

SIZEWELL C CONSTRUCTION: PERCEIVED SOCIAL IMPACTS OF TRAFFIC



Accent is registered to the market, opinion and social research
International Standard ISO 20252

Background 1

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- ❑ The planned construction of Sizewell C proposes to use the A12 and B1122 and will have a major impact on the communities along the route due to:
 - HGV vehicles for the delivery of materials, coach traffic for transporting workers to the site, abnormal loads and car trips by individual workers/visitors
- ❑ Therefore, there is expected to be significant disruption during its ten year construction phase which is expected to have following impacts:
 - Impacts on the quality of life, and
 - Fear of or intimidation by the traffic



Background 2

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- Because of the limitations of the DfT's WebTAG methodology for assessment of impacts on communities, and a tendency to therefore rely on outdated Guidelines which are not particularly applicable to modern day rural Suffolk, Suffolk County Council wished to engage directly with communities along the route to understand *“the consistency in views on the nature, scale and range of traffic-related impacts that are perceived as likely to arise with the construction of Sizewell C.”*

Objectives

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Core Objective	Assess the traffic impacts of the proposed Sizewell C construction on the wellbeing of local communities
Detailed objectives	<ul style="list-style-type: none">• To review approaches to assessing the social and community impacts of changes in traffic flows on people within directly affected communities, identifying best practice and also any correlations between pre-construction perceptions and actual experiences during construction• To research the perceived effects of an increase in traffic flows on the B1122 and the A12 through Yoxford, having regard to any previous comparable experiences.• To analyse the type, scale and range of impacts that are envisaged to arise
Desired Outcome	The research will help inform Suffolk County Council in their discussions with EDF Energy on means of addressing the impacts

Methodology overview

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- There were four elements to the method:

Literature review



Initial consultation survey



Depth interview case studies



Follow-up survey including a stated preference exercise

Literature review method

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- ❑ Built upon study team's existing knowledge of the relevant issues, and supplemented with a Rapid Evidence Assessment to identify the key literature across a broad range of sectors (including a review of literature into views following construction)
- ❑ It was divided into three parts:
 - review the evidence on the social impact of major infrastructure projects and changes in traffic levels taking into account appraisal and evaluation studies of previous projects, with a particular focus on Sizewell B
 - identify the limitations of WebTAG in the assessment of the social impacts of transport projects
 - identify methods in previous impact assessment studies and academic literature that address the gaps left by the WebTAG approaches

Initial consultation survey method

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- ❑ Designed to gain an initial understanding of the views of residents within the catchment area of the route and provide a robust understanding of the nature of the population and their level of awareness, their fears, concerns etc
- ❑ Two methods
 - An introductory letter was sent to all households before the start of fieldwork
- ❑ Face-to-face
 - Door to door on tablets
 - 70% sample close to alignment
 - 7-10 minute interview
 - 122 interviews between 15 Dec 2015 and 8 Jan 2016
- ❑ Online
 - Open link 'live' after face-to-face closed
 - 145 interviews between 9-18 Jan 2016

Depth survey method

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- ❑ Designed to gain deeper insight into the views of residents within the catchment area of the route
- ❑ **Method**
 - 20 depths with sub sample of initial consultation survey
 - Could be undertaken with a number of representatives from the household if the respondent wanted to bring them into the discussion

Stated preference survey method

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- ❑ Designed to measure relative impact of different traffic aspects, and preferences over different mitigations that could be implemented
 - Informed by research with householders, the literature review and discussions with Suffolk County Council
- ❑ **Survey Method**
 - online survey
 - householders who had provided email addresses and agreed to take part
 - open link printed in letter sent to all households

Structure of findings

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Sizewell B: pre-construction perceptions vs experiences vs recollections

2

General views on Sizewell C

3

Impacts due to traffic increases

4

Priorities amongst mitigation initiatives

5

Discussion

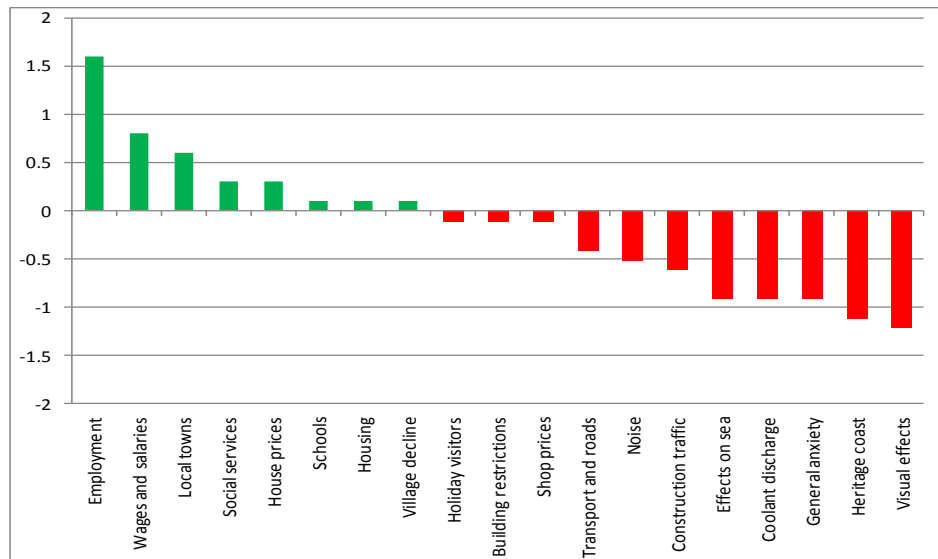
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SizeWell B: pre-construction perceptions vs experiences vs recollections

Findings from the literature

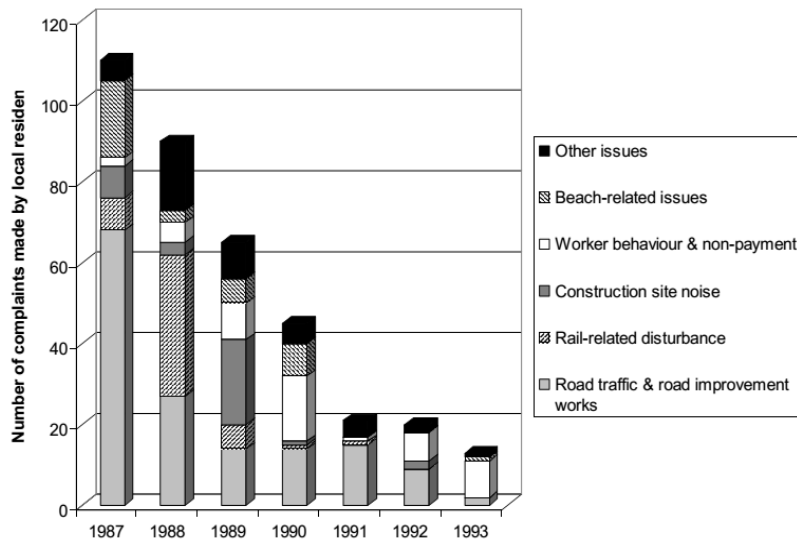
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Pre-construction survey: average of participants' ratings of 'Sizewell B' impacts



Source: the authors, using data from Glasson et al. (1989)

Complaints made by local residents to Nuclear Electric, 1987-1993

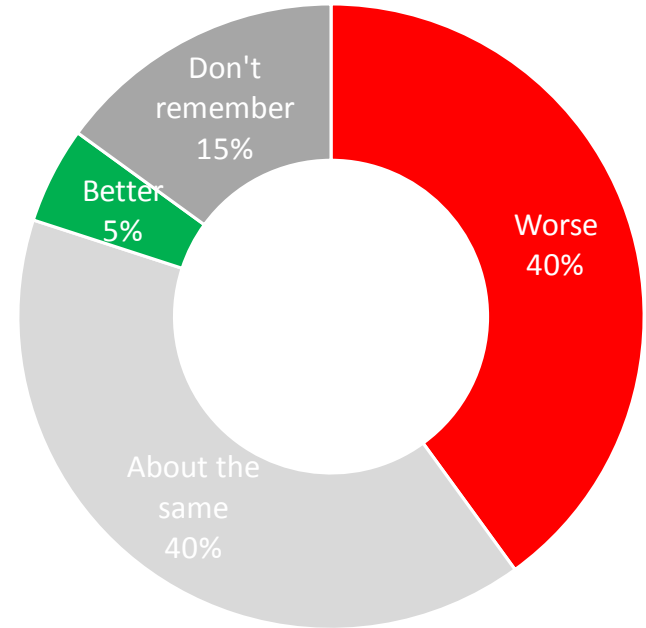


Source: Glasson et al. (1995)

- Pre-construction, traffic related issues were identified but were not considered the most important.
- Complaints were highest for traffic related issues early on, however, but subsided relatively quickly.

Views of current residents: comparison with expectation

- ❑ Views on Sizewell B construction are based on the responses of 65 participants who confirmed they were living in the area at the time
- ❑ Four tenths said the impact was worse than they had expected
- ❑ Only 5% said the impact was better than expected

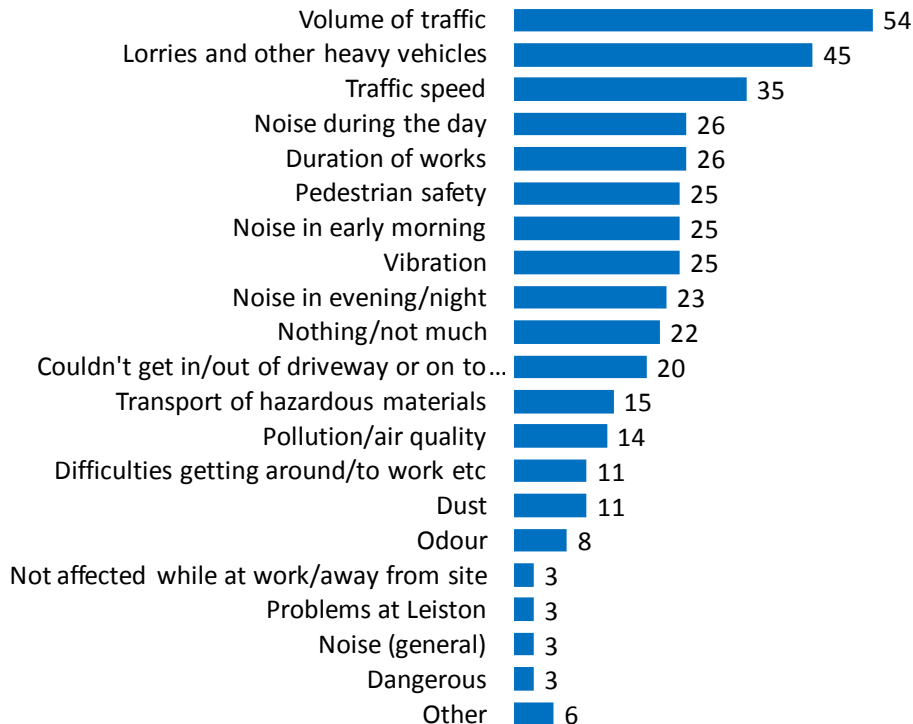


Base: 65

What recalled about construction traffic

14

- ❑ Over half recalled 'volume of traffic'
- ❑ Other aspects most frequently remembered:
 - Lorry and other heavy vehicles
 - Traffic speed
 - Noise during the day
 - Duration of works

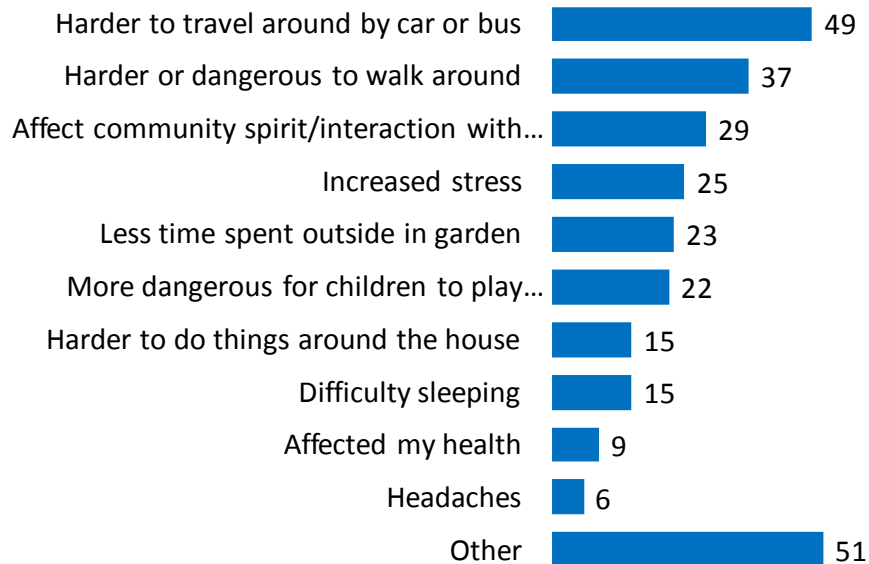


Base: 65

Impacts of Sizewell B construction traffic

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- ❑ The main impact of the Sizewell B construction traffic, mentioned by about half, was it being harder to travel around by car or bus
- ❑ Other impacts:
 - harder or dangerous to walk around
 - affect the community spirit/interaction with neighbours
 - increased stress

