

A3055- Undercliff Drive Impact study

Prepared by the International Centre for Tourism and Hospitality Research
and the Market Research Group at Bournemouth University

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Table Of Contents

Introduction	3
Summary Findings.....	4
Methodology– Business Effects of the Road Closure	5
Survey design	5
Business sample	5
Survey pack.....	5
Fieldwork	5
Face-to-face interviewing.....	6
Data analysis and reporting	6
Sample size and statistical validity.....	6
The Market Research Group.....	7
Main Findings – Travel Effects of the Road Closure.....	8
Main Findings – Business Effects of the Road Closure	10
Main activity of the business.....	10
Seasonality	10
Staffing levels of the business.....	11
Ways in which the road closure affected the business	11
Effect of the road closure on business turnover	12
Further comments	15
Conclusions.....	19
Appendix: Traffic Analysis.....	21
1. St Lawrence Shute.....	22
2. Undercliff Drive, outside the Cricket Club	23
3. Undercliff Drive, outside Rare Breeds	24
4. Undercliff Drive, Little Orchard	25
6. Whitwell Road, Fox Hill.....	27
7. Undercliff Drive, location unspecified.....	28
8. Chatfield Road, Niton	29
9. Undercliff Drive, Little Orchard	30
10. Institute Hill, Rill Farm	31
11. St Lawrence Shute.....	32
12. West Undercliff Drive, Orchard Grove	33
13. Seven Sisters Road	34
14. Kemming Road, Whitwell	35
15. Undercliff Drive, outside of Owl Cottage.....	36

Introduction

Undercliff Drive (A3055) links Bonchurch with Niton on the South coast of the Isle of Wight. The five mile stretch travels through Ventnor and St Lawrence and has several points along it that are subject to land movement. The road between St Lawrence and Niton collapsed in two places at the westerly edge of St Lawrence on 17 February 2014 as a result of land movement following a period of prolonged rainfall amidst ongoing engineering works to stabilise the A3055 and prolong its use.

There is currently no vehicular access between St Lawrence and Niton along the former road. Vehicular traffic must go via Whitwell. Pedestrian and cycle access was restored by late 2016. Bus routes are diverted and no longer serve St Lawrence. A few steep roads (locally termed "shutes") connect the clifftop to the lower Undercliff level: Niton Shute, St Lawrence Shute, and Bonchurch Shute.

In February 2017, a feasibility study was commissioned by Isle of Wight Council to investigate solutions to reopen Undercliff Drive to through traffic because of concerns about the potential impact the road closure has had on the local economy since the landslip in 2014.

The Isle of Wight Council commissioned Bournemouth University to assess the effect of the A3055 Undercliff Drive road closure on local businesses.

Summary Findings

The costs to businesses and the general public of the Undercliff Drive being closed are estimated to be £1,448,080 per annum. This includes:

- net costs of £1,120,538 per annum to local businesses from loss of local trade, loss of markets and time costs to suppliers, staff and customers. The most significant effect on business trade was identified as being that customers are deterred from the area because of the road closure, and with many of the most affected businesses being engaged in hospitality, tourism or leisure, this effect comes about from tourists and leisure visitors being deterred.
- extra time and fuel costs of £327,524 per annum as motorists negotiate around other routes or divert journeys to other destinations.

Over the course of a 30 year period, when growth is factored in, but future values are also discounted, this represents a total cost to businesses and the general public of £36.1 million.

These findings include the annual value of all travel and business impacts of the road closure, but do not include the effects of the landslip itself, which has contributed to damage to housing and falls in prices of houses and business premises because of high insurance costs and safety concerns. These are not caused by the road being closed, although the road closure might make the risks more apparent, e.g. to potential house buyers.

Where businesses have closed between the road closure and the survey being conducted, it has not been possible to determine the cause of the business closure, although some may have been as a direct or indirect consequence of the road closure. Similarly, there may have been potential business start-ups deterred by the road closure. The effects of these have not been included.

Methodology– Business Effects of the Road Closure

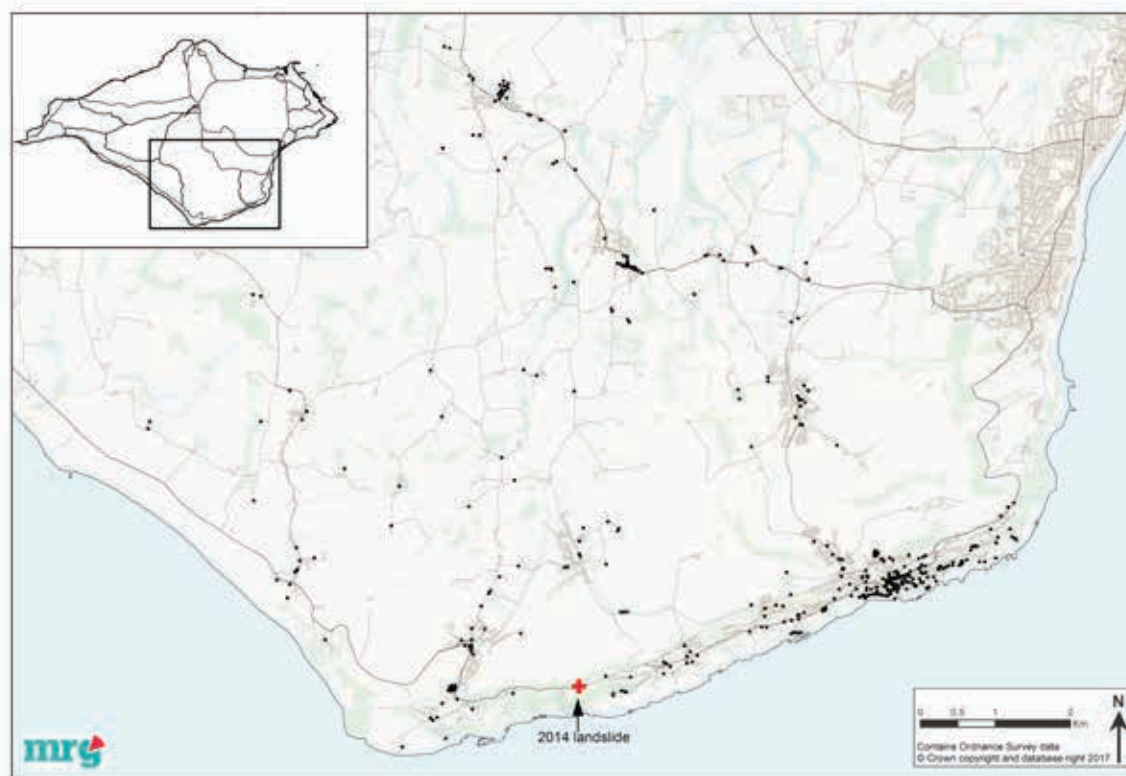
Survey design

Bournemouth University's Market Research Group designed a postal and online survey to gather views to determine the effect of the A3055 Undercliff Drive road closure on local businesses. A paper version of the survey was designed for postal distribution. The survey included introductory text describing the background to the survey as well as Market Research Group contact details. Instructions on how to complete the questionnaire electronically were also included.

Business sample

Isle of Wight Council provided the university with a database of 724 addresses of local businesses, of which the university randomly selected 500 to send a postal survey.

The map below shows all the businesses that received a postal survey in the south of the Isle of Wight.



