

Warwickshire County Council

Bermuda Connection: Health Impact Assessment

An examination of the potential health impacts, both beneficial and adverse, that the proposed Getting West Nuneaton Moving: Bermuda Connection (2018) is likely to have on local residents

WCC Public Health

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1. Introduction

1.1 Context

1.1.1 In 2015 WCC Public Health produced an Health Impact Assessment (HIA) on the proposed Getting West Nuneaton Moving: Bermuda Connection (2015) highways scheme. The scheme has since been revised and the scope of the project has been reduced. WCC Public Health has produced an updated HIA based on the revised Getting West Nuneaton Moving: Bermuda Connection (2018) scheme. This HIA follows the same format as the 2015 report, which can be accessed [here](#).

1.2 Site description

1.2.1 The proposed scheme focuses on opening up the existing Bermuda Bridge to allow for two-way traffic to flow between West Nuneaton and Griff roundabout. The bridge is currently only accessible to pedestrians and cyclists.

1.2.2 The area surrounding the application site is mainly urban comprising residential, commercial and industrial development. The northern half of the scheme is dominated by residential development to the east and a mixture of commercial and residential development to the west of the scheme. To the west of St Georges Way are mainly commercial and industrial premises; to the east lies the railway line. Since the 2015 HIA was produced, the Bermuda Park Railway Station on St Georges Way has opened.

1.3 Purpose of Health Impact Assessment

1.3.1 Health Impact Assessment (HIA) is a tool used to systematically examine the effect that a development may have on population and individual health. The purpose of this HIA is to assess the potential health and wellbeing impacts (both positive and negative) that the proposed Getting West Nuneaton Moving: Bermuda Connection (2018) transport scheme is likely to have on local residents.

1.3.2 The 2015 HIA concluded that:

- The assessment has highlighted that there will be specific roads which will experience an increase in traffic volume, particularly at peak time. This may have an impact on the health and wellbeing of the residents of around 125 properties within Arbury ward. The main impacts will be in relation to increased numbers of traffic on the roads which could cause an increase in air and noise pollution and associated health conditions.
- Within Wembrook ward, there is expected to be a shift in road use, as volume reduces along the B4113, but increases along St. George's Way. This may alleviate congestion concerns, and could contribute towards improving the health outcomes within the ward, particularly if opportunities for active travel are supported.
- The scheme has the potential to contribute towards lessening health inequalities by alleviating traffic congestion issues, opening / enhancing movement and connections between localities and services, and strengthening opportunities for active travel

1.3.3 The following table highlights the recommendations made within the 2015 HIA and provides an update for the current relevance of these.

HIA (2015) Recommendation:	HIA (2018) Update:
We recommend that walking and cycling routes are enhanced between Hill Top and St George's way in order to promote active travel opportunities and improve health inequalities across Wembrook ward and Arbury ward.	To be considered within the HIA review.
We recommend that the current air quality is surveyed around those areas which are expected to see a noticeable increase in traffic flows (as shown in Figure 2). And this is used to better understand the potential impacts of the scheme.	To be considered with the HIA review.
We recommend that traffic management measures are considered for inclusion in the scheme to ensure that the additional HGVs which are expected to utilise Bermuda Rd and The Bridleway do not result in increased risk / perceived risk of traffic accidents	The updated traffic modelling shows that the number of HGVs accessing the road will remain the same.
We recommend that bicycle parking / lockups are integrated into the Bermuda Station development to encourage active travel.	Bermuda Station is now outside the scope of the scheme. Bicycle parking has since been installed at the station.
We recommend that in the event that the adverse impact arising from noise from the scheme is considered to be significant, then mitigation is put in place to ensure that noise impacts are within acceptable limits to ensure mental health and wellbeing of local residents is minimised.	To be considered within this HIA review.
We recommend that adequate lighting is provided along the shared pedestrian / cycle way route and around the new Bermuda Station to improve perceptions of safety and reduce the risk of crime.	Bermuda Station is now outside the scope of the scheme.

