

Health Impact Assessment of the South Devon Link Road

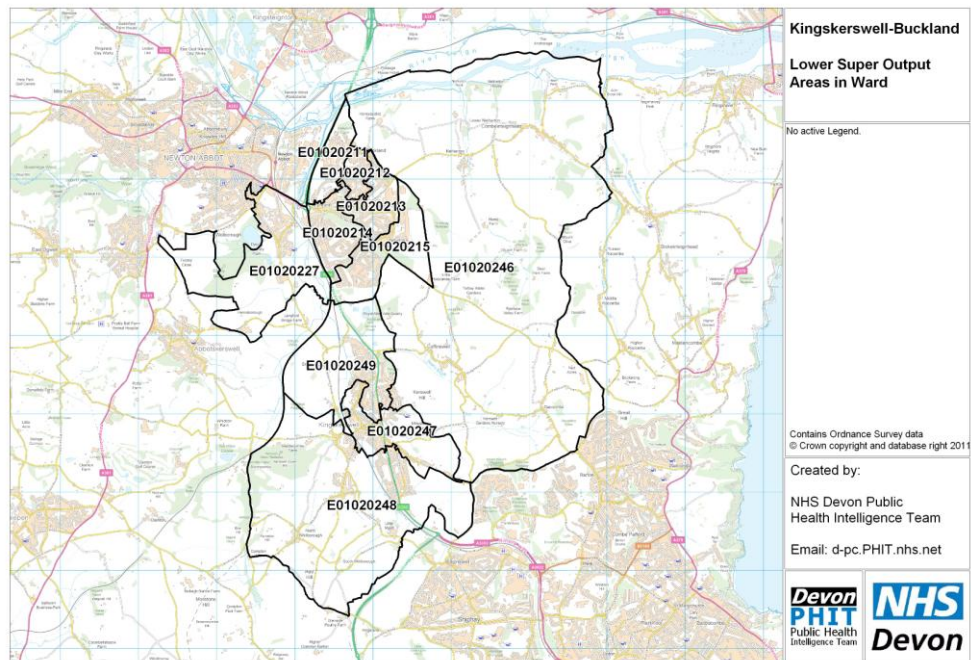
1. Introduction

- 1.1 The aim of the study was to examine the potential health and well-being impacts of the South Devon link road. It is a rapid health impact assessment (HIA) based on documentary evidence including wider evidence regarding the health and well-being of the local population and contributions from the steering group.
- 1.2 Transport is an essential activity, connecting people to shops, employment, healthcare services, family, community and recreation. Transport policies that prevent injury and improve health will have cost savings for the National Health Service (NHS) in the medium to long term (BMA 2009)
- 1.3 Transport is often cited as an important determinant of health and health inequalities and as such transport policies and interventions should be assessed for their potential to impact positively or negatively on health.
- 1.4 Transport and its links to health and health inequalities suggest that it is important to assess both the direct and unintended indirect health and related impacts of transport initiatives and policies. Health Impact Assessment provides a framework to do this.

2. Scope

- 2.1 The HIA addressed the health impacts on the local population but did not address the health impacts of national transport policy regarding road schemes or global health impacts relating to road and car use. The health impacts relating to wider economy have not been included and are incorporated in Devon County Councils proof of evidence as part of the public enquiry. Figure 1 illustrates the geographical boundary for the assessment of impacts.
- 2.2 The proposal is to build a road bypass (the South Devon link road) to alleviate the traffic pressures on the A380 and enhance the local economy of Torbay and the surrounding area. Appendix 1 provides an aerial view of the proposal.

Figure 1 Geographical scope of the HIA with lower super output areas (LSOA)



3. Process

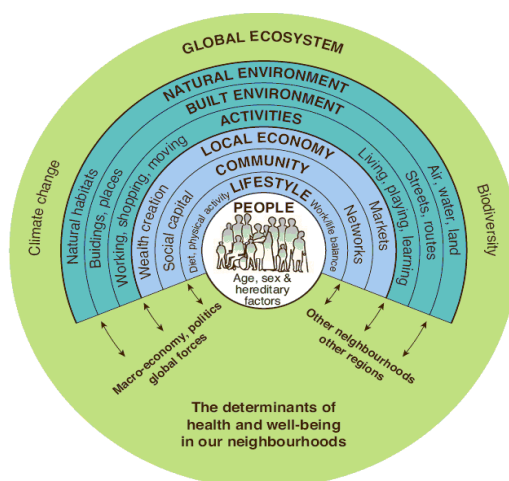
- 3.1 Health Impact Assessment is an evidence-based process that aims to predict the positive and negative impacts of a strategy, proposal or development on the health of a population. The HIA process provides an opportunity to promote sustainable communities, by ensuring new strategies and developments are considered in the context of their contribution to the health and well being of the population.
- 3.2 The geographical boundary for the HIA initially included four lower layer super output areas (LSOA) including Kingkerswell North, South and Central and East of Newton Abbot but this was extended following advice from the steering group to include the four Buckland and Milber LSOA and Newton Abbot; Park Road as these areas are also impacted locally by current traffic arrangements and the new proposal.
- 3.3 The HIA approach was consistent with that adopted for the Devon and Torbay Transport Plan 2011-2026 but using a spectrum approach rather than a numbered scale to evaluate the impacts. (Devon County Council 2011) During development of local transport plans there is a requirement to limit or mitigate adverse effects and maximise the positive contribution they make to health this approach has been taken to assess the scheme within the context of the Local Transport Plan 3.