Survey pack

Each business was sent a paper copy of the survey, along with a freepost return envelope for businesses to send completed surveys back to Bournemouth University for processing and analysis.

Fieldwork

500 paper questionnaires were sent to local businesses in the surrounding area of Undercliff Drive in September 2017. A full postal reminder was sent to businesses that did not respond on the first occasion. The reminder was sent out four weeks after the initial invitation.

Face-to-face interviewing

Face-to-face interviews were conducted with businesses that had not returned either the initial invitation or the reminder. Face-to-face interviewing was conducted over a four-day period in November 2017. It is worth noting that interviewing was focused on locations in the immediate vicinity of the closure, as well as areas of high concentration of businesses, in order to maximise response rates.

Data analysis and reporting

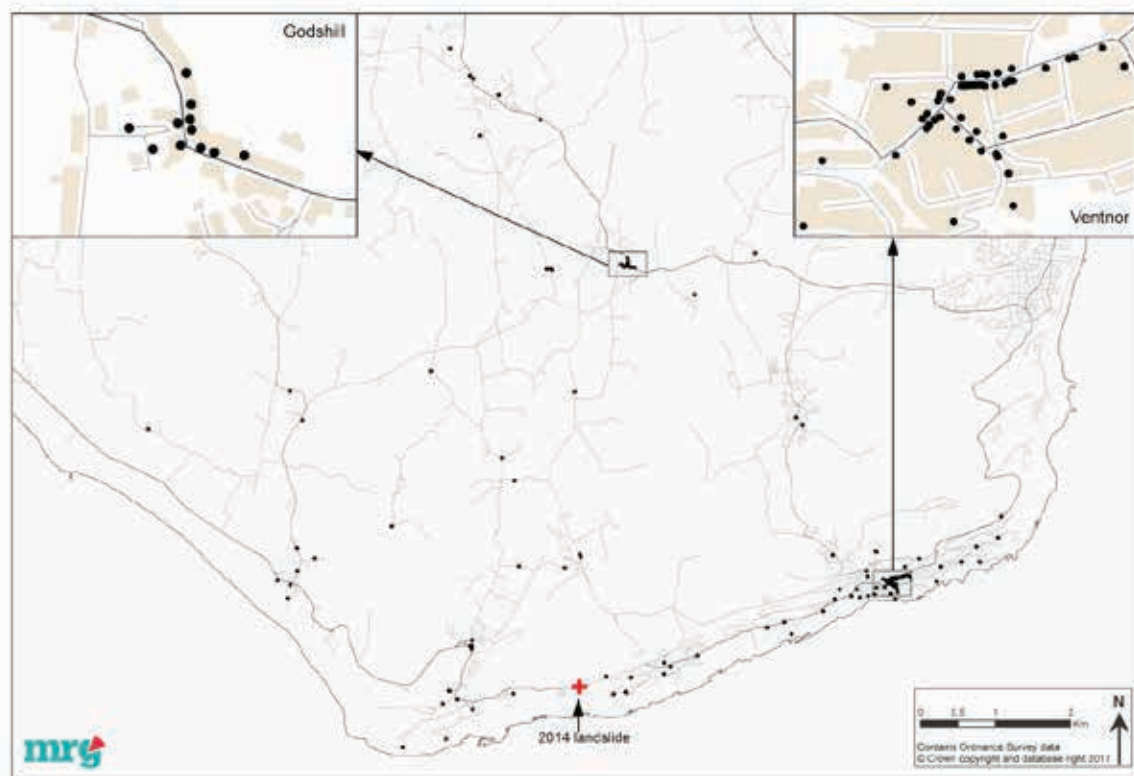
All completed paper surveys were returned to the Market Research Group offices where they were logged, processed and scanned. The Market Research Group's comprehensive data quality procedures ensure that responses remain entirely confidential throughout data processing. Postal responses were collated with the online and face-to-face responses and data analysis was performed using SPSS statistical software. Results were then presented in a report by the Market Research Group. Traffic data, previously collected by Isle of Wight Council has also been reviewed and included in the report.

Sample size and statistical validity

There were a total of 161 individual responses to the questionnaire. 107 of these were via the postal survey, with the remaining 54 being face-to-face interviews.

A sample size of 161 indicates that the results are representative of the original 724 local businesses to within $\pm 6.82\%$ at the 95% confidence level. One can therefore assert with 95% confidence that the margin of error contained within the results is not greater than 6.82%.

The map below shows all the businesses that responded to the survey.



The Market Research Group

All fieldwork has been conducted by The Market Research Group, an independent market research agency based within Bournemouth University.

The Market Research Group is a full service agency, with the capability to carry out bespoke data collection and analysis for clients in need of qualitative, quantitative or desk-based research. It specialises in providing market and social research intelligence services for local government, healthcare organisations, heritage, tourism, arts and academic sectors and have accumulated over twenty years' worth of experience working within the public sector in particular.

Main Findings – Travel Effects of the Road Closure

Traffic data for Undercliff Drive was provided by Isle of Wight Council for analysis. Traffic was monitored by Isle of Wight Council at various locations in the area surrounding Undercliff Drive between 2006 and 2017. However, direct comparisons and change in traffic volume are not possible, due to the traffic analysis taking place at different times of the year as well as in different locations. Traffic counts made before 2014 were clearly not specifically related to the road closure but were part of general traffic surveying conducted all across the island.

In August 2010 traffic on Undercliff Drive was monitored for 15 days. A precise location on Undercliff Drive was not specified for this fieldwork. However, there was an average of 2,776 vehicles travelling on Undercliff Drive a day during the fieldwork period. In comparison, traffic on Undercliff Drive was monitored over 6 days in July 2016 at a location near to Orchard Grove. On average, 75 vehicles travelled on Undercliff Drive a day during this fieldwork period. In addition, traffic was monitored for 7 days outside of Owl Cottage on Undercliff Drive February 2017. The daily average number of vehicles travelling on Undercliff Drive was 117. Despite not being able to draw direct comparisons, these figures highlight a dramatic decrease in traffic volume on Undercliff Drive following the road closure.

In addition, traffic data was collected in three separate locations around Niton both before and after the closure of Undercliff Drive, although not at the same locations at the same times of year, again making direct comparisons impossible. This is along the diversion route that needs to be taken to avoid the Undercliff Drive. In February 2011 traffic was monitored on Chatfield Road in Niton for 8 days. The daily average number of vehicles travelling on Chatfield Road during the fieldwork period was 1,761. Traffic data was also collected on Institute Hill by Rill Farm for a 15 day period in September 2011, where a daily average of 2,509 vehicles was recorded. After the Undercliff Drive road closure, in September and October 2016, vehicles travelling on Kemming Road were monitored for 4 days. The average number of vehicles travelling on Kemming Road during the fieldwork period was 3,051 a day. This data highlights an increase in traffic volume on one of the routes of the diversion.