2. Policy Framework

2.1 National Policy

2.1.1 The National Planning Policy Framework (NPPF) set out the Government's planning policies for England and how these are expected to be applied. Paragraph 171 places a duty on the County Council and the Director of Public Health to provide advice and guidance on health and wellbeing matters:

“local planning authorities should work with public health leads and health organisations to understand and take account of the health status and needs of the local population (such as for sports, recreation and places of worship), including expected future changes, and any information about relevant barriers to improving health and wellbeing.”

2.1.2 Paragraph 69 of the NPPF states that planning policies and decisions should aim to achieve places which promote:

- Opportunities for meetings between members of the community who might not otherwise come into contact with each other, including through mixed-use developments, strong neighbourhood centres and active street frontages which bring together those who work, live and play in the vicinity;
- Safe and accessible environments where crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion; and
- Safe and accessible developments containing clear and legible pedestrian routes, and high quality public space, which encourage the active and continual use of public areas.

2.1.3 The Marmot reviewⁱ recommends 3 main policy actions to try to ensure that the built environment promotes health and reduces inequalities for all local populations.

1. Prioritise policies and interventions that both reduce health inequalities and mitigate climate change by:
 - a. Improving active travel;
 - b. Improving good quality open and green spaces;
 - c. Improving the quality of food in local areas; and
 - d. Improving the energy efficiency of housing.
2. Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality
3. Support locally developed and evidence-based community regeneration programmes that:
 - a. Remove barriers to community participation and action; and
 - b. Reduce social isolation.

2.2 Local Policy

2.2.1 Warwickshire County Council's Local Transport Plan (2011 to 2026) sets out the transport strategy and policies for the County and has six main objectives:

- To promote greater equality of opportunity for all citizens in order to promote a fairer, more inclusive society;

- To seek reliable and efficient transport networks which will help promote full employment and a strong, sustainable local and sub-regional economy;
- To reduce the impact of transport on people and the (built and natural) environment and improve the journey experience of transport users;
- To improve the safety, security and health of people by reducing the risk of death, injury or illness arising from transport and by promoting travel modes that are beneficial to health;
- To encourage integration of transport, both in terms of policy planning and the physical interchange of modes; and
- To reduce transport emissions of carbon dioxide and other greenhouse gases and address the need to adapt to climate change.

2.2.2 Warwickshire's Health and Wellbeing Board has prioritised the following areas in order to ensure that health and social care outcomes for Warwickshire residents are considered and improved by:

1. Promoting independence;
2. Community resilience; and
3. Integration and working together.

The latter priority is integral to success and the Health and Wellbeing Board in Warwickshire are committed to enhanced integration and effective joint working across Health, Social Care, Public Health and Community sectors, but also across other key organisations such as Environmental Health, Housing, Planning and Transport

3. Project Description

3.1 Project Aims & Objectives

3.1.1 The Getting West Nuneaton Moving: Bermuda Connection (2018) highway scheme is focused on creating a direct 1.3 mile two-way highway link between West Nuneaton and Griff Roundabout. The scheme consists of the following components, which can be identified on the map in figure 1.

- A. Capacity improvements to the Heath End Road / Tenlons Road Junction including enhancements to signalised pedestrian crossings;
- B. Double yellow line parking restrictions on Tenlons Road, Bermuda Road and The Bridleway;
- C. Refuge island (traffic calming) at the southern end of Bermuda Road acting as a road safety measure aimed at controlling vehicle speed;
- D. Uncontrolled shared pedestrian and cycle crossing on Bermuda Road to complement links to the Bermuda Village residential area;
- E. Improvement to the bus stop area on The Bridleway;
- F. Improvement to the bus stop area on The Bridleway;
- G. Refuge island (traffic calming) on The Bridleway acting as a road safety measure aimed at controlling vehicle speed;
- H. Improved pedestrian footway on The Bridleway;
- I. Improvements to Bermuda Bridge and connecting it to the adjoining highway on either side;

- J. Refuge islands (traffic calming) on northern end of St Georges Way acting as a road safety measure aimed at controlling vehicle speed;
- K. Shared pedestrian / cycle path running between St Georges Way – Bermuda Bridge – The Bridleway.