3.4 The steering group consisted of:

- Tina Henry - Head of Health Improvement, NHS Devon
- Neil Blaney – Principal Planner, Teignbridge District Council
- Peter Walsh - Principal Air Quality Scientist, Parsons Brinkerhoff
- Lorraine Montgomery - Service Manager Green Spaces and Active Leisure, Teignbridge District Council
- Simon Chant - Head of Public Health Intelligence, NHS Devon
- David Eaton - Environmental Protection Manager, Teignbridge District Council
- Patricia Hartley – Resident and Parish Councilor, Kingkerswell

3.5 Methodology – The criteria for assessment in the HIA were agreed by the steering group, evidence gathered for baseline assessment which was tested by the steering group to form draft proposals and redrafted to the final report. Consideration was given to the wider determinants of health and well-being in neighbourhoods. (Figure 2) The Spectrum Approach was used to assess the impacts which distinguish five different levels of success or failure, each associated with a colour: blue, green, yellow, orange and red. The views to create the value judgement were those of the steering group.

Figure 2. A Health Map. © Barton and Grant 2010 (based on a public health concept by Whitehead and Dahlgren.1991)



4. Findings

4.1 A number of potential health impacts were considered using a range of sources of information. The evidence sources are listed in Appendix 5. The HIA seeks to identify the potential positive or negative health impact but also expresses mitigation to lessen or enhance those impacts and provides recommendations for further consideration.

Air Quality

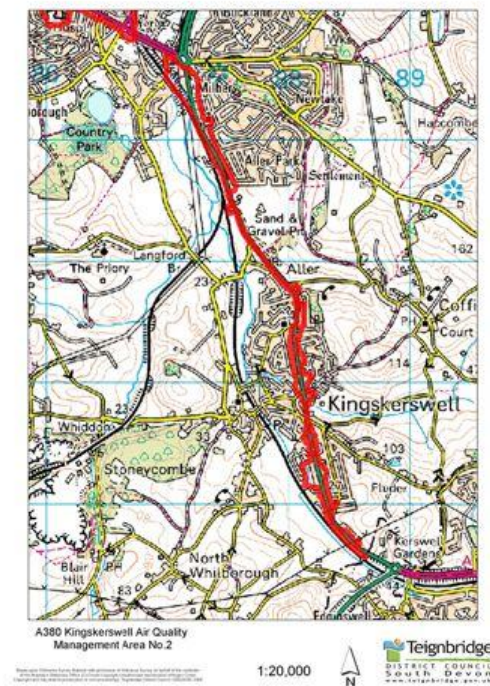
- 4.2 Teignbridge District Council declared an Air Quality Management Area (AQMA) as a result of monitored exceedance of the UK's objective for annual mean nitrogen dioxide the area encompasses the section of the A380 illustrated in figure 3. (WHO: DEFRA 2007). The Council concluded in response to the Air Quality Assessment that the scheme should result in significant air quality improvements along the existing A380 corridor and that displaced traffic does not result in unacceptable additional exposure to air quality elsewhere within the study area. (Teignbridge DC 2011)

The Department of Health Committee on the Medical Aspects of Air Pollution (COMEAP) accepts the World Health Organisation (WHO) recommendations and estimates that air pollution contributed to 12,000 premature deaths each year and to 14,000 hospital admissions for respiratory disease in being brought forward (DH 1998)

Road transport contributes 24% of particulate matter and 47% of nitrous oxides into the atmosphere and is the major contributor of carbon dioxide. (Department for Transport 2005)

Transport has also been demonstrated to contribute to health inequalities. Exposure to air pollution is worse in the areas of greatest disadvantage (Acheson 1998) later studies have reduced the strength of this argument as AQMA'S are declared in a variety of locations but this does not remove the compounded impact that air quality has on deprived neighbourhoods. (DEFRA 2006)

Figure 3 Kingkerswell Air Quality Management Area.



The Environmental Assessment (DCC) and Air Quality Assessment has stated that the proposal will result in an improvement to air quality in

Kingkerswell and where there is an increase (adjacent to the by-pass) this is not predicted to cause new, exceed or worsen air quality objectives. (DCC September 2009)

The health impact will therefore be localised but positive for the Kingkerswell population. Modelling used internationally and nationally to predict health impacts use whole population estimates, work regionally to predict health impacts through reduction in pollutants provides estimated reduction at a minimum of Primary Care Trust (PCT) level if this is applied to a very small local population the direct impact is difficult to model and influenced by so many other factors. However, the lower the levels of air pollution the better the respiratory (both long and short term) and cardiovascular health of the population will be.

The WHO Air quality guidelines represent the most widely agreed up-to-date assessment of health effects of air pollution, recommending targets for air quality at which the health risks are significantly reduced.

Evidence suggests that nitrogen dioxide can increase the sensitivity of asthmatics to allergens and therefore increase the likelihood of asthma attacks and longer term exposure to nitrogen dioxide can increase the likelihood of respiratory illness in children. The difficulty lies in the separation of the impact from this and other pollutants. (COMEAP 2009)

Recommendation: The proposal is likely to improve local air quality which will have a have a health benefit to the local population. To mitigate the risks associated with traffic remaining on the local roads or returning to the Kingkerswell A380 the integrated transport proposals for the area should encourage behaviour change.

Noise

- 4.3 The proposal has a net increase in the number of properties affected by noise. (DCC/SUM/9) The link between road transport noise and health are inconclusive (NHS Health Scotland 2007) Traffic noise levels do not generally result in hearing loss but can be enough to lead to serious annoyance, interference with speech and sleep disturbance. Stress has been suggested as a possible mechanism through which noise may affect mental and physical health.