The travel costs of the road closure can only be estimated based on these figures. The road closure has dramatically reduced traffic flows along Undercliff Drive by around 2,500 one-way trips per day, but has had a much smaller effect on the diversionary route. The approximate cost to the travelling general public of the closure is then calculated by multiplying the number of trips affected per year by distance that journeys are increased by and by the time and fuel cost of doing so, with adjustments made for seasonality and to avoid double-counting of business effects:

Average cost to the travelling general public

Number of trips per day affected	2,500
Days per year	x365
Additional kilometres travelled per trip ¹	x4.19
Time and other cost ²	x0.17
Seasonality adjustment ³	x0.75
Leisure/commuting adjustment ⁴	x0.90
Additionality adjustment ⁵	x0.75
Total time and travel cost to residents	£327,542

Notes

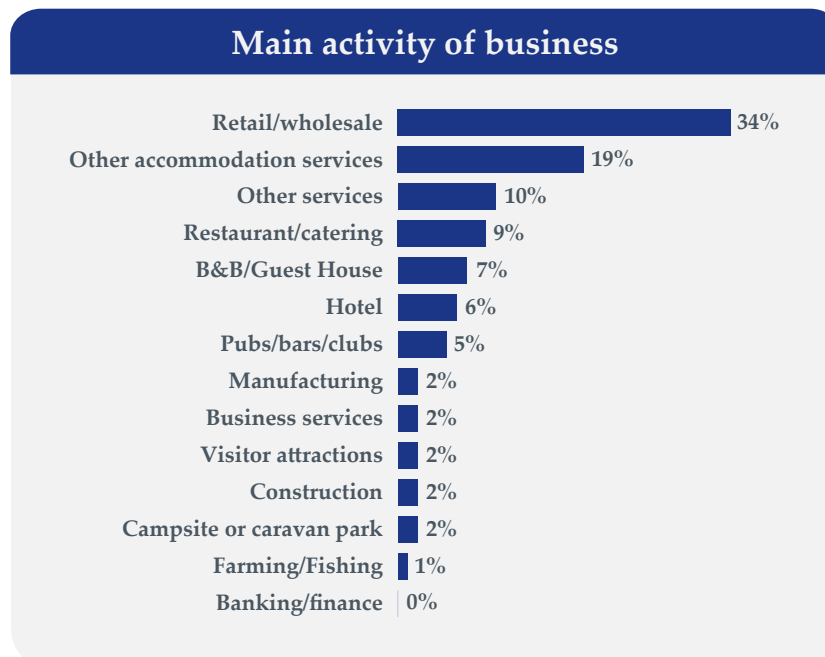
- 1: Rather than a measurement of distance around the detour route, this figure is the result of GIS analysis that examines the changes made to journey distances. It takes account of the fact the east and west ends of Undercliff Drive are equally accessible that from some locations while other journeys begin in locations where the full detour needs to be used.
- 2: Standard rates for costs used in transport impact assessments are given in pounds per hour of travel time; here the standard market price rate per vehicle for non-work journeys in 2017 (£9.43 per hour) is converted assuming an average speed of 50mph. [Department of Transport's WebTAG table A1.3.2], plus the standard fuel cost for petrol cars for 50mph journeys. This results in a rate of 17p per km.
- 3: Because the only traffic count prior to the road closure was taken in August 2010, an adjustment is made to reduce the average effect on an annual basis.
- 4: The business survey takes account of the effects of business travel, including travel by a business owner or staff during the business day, travel by customers and suppliers to the business. An adjustment is made here to avoid double-counting.
- 5: Not all trips diverted from the Undercliff Drive would take the full detour around to the other side, as some trips are either not undertaken or are diverted to another end point. These trips still incur some cost, which may for many be close to the full detour cost.

GIS analysis was performed to determine the effect of the closure on journey distance. Analysis determined whether businesses were most affected in getting to the east or the west of the closure. 81% of businesses were most affected in getting to the western side of the closure, with 19% more affected in getting to the eastern side. The average travel distance was determined both pre- and post- closure. The average journey distance increased by 4,483 metres for businesses who were most affected getting to the western side of the closure, and increased on average 2,927 metres for businesses most affected getting to the eastern side of the closure. The average distance for all businesses was 4,187 metres.

Main Findings – Business Effects of the Road Closure

Main activity of the business

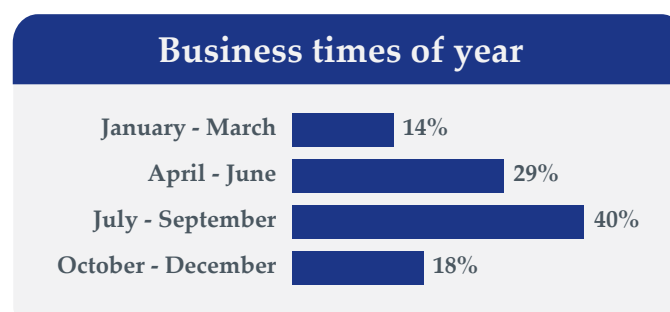
Respondents were asked to indicate the main activity of their business. The most common business activities identified were retail or wholesale businesses (34%) and other accommodation services (19%). A further 9% were restaurants or catering services. Other business types that responded to the survey included B&B's or guest houses (7%), hotels (6%) and pubs, bars or clubs (5%).



Seasonality

Businesses responding to the survey were asked to indicate how much of their business takes place at different times of the year. 78% of businesses provided a valid response to this question. Businesses reported a high level of seasonality, as might be expected in an area where tourism and recreation is important.

The highest proportion of business is done in the area between July and September when an average of 40% of business is done. 29% of business is done April to June, while 18% of business is done between October and December. The lowest proportion of business is done between January and March when an average of 14% is done.



Staffing levels of the business

Businesses were asked to provide details of their current staffing levels, including the number of full-time, part-time and seasonal staff members they employ. If a respondent had completed at least one of the boxes for this question but others were left blank it was presumed that the number of that type of staff they currently employ is zero. 141 of the 161 businesses provided staffing information.

The average total number of staff employed by businesses who responded to the survey was 6.4.

Current staffing levels at the business				
	Full-time	Part-time	Seasonal	Total staff
Mean	3.0	2.2	1.2	6.4
Range	41	23	20	64
Minimum	0	0	0	0
Maximum	41	23	20	64

Businesses employed an average of 3.0 full-time staff members. Interestingly, one-fifth of the businesses that responded to this question indicated that they had no full-time members of staff (20%), while half of the businesses indicated that they had either one or two full-time members of staff (52%).

The average number of part-time staff that businesses employed was 2.2, with more than two-fifths of businesses having no part-time staff (44%). More than one-third of businesses only had one or two members of part-time staff (35%).

The average number of seasonal staff employed by businesses was 1.2. Of the businesses that responded to this question just less than three-quarters indicated that they did not currently employ any seasonal staff (74%).

Ways in which the road closure affected the business

Respondents were asked to indicate the extent to which the road closure has affected their business through a number of statements. For the purpose of analysis in this section, businesses who responded 'don't know/no opinion' to the statements were excluded.

More than two-thirds of the businesses indicated that some customers had been deterred from the general area as a result of the closure (70%). However, one fifth of businesses indicated that customers had not been deterred from the area at all (20%).

Three-fifths of the businesses indicated that their customers' journey time has increased since the road closure (60%). On the other hand, just less than one-third of the businesses indicated that their customers' journey times had not increased at all (30%).

In addition to this, half of the businesses indicated that some of their customers have gone elsewhere since the road closure (50%), however more than one-third of businesses indicated that this was not the case at all (36%).