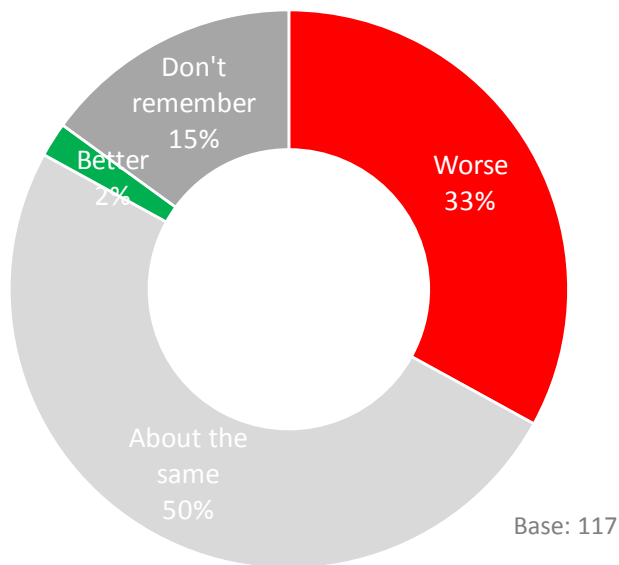


Base: 65

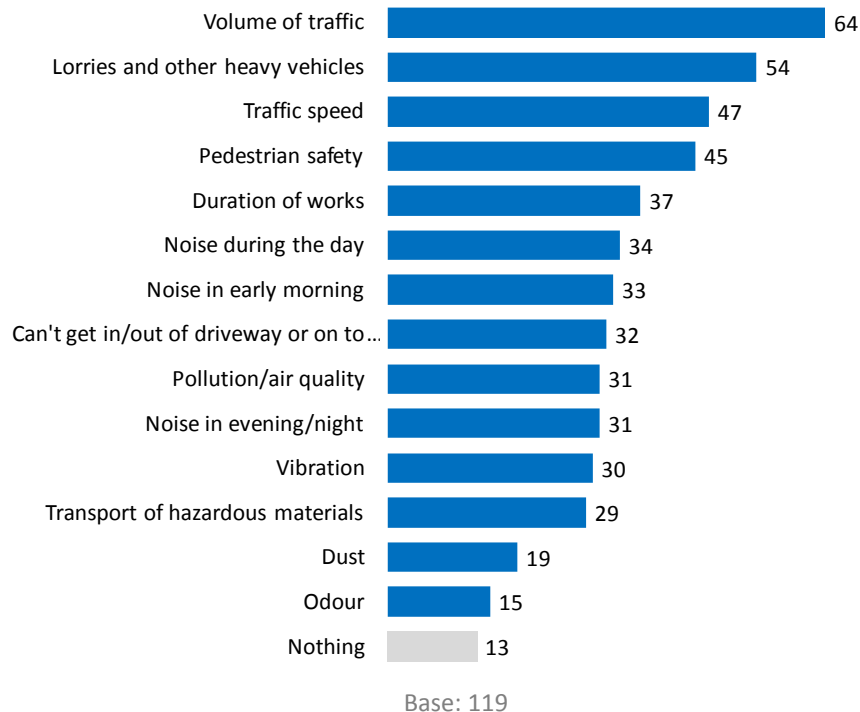
Sizewell B Dry Fuel Store construction

16

- 45% aware
- Third said the impact was worse than they had expected



- Main concerns (over 10%):

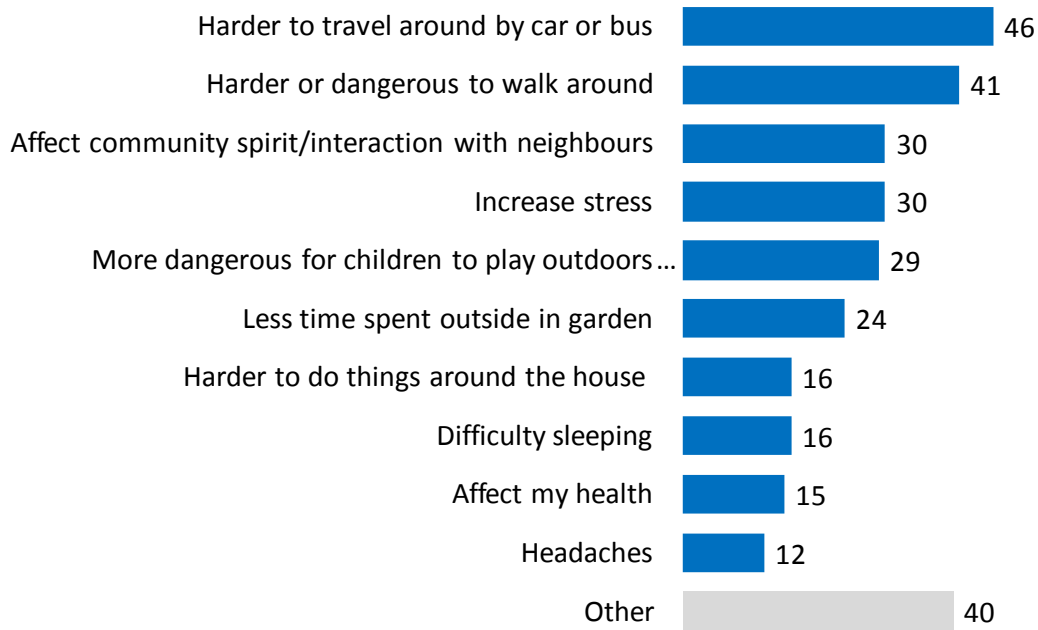


Impacts of Sizewell B Dry Fuel Store construction

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□ Main impacts of Sizewell B Dry Fuel Store construction traffic:

- harder to travel around by car or bus
- harder or dangerous to walk around
- affect the community spirit/ interaction with neighbours
- increased stress

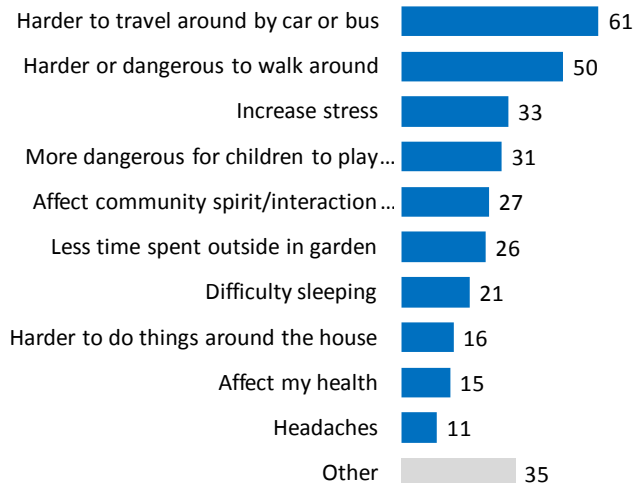


Sizewell B Outages

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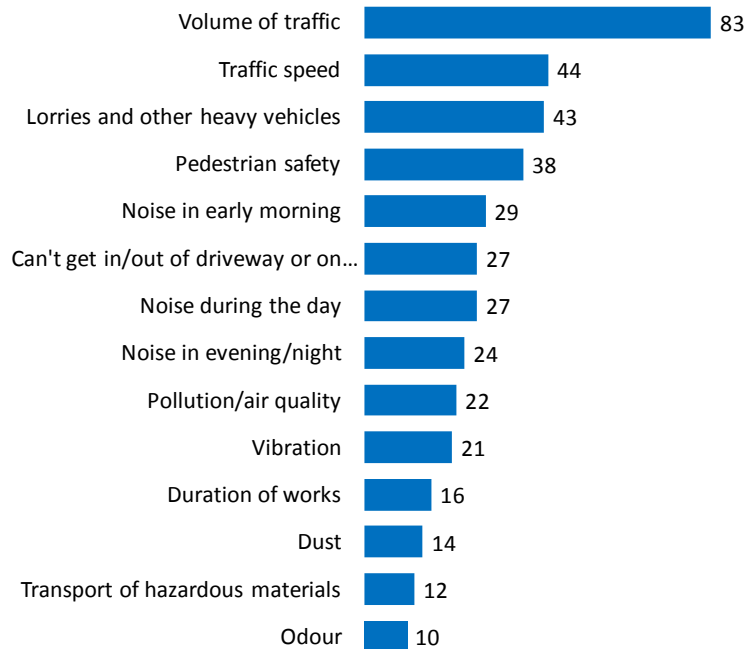
- Almost half (46%) had been aware of changes in traffic during the last Sizewell B outage in October 2014

Main impacts:



Base: 124

Main concerns (over 10%)

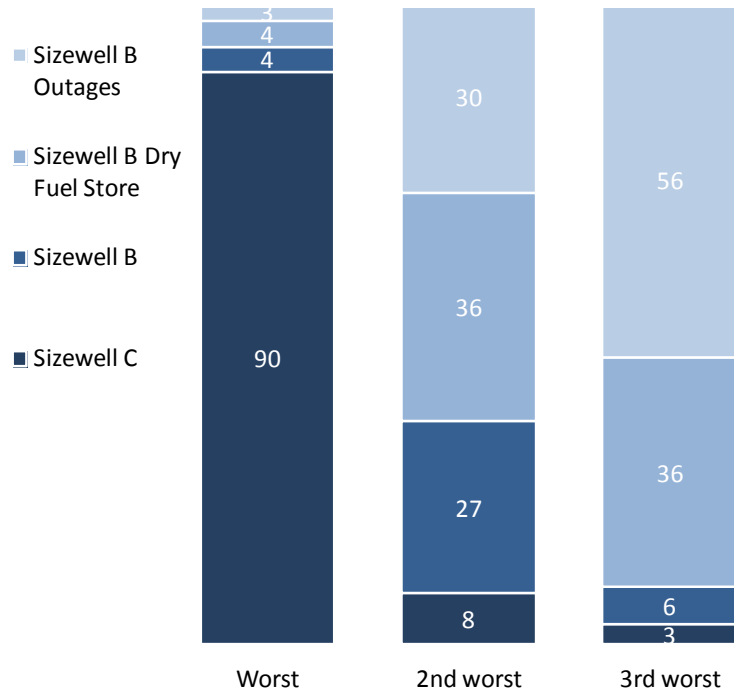


Base: 124

Relative impact of Sizewell C

19

- All participants who had been aware of at least one of the Sizewell B works were asked to rank the perceived traffic impact of those and Sizewell C
- A vast majority expected Sizewell C to have the worst impact on traffic



Base: 183

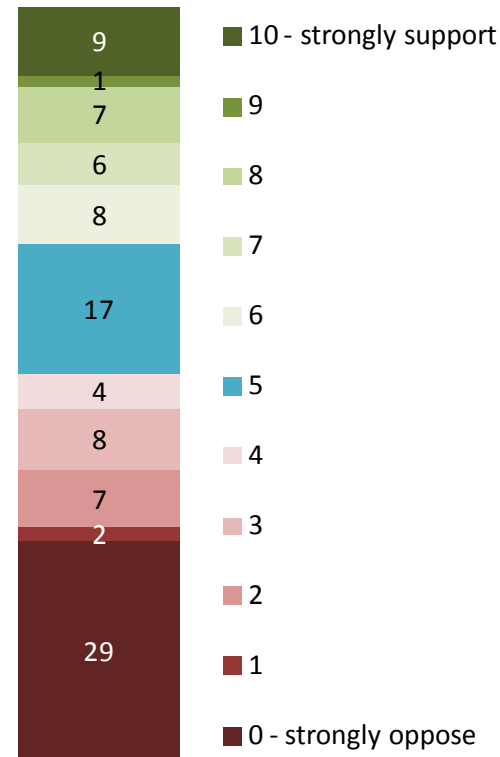
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General views on Sizewell C

