbound through trips (vehicles per hour) travel via the underpass section of the A1, including 221 trips (25%) originating from A1 St. Aubin's Road, 519 trips (59%) originating from A2 Victoria Avenue and 103 trips (12%) originating from A9 Gloucester Street. At the eastern end of the A1, 708 trips (81%) continue into La Route du Fort Tunnel, and 135 trips (15%) continue onto Commercial Buildings.

For the westbound flow, this output is illustrated in Figure 23, with the volume of trips indicated by the thickness of the line plotted on the map.

Figure 23 - Strategic Model Westbound A1 Analysis

The model output suggests that 851 westbound through trips (vehicles per hour) travel via the underpass section of the A1, including 268 trips (31%) originating from Commercial Buildings and 558 trips (66%) originating from La Route du Fort Tunnel. At the western end of the A1, 446 trips (52%) continue onto A2 Victoria Avenue, 98 trips (12%) onto A1 St. Aubin's Road and 146 trips (17%) onto A9 St. Aubin's Road.

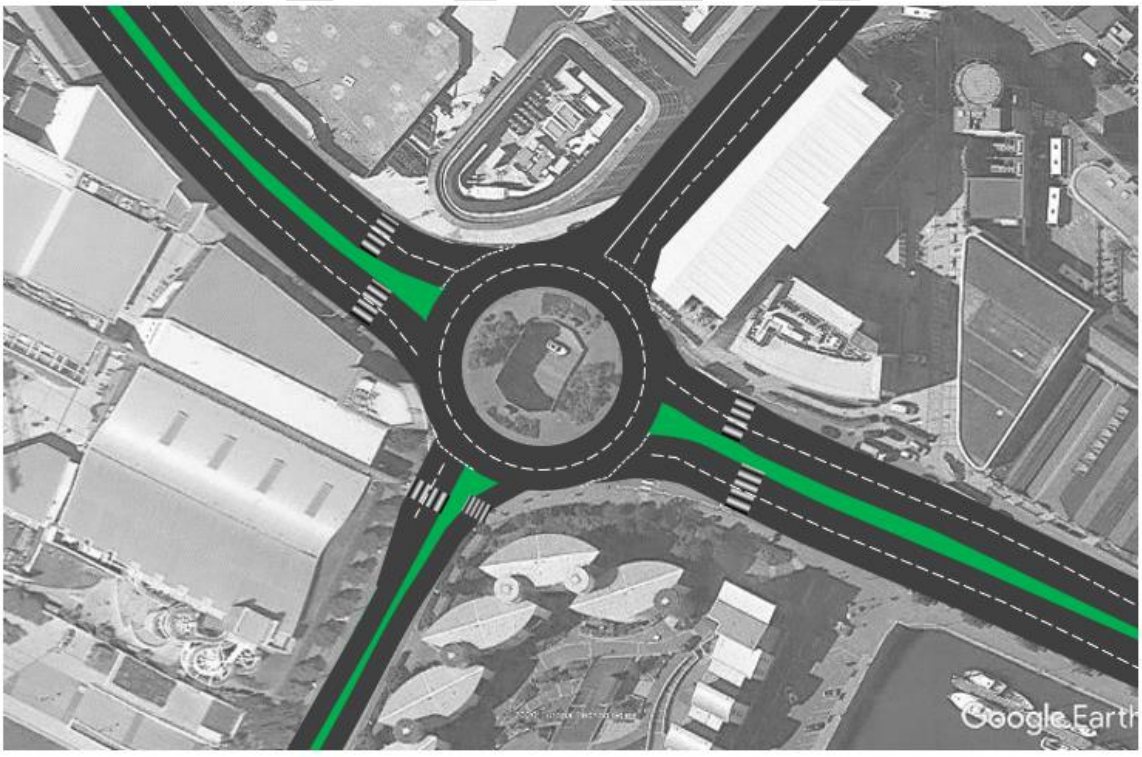
ASSESSMENT OF PROPOSED DOWNGRADING OF THE A1

Following proposals to consider the downgrading of the A1 and the removal of the grade-separated junction at Castle Street/La Route du Port Elizabeth, a number of options were identified for the potential layout of the junction. To accommodate existing demand in an at-grade junction the number of lanes significantly increases, with eight lanes required for the A1. This increase in lanes would have an impact on the land take and a significant increase in pedestrian crossing times and distances, creating a much worse experience of pedestrians than the current layout.