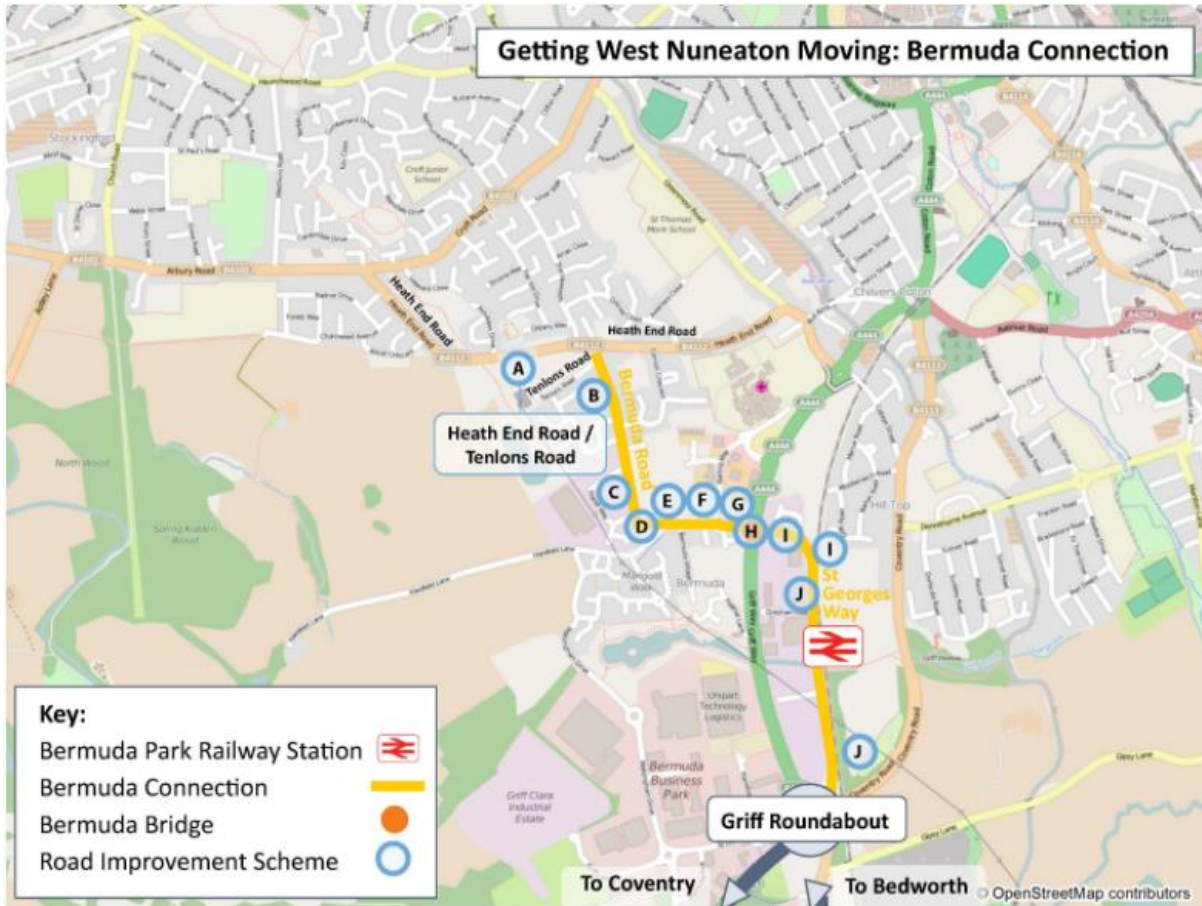


Figure 1: Map to show the highway schemes key improvement points

- 3.1.2 In making these improvements the scheme aims to deliver the following range of benefits for the local community in the wider west Nuneaton area:
- Contribute towards reducing journey times for local residents on a number of routes in the West Nuneaton area;
 - Contribute towards reducing congestion in parts of the town centre, thus improving links onto the A444 in Nuneaton for residents in other parts of the town;
 - Enhance accessibility to local businesses, amenities and residential areas, particularly in Bermuda and adjoining areas;
 - Support economic growth in Nuneaton by enhancing accessibility to existing and future local jobs;
 - Improve connectivity to Bermuda Park Rail Station, which will soon be served by two trains per hour to Coventry;
 - Provide an improved environment for cyclists and pedestrians to increase mode choice and accessibility;

- Drive forward further economic growth in Nuneaton, including potential employment and housing development along the new highway link route; and
- Complement the wider economic aspirations of the Coventry and Warwickshire sub region, e.g. Coventry and Warwickshire Local Enterprise Partnership (CWLEP) Strategic Economic Plan.

3.1.3 The primary change to the scheme since 2015 relates to the revision of the highway design standard applied for the scheme from Design Manual for Roads and Bridges (DMRB) highway standards to Manual for Streets II. Manual for Streets II is deemed more appropriate for 30mph urban roads, like those on the Bermuda link route. Making this change has reduced the amount of preliminary work needed, and has resulted in the following changes:

- A substantial reduction in the extent of earthworks and pavement improvements required as part of the scheme;