In terms of well-being there is little doubt that a significant number of people are adversely affected by exposure to environmental noise. There is increasing evidence that environmental noise, from both aircraft and road traffic, is associated with raised blood pressure and with a small increase in the risk of coronary heart disease. Evidence that environmental noise damages mental health is, on the other hand, inconclusive. (Health Protection Agency 2010)

Health Scotland produced a guide Health impact Assessment of Transport Initiatives and undertook a strength of evidence review for road bypasses it concluded that there was an increased noise and sleep related disturbance for those living near bypasses.(2++) (Weightman 2005) With the proposed scheme there is a reduction in noise for those areas with displaced traffic.

The impact of the proposal will be positive in the parts of Kingkerswell closest to the A380.

Recommendation: The evidence presented has shown that some properties will be exposed to increased noise at levels with the potential to cause annoyance and disturbance. To mitigate noise impacts the reduction measures in the proposed scheme must minimise the noise impacts.

Road Traffic Accidents

- 4.4 A study in Ireland reviewed the health impacts of transport and concluded the impact of road traffic accidents was large and the certainty was high. The study highlighted the important impact of transport on health and that busy roads can divide communities and form barriers to social contact. (Institute of Public Health Ireland 2005)

Appendix 3 shows the road traffic accidents in the study area between January 2008 and December 2010 a large proportion of the accidents are caused during congestion and slow moving traffic. Most accidents were in cars with 7 cycles. 28 included young drivers (aged 17-24). The evidence submitted in the public enquiry shows a future reduction in road traffic accidents as a result of the scheme.

Department for Transport published rates of crashes by road types the highest rate is on urban A roads although the rate of serious injuries and fatalities is higher on rural B, C and unclassified roads. (Department for Transport 2005)

A strength of evidence review of bypasses demonstrated an overall decrease in accidents on old and new roads (2++) with a possibility of increased crashes where old and new roads intersect (3). (Thompson 2008)

The diversion of slow moving traffic from the A380 is likely to have a positive health impact on those road users. The potential to improve road safety allows communities to move safely across the community. There is research that bypass construction does not necessarily reduce overall crash frequencies it can merely shift from the road being bypassed, to other roads. (Thompson 2008, Wafa et al 2011) To mitigate such impacts measures must be made to increase safety on the by-passed roads and others.

Recommendation: The proposal has the potential for a net reduction in road traffic accidents as long as mitigation is in place to prevent potential shifts to other roads and the safety of the intersect between the old and new road is considered.

Active Travel

- 4.5 Physical activity not only contributes to well-being, it is essential for good health (DOH 2004) Increasing physical activity levels in the population will help prevent or manage over 20 conditions or diseases.

Promoting and creating built or natural environments that encourage and support physical activity recommends involvement of local and experts at all stages of development to ensure the potential for physical activity is

maximised and to plan a network of routes for walking, cycling and using other modes of transport involving physical activity and ensure promotion of accessibility to open spaces. (NICE 2008)

Investment in infrastructure which enables increased activity levels amongst local communities through cycling and walking is likely to provide low cost, high-value options providing benefits for our individual health, the NHS in terms of cost savings, and for transport as a whole. (GOSW 2010)

The Local Transport Plan 3 (DCC 2011) incorporates a number of priorities including working with communities to provide safe, sustainable and low carbon choices which includes making cycling and walking realistic choices and making bus and rail travel convenient and reliable and car travel more efficient. Also the plan proposes to make Devon the 'Place to be naturally active.' This links with Teignbridge Districts Councils proposed strategy 'Heart of Teignbridge' Green Infrastructure Strategy which seeks to provide interconnecting routes to enable people to be more active. (Teignbridge District Council 2011)

More locally the Kingkerswell Village Plan makes references to resident wishes to access cycle and walking routes and 75.2% of respondents to the consultation said they would use a route which would enable them to walk/cycle between Torquay and Newton Abbot. The proposal needs to enhance the opportunities to access active methods of transport. (Kingkerswell Village Plan)

Recommendations: The proposal is to provide a road which facilitates car use to mitigate against this the enhancements to local public transport and cycle routes are essential to increase active travel. The opportunity to further develop the cycling link between Torbay and Newton Abbot provide an opportunity to promote active travel in line with LTP3.

Healthy Lifestyles

- 4.6 The synthetic estimates of health-related behaviours 2003-05 (Source: ONS 2008) provides obesity estimates and the Buckland Milber area excluding Sandringham Road has an estimated 27.3% obesity compared to 23.7% in the Kingkerswell ward. National Child Measurement data from 2007-08-2009-10 shows that 6.86% of reception children are obese compared to 8.69% in the wider Buckland wards and 12.04 in the most deprived ward. At year 6 the rates are 15.72, 19.87 and 18.25 respectively.

Physical activity is addressed in active travel but is an essential component of a healthy lifestyle.

Smoking rates are highest in Buckland and Milber and lowest in Kingkerswell. Fruit and vegetable consumption is highest in Kingkerswell and binge drinking highest in Buckland.

Emotional health and well-being is important for health and New Horizons: A Shared Vision for Mental Health (Department of Health 2010a) hi-lights the importance of:

- integrating physical and mental health and wellbeing

- developing sustainable, connected communities

A community which is well connected, sustainable and active will have a stronger emotional resilience.

Recommendation: The proposal must enhance opportunities for physical activity, access to open spaces, healthy foods and leave a well connected community. Access to the Downs and future open space developments should be facilitated and not restricted by the proposal.

Accessibility

- 4.7 The current traffic congestion restricts travel and prevents efficient public transport routes and sustainable transport methods. The existing road restricts access to Torbay and the surrounding areas.

The proposed scheme only provides access to the link road at either end of the scheme without slip roads therefore the local traffic will remain on the A380. The reduced traffic in Kingkerswell itself will make local travel easier and could increase local car use. The scheme needs to enhance use of public transport and sustainable travel.