General views about the planned construction

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- ❑ Overall, 29% very strongly opposed and 9% strongly supportive of Sizewell C construction (mean score = 3.96)
- ❑ Yoxford residents were significantly more likely to support the planned construction than those from Middleton and Theberton (means of 4.74, 3.93 and 3.41 respectively)
- ❑ Those who lived in the area during Sizewell B construction and therefore had some prior experience were significantly more supportive than those who did not (4.69 cf 3.67).
- ❑ Men were significantly more supportive than women (4.45 cf 3.55)
- ❑ Younger participants (aged between 16 and 34) were significantly more supportive than older participants (6.64 cf 3.69-4.05)

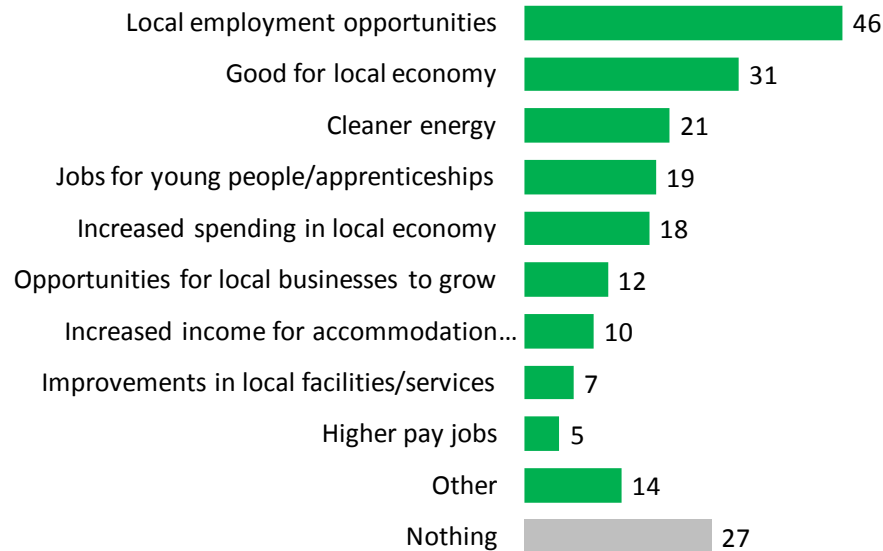


Base: 267

Positives from the planned construction

22

- ❑ Local employment opportunities and good for local economy were the main positives cited
- ❑ 27% said that there would be no benefit at all
- ❑ Average of 3.5 positives for each who mentioned any

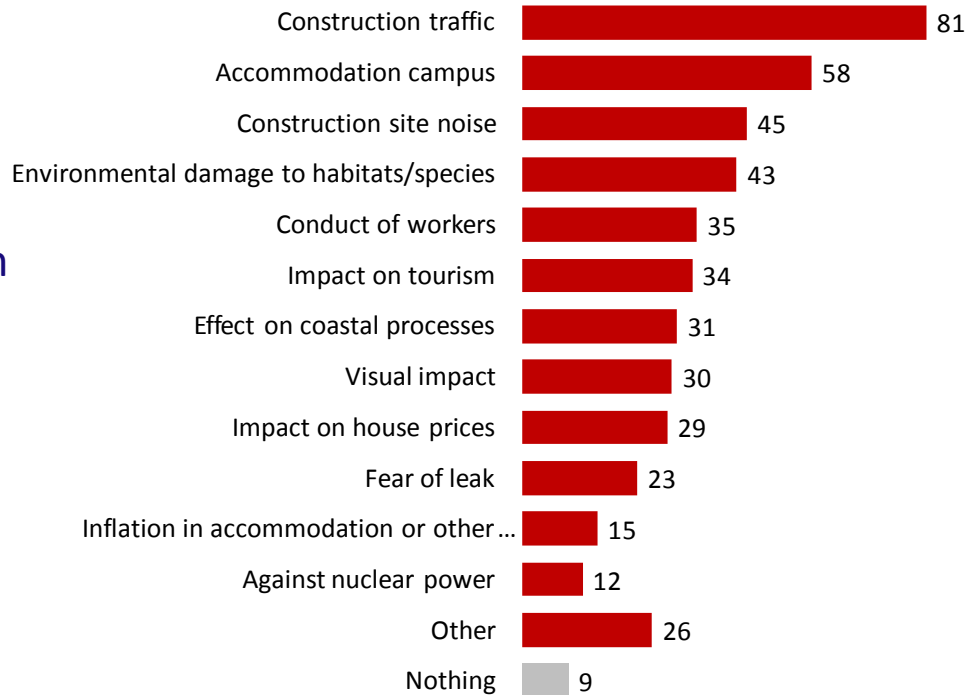


Base: 267

Negatives from the planned construction

23

- ❑ Construction traffic was the dominant concern
 - those living close to the roads were more likely to be concerned about the construction traffic than those living further away (92% vs. 79%)
- ❑ Accommodation campus, site noise and environmental damage also significant
- ❑ Average of 5.7 negatives for each who mentioned any

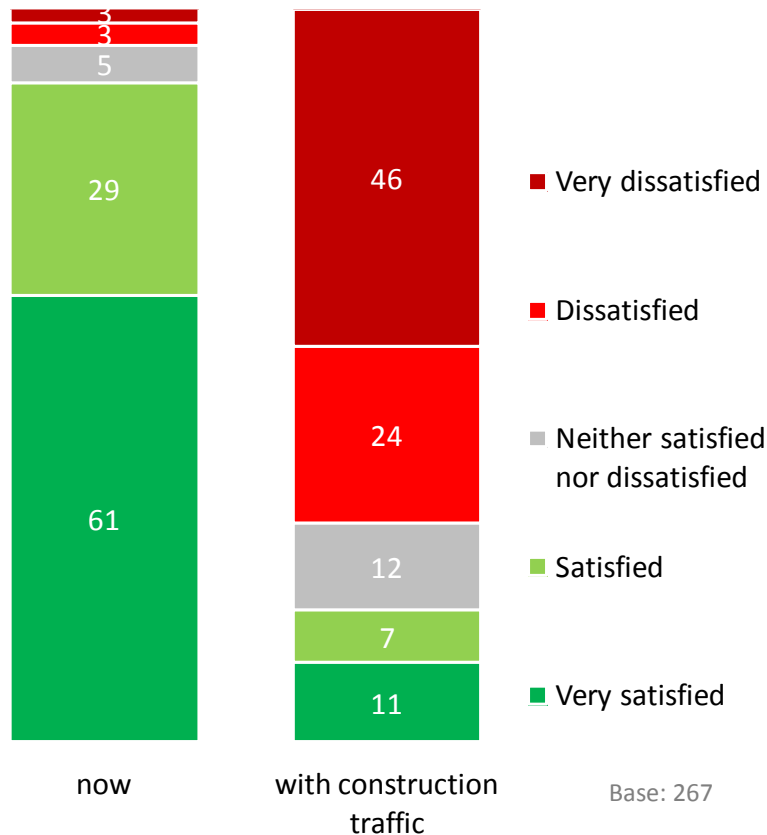


Base: 267

Satisfaction living in area

24

- ❑ Striking contrast between current satisfaction with living in area and with construction traffic
- ❑ Those living closer (within 100 metres or 1 minute of alignment) more dissatisfied than those living further away:
 - 78% cf 64% dissatisfied or very dissatisfied



3

Impacts due to traffic increases

Traffic aspects

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Name	Description
risk	Increased risk of being involved in an accident
airpol	Worsening of the local air quality
noise	Greater traffic noise
vibration	Greater vibration from traffic
visual	The sight of all the extra traffic
walktriptime	Increased walking time due to it taking longer to cross the road
carbustriptime	Extra time added to car/bus journeys
walkavoid	Not making walking trips that you would have otherwise made
caravoid	Not making driving trips that you would have otherwise made
bikeavoid	Not making cycling trips that you would have otherwise made
community	Loss of community cohesion or character
stress	Increased stress
health	Affect my health
sleeping	Make sleeping more difficult
gardenavoid	Less time spent outside in garden
roomsavoid	Make some rooms in the house unusable

Question format

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Which aspect of the increase in traffic would have the most impact on you, and which would have the least impact?

Most impact

☐

Extra time added to your car or bus journeys, in particular exiting properties or at junctions

☐

Not making cycling trips that you would have otherwise made

☐

Affect my health

☐

Increased risk of being involved in an accident

Least impact

☐☐☐☐

None of these would impact me

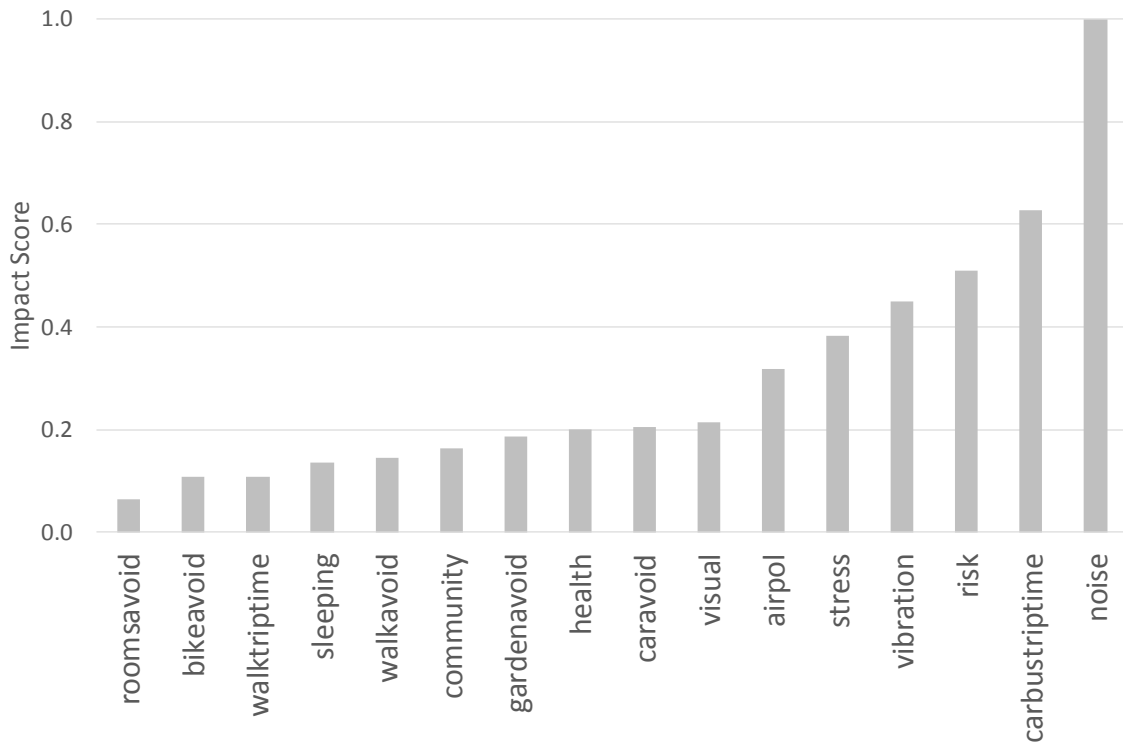
☐

Impact of traffic aspects, overall

(relative to *noise*)

28

- ❑ The most impactful aspects, after traffic noise, were extra time added to car/bus journeys, increased accident risk and vibration
- ❑ The least impactful aspects were “make some rooms in the house unusable”, not making cycling trips, and increased journey time when walking