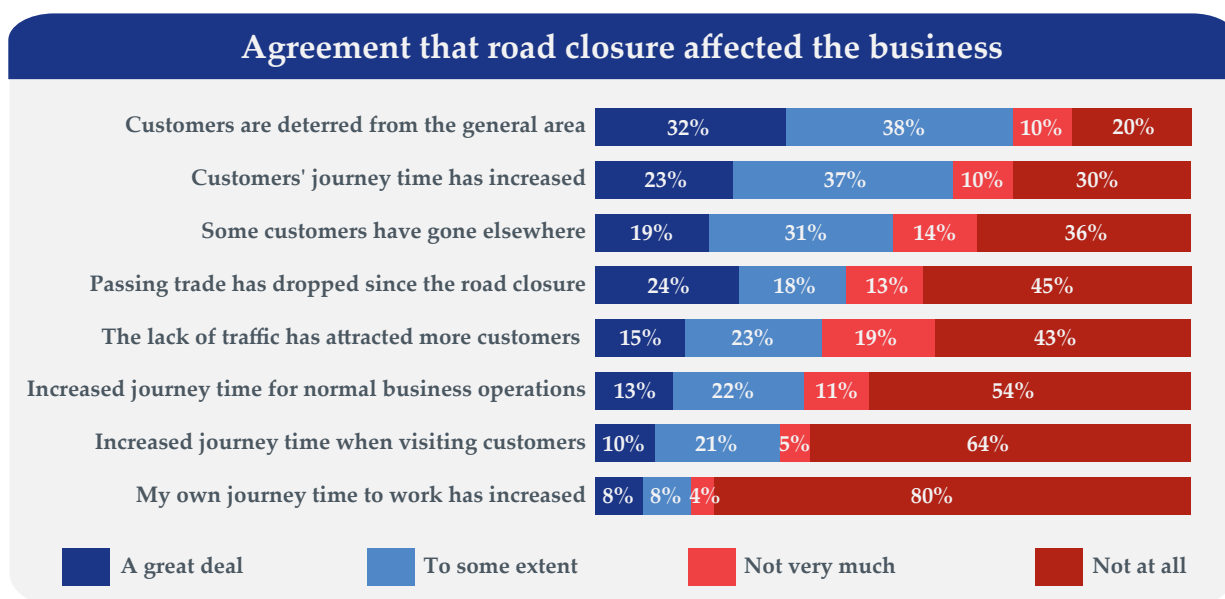
More than two-fifths of the businesses suggested that their passing trade had dropped a great deal or to some extent since the road closure (42%), although a similar proportion of businesses indicated that their passing trade had not dropped at all since the road closure (45%).

Just less than two-fifths thought that the lack of traffic has made the area quieter and attracted more walkers and cyclists to the area (38%), however more than two-fifths did not think this was the case at all (43%).

More than one-third of businesses indicated that the road closure has increased the journey time they or their staff take as part of normal business operations (35%). However more than half indicated that journey times as part of normal business operations had not increased at all (54%).

Just less than one-third of the businesses suggested the road closure has increased their journey time when visiting customers (31%). However, almost two-thirds of the businesses indicated that journey times when visiting customers had not increased at all (64%).

When considering their own journey time to work more than three-quarters of respondents indicated that this had not increased at all since the road closure (80%). 16% of respondents indicated that that the road closure has increased their own journey time to work.



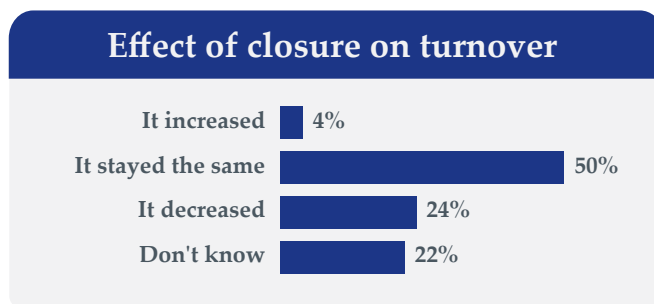
Effect of the road closure on business turnover

Businesses responding to the survey were asked to indicate the effect the road closure had had on their businesses turnover during the last financial year, specifically between April 2016 and March 2017. Businesses were then asked to provide an approximate figure for how much the road closure had caused turnover to increase or decrease in the last financial year. 153 of the 161 businesses that replied to the survey answered this question.

Caution should be taken when interpreting figures for turnover increase or decrease due to a number of respondents commenting that they took ownership of their business after the Undercliff Drive road closure in 2014 and are therefore unable to approximate changes in turnover as a result of the closure. In addition, the fieldworker noted that some businesses had closed

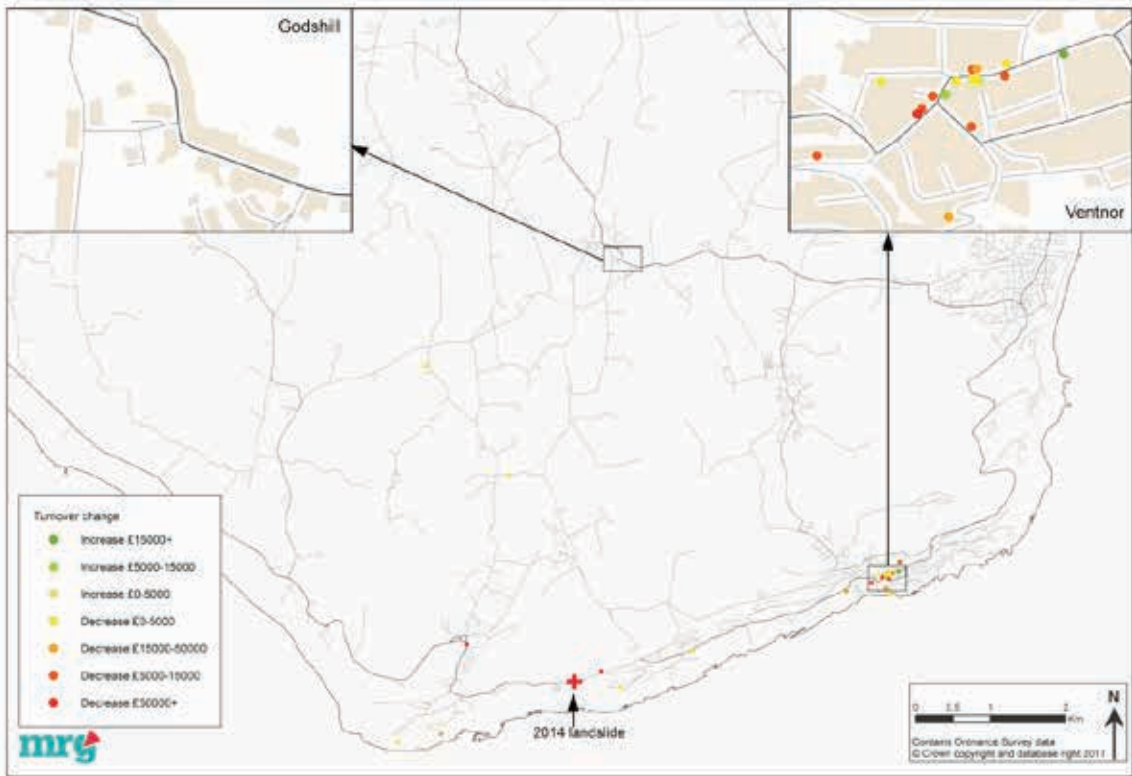
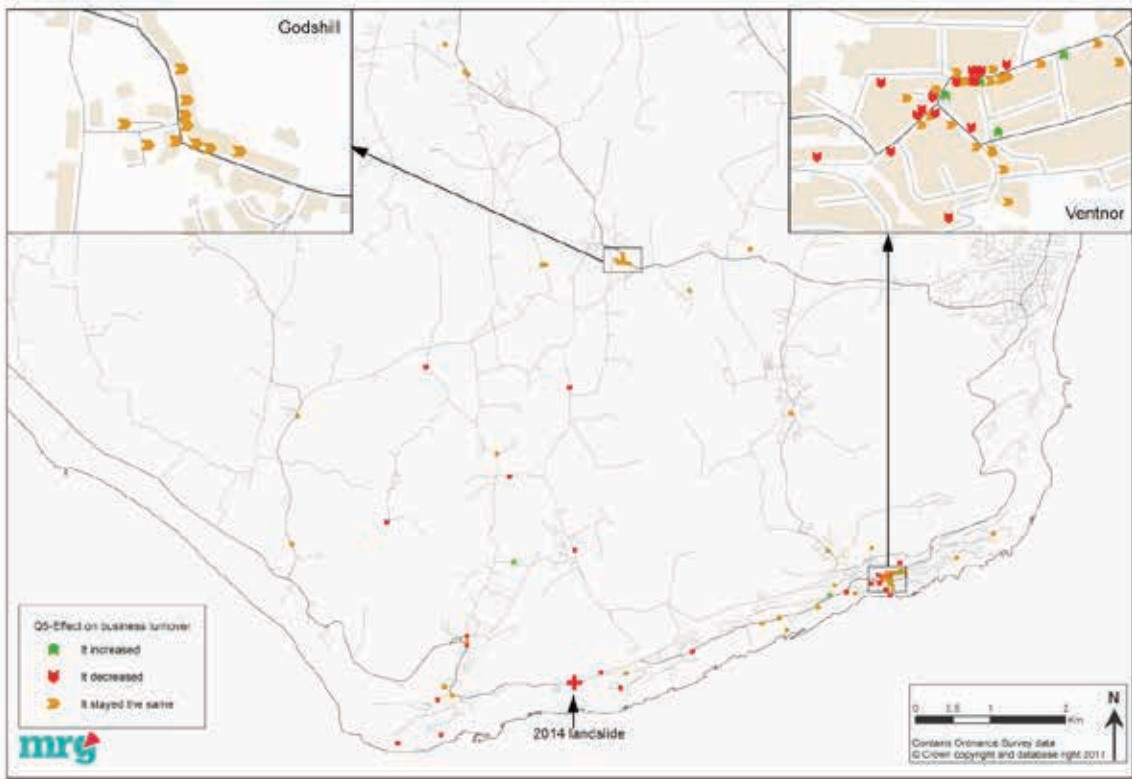
completely, and were therefore unable to respond. It was not known when these businesses closed, or the reasons for doing so. The results have not been adjusted to take account of businesses that may have closed because of reduced revenues as a result of the road closure.