Recommendation: The proposal should enhance accessibility to Torbay for the wider population and local travel will be easier. To enhance health outcomes the enhancement should promote local sustainable travel choices.

Local Economy

- 4.8 The proposal has the potential to reduce journey time, and reliability of the public transport system. The local businesses could be impacted in two ways through return to a 'village' atmosphere with the potential to encourage visitors and and more local trade with improved local access to local businesses versus the loss of passing trade.

Recommendation: The proposal has the potential to impact on the local economy in a positive and negative way so consideration should be made by policy makers to enhance the opportunities for local businesses.

Community

- 4.9 Kingkerswell is a community divided by the A380 which is a busy congested road. The community is well served by a number of community buildings on both sides of the road. The school is on the north side and playing fields to the south of the road. The proposal has the potential to promote social inclusion, connectivity and access to social spaces.

Studies have demonstrated the links between strong social networks and health. Busy roads may disrupt these networks and sever communities.

A review of evidence of transport and health impacts suggested that community severance is decreased in an area being by-passed (2++). This could have a positive impact on health.

Creating living streets (designed for community use), where cars have access at slow speeds enhances community networking can have a beneficial effect on road safety, activity levels and health inequalities. (HDA 2005)

Transport can exacerbate or reduce social exclusion assisting with access to work, learning, access to health appointments and food shopping.

The shifting of traffic to the bypass could facilitate growth in the village along the existing route as there will be easier access to the road but this will not be possible for areas around the link road as there is no access onto it and traffic would have to rely on the remaining sub-standard roads.

The proposal has the potential to reduce perceived accessibility and connectivity for a small area of Kingkerswell South which will be divided from the community by the road albeit accessed over a bridge.

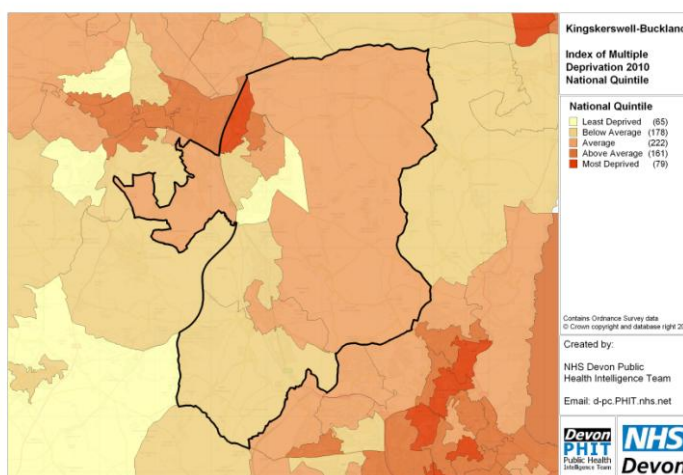
Recommendation: The proposal provides an opportunity to enhance a local community if the development of the Kingkerswell village is enhanced and any potential negative impacts for access from Buckland and Milber are addressed.

Health Inequalities

- 4.10 Fair Society, Healthy Lives states the importance of creating and developing healthy and sustainable places and communities by fully integrating the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality and improving active travel across the social gradient. (Marmot Review 2010)

Buckland and Milber: Sandringham road area (E01020212) is in the most deprived quintile nationally, the remaining area of the assessment area are less deprived and are at or below the national average. (Figure 4)

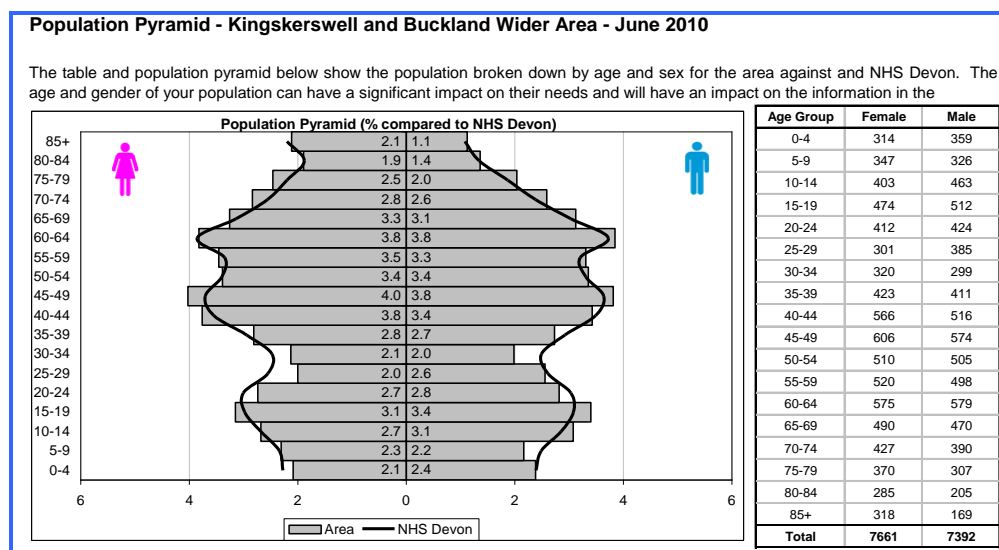
Figure 4 Indices of Multiple Deprivation 2010



The age profiles by LSOA show variation across the LSOA areas. Kingkerswell has a wider 40-79 age range than the rest of Devon but Kingkerswell central has a higher 15-24 age range with Kingkerswell South North and Rural having a higher 60 plus population. The most deprived ward

has a skewed younger population with a high proportion of 0-4 year olds. The less deprived areas have a larger older population. (Figure 5)

Figure 5 Population pyramid for the area



The mosaic data for the communities of interest demonstrate that the local population has a mix of residents with strong local routes, middle income families and successful professionals. Buckland also includes a large proportion of social housing. (Appendix 4)

Health indicators were selected from those impacted by road traffic and activity levels as an indication of the health of the population. The area has a significantly lower emergency admission rate for circulatory diseases than Devon as a whole. Emergency hospital admissions are significantly higher than the rest of Devon in all but Kingkerswell rural and Shaldon road and Laburnham road areas of Buckland and Milber.