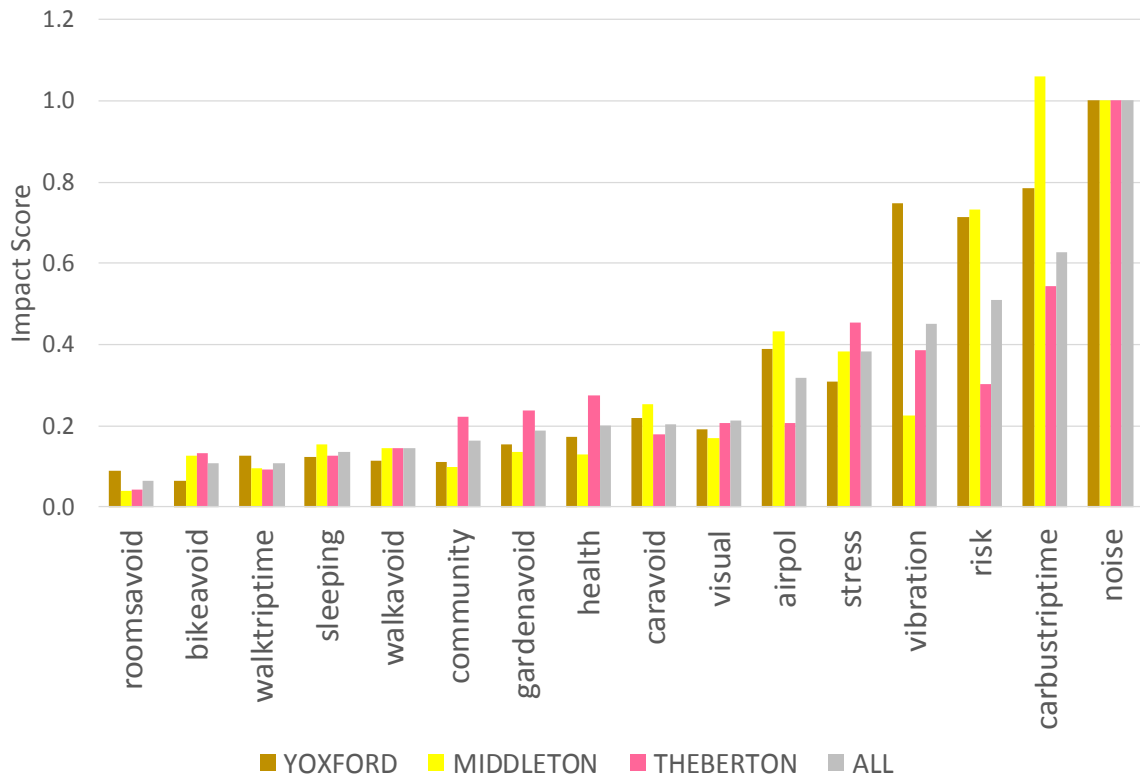


Impact of traffic aspects, by parish

(relative to *noise*)

29

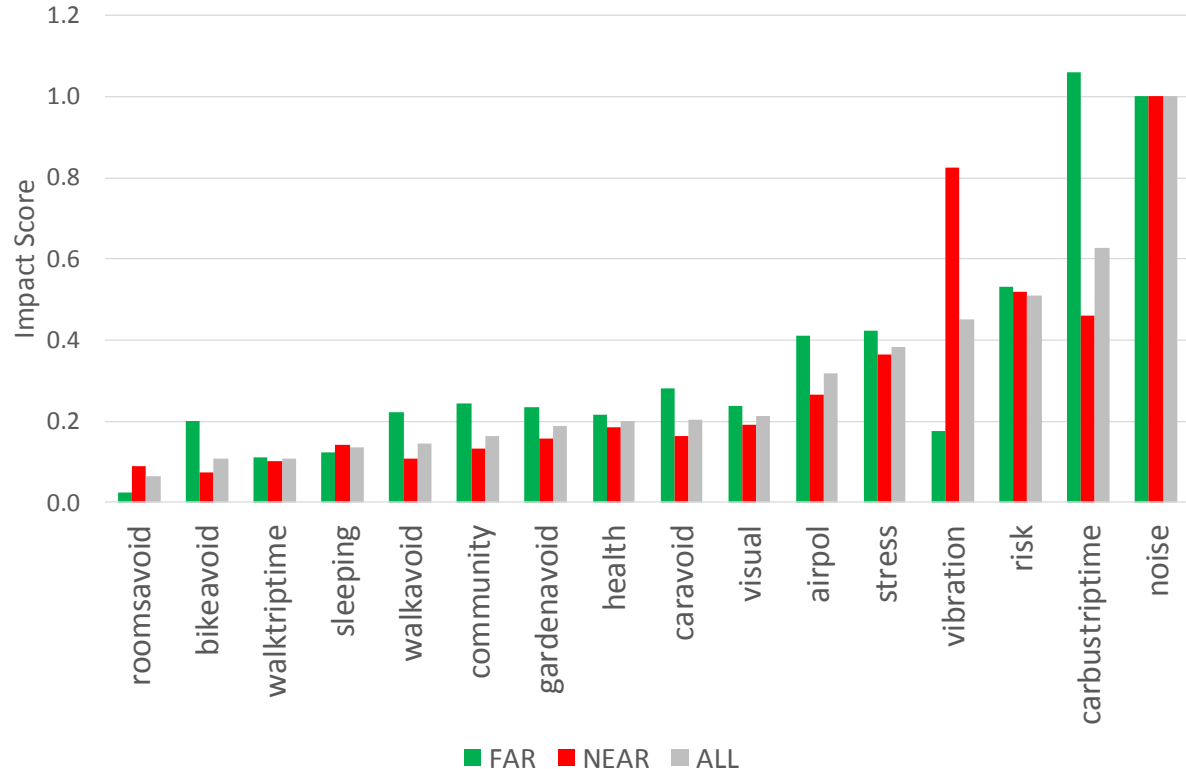
- ❑ Extra time added to car/bus travel journeys, accident risk and air pollution were more impactful in Middleton and Yoxford than in Theberton
- ❑ “Vibration” was more impactful in Theberton and Yoxford



Impact of traffic aspects, by distance to road

(relative to *noise*)

- ❑ Extra time added to car/bus travel journeys was more impactful to participants living far from the road
- ❑ Vibration was more impactful to participants living near the road



Impact of traffic aspects, by segment

(relative to *noise*, by segment)

After controlling for distance to the road and parish:

Group	More concerned with...
Younger (<65 yrs old)	<ul style="list-style-type: none">• avoiding garden
With children (<10 yrs old)	<ul style="list-style-type: none">• risk• air pollution• vibration• suppressed cycling trips
In full-time employment	<ul style="list-style-type: none">• suppressed walking trips• loss of community character
High income	<ul style="list-style-type: none">• stress• air pollution
Low income	<ul style="list-style-type: none">• walk trip time

Supporting findings

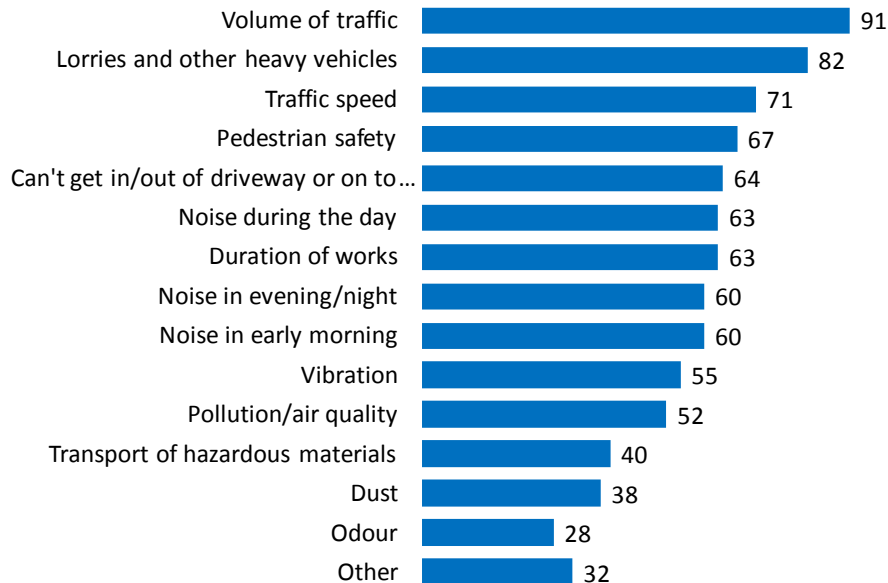
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- ❑ From initial consultation survey with 267 participants and 20 depths

Concerns regarding construction traffic

33

- ❑ Main concerns for the 91% who mentioned construction traffic as a concern (unprompted (81%) or prompted (10%)):
 - volume of traffic
 - lorries and other heavy vehicles
 - traffic speed
 - pedestrian safety
 - access

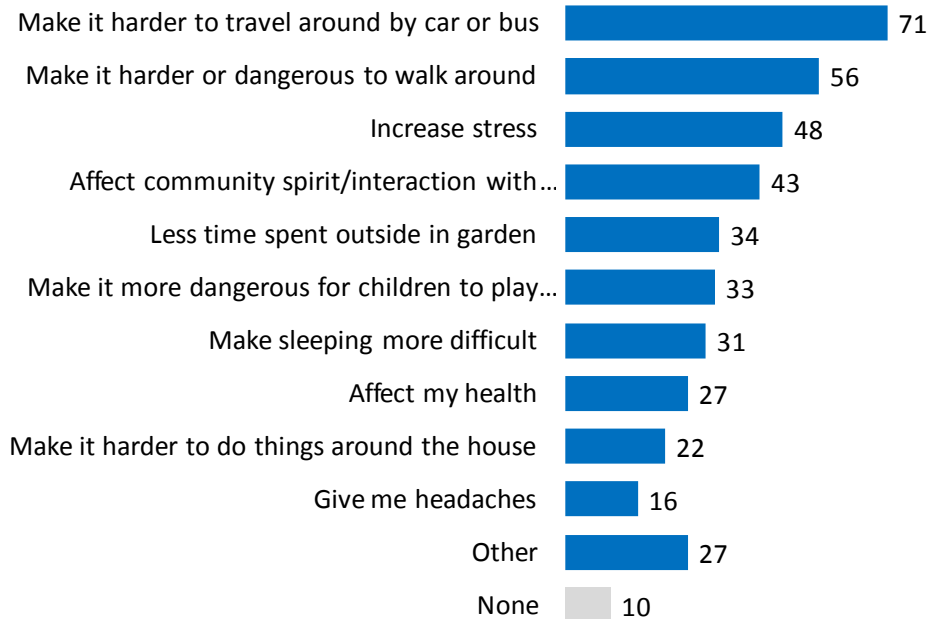


Base: 243

Personal impacts

34

- ❑ The most commonly mentioned impacts on themselves were:
 - making it hard to travel around by car or bus
 - making it hard or dangerous to walk around
 - increased stress

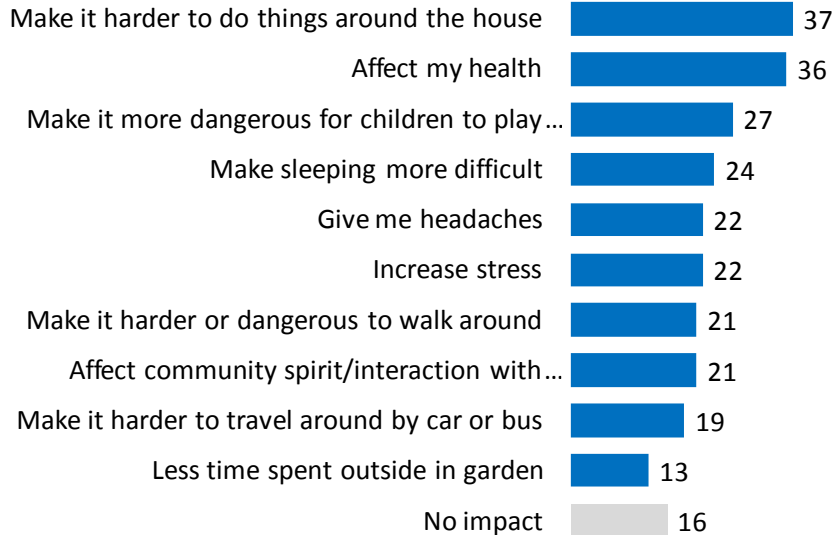


Base: 267

Other impacts

35

- ❑ Participants were then asked which other potential impacts would happen
- ❑ Main impacts:
 - making it harder to do things around the house
 - impact on health
 - making it more dangerous for children to play outdoors unsupervised

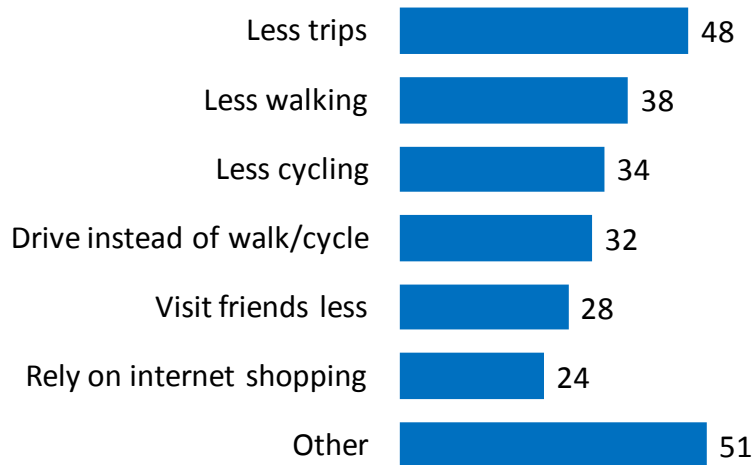


Base: 216 (excluding those who said none to personal impacts)