Following the potential options designed to accommodate the existing levels of demand, Figure 24 shows a potential layout deemed to be more in line with the aspirations of downgrading the A1. It shows two-lane approaches and proposes to maintain the existing zebra crossing arrangements.

The layout shown in Figure 24 has been assessed in the traffic model, and the results are presented in Table 2 and Table 3. The modelling assumes the at-grade junction with two through lanes in each direction between West Park and the Liberation Square junction, in line with the aspirations of downgrading the A1.

Figure 24 - Example of modified Castle St roundabout – two-lane approaches



The Jersey traffic model has been used to assess the potential for downgrading the A1. The model is a strategic highway assignment model using the PTV VISUM software.

Results from the traffic modelling are presented in Table 2 and Table 3 and in Figure 25 to Figure 28. Table 2 and Table 3 outlines the very significant impact of downgrading through the removal of traffic lanes and the replacement of the grade-separated junction at Castle Street/La Route du Port Elizabeth with an at-grade arrangement would have. Table 2 shows the largest differences would occur in the PM peak period.

Table 2 – Jersey Traffic Model Do Minimum vs Do Something Network Statistics

Statistic	Unit	Do Minimum (Existing)		Do Something (Downgraded A1)		Difference (DS-DM)	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Over-capacity Queues	Veh-Hrs	3.7	30.8	141.2	492.5	137.6	461.7
Total Free Flow Time links+turns+connectors	Veh-Hrs	2,105.2	2,069.0	2,109.8	2,030.8	4.7	-38.1
Total Travel Time links+turns+connectors	Veh-Hrs	3,148.1	2,900.4	3,397.0	3,349.2	248.9	448.8
Total Delay links+turns+connectors	Veh-Hrs	1,042.9	831.4	1,287.2	1,318.4	244.3	486.9
Total Link and Junction Delay	Veh-Hrs	219.5	179.5	297.2	547.4	77.7	367.9
Total Travel Distance links+turns+connectors	Veh-kms	98,357.8	96,719.5	98,413.5	94,253.1	55.7	-2,466.4
Average Speed excluding connectors	kph	33.2	35.8	30.5	29.5	-2.7	-6.3

Table 3 shows very significant increases in queuing, congestion and journey times are predicted, with journey times shown to increase by over 500% in the PM peak for the westbound and 130% in the PM peak. In comparison, eastbound journeys are shown to increase by 210% in the AM and 130% in the PM.

Table 3 – Jersey Traffic Model Do Minimum vs Do Something Journey Times

Direction	Attribute	Theoretical Time (@30mph)	Do Minimum (Existing)		Do Something (Downgraded A1)		Difference	
		Freeflow	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Eastbound	Length	2.38 km	2.38 km	2.38 km	2.38 km	2.38 km	n/a	n/a
	Journey Time	2min 57s	5min 15s	5min 55s	11min 3s	7min 41s	5min 48s	1min 46s
Westbound	Length	2.40	2.40 km	2.40 km	2.40 km	2.40 km	n/a	n/a
	Journey Time	2min 57s	3min 22s	3min 22s	4min 24s	17min 24s	1min 2s	14min 2s

In addition to the tables, Figure 25 to Figure 28 show the predicted changes in traffic flows across the wider network as a result of rerouting of traffic which is not able to be accommodated on the A1 corridor as a result of the downgrading. For example, traffic is shown to reroute via the north of the island in the PM peak period.