There are significantly higher emergency admissions for respiratory conditions in the more deprived areas of Buckland and the Newton Abbot Park road area but not along the A380 corridor. Asthma prevalence for Kingkerswell patients is significantly higher than Devon as a whole. The evidence of a population wide health impact is not clear. However, asthma prevalence is associated with air pollution levels and living in high traffic density areas (WHO 2005) and poor air quality will impact on the health of vulnerable individuals.

Recommendation: The proposed scheme must enhance positive health impacts through ensuring better air quality is achieved and providing safer travel routes and promoting active travel whilst mitigating potentially negative impacts such as noise and accessibility for more deprived communities.

5. Summary of Recommendations:

- 5.1 To improve air quality the proposal needs to enhance sustainable travel in an integrated way.
- 5.2 The net noise impact cannot be avoided and the proposal will need to mitigate the impact and enhance health impacts in other aspects.
- 5.3 Road traffic accidents will need to be closely monitored to ensure the anticipated improvements are realised.
- 5.4 The proposal should use the development opportunity to enhance active travel.
- 5.5 The proposal should use the development opportunity to facilitate healthy lifestyles.
- 5.6 The local economy should also be enhanced through the proposal.
- 5.7 The proposal should ensure the opportunity to realise improvements to the local community of Kingkerswell.
- 5.8 The proposal must consider the health impacts on the most vulnerable communities and groups.

6. Conclusions

- 6.1 Assessment of the health impacts of transport interventions is characterised by much uncertainty, competing values, and differential or conflicting impacts for different population groups at a local or wider level. Reducing traffic volume on roads has the potential to affect road safety, air quality and physical activity levels.
- 6.2 Injuries and deaths caused by motor-vehicles are indisputable and already closely monitored with many effective interventions in place to minimise this harm. The strength of evidence about other indirect health related impacts varies according to the pathways concerned, from strong quantifiable evidence of air pollution effects, to much weaker evidence on the health effects of transport noise and community severance. This leads to considerable uncertainty in assessing the overall benefits and harms of transport interventions. (Thompson 2008)
- 6.3 The purpose of the HIA is to identify areas where the positive health impacts can be enhanced and negative impacts mitigated it is recommended that the outcome of the HIA is used to inform the process for a more detailed HIA post decision to ensure the transport developments have an overall positive impact on the health and well-being of the local (and wider) population.

7. Limitations

- 7.1 The steering group defined a geographical boundary to limit the scope of the assessment it does not assess the impact of climate change.
- 7.2 The HIA is rapid and is not an Environmental or Strategic Environmental Assessment.
- 7.3 The timescale was short and a full HIA should be undertaken and used to monitor future health impacts post decision.
- 7.4 The HIA does not seek to conclude whether the scheme has an overall positive or negative health impact.
- 7.5 The HIA only assesses the impact on the local economy within the geographical scope of the HIA.
- 7.6 The HIA did not consider the health impacts during the construction phase.

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Himp:SOUTH locality/planning and HIA/Kingkerswell bypass/HIA South Devon link road

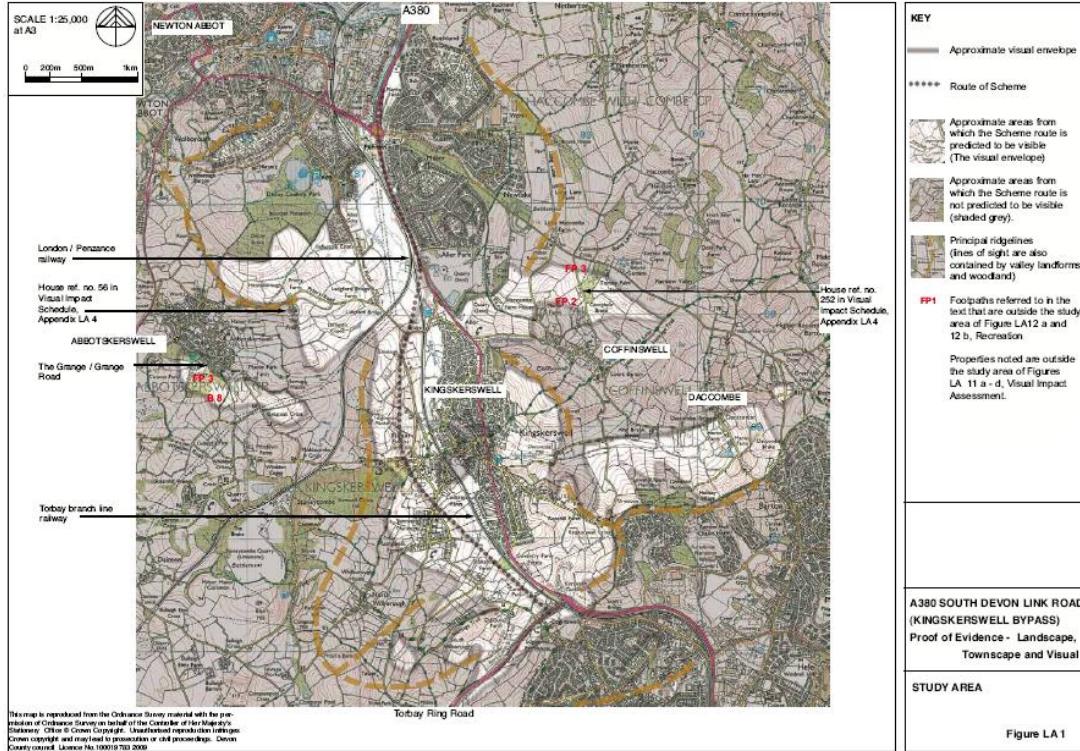
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APPENDIX 1