Travel impacts from construction traffic

36

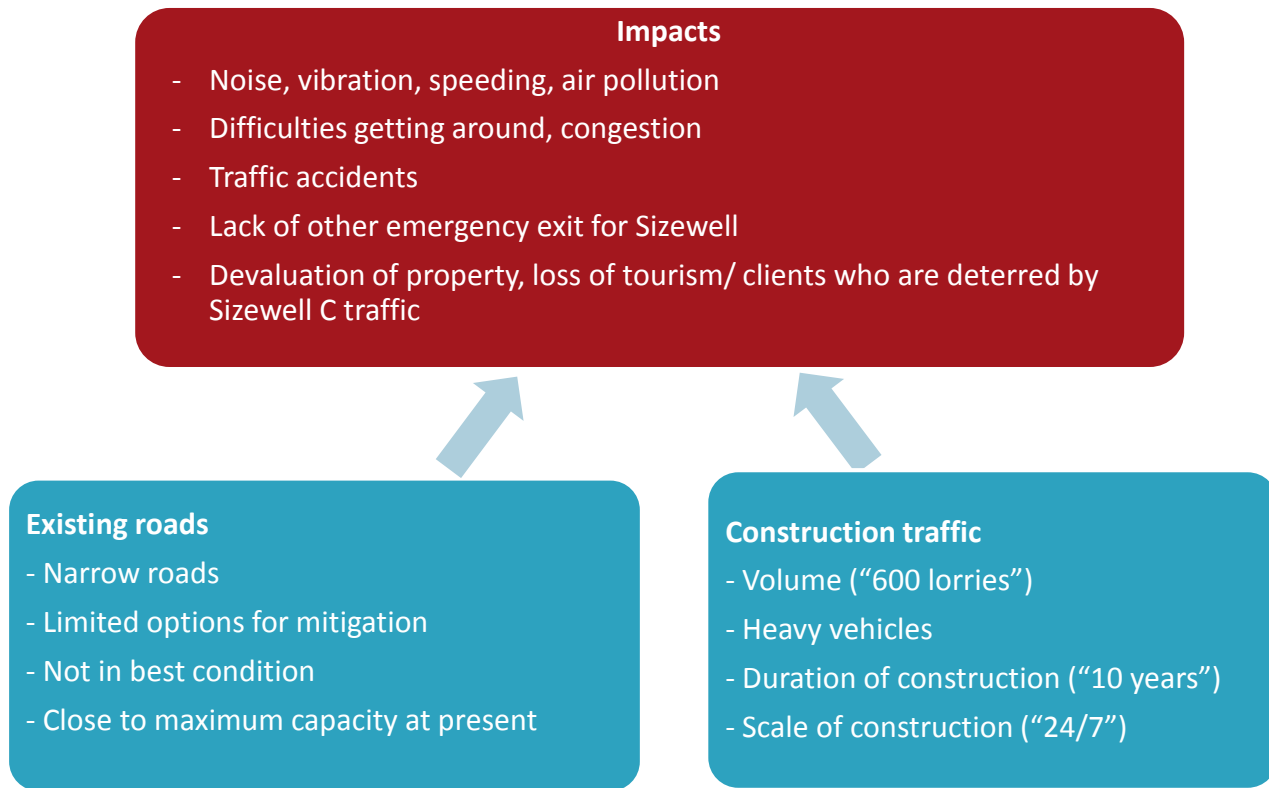
- ❑ Almost half stated that they would make fewer trips
- ❑ Around one third thought they would walk less, cycle less and/or drive instead of walk/cycle



Base: 267

Depths: concerns about construction traffic

37



Depths: concerns about construction traffic

38

"There is the pollution... there is the potential of obviously the noise and the impact on the road, impact potentially on the building if we're looking at very heavy traffic coming through on a regular basis, we are looking at a building that is early 19th century here..."

– Theberton

"There are safety issues on this road... It looks fairly straight but there are bends and we have difficulty pulling out of our drives because we have very poor visibility."

– Yoxford

"What I'm opposed to is the fact that they are talking of running the supplies for the building down the road which is to quote the expression 'not fit for purpose'...It's a single lane. It's very narrow...There are small villages all the way through...."

– Middleton

"In the event of something going horribly wrong like in Fukushima in Japan or Chernobyl in Russia, there has to be good ways of getting people in and out of this area and this road would become that conduit as well. That cannot be right. I think when you're planning something, you need to plan for the 'What if?'"

– Middleton

Depths: wider impact of traffic on personal life

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"...in every respect really, the quality of life that will be affected... our house is up for sale What's the chances of selling it at the moment, very unlikely... We love it here. We're so upset that we're going to have to move"

Middleton

"It will be difficult for me personally to drive and get out onto the B1122... ...there are people older than me that do drive around and I would be concerned for some of them."

Yoxford

"...the noise impact which will be massive in spite of the fact the house is double glazed and triple glazed in places..... It's quite quiet here most of the time, but when there's big lorries going past... the reverberation is huge. ... it'll make those rooms [uninhabitable] so that we can't use them."

Yoxford

"Noise pollution and light pollution. At the moment you can look up at the sky round here and you can see the stars when the clouds aren't there and it's beautiful. They're wanting to put street lights and everything in... The noise...is going to be a nightmare ...We can't have double-glazing because of the listed building thing."

Theberton

Summary

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- ❑ Local residents were concerned about the increase in traffic volume, especially if associated with high traffic speeds and large numbers of HGVs
- ❑ The traffic aspects with the biggest impact were noise, vibration, accident risk, and extra time added to car/bus journeys
- ❑ The time added to car and bus travel journeys was more impactful to participants living far from the road, and in Middleton or Yoxford
- ❑ Vibration was more impactful to participants living near the road, and in Theberton or Yoxford
- ❑ The perception of the different impacts also depended on personal factors such as age, household type, employment status, and income

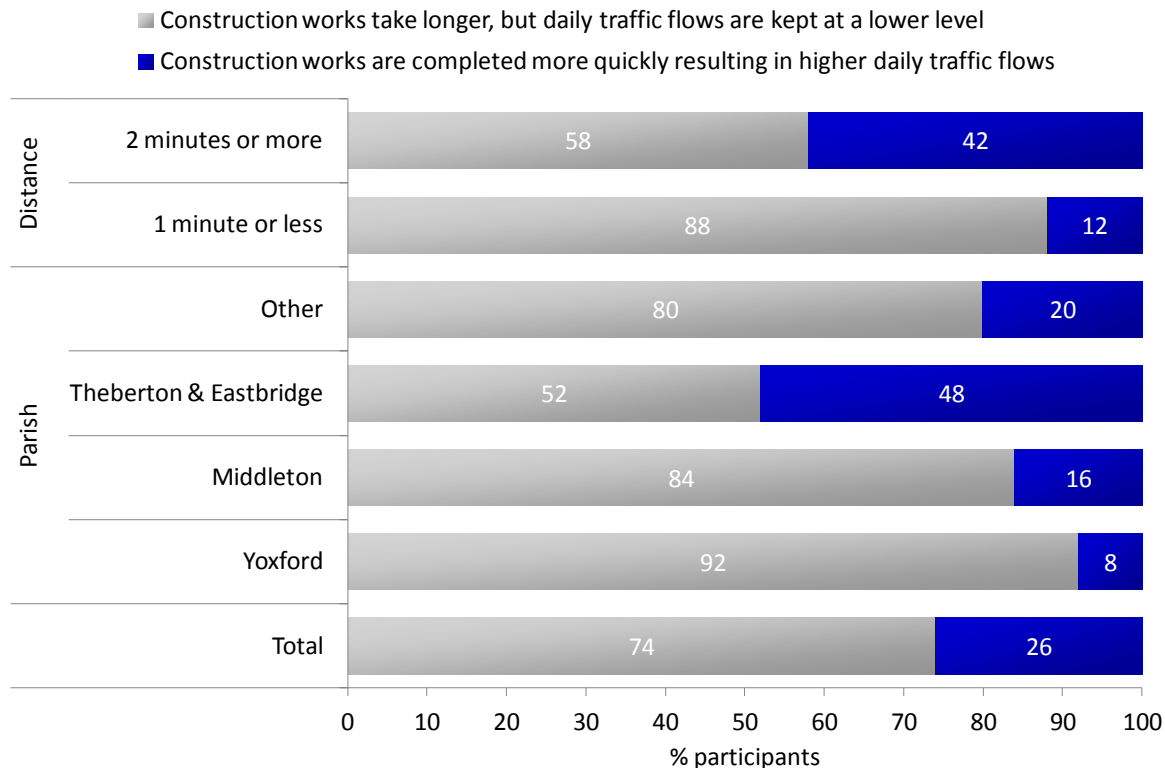
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Priorities amongst mitigation initiatives

Duration of works vs. daily traffic flows

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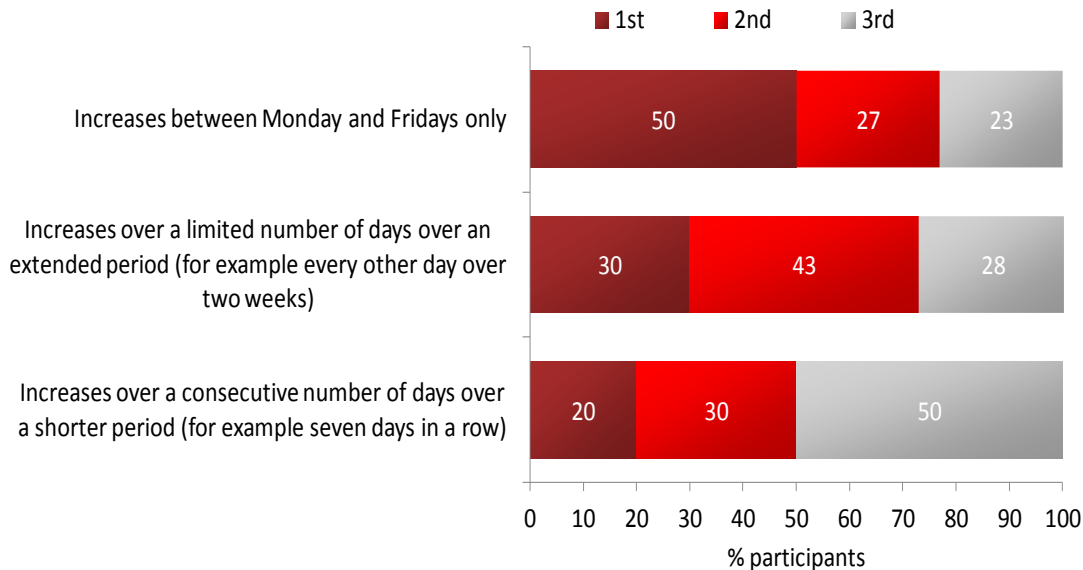
- Most people preferred longer construction works, with lower traffic flows, rather than quicker works with higher flows
- This was especially the case for participants living in Yoxford and nearer to the road