Half of the businesses that replied indicated that their turnover had not been affected by the road closure, while one-quarter (24%) indicated that it had decreased, only just over one-fifth (22%) indicated that they did not know. Only 4% of businesses indicated that turnover had increased because of the road closure.



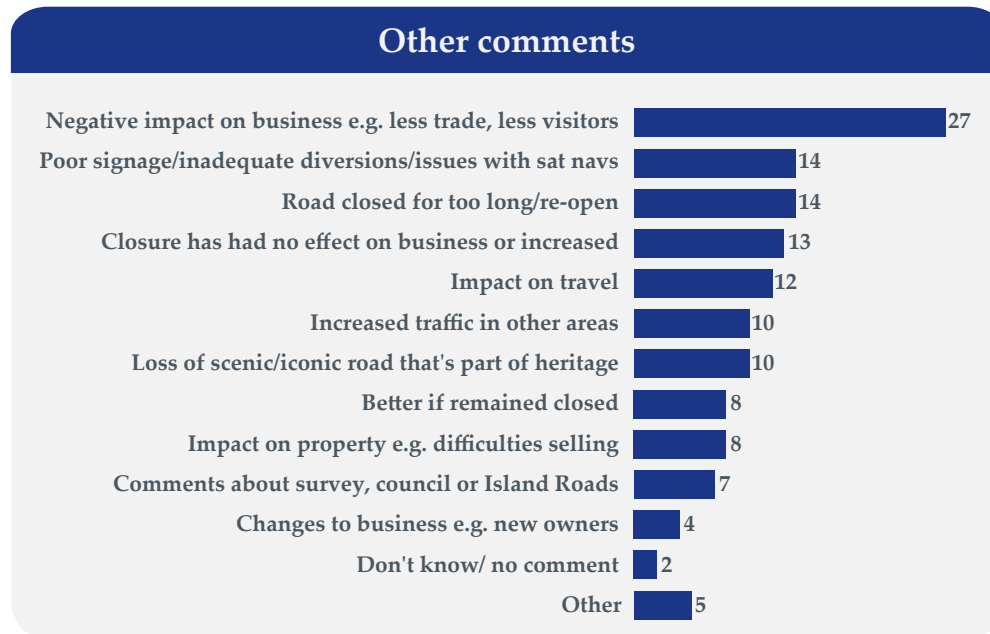
Businesses that indicated that turnover had either increased or decreased were asked to indicate how much it had changed during the last financial year. 30 of these 43 businesses provided a figure. Of the 6 businesses that indicated turnover had increased, 3 provided a figure. The average increase in turnover was £11,007 (range = £12,022). Of the 37 businesses that saw a decrease, 27 provided an approximate figure for how much their turnover had decreased during the last financial year. The average decrease in turnover was £25,715 (range = £284,000).

In order to calculate an estimate of economic impact on business within the local area, businesses that indicated their turnover increased or decreased but did not provide a value, were assigned the average value of those businesses that did. In addition, businesses that said they did not know were distributed to reflect the responses of those who did, and were assigned the average value as appropriate. Taking this in to consideration, there has been an estimated £1,120,538 decrease in turnover for local businesses during the last financial year. However, this figure should be treated with caution, as it does not take in to account all businesses within the local area, nor does it take in to account any businesses that have closed in the past year or the reasons why.



Further comments

Respondents were asked to provide further comments about the road closure. A total of 135 comments were made by respondents to the survey. For the purpose of analysis these comments were coded into one of twelve main themes.



Many comments related to the **negative impact** the road closure has had on businesses in the local area, in terms of closure of businesses, decreased profit, less trade and fewer visitors in the area (27 comments).

“The Undercliff closure had a serious detrimental impact on our business. We estimate that our turnover could increase by £200-250,000 if it re-opens.”

(Retail/wholesale, business turnover decreased)

“Footfall is down in Ventnor. Very quiet. Bank closed down, people have to go to Shanklin. No of customers into area has reduced.”

(Retail/wholesale, business turnover decreased)

“The traffic is directed away from the town and therefore this has affected trade. We have Christmas dinner bookings so are hopeful for increase.”

(Pubs/bars/clubs, don't know if business turnover has changed)

A number of comments also suggested **the signage about the road closure is poor**, diversions are inadequate and they have experienced issues with maps or sat navs not being updated to include the road closure, which has created confusion for people travelling in the area (14 comments).

"The signage regarding closure and alternative routes is inadequate."

(B&B/Guest House, business turnover stayed the same)

"Council signage was in wrong place. Not helpful at all."

(Visitor Attractions, business turnover stayed the same)

"The signage is wrong for the area because a lot of cars are still going past thinking they can get through."