- The treatment and removal of hazardous contaminated land is no longer necessary as part of the scheme, e.g. the large earth bund situated on the extended Holland and Barratt land off The Bridleway will now remain unaffected;
- The attenuation pond off Bermuda Road will remain in situ and unaffected by the scheme; and
- The total area of land required to implement the scheme has substantially reduced.

3.1.4 The scheme is programmed for delivery in 2019/20 and work to progress the detailed design of the scheme is underway.

3.1.5 The proposed scheme should not be viewed in isolation as it forms part of the Programme of A444 Corridor Improvements, which will bring benefits to the wider community. The package of A444 Corridor Improvement Schemes has been developed to address both existing issues along the A444 and predicted impacts arising from Local Plan housing and employment growth within Nuneaton and Bedworth Borough.

4. Assessment

4.1 Health Profile

- 4.1.1 The proposed scheme is expected to impact both directly and indirectly on the residents of Nuneaton and Bedworth Borough and those travelling via the proposed schemes route.
- 4.1.2 For the purpose of this assessment the residential wards which the scheme is expected to directly impact have been looked at. These are Arbury ward to the west of the bridge, and Wembrook ward to the east (as shown in figure 2). Health profile data has been adapted from Public Health England's [Local Health](#) tool.
- 4.1.3 The 2016 Office for National Statistics (ONS) mid-year population estimates are the latest population figures available at ward level and were released in October 2017. They show that in 2016 the population of Arbury ward was 7,082 people whilst the population of Wembrook ward was 7,857 people.