HGV traffic options

43

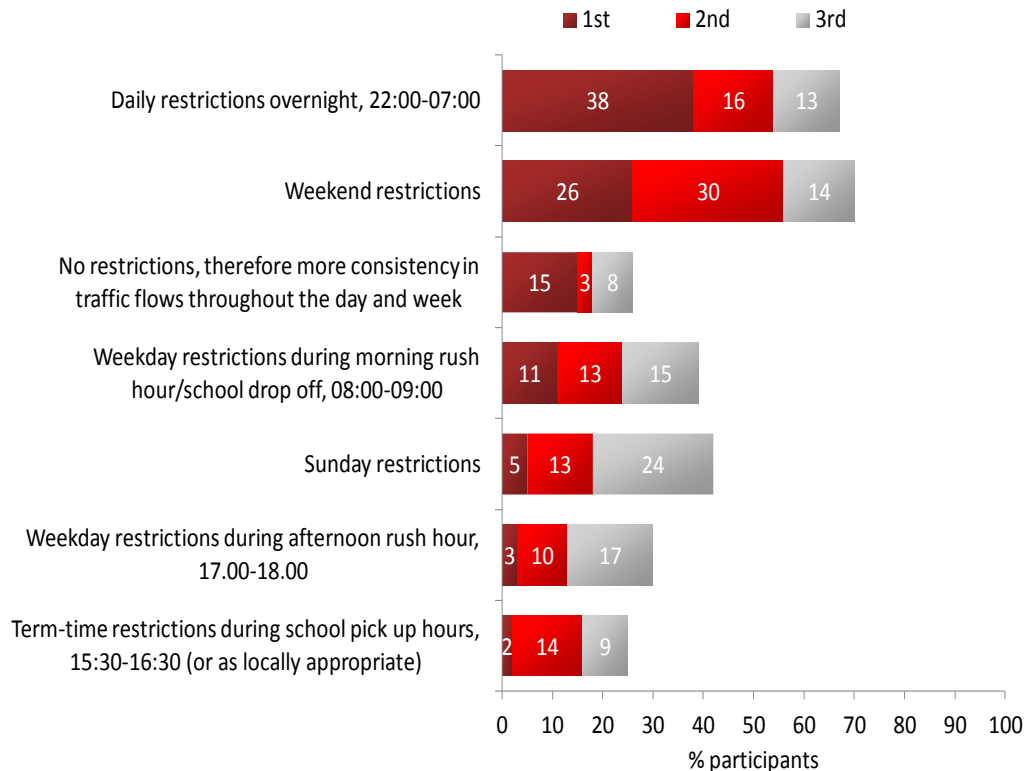
- ❑ The most preferred scenario for half of the participants is to have HGV traffic increases between Mondays and Fridays only
- ❑ 30% preferred increases over a limit number of days over an extended period
- ❑ 20% preferred increases over a consecutive number of days over a shorter period



LGV traffic options

44

- ❑ The most preferred mitigation measure was daily restrictions overnight to LGV traffic
- ❑ The second most preferred measure was weekend restrictions

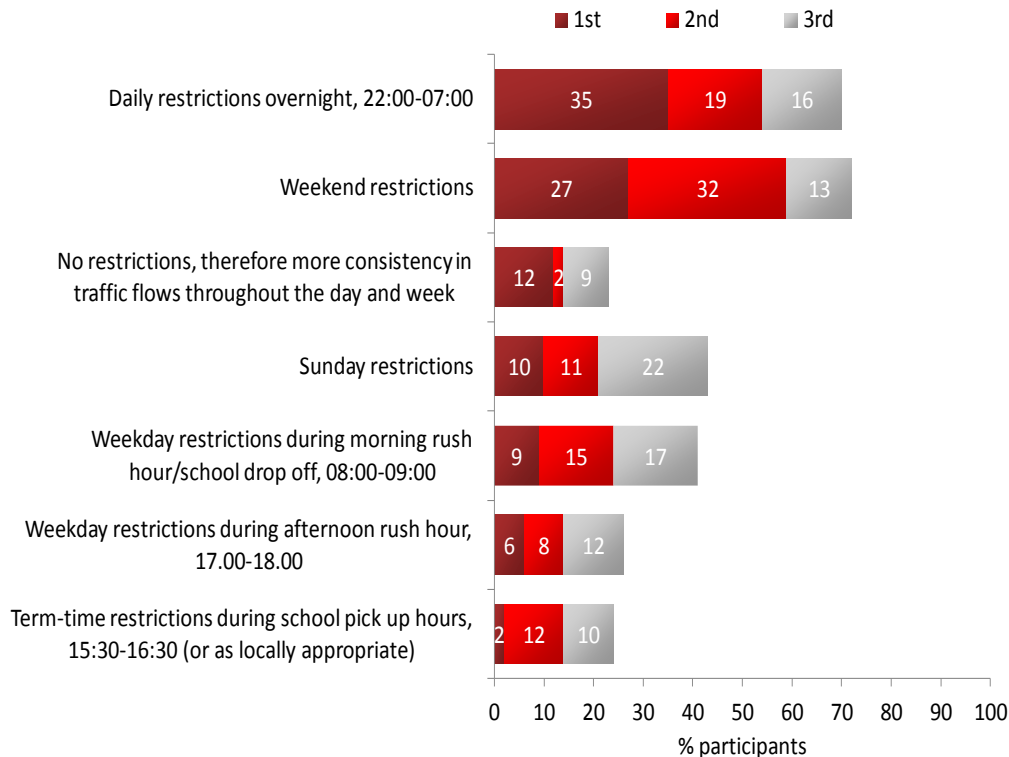


Bus and HGV movement restrictions

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Again:

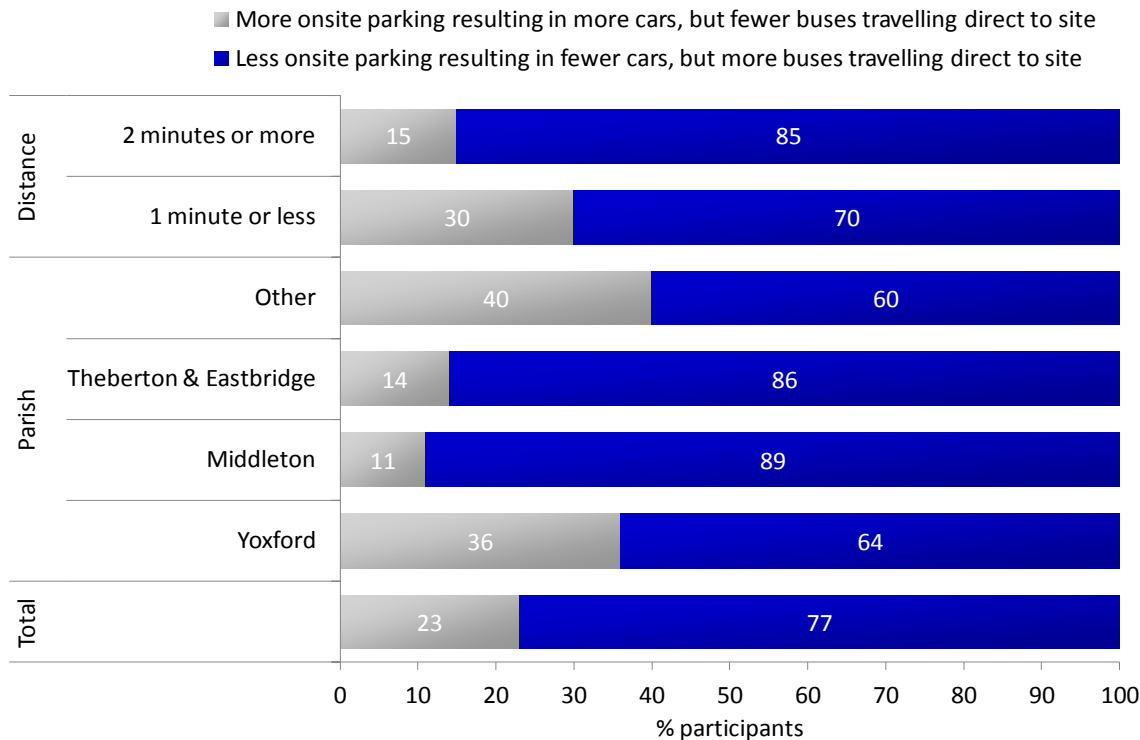
- ❑ The most preferred measure was daily restrictions overnight to Bus/HGV traffic
- ❑ The second most preferred alternative was weekend restrictions



Parking provision and car vs bus traffic

46

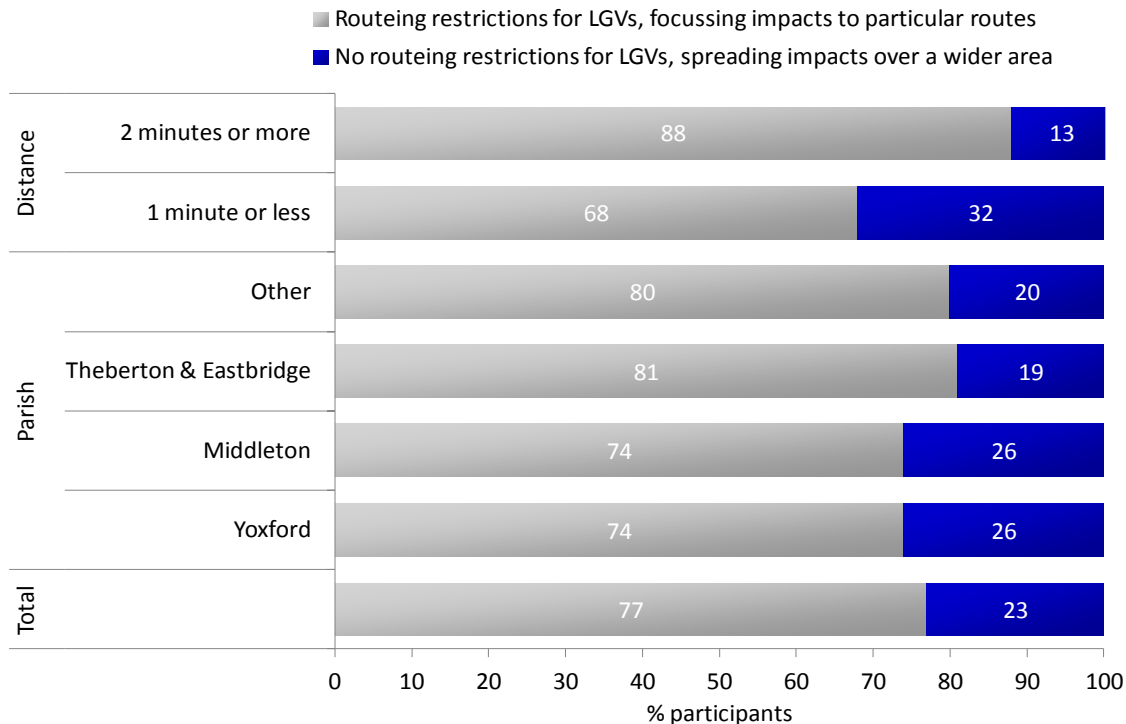
- Most people preferred to have less onsite parking resulting in fewer cars, but more buses travelling to the site
- This was especially the case for participants living in Middleton and Theberton



Routeing restrictions for LGVs

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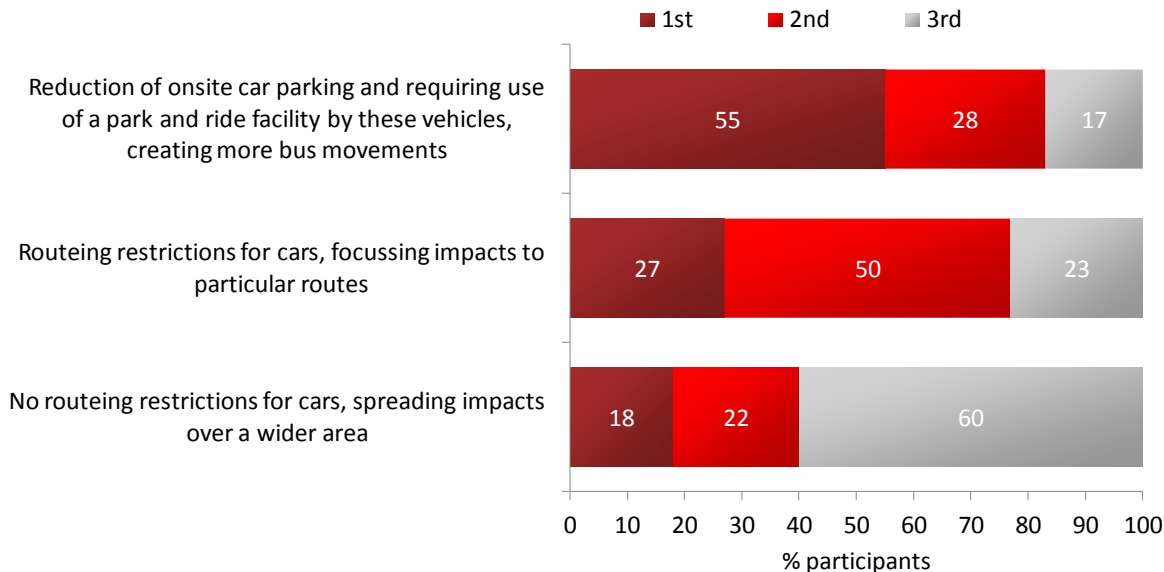
- Most people preferred to have routeing restrictions for LGVs, focusing impacts to particular routes, rather than not having restrictions and spreading impacts over a wider area