Figure 25 – Jersey Traffic Modelling Do Minimum vs Do Something – AM Peak – Wider network

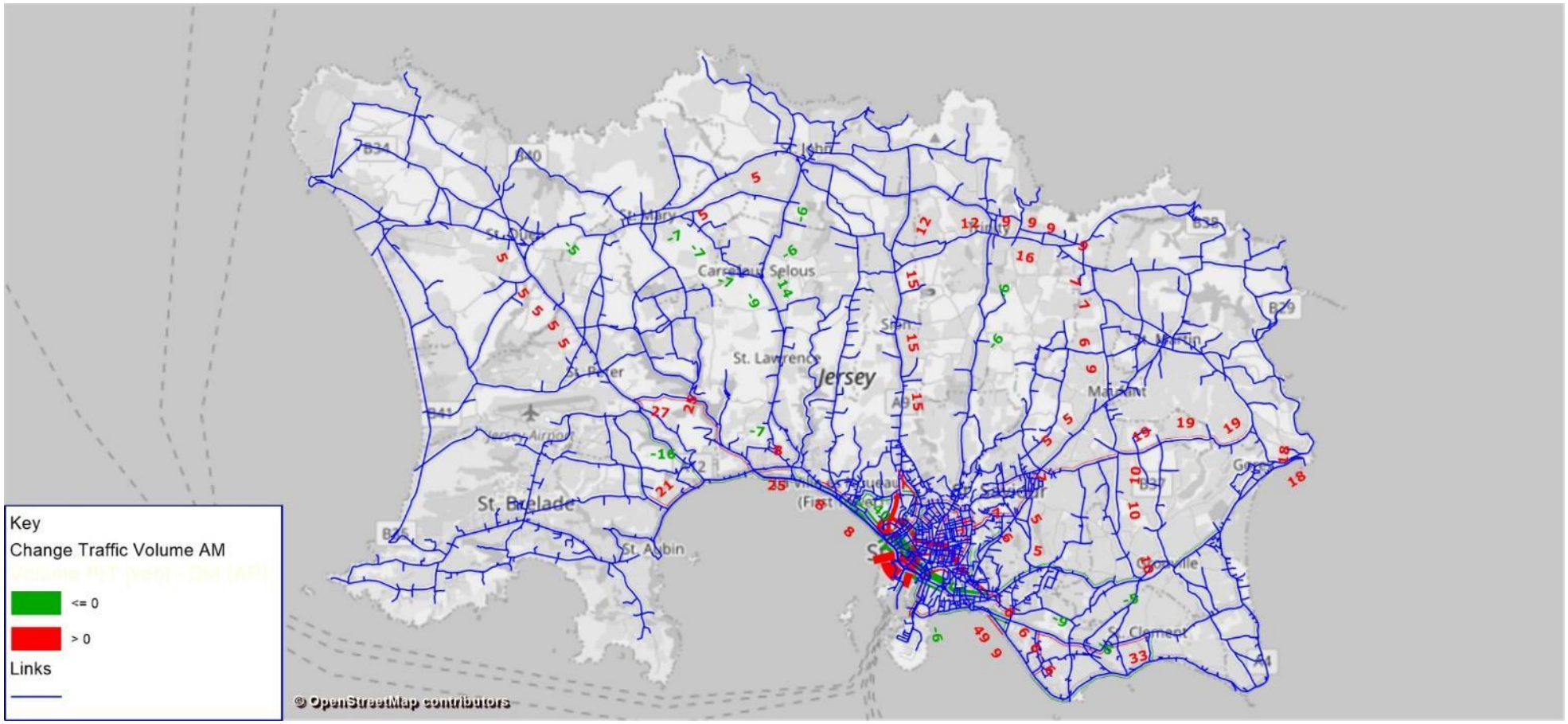


Figure 26 – Jersey Traffic Modelling Do Minimum vs Do Something – AM Peak – Zoomed