(Other services, business turnover stayed the same)

Some respondents suggested the road has been **closed for far too long** and that it **needs to be re-opened as soon as possible**, even if this means temporary measures, a part re-opening or weight restriction on the new road (14 comments).

"Even if a temporary measure was undertaken it could be opened, then re-done in a few years' time. All this time closed is terrible."

(Farming/fishing, business turnover decreased)

"We would like to see the road rebuilt."

(Retail/wholesale, business turnover stayed the same)

"At least partly open would be good."

(Don't know if business turnover has changed)

On the other hand, some commented that the road closure has had **no effect** on their business at all or, if anything, their trade **has increased** (13 comments).

"Not noticed any difference was a long time ago."

(Retail/wholesale, business turnover stayed the same)

"Has not affected us here. Ventnor has suffered."

(Retail/wholesale, business turnover stayed the same)

"We bought the shop and post office after the road closure. Previous owners did not notice a decrease in sales, if anything trade increased."

(Retail/wholesale, don't know if business turnover has changed)

Some comments were related to the **negative impact** the road closure has had on **travel** within the area, for example **increased journey times** and changes to public **transport** creating difficulties (12 comments).

"The withdrawal of the bus service to St Lawrence has particularly affected us and our customers."

(Hotel, don't know if business turnover has changed)

"Yes the area is quieter but its closure has affected other roads and our distance to local school."

(Don't know if business turnover has changed)

"Journey time has increased to places like Chale."

(Retail/wholesale, don't know if business turnover has changed)

In addition to this, ten comments were related to the **increase in the amount of traffic in other surrounding areas** particularly Niton and Whitwell. Respondents were concerned of the risk associated with this and noise which is off-putting to local residents in these areas.

"I live in Niton on the top road which because of the closure of the bottom road, it has got very busy. There are frequent traffic jams in the village and we as a family here had three of our cats run over. Please get the Undercliff road re-opened."

(Business turnover stayed the same)

"Heavy traffic increased through Whitwell, re-open the A3055 to stop heavy traffic via Whitwell."

(Business turnover increased)

"The traffic now diverts up Spindlery Road and through the Shute via a very old train bridge which I'm sure won't withstand the increased level of traffic."

(Retail/wholesale, business turnover stayed the same)

Ten comments were related to Undercliff Drive being a **scenic and iconic route** which previously attracted visitors to the area and its closure being a **great loss to the heritage** of the area.

"This road was in the top 3 best iconic driving roads in the UK. Its loss is a tragedy for 7 hour island tourist trade."

(Business turnover decreased)

"Some people miss the coast road, very scenic."

(Hotel, business turnover stayed the same)

"Road is iconic and part of our heritage."

(Retail/wholesale, business turnover increased)

Some comments were related to the negative impact the landslip (but not necessarily the road closure) has had on **property in the local area**, for example difficulties with selling property or attaining mortgages in the area (8 comments).

"Mortgages are unattainable in the area because of land instability."

(Events, business turnover stayed the same)

"We have properties in villages like Niton and because of the increase in traffic on that route (lorries) we cannot sell them."

(Other services, business turnover stayed the same)

However, eight commented that it would be **better if the road remained closed**. This is because some think it is a waste of money and resources to re-open the road, meanwhile others believe the area is quieter and more peaceful as a result of the road closure and that it has become more attractive to walkers and cyclists.

"I think it is inevitable that the ground will carry on moving so it would be a waste of money to try and reopen it."

(Other accommodation services, business turnover stayed the same)

"I think the closure is beneficial. Undercliff Drive is much more peaceful and the area between St Lawrence and Niton is a very attractive area for walkers, cyclists and nature lovers."

(Other accommodation services, business turnover stayed the same)

Other comments were related to the **survey itself, Isle of Wight Council or Island Roads** (7 comments), **other** comments (5 comments) or **changes to the business** since the road closure so found it **difficult to comment**, for example respondents were new owners (4 comments).

"Just get on and repair the road, stop wasting money on useless report after report which achieves nothing. Action no words."

(Construction, business turnover decreased)

"We have been here 1.5 years only and custom is steady. We are very pleased, so far!"

(Restaurant/catering, business turnover stayed the same)

Conclusions

The cost to the travelling public can be added to the costs to local businesses to derive the total cost of the road closure, of £1.45 million pounds per annum. As this is a cost repeated every year, the total cost of the road closure increases every year that it is closed, and these costs can be summed over time, applying a discount rate for future values. The net present value of future losses is useful when comparing against the cost of repairing the road, and depends greatly on the length of time for which the future losses are considered.

Assuming that real costs increase at 2% pa., as they might do through population growth or economic growth, the net present value at current prices of the costs over the next 30 years is £36.1 million (using the 3.5% discount rate recommended by the Treasury Green Book).

Annual cost of road closure	
Cost to travelling public of additional travel time and petrol costs	£327,542
Costs to local businesses	£1,120,538
Total annual cost of road closure	£1,448,080

These results must be treated with some caution. The cost to the travelling public are based on the results from a small number of traffic count surveys, and rely heavily on the results from just one of these surveys, the only survey conducted of traffic along the Undercliff Drive prior to the landslip that caused the road closure. While attempts have been made here to adjust wherever these numbers may be biased, such as through the seasonality adjustment, it is not possible to adjust for the inherent uncertainty of basing results on a single traffic survey. While the costs to the travelling public are one important part of the cost, they are however a minor cost relative to the costs to local businesses, and it is important to have an estimate of these costs in the final calculation of total costs.

The costs to local businesses are inherently a conservative estimate because of the nature of sampling businesses in a local environment. As businesses more harmed by the impact of the road closure are far more likely to complete and return a survey, this sample self-selection bias has made it impossible to take a representative sample and multiply up ('gross up') to represent all businesses. The survey instrument deliberately tried to increase the chance that the most affected businesses would be included, first by making it clear that the survey was about the cost of the road closure, and secondly by employing a field researcher to conduct face-to-face surveys with businesses closest to the road closure that had not completed the postal/online survey. Therefore, the reported costs of the road closure are added up, and businesses that did not respond are not counted, essentially assuming that by not responding they have chosen to declare no cost from the road closure.

While the survey methodology does mean that there are inevitably some businesses that have been affected by the road closure and are not included, the population sample covered a relatively wide area, and the use of a field worker has captured responses from most of the businesses close

to the road closure. The survey results are therefore conservative, but most of the highly affected businesses have probably been included. The survey methodology also misses the effects through businesses that have ceased trading since the closure of Undercliff Drive, some of which may have closed for other reasons, and for businesses that do not have premises, such as self-employed trades.

Appendix: Traffic Analysis

Traffic data for Undercliff Drive was provided to the Market Research Group by Isle of Wight Council. Traffic was monitored by Isle of Wight Council at various locations in the area surrounding Undercliff Drive between 2006 and 2017. However, comparisons and change in traffic volume are not possible, due to the traffic analysis taking place at different times of the year as well as in different locations.



1. St Lawrence Shute

September-October 2006



Vehicles travelling on St Lawrence Shute were monitored at the junction of footpaths for a period of 22 days in September and October 2006. A total of 9,796 vehicles were recorded on St Lawrence Shute during the fieldwork period. Of the vehicles travelling on St Lawrence Shute 5,140 were travelling south, and 4,656 were travelling north. There was a daily average of 465 vehicles travelling on St Lawrence Shute during the fieldwork. On average 236 vehicles travelled south on St Lawrence Shute each day, while there was a daily average of 214 vehicles that travelled north.