Parking restrictions vs routeing restrictions

48

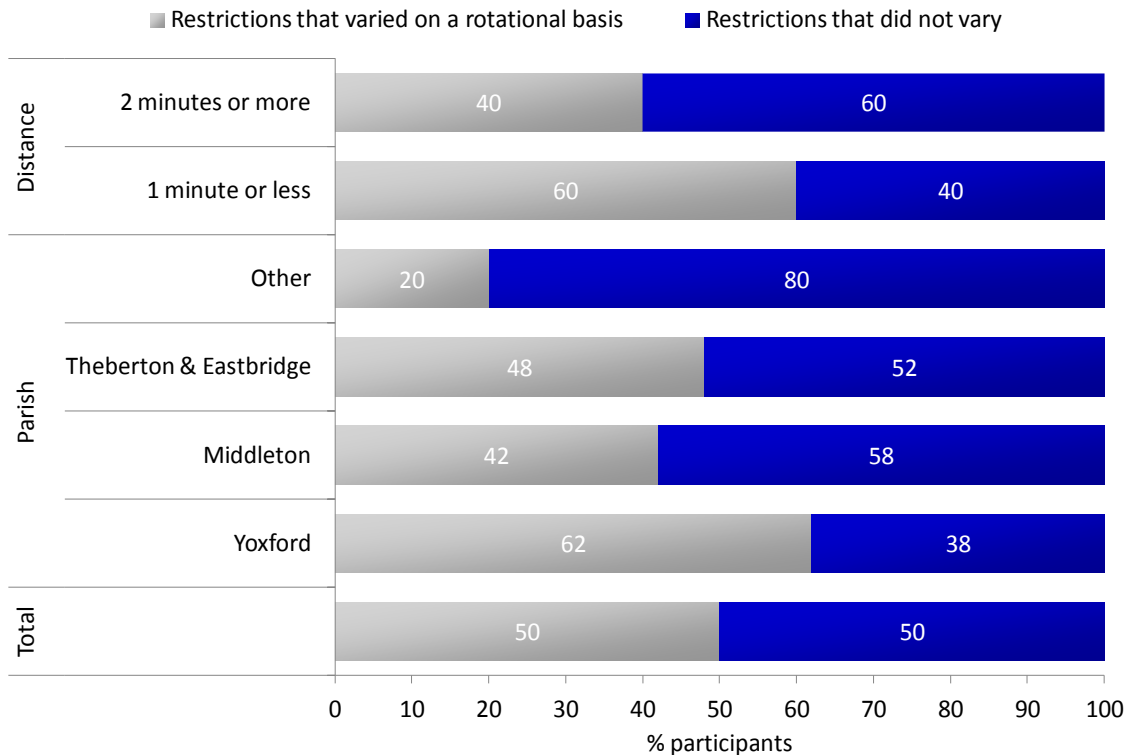
- More people preferred to have a reduction of onsite car parking rather than having routeing restrictions for cars or having no restrictions and spreading impacts over a wider area



Rotation of routeing restrictions for LGVs and car

49

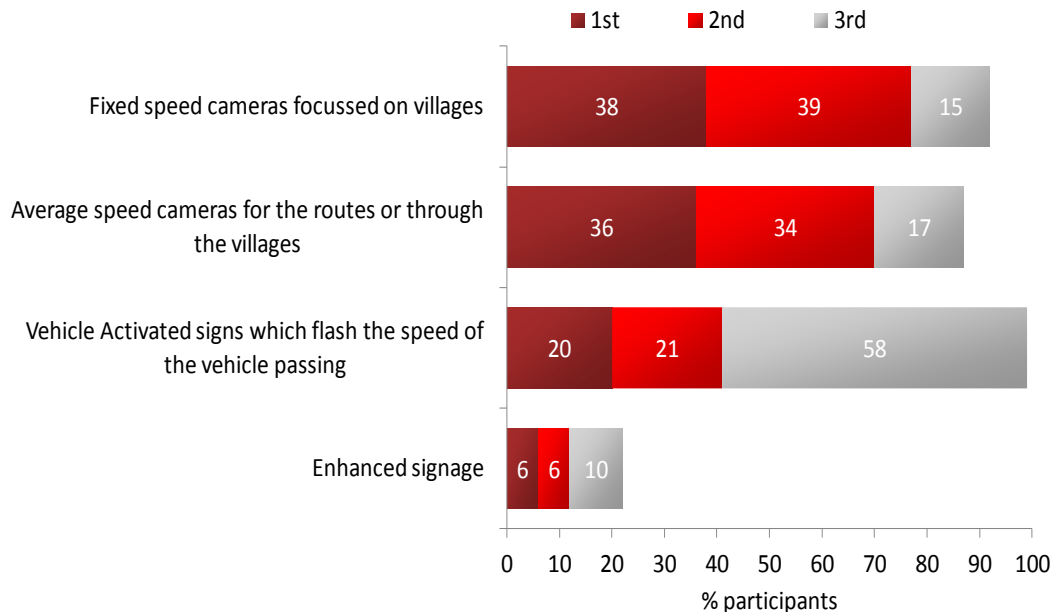
- ❑ The majority of participants in Yoxford or living close to the road preferred restrictions that varied on a rotational basis
- ❑ The majority of participants in other parishes and living far from the road preferred restrictions that did not vary



Addressing speeding

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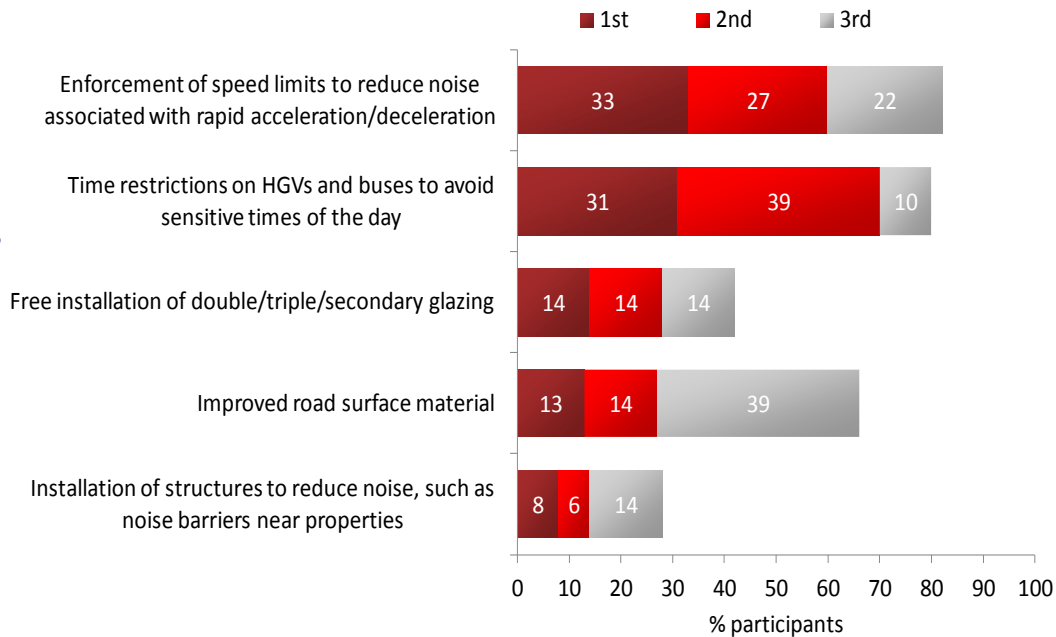
- The most preferred alternatives for addressing speeding are fixed speed cameras focussed on villages and average speed cameras for the routes or through the villages



Addressing ambient noise conditions

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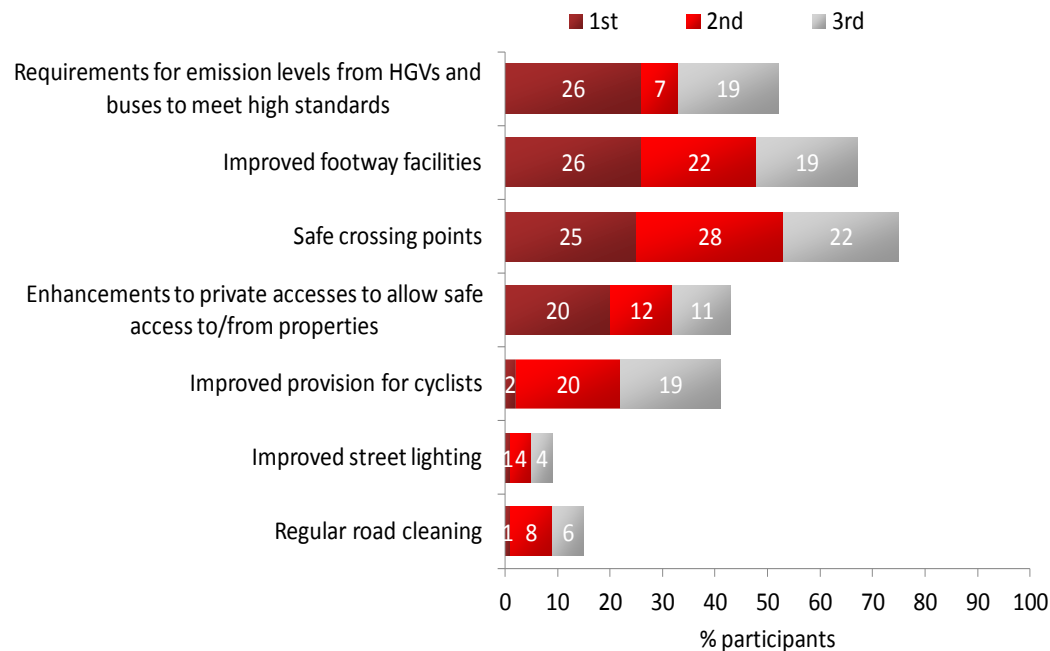
- The most preferred alternatives for addressing noise conditions were the enforcement of speed limits (to reduce noise) and time restrictions on HGVs and buses (to avoid sensitive times of the day)



Increasing the safety and wellbeing

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- Participants had different views regarding the best way to address safety and wellbeing, with an almost equal number choosing requirements for emission levels from HGVs, improved footway facilities, provision of safe crossing points, and enhancements to private accesses



Measures to mitigate the impacts of greater traffic

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Name	Description
quick	Construction works completed as quickly as possible, but with higher daily traffic
peak_lgv	Peak hour restrictions on movements of LGVs
weekend_lgv	Weekend restrictions on movements of LGVs
night_lgv	Night-time restrictions on movements of LGVs
peak_hgv	Peak hour restrictions on movements of HGVs
weekend_hgv	Weekend restrictions on movements of HGVs
night_hgv	Night-time restrictions on movements of HGVs
parking	Less onsite parking, resulting in fewer cars, but more buses, travelling direct to site
route_lgv	Requiring LGVs to take particular routes to site
route_car	Requiring car drivers who live east of the A12 to take particular routes to site
speed	Strict enforcement of speed limits
noise	Provision of noise reduction measures for properties
safe_walk	Provision of safety measures for pedestrians and cyclists
safe_acc	Provision of safety measures for private accesses to properties
air	Maintenance of current air quality standards
light	Provision of street lighting

Question format

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Which of these measures would you like to see given the highest priority, and which would you like to see given the lowest priority?