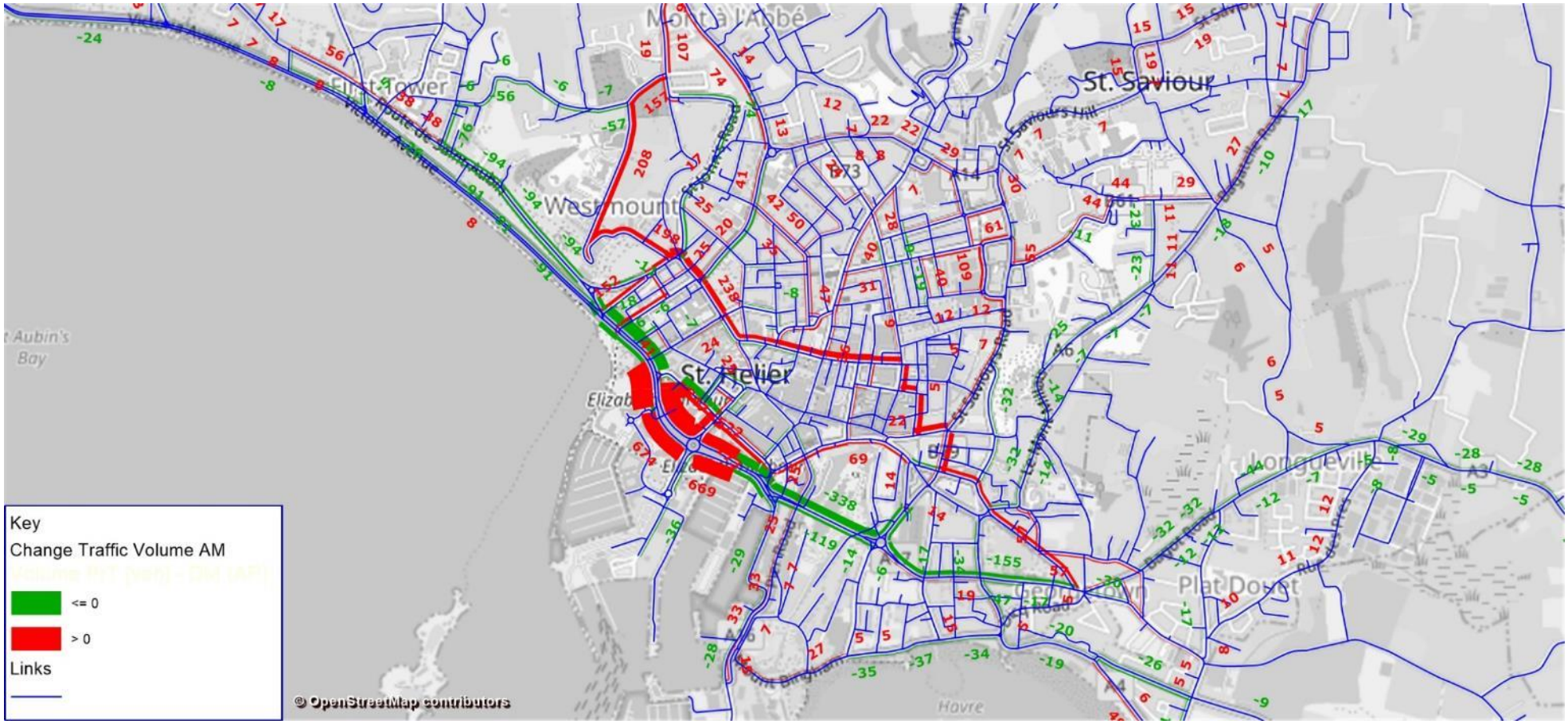


Figure 27 – Jersey Traffic Modelling Do Minimum vs Do Something – PM Peak – Wider network