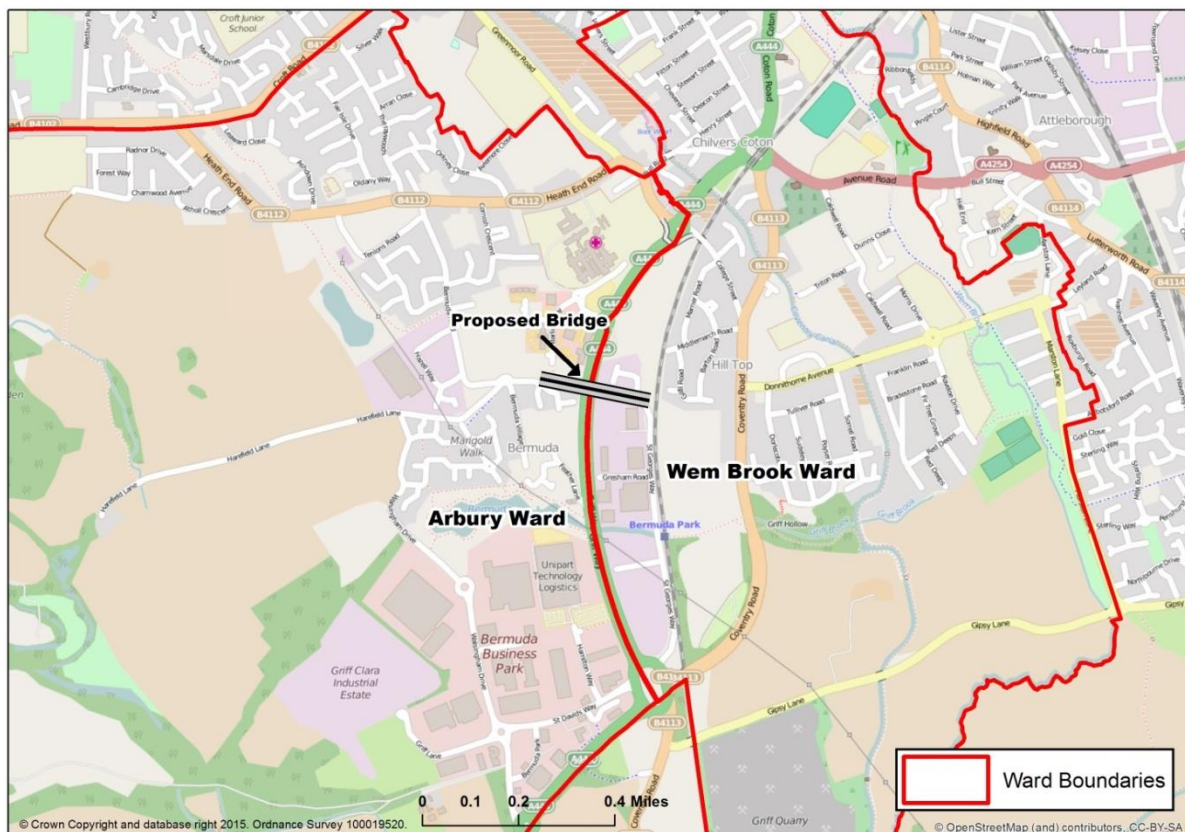


Figure 2: Arbury and Wembrook wards boundaries

- 4.1.4 Outcomes for a range of health and wellbeing indicators differ between the two neighbouring wards, suggesting there are inequalities in health. A key indicator used to demonstrate inequalities in health is life expectancy. Figure 3 shows that for Arbury ward average life expectancy is 78.6 years for males and 81.4 years for females, which is not statistically significantly different from borough and national averages (78.2 for males and 82.3 for females and 79.4 for males and 83.1 for females respectively). Whereas in Wembrook ward life expectancy is statistically significantly lower than the borough and national averages at 75.3 years for males and 81.2 years for females.

Local Health Profiles (Department of Health, 2017)