The peak time for vehicles travelling on St Lawrence Shute in the morning was 11am with a daily average of 34 vehicles travelling at this time. The peak time for vehicles travelling south in the morning was 11am, however the peak morning travel time for vehicles travelling north was 8am. For vehicles travelling on St Lawrence Shute in the afternoon the peak time was 5pm with an average of 39 vehicles travelling at this time each day. There was no difference when comparing the peak afternoon travel time for vehicles travelling south and north on St Lawrence Shute.

2. Undercliff Drive, outside the Cricket Club

November 2007



In November 2007 traffic was monitored outside the Cricket Club for 15 days. The total number of vehicles recorded outside the Cricket Club was 23,304; 12,507 of these vehicles were travelling west, and 10,797 were travelling east. The daily average number of vehicles travelling on Undercliff Drive outside of the Cricket Club was 1,660.

For vehicles travelling outside of the Cricket Club in the morning, the peak time was 11am, with a daily average of 149 vehicles travelling at this time. There was no difference in the morning peak travel time for east and westbound vehicles. In the afternoon, the peak time for vehicles travelling outside of the Cricket Club was 2pm. For vehicles travelling east the peak travel time in the afternoon was 3pm with a daily average of 83 vehicles at this time, however for westbound vehicles the peak afternoon travel time was 12pm, with an average of 90 vehicles travelling at this time each day.

Vehicles travelling on Undercliff Drive outside of the Cricket Club were classified based on an estimate of their gross weight. 8% of vehicles travelling west, and 7.6% of vehicles travelling east were estimated to have a gross weight in excess of 7.5 tonnes.

3. Undercliff Drive, outside Rare Breeds

November 2007



In November 2007 traffic was monitored outside Rare Breeds for 18 days. A total of 17,222 vehicles were recorded outside Rare Breeds on Undercliff Drive during the fieldwork period. Of the vehicles recorded 9,420 were travelling west, and 7,802 were travelling east. The average number of vehicles travelling on Undercliff Drive outside of Rare Breeds was 1,036 a day.

In the morning, the peak time for vehicles travelling outside of Rare Breeds was 11am, with an average of 94 vehicles traveling at this time each day. There was no difference in the morning peak travel time for east and westbound vehicles. The peak travel time in the afternoon for this location was 2pm, with a daily average of 106 vehicles travelling at this time. The peak afternoon travel time for westbound vehicles was 12pm with an average of 59 vehicles travelling at this time; however the peak afternoon time for vehicles travelling east was 3pm with a daily average of 51 vehicles at this time.

Recorded vehicles were classified based on an estimate of their gross weight. 8.4% of eastbound vehicles and 7.8% of westbound vehicles on Undercliff Drive were estimated to have a gross weight in excess of 7.5 tonnes.

4. Undercliff Drive, Little Orchard

November 2009



Traffic was monitored over a 7 day period in November 2009 at a location on Undercliff Drive, 150 yards west of Little Orchard. The total number of vehicles recorded was 5,904. Of these, 3,185 vehicles were travelling east, and 2,719 vehicles were travelling west.

The daily average for the number of vehicles travelling on Undercliff drive was 914. The average number of eastbound vehicles was 492, while the average number of vehicles travelling west was 423.

The peak time for vehicles travelling on Undercliff Drive in the morning was 11am, with a daily average of 56 vehicles travelling at this time. There was no difference in the peak morning travel time between vehicles travelling west and east. In the afternoon the peak travel time on Undercliff Drive was 2pm, with an average of 106 vehicles travelling at this time every day. The peak afternoon travel time for vehicles travelling east was 2pm with an average of 62 vehicles each day; however the peak time for travel in the afternoon for westbound vehicles was 5pm, with a daily average of 49 vehicles at this time.

All vehicles travelling on Undercliff Drive were classified based on an estimate of their gross weight. 96.5% of vehicles travelling on Undercliff Drive had an estimated gross weight of less than 7.5 tonnes (5,700 vehicles). The percentage of vehicles with an estimated gross weight in excess of 7.5 tonnes was greater for those travelling west on Undercliff Drive (4.5%) than those travelling east (2.6%).

5. Ventnor Road, by Dean Farm

February 2010



Vehicles were monitored on Ventnor Road in Whitwell by Dean Farm for 7 days in February 2010. A total of 15,374 vehicles were recorded during the fieldwork. An average of 2,209 vehicles travelled on Ventnor Road a day during the fieldwork period.

For vehicles travelling on Ventnor Road in the morning the peak time was 11am with an average of 181 vehicles travelling at this time each day. In the afternoon, the peak travel time was 1pm with an average of 201 vehicles travelling at this time.

6. Whitwell Road, Fox Hill

February 2010



In February 2010 vehicles were also monitored further east on Whitwell Road, by Fox Hill, for a period of 8 days. 14,221 vehicles were recorded during the fieldwork period. There was an average of 2,056 vehicles travelling on Whitwell Road a day during the fieldwork.

The peak time for vehicles travelling on Whitwell Road in the morning was 11am with an average of 161 vehicles travelling at this time each day. Meanwhile the peak time for vehicles travelling in the afternoon was 4pm with a daily average of 182 vehicles travelling at this time.

7. Undercliff Drive, location unspecified

August 2010

In August 2010 traffic on Undercliff Drive was monitored for 15 days. A precise location on Undercliff Drive was not specified for this fieldwork. The total number of vehicles recorded was 35,790. More than half of the vehicles recorded were travelling west along Undercliff Drive (57%, 20,236 vehicles), meanwhile 43% were travelling east (15,554 vehicles).

There was an average of 2,776 vehicles travelling on Undercliff Drive a day during the fieldwork period. The daily average number of vehicles travelling west was 1,542; meanwhile the average number of eastbound vehicles was 1,184 a day.

The peak morning travel time was 11am, with an average of 277 vehicles travelling on Undercliff Drive at this time each day. There was no difference between the peak morning travel time for westbound and eastbound vehicles. The peak time for vehicles traveling on Undercliff Drive in the afternoon was 12pm with an average of 297 vehicles travelling each day. The peak afternoon travel time for westbound vehicles was 12pm with a daily average of 199 vehicles travelling at this time, however the afternoon peak time for vehicles travelling east was 4pm with an average of 136 vehicles at this time.

Vehicles travelling on Undercliff Drive were classified based on an estimate of their gross weight. 98.7% of the vehicles recorded on Undercliff Drive during the fieldwork period had an estimated gross weight of less than 7.5 tonnes (35,328 vehicles). There was no difference in the percentage of vehicles with an estimated gross weight in excess of 7.5 tonnes travelling east or westbound (1.3%).

8. Chatfield Road, Niton

February 2011



In February 2011 traffic was monitored on Chatfield Road in Niton for 8 days. A total of 12,202 vehicles were recorded during the fieldwork period. Of these vehicles, 7,097 were travelling north and 5,115 were travelling south.

The daily average number of vehicles travelling on Chatfield Road during the fieldwork period was 1,761. The daily average number of vehicles travelling north was 1,043, while the daily average number travelling south was 737.