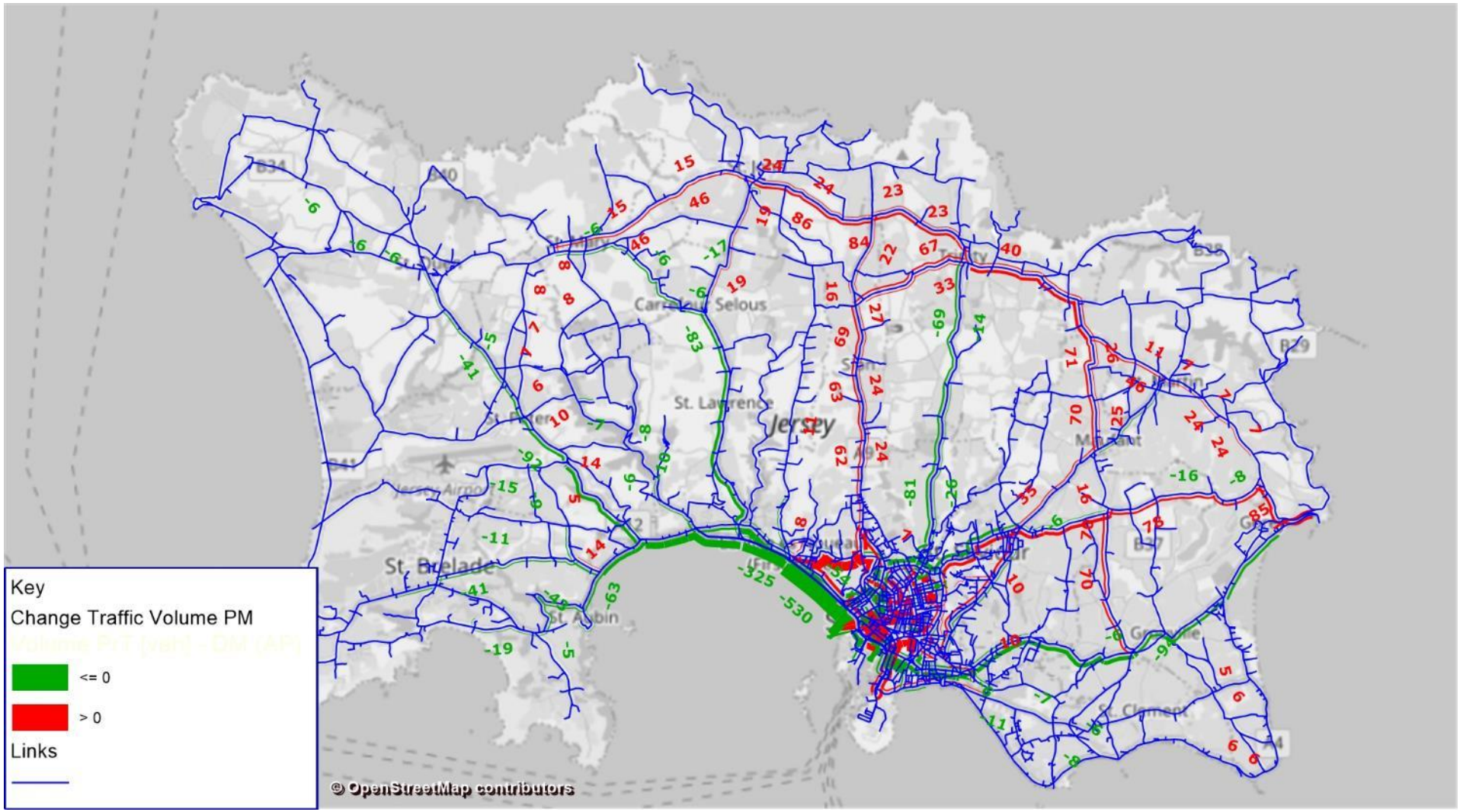