Highest priority

Lowest priority

☐

Provision of safety measures for private accesses to properties

☐☐

Peak hour (08:00 - 09:00 and 17:00 - 18:00) restrictions on
movements of light goods vehicles

☐☐

Provision of noise reduction measures for properties

☐☐

Peak hour (08:00 - 09:00 and 17:00 - 18:00) restrictions on
movements of heavy goods vehicles

☐

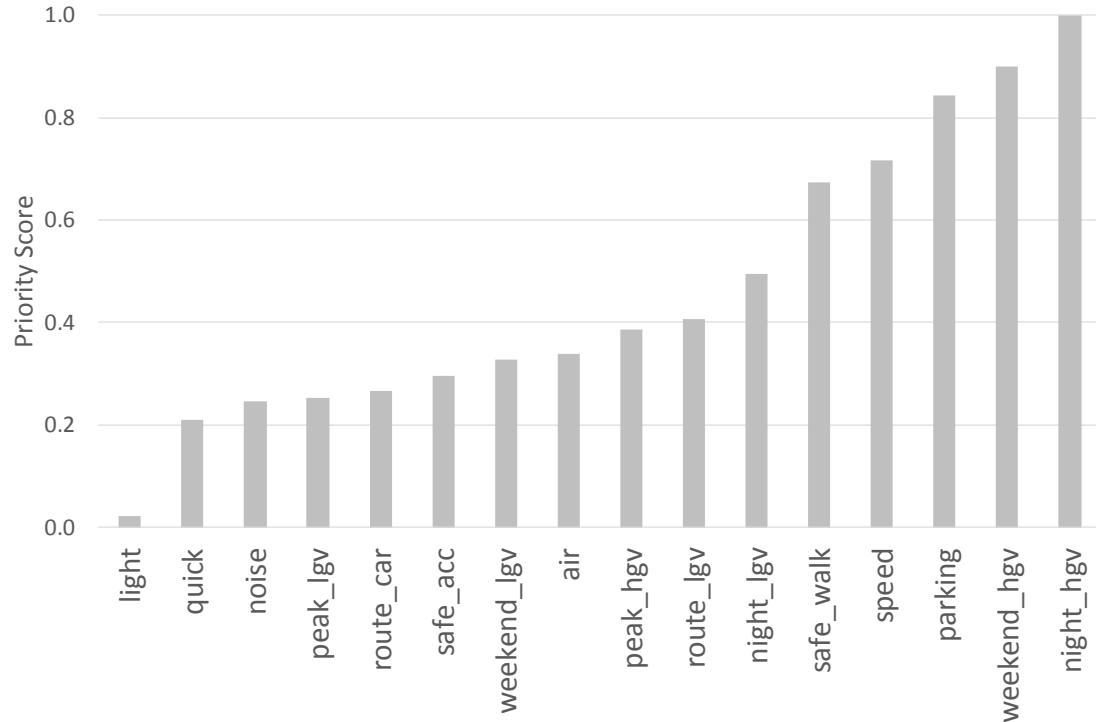
None of these matter to me

☐

Priority of measures, overall

(relative to *night-time restrictions to HGVs*)

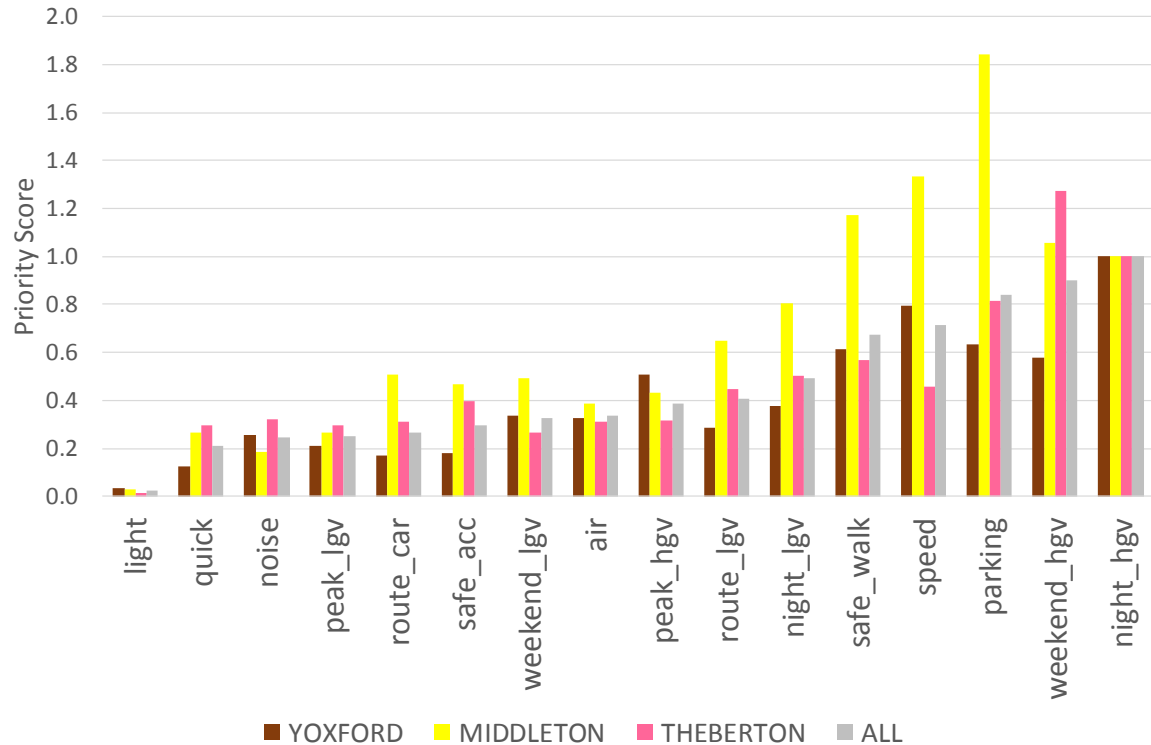
- The measures with the highest priority, after night-time restrictions to HGVs, were weekend restrictions to HGVs, less onsite parking, enforcement of speed limits, and safety measures for pedestrians/cyclists
- The measure with the lowest priority was provision of street lighting



Priority of measures, by parish

(relative to *night-time restrictions to HGVs*)

- Weekend restrictions to HGVs were more important in Theberton than in the other two parishes
- Less onsite parking, enforcement of speed limits, and safety measures for pedestrians/cyclists were more important in Middleton

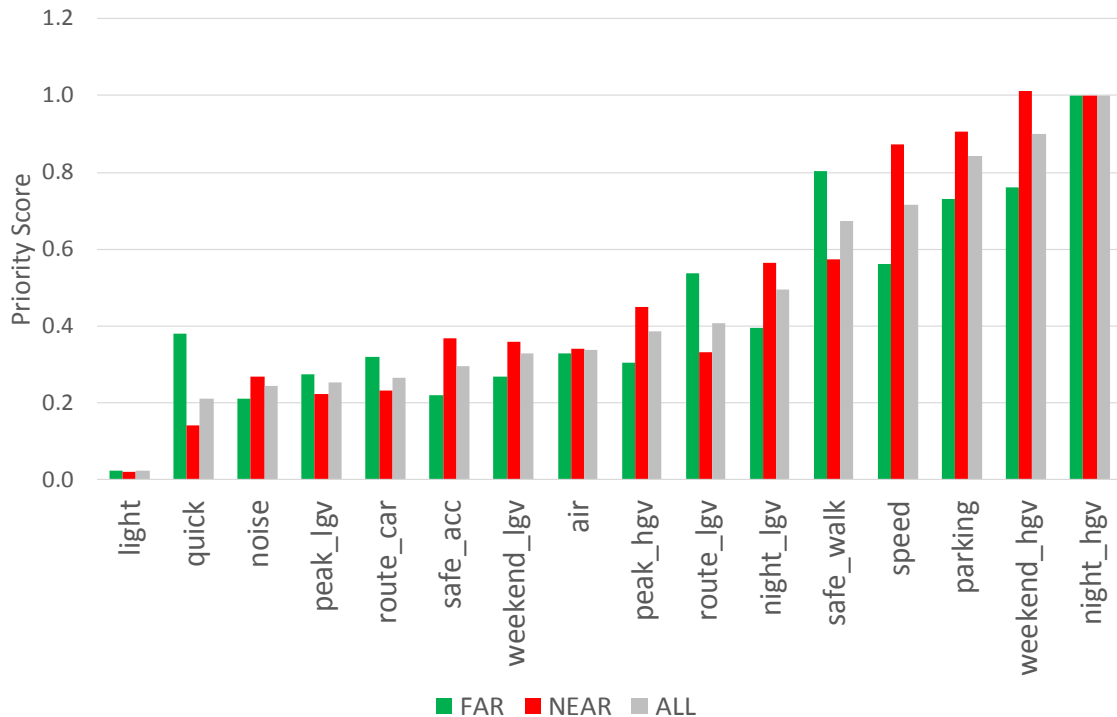


Priority of measures, by distance to road

(relative to *night-time restrictions to HGVs*)

57

- Safety measures for pedestrians/cyclists, route restrictions to LGVs, and quicker construction works were more important for participants living far from the road
- Enforcement of speed limits and weekend restrictions on HGVs were more important for those living near the road



Priority of measures, by segment

(relative to *night-time restrictions to HGVs*)

After controlling for distance to the road and parish:

Group	Give higher priority to...
Women	<ul style="list-style-type: none">• peak restrictions to LGVs and HGVs• weekend restrictions to HGVs• noise reduction measures for properties• safety measures for private accesses to properties• air quality standards
Older (age>65)	<ul style="list-style-type: none">• quick construction works• parking restrictions• enforcement of speed limits
With children	<ul style="list-style-type: none">• all measures
In full-time employment	<ul style="list-style-type: none">• weekend restrictions to LGVs and HGVs
High income	<ul style="list-style-type: none">• Maintenance of air pollution standards

Depths: mitigation measures

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Alternative routes

- Relief road (“D2”)
- Transport by rail and sea

Mitigation along proposed roads

- Most mitigation measures are not feasible due to nature of roads (e.g. “too narrow”)
- Diverging views on restricted hours and speed limits

Depths: mitigation measures

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"If [no relief road] this place is almost unliveable in. We live with that road at the moment and it's quite a busy little road but it's not Hyde Park Corner., it's okay, I get used to it, I filter out the noise, it doesn't bother me but I can't filter 600 lorry trips."

Middleton

"[would restricted hours for construction traffic be helpful?] Yes, definitely. Mind you, the only trouble with that is, if they can't come through at a certain time, there's no other way round... But then I'd rather, I guess... – during the day – than obviously at night when you're trying to sleep."

Yoxford

"One of the things that I would say that would be beneficial as an immediate thing on this piece of road is some speed cameras... because the traffic now comes through here significantly faster."

Theberton

"If you can get construction traffic away from peak time traffic, it can only be a good thing. I think that may be an option to think of, because people who are using that during the day, it's not gonna impact if they're coming in after 9 o'clock at night until, say, 6 in the morning."

Yoxford

Summary

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- ❑ Most people preferred longer construction works, with lower traffic flows, rather than quicker works with higher flows
- ❑ The majority of participants prioritised restrictions to HGV traffic at night-time or during weekends
- ❑ Participants living near the road and in Theberton had a stronger preference for weekend restrictions than for night-time restrictions
- ❑ Other measures prioritised were the provision of less onsite parking, enforcement of speed limits, and safety measures for pedestrians/cyclists
- ❑ Preferences varied with gender, age, household type, employment status, and income

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Discussion

Summary of findings

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- ❑ Local residents were concerned about the increase in traffic volume, speed, and proportion of HGVs
- ❑ The most important perceived impacts of traffic increases were noise, vibration, accident risk, and extra time added to car/bus journeys
- ❑ The most preferred mitigation measures were restrictions to HGV traffic at night-time or during weekends
- ❑ Other measures prioritised included the provision of less onsite parking, enforcement of speed limits, and safety measures for pedestrians/cyclists
- ❑ The perceived impacts and preferred mitigation measures depended on residence location (parish and distance to the road) and on personal factors

Appendices

Phase I: initial consultation survey

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- ❑ 267 participants took part in the initial consultation survey
- ❑ Of these, 122 were completed face-to-face and 145 online
- ❑ 257 respondents were domestic residents and 22 were businesses/farms (allowed to respond in both capacities)
- ❑ **Sample characteristics**
 - 36% in Yoxford, 34% in Theberton (or Eastbridge) and 28% in Middleton
 - 44% of participants lived within one minute (or within 100 metres if time not stated) of B1122/A12/A1120
 - 55% female and 45% male
 - 12% aged <44, 20% aged 45-54, 24% aged 55-64, 35% aged 65-74, 10% aged 75+

Phase II: depth case studies

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- ❑ 20 interviews with a subsample of those who took part in the Initial consultation survey
- ❑ Of these 15 were conducted face-to-face and 5 over the phone
- ❑ 18 residents and 2 businesses
- ❑ **Sample characteristics**
 - 7 in Yoxford, 7 in Theberton, 6 in Middleton
 - 16 near alignment
 - 8 retired, 5 working full-time, 3 working part-time, 2 not working, 1 part-time student, 1 other (self-employed)
 - 4 aged <44, 4 aged 45-54, 3 aged 55-64, 6 aged 65-74, 3 aged 75+