The peak morning travel time for vehicles on Chatfield Road was 11am, with daily average of 136 vehicles travelling at this time. The peak morning travel time for vehicles travelling south was 11am; however the peak time for northbound vehicles was 10am. The peak time for vehicles travelling on Chatfield Road in the afternoon was 12pm, with an average of 221 vehicles travelling at this time. The peak afternoon travel time for vehicles travelling north was 12pm; however for vehicles travelling south the peak time for travel in the afternoon was 5pm.

Vehicles travelling on Chatfield Road were classified based on an estimate of their gross weight. 8% of the vehicles travelling north, and 4.6% of vehicles travelling south were estimated to have a gross weight in excess of 7.5 tonnes.

9. Undercliff Drive, Little Orchard

June-July 2011



Traffic was monitored at a location on Undercliff Drive, 150 yards west of Little Orchard in June and July 2011 over a 15 day period. A total of 25,354 vehicles were recorded during the fieldwork period. Of the vehicles travelling on Undercliff Drive 60% were travelling west (15,196 vehicles), and 40% were travelling east (10,158 vehicles).

The daily average for the number of vehicles travelling on Undercliff Drive during the fieldwork period was 1,844. The average number of westbound vehicles was 1,203 a day, meanwhile the average number of vehicles travelling east was 741.

The peak time for vehicles travelling on Undercliff Drive in the morning was 11am with a daily average of 184 vehicles travelling at this time. There was no difference in the peak morning travel time for eastbound or westbound vehicles. The peak afternoon travel time was 1pm with a daily average of 201 vehicles travelling at this time. The afternoon peak time for vehicles travelling west was 12pm with an average of 132 vehicles at this time; however the afternoon peak time for eastbound vehicles was 4pm with an average of 85 vehicles travelling at this time.

Vehicles travelling on Undercliff Drive were classified based on an estimate of their gross weight. 95.8% of the vehicles recorded had an estimated gross weight of less than 7.5 tonnes (24,290 vehicles). The percentage of vehicles with an estimated gross weight in excess of 7.5 tonnes was greater for those travelling west on Undercliff Drive (6.0%) than those travelling east (1.5%).

10. Institute Hill, Rill Farm

September 2011



Vehicles travelling on Institute Hill by Rill Farm were monitored for a 15 day period in September 2011. There were 34,847 vehicles recorded in total; 19,368 were travelling west, while 15,479 vehicles were travelling east.

There was an average of 2,509 vehicles travelling on Institute Hill each day during the fieldwork. A daily average of 1,402 vehicles were travelling west and 1,021 were travelling east.

The peak time for vehicles travelling on Institute Hill in the morning was 11am, with a daily average of 248 vehicles travelling at this time. There was no difference between the peak morning travel time for westbound and eastbound vehicles. In the afternoon the peak time for travel on Institute Hill was 12pm with an average of 240 vehicles travelling at this time each day. The peak afternoon travel time for vehicles travelling west was 12pm, however for those travelling east the peak afternoon travel time was 5pm.

Vehicles were classified based on an estimate of their gross weight. 4.4% of vehicles travelling west, and 3.4% of the vehicles travelling east were estimated to have a gross weight in excess of 7.5 tonnes.

11. St Lawrence Shute

October 2015



In October 2015 traffic on St Lawrence Shute was monitored for 7 days. A total of 2,744 vehicles were recorded. More than two-thirds of these vehicles were travelling north (69%, 1,897 vehicles) while just less than one-third were travelling south (31%, 847 vehicles). On average 466 vehicles travelled on St Lawrence Shute a day during the fieldwork period. When making comparisons between vehicles travelling north and south, an average of 321 vehicles travelled north on St Lawrence Shute each day and 145 vehicles travelled south.

The peak time for vehicles travelling on St Lawrence Shute in the morning was 9am, with an average of 41 vehicles travelling at this time. The peak morning travel time was 9am for vehicles travelling north, however the peak morning travel time was 11am for those travelling south on St Lawrence Shute. For vehicles travelling on St Lawrence Shute in the afternoon the peak travel time was 1pm, with a daily average of 43 vehicles travelling at this time. The peak afternoon travel time was 1pm for vehicles travelling north, however this was later for vehicles travelling south on St Lawrence Shute with a peak time of 4pm.

12. West Undercliff Drive, Orchard Grove

July 2016



Traffic on Undercliff Drive was monitored over 6 days in July 2016 at a location near to Orchard Grove. A total of 361 vehicles were recorded over the 6 days; 185 of these vehicles were travelling east, and 176 were travelling west along Undercliff Drive. On average, 75 vehicles travelled on Undercliff Drive a day during the fieldwork period. The daily average number of recorded vehicles was 39 for those travelling east and 36 for those travelling west.

In the morning, the peak time for vehicles travelling on Undercliff Drive was 10am with a daily average of 9 vehicles travelling at this time. There was no difference between the peak morning travel time for vehicles travelling east or westbound. The peak afternoon travel time on Undercliff Drive was 4pm with a daily average of 9 vehicles travelling at this time. The peak afternoon travel time for vehicles travelling west was 4pm, however the peak afternoon travel time for vehicles travelling east on Undercliff Drive was 3pm.

13. Seven Sisters Road

September 2016



In September 2016 traffic travelling on Seven Sisters Road was monitored near the junction for Twining Road for 7 days. There was a total of 2,600 vehicles recorded during the fieldwork period; 1,344 vehicles travelled west and 1,256 travelled east. An average of 376 vehicles travelled on Seven Sisters Road a day during the fieldwork.

The peak time for vehicles travelling on Seven Sisters Road was 10am for those travelling in the morning, and 2pm for monitored vehicles in the afternoon. For those travelling west on Seven Sisters Road the peak travel times remained the same however for vehicles travelling east, both the morning and afternoon peak times were earlier with a peak morning travel time of 9am and peak afternoon travel time of 12pm.

14. Kemming Road, Whitwell

September-October 2016



In September and October 2016 vehicles travelling on Kemming Road were monitored for 4 days. The total number of vehicles recorded was 11,477; of these, 5,859 travelled east and 5,618 travelled west. The average number of vehicles travelling on Kemming Road during the fieldwork period was 3,051 a day.

The peak time for vehicles travelling in the morning was 11am with an average of 273 vehicles travelling at this time each day. There was no difference between the peak morning travel times for those travelling east and west. For all vehicles travelling on Kemming Road in the afternoon the peak travel time was 3pm with a daily average of 293 travelling at this time. The peak travel time was 3pm for vehicles travelling east, however the peak afternoon travel time was earlier for westbound vehicles, peaking at 1pm.

15. Undercliff Drive, outside of Owl Cottage

February 2017



In February 2017, traffic was monitored for 7 days outside of Owl Cottage on Undercliff Drive. The total number of vehicles recorded over the 7 day period was 806. Of these vehicles, 408 were travelling east, and 398 vehicles were travelling west. The daily average number of vehicles travelling on Undercliff Drive was 117. On average, 59 vehicles travelled eastbound each day and 58 travelled westbound.

The peak time for vehicles travelling along Undercliff Drive in the morning was 10am with a daily average of 16 vehicles travelling at this time. There was no difference between the peak morning travel time for vehicles travelling eastbound or westbound. In the afternoon, the peak travel time on Undercliff Drive was 12pm with a daily average of 13 vehicles travelling at this time. The peak afternoon travel time for vehicles travelling west on Undercliff Drive was 12pm; however the peak afternoon travel time for eastbound vehicles was 3pm.

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