ARIAL PHOTO TO ILLUSTRATE SCHEME








Source: Proof of Evidence: Landscape, Townscape and Visual Volume 4 Appendices 2 Figure LA 1

APPENDIX 2 SOUTH DEVON LINK ROAD HIA

1. What type and how significant an impact on health does the proposal have?	Spectrum Appraisal	Comments (inc. any need for further info)	Mitigating Measures (inc. any need for further info)
Local Air Quality		Net reduction in exposure. No properties will breach air quality standards if the proposal is undertaken	Future traffic growth on local roads/lack of shift in behaviour to new road. Impact of poorer air quality in some areas but not breaching AQ standards. Concern regarding local housing growth, more traffic and the impact on air quality. AQMA action plan review if scheme does not go ahead Speed restrictions on A380 to traffic calm post scheme.
Noise		Appraisal summary. Traffic diverted away from roads within more built-up areas to a dual carriageway bypass passing through a more rural environment. 1051 annoyed without/1233 annoyed with scheme.	Consider construction phase noise (and dust) requirement for HIA Noise impact mitigation measures essential as proposed in technical documents
Road Traffic Accidents		From 1 st January 2008- 31 st December 2010 there were 127 collisions 76 involving cars, 21 motorcycles, 7 cycles, 2 taxis, 4 buses/coaches, 3 other motors, 1 agricultural and 4 HGV other. 3 were fatal, 13 serious and 111 slight. 28 involved young drivers (17-24) one on a cycle. The majority of reports were due to queuing/slow traffic. Highest number in Kingkerswell North (43)	Requires a shift in use of the road or the risk remains the scheme design must enhance this through access to the new road and management of future A380 traffic Overall reduction in road traffic accidents from the proposal
Active Travel		Access to open spaces (the Downs) needs emphasis – Improvements to cycle way enhanced. Access to and improvements to playing field. School journey improved	Benefit for public transport use, promoting walking to public transport routes rather than car use. Increased cycling through road design and development of future cycling routes
Healthy lifestyles		Active lifestyles if community use changes, potential of reduction in obesity. Allotment use remains	Evidence of change in behaviour ability of a bypass to achieve behaviour change
Cycling		Enhanced cycle routes through traffic calming and development of the proposed cycling link between Torbay and Newton Abbot	WHO HEAT calculations could be undertaken in detailed assessment
Walking		Footpath statements/agreements severance mitigation	WHO HEAT calculations could be undertaken in detailed assessment
Accessibility		Slip road access removed requiring local travel on A380 Improved public transport	Negative impact on accessibility for Buckland through flyover construction needs to be mitigated to connect the community with Newton Abbot through design
Local Economy		Small local businesses passing trade versus new 'village'	There is potential to enhance the local economy
Community		Lack of connectivity in the community as there is potential for 3 communities above/below A380 and below link road, opportunity for community to join if traffic shifts to link road, capacity to develop housing in Kingkerswell due to road. Community well served by public buildings (library, community centre, parish hall and others) access could be enhanced	Youth facilities highlighted as potential to improve local community access to te range of facilities available how can this be enhanced for young people
Health Inequalities		Highest deprivation Buckland (E01020211) deprivation lower in remaining areas but pockets will exist and inequalities in health status will exist	Benefit to Kingkerswell with a disbenefit to small rural populations & Penn Inn Buckland this could be mitigated through design enhancement to promote