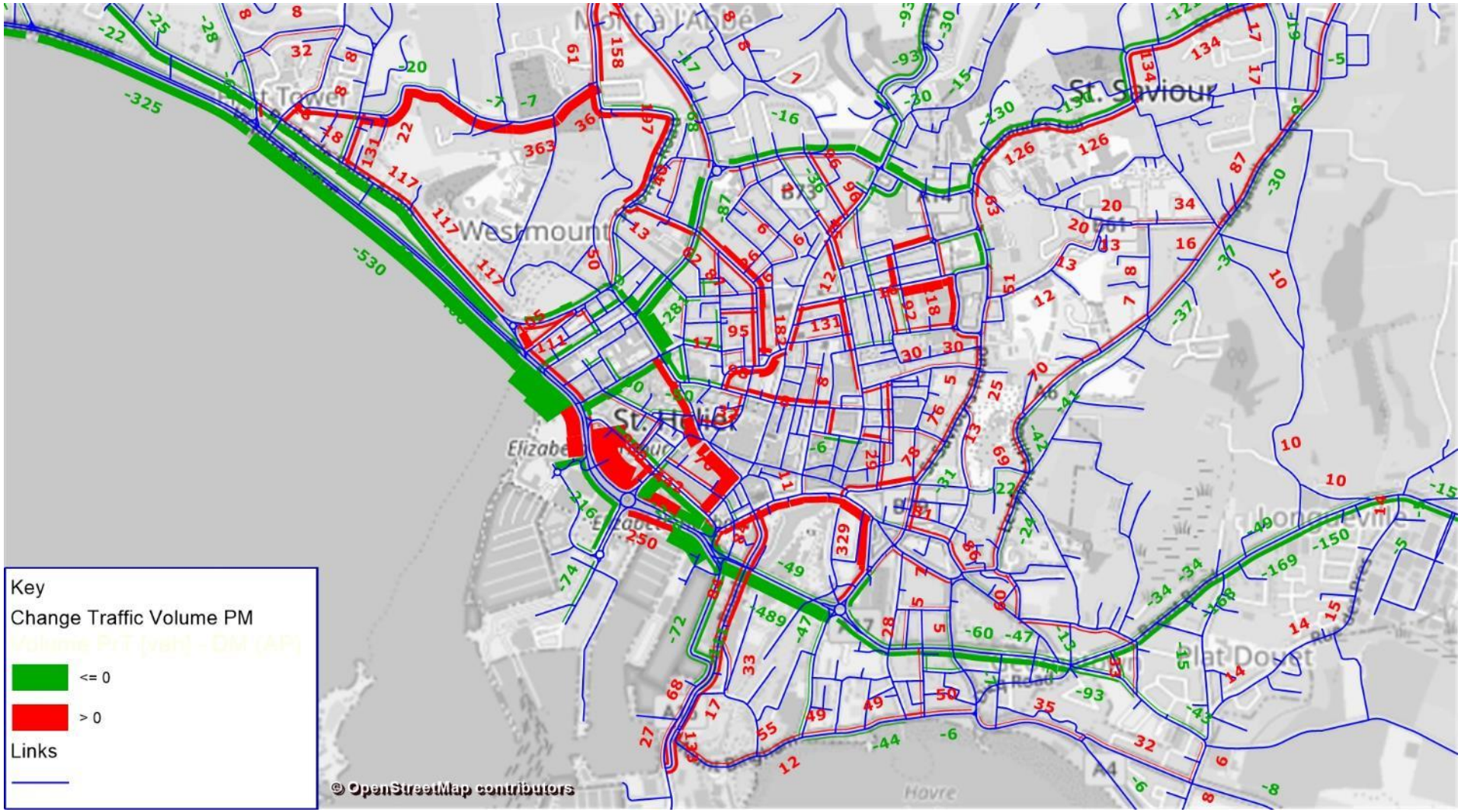