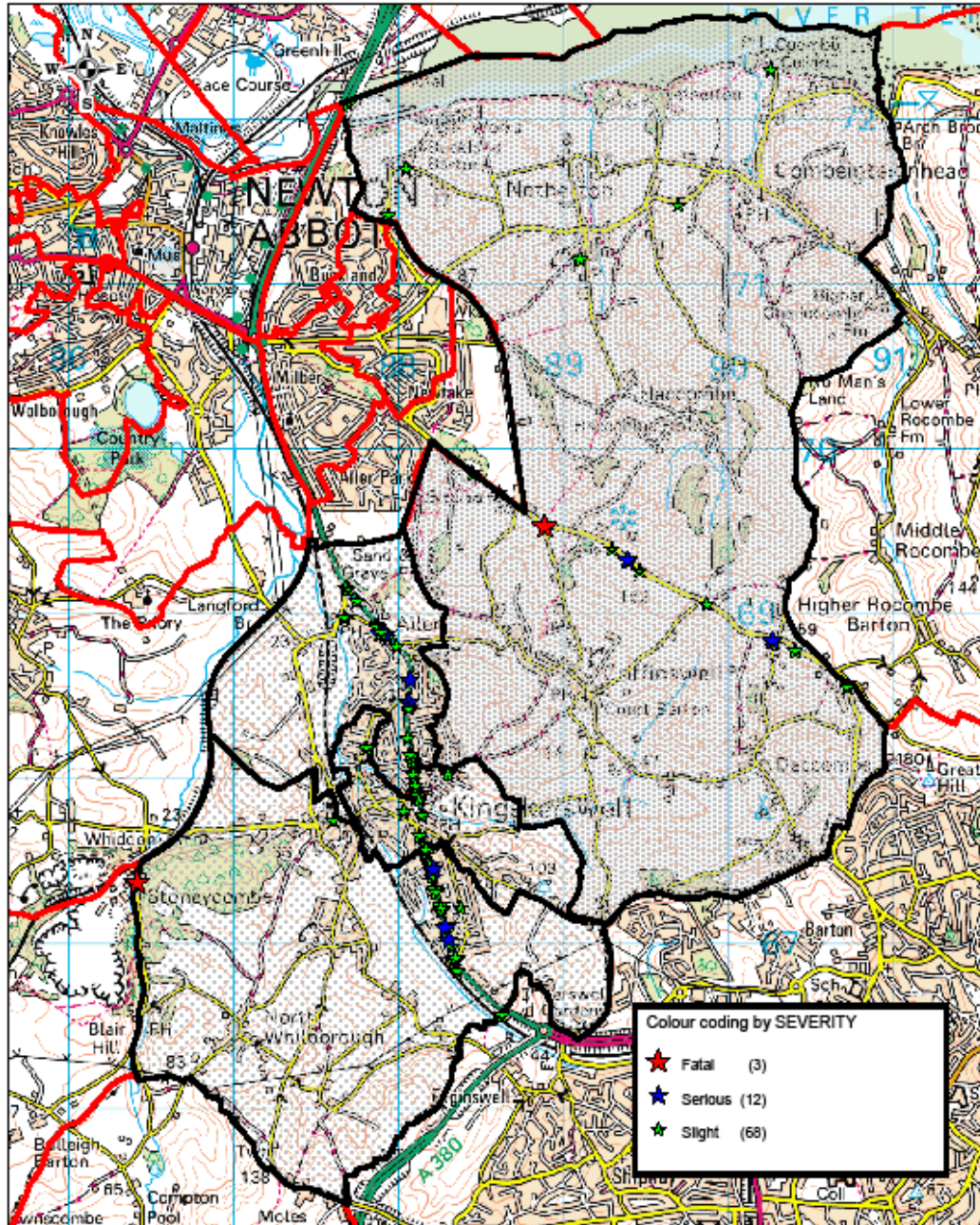
			accessibility and active travel.
Other (1) State: Emergency admissions		Emergency hospital admissions are significantly higher than the rest of Devon in all but Kingkerswell rural and Shaldon Road and Laburnham Road areas.	No clear evidence for reason
Other (1) State: Circulatory Diseases		Significantly lower emergency admission rates for circulatory diseases than Devon.	Population based information not significant but will impact on vulnerable individuals
Other (2) State: Obesity		Higher obesity rates in Buckland and Milber areas	Need to enhance opportunities for enhanced impacts
Other (3) State: Respiratory		Significantly higher emergency admissions for respiratory conditions in the more deprived areas of Buckland and the Newton Abbot Park Road area	Also linked to deprivation and smoking rates, less explanation for Newton Abbot area population wide effects not significant but will impact on vulnerable individuals
Other (4) Disease prevalence		The main Kingkerswell GP surgery has significantly higher disease prevalence for asthma, blood pressure, cancer, stroke and thyroid Residents from the Newton Abbot areas attend a number of practices so the same comparison cannot be made	Poor air quality will impact on individuals with asthma
2. How does the proposal influence the population?			
Children (Under 16's)		Improved access to school, potential for enhancement to Kingkerswell community	Severance in Buckland
Young people (16's -25's)		Potential to improve social environment of Kingkerswell	
Workers		Improved access to work	
Over 65's		Area attractive to older people large numbers of bungalow close to Torbay	
Mobility impaired		Easier access possible	
Others (1) deprived groups		Potential negative impact which can be mitigated	Design to enhance the local environment
Others (2) visitors		Improved access to the local environment and tourism	
3. Are existing inequalities in health reduced or widened?			
Devon Wide		Local economy evidence to improve work opportunities	
Torbay		There is a positive health impact on the economy of Torbay and the potential to reduce health inequalities in the Bay. This HIA did not focus on the Torbay population	The independent economic assessment has hi-lighted the impact on inequalities in Torbay through creation of new jobs and reduced benefit reliance
Newton Abbot / Teignbridge		Improved connectivity with Newton Abbot and Teignbridge	
Kingkerswell		Enhanced impacts if the new road results in reduced traffic and enhanced active travel	
Buckland and Milber		Concerns raised which require consideration	
Regional, national and global impacts	Not assessed		
4. What mitigation measures are required to improving the South Devon Link Roads impact on health?		Summary of recommendations	


Key for spectrum appraisal (© Barton and Grant 2006):

	EXCELLENT	The criterion is fully satisfied. A very well-designed proposal is backed with realistic action plan and partner backing as appropriate. Delivery is secure and exemplary.
	GOOD	The criterion is generally satisfied. Well thought out proposal with an action plan. Delivery is secure.
	NEGOTIABLE	The criterion is addressed and there is an acknowledgement of a delivery mechanism/action plan but success depends on further work and negotiation
	PROBLEMATICAL	The criterion is addressed but remains largely aspirational. It is not likely to be satisfactorily fulfilled without major reassessment
	UNACCEPTABLE	The criterion is not being addressed at all in the proposal