Figure 28 – Jersey Traffic Modelling Do Minimum vs Do Something – PM Peak – Zoomed network



Following the assessment of the proposals to consider the downgrading of the A1 and the removal of the grade-separated junction at Castle Street/La Route du Port Elizabeth, it has shown it would result in very significant increases in congestion and delays on the corridor as well as other routes due to displaced traffic.

It has therefore been confirmed that the proposals are not viable without extensive reductions in the level of demand. Sensitivity tests have been undertaken to determine the level of demand reduction required to accommodate the proposed downgrading scenario, and these tests have indicated a reduction of between 30 – 50% would be required during peak periods. The reduction would equate to roughly 1,200 vehicles in the peak periods.

Further signalisation and/or prioritisation of crossing facilities for pedestrians and cyclists across the A1 would further reduce the capacity for vehicles, further increasing lane requirements or reductions in traffic volumes (greater than -50%).

It is suggested that significant accessibility issues and severance will still exist with downgrading unless a single carriageway two-way street can be achieved, requiring very substantial traffic reduction and/or re-assignment. The implications of downgrading and the resultant increases in congestion and journey times are likely to impact productivity and the island's economy significantly.

In order to achieve a >30% reduction in existing traffic levels, a wide range of initiatives have been considered. The most effective initiatives could, initially at least, be deeply unpopular. Implementation of measures would have a long lead-in and require Island wide political and community support.

Figure 29 indicates the potential measures which could be used to achieve a >30% reduction in existing traffic levels.

Figure 29 – Demand Management

			
• Minimise the need to travel • Telework (work from home or another location) • Schedule conference calls in place of meetings that require travel	• Shift your workday to avoid peak travel • Use real-time travel apps to help plan • Work a compressed workweek (more hours over fewer days)	• Instead of driving alone, form a carpool • Take public transport, where available • Walk or cycle for all or part of your journey	• Shift your route to a less busy one • Use online tools to find the best route and avoid road closures
✓ Limited potential	✓ Limited potential	✓✓ Potential	× No potential

CONCLUSIONS

The Esplanade/La Route de la Liberation corridor is a key strategic artery carrying roughly 37,000 vehicles each weekday. The corridor experiences peak period congestion, with regular queuing and journey time unreliability. The road is also seen to be a major barrier to pedestrian and cycle flows, causing severance and accessibility issues between the Waterfront and the town.

This Technical Note has summarised the key current transport conditions and reported the outcomes of an assessment into the potential impact of downgrading the Esplanade/La Route de la Liberation corridor and Castle Street junction with two lanes in each direction and an at-grade roundabout junction in place of the current grade-separated arrangement.

The outcomes of the assessment confirmed that downgrading the corridor and bringing it back to surface level would result in very significant congestion and delay, with journey times predicted to increase by over 500%.

Although following the Covid-19 pandemic the peoples travel patterns and working practices are anticipated to change, such as increased remote working and the associated reduction in peak period commuting it is considered this alone with not create a significant reduction in vehicular demand.

Sensitivity tests were used to determine the level of reduction in traffic volumes required for the proposed downgrading to operate within or close to theoretical capacity and indicated a significant reduction of greater than 30% of peak demand in vehicular demand would be needed.

While there is great potential to integrate Active and Sustainable travel throughout the Waterfront development, significant mode change and vehicle demand reductions on the KOS 7 corridor are considered to be outside the development's influence.

There are opportunities to soften the existing infrastructure and narrow certain sections of carriageway. There is also high potential to incorporate feature lighting, artwork, sculptures, green walls, and planting to meet the SPG aspirations. However, the reductions in vehicular demands needed (>30%) to achieve downgrading La Route de la Liberation to an at-grade street are large and require Island wide political and public support to achieve.

Initiatives considered to have the most potential to initiate the large change in behaviours required would be highly controversial, have significant lead times to realisation, and come with many challenges.

Longer-term measures call for GoJ ownership due to the significant Political and Public support required to achieve the scale of impact necessary.