APPENDIX 3

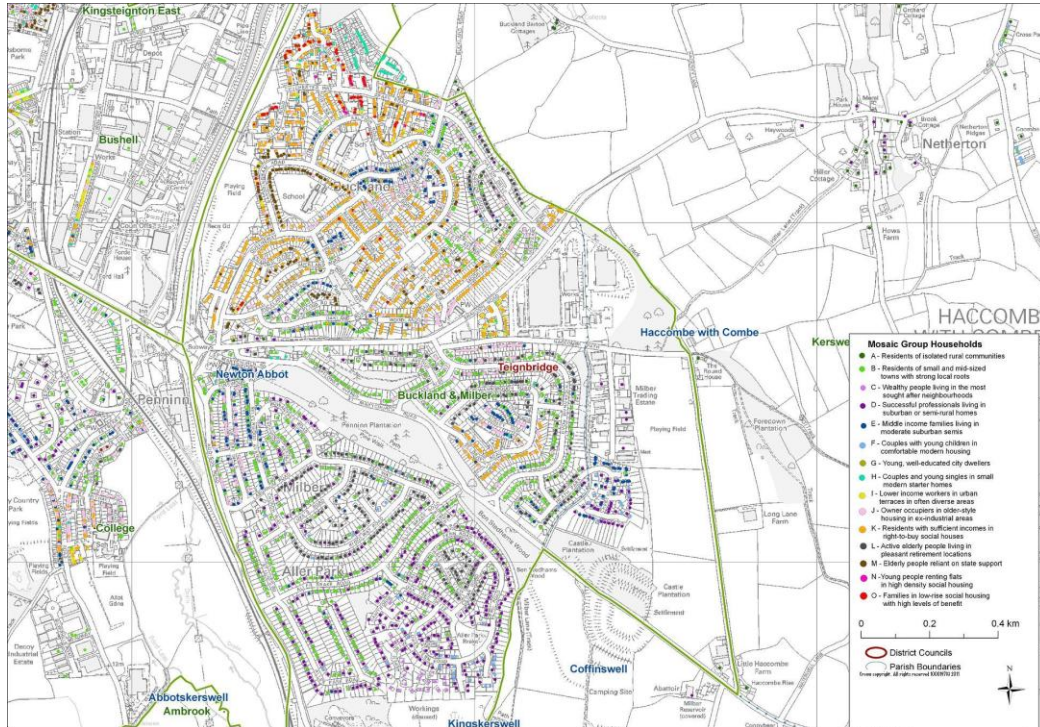
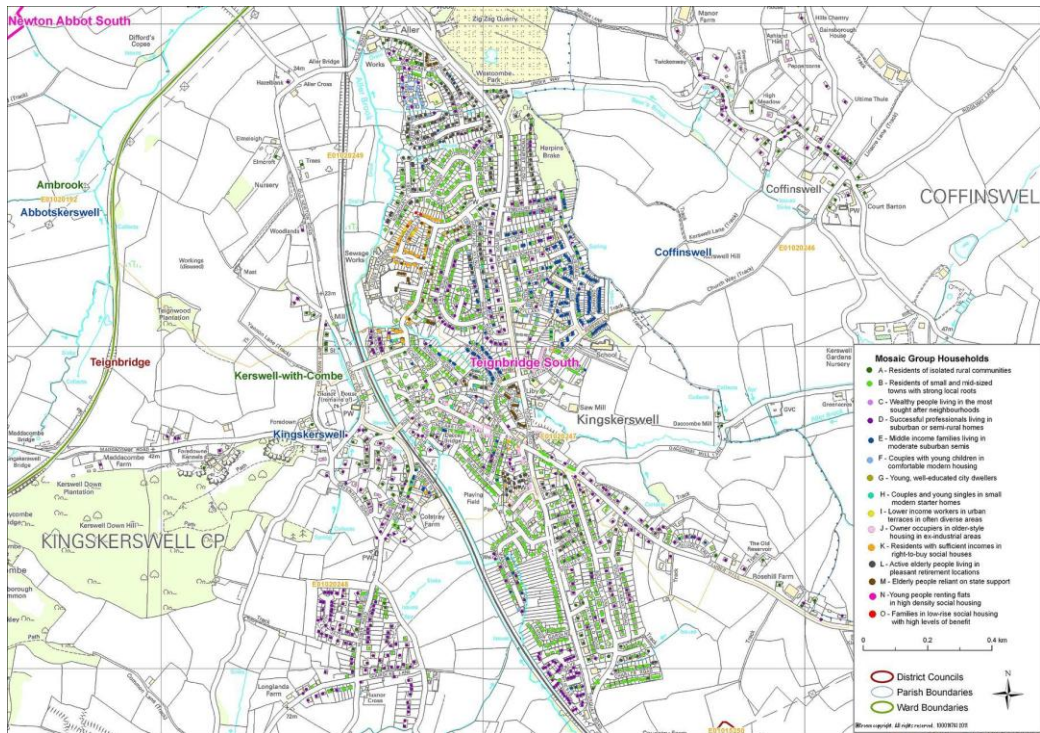
ROAD TRAFFIC ACCIDENTS



 <p>Devon County Council</p> <p><small>© Crown copyright. All rights reserved Devon County Council License No. 100016760 2011</small></p>	Injury Collisions - Kingskerswell LSOA's	SCALE	1 : 31492
	Selected Range of Accidents between dates 01/01/2008 and 31/12/2010	DATE	12/08/2011
		DRAWING No.	
		DRAWN BY	

APPENDIX 4

MOSAIC PROFILES OF LOCAL AREAS



APPENDIX 5

Sources of Evidence

- Devon County Council. Major Scheme Business Case. Appendix 4: (1) Appraisal Summary Table –Proposed Scheme
- DCC. Kingkerswell Bypass Air Quality Assessment. September 2009. Prepared by Parsons Brinkerhoff Ltd
- DCC/SUM/9 Proof of Evidence. Noise and Vibration. Volume 1: Summary. Noise reports
- Devon County Council. Mosaic Data
- Public Health Intelligence Team. Indices of Multiple deprivation, population pyramids, synthetic estimates of health-related behaviour, national child measurement programme data, hospital admission rates and GP practice profile for Kingkerswell and Ipplepen.
- Teignbridge District Council. (2009) Review of Kingskerswell AQA (PB September 2009 for DCC) including supporting data.(E-mail correspondence)