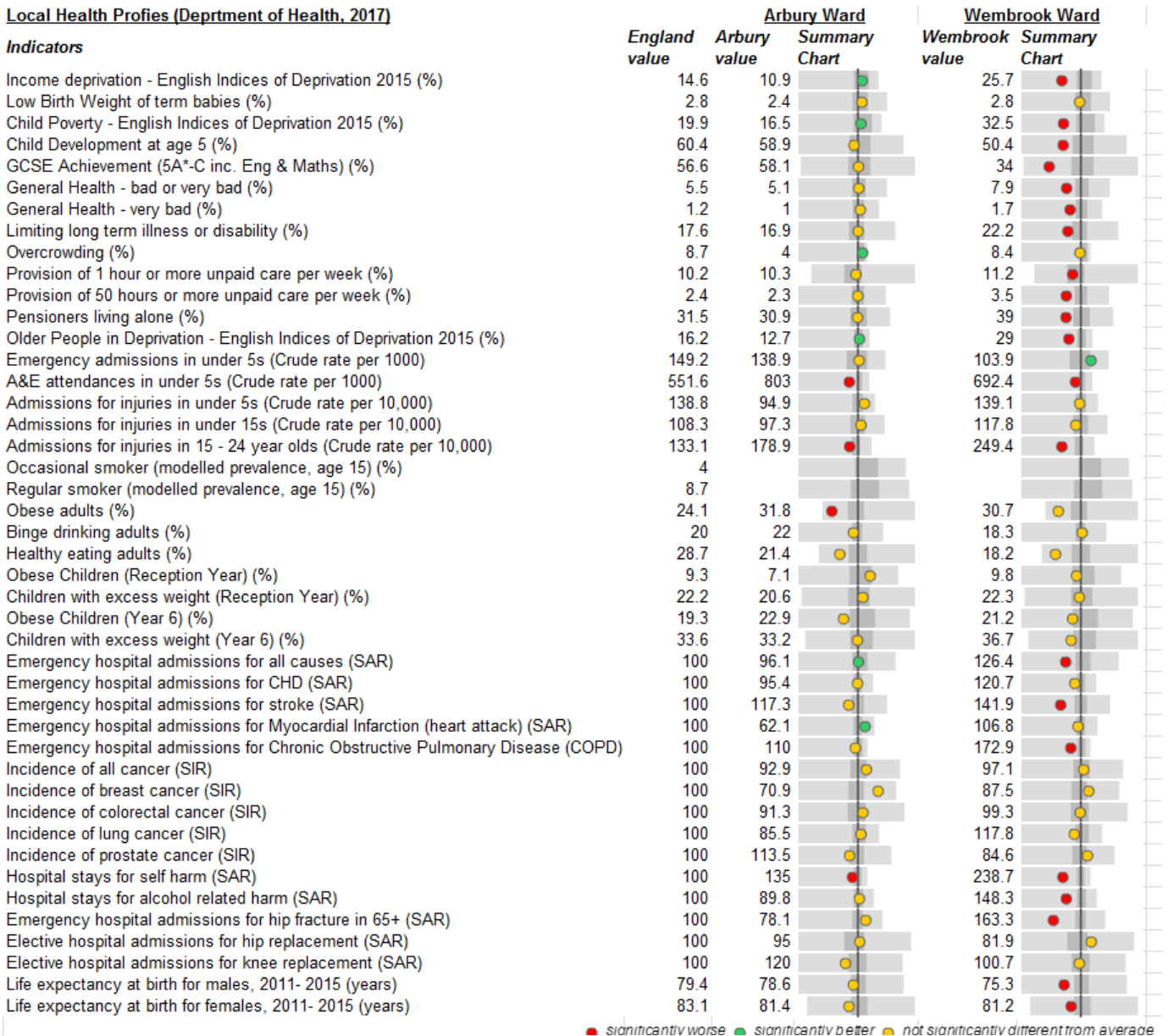


Figure 3: Health Profiles for Arbury and Wembrook Wards

4.1.5 For a number of deprivation indicators Arbury ward performs statistically significantly better than the averages for both the borough and nationally, whilst Wembrook ward performs statistically significantly worse, again highlighting the variation across the wards. For example, the proportion of the population living within income deprivation is 10.9% in Arbury ward compared with 25.7% for Wembrook Ward, 14.9% in the borough and 14.6% nationally. Similarly the rate of child poverty is statistically significantly lower at 16.5% for Arbury ward, compared with 32.5% for Wembrook Ward, 20.7% for the borough and 19.9% for the England average.

4.1.6 In terms of General Health the proportion of the population recorded as experiencing ‘very bad’ health in Arbury ward is 1.2%, which is not statistically significantly different to that of the national average of 1%. However in Wembrook ward the proportion of the population experiencing ‘very bad’ health is 1.7%, which is statistically significantly higher than the national average.

- 4.1.7 The proportion of obese adults in Arbury ward is 31.8%, which is statistically significantly higher than the national average of 24.1% and higher than the 30.1% average for Wembrook ward.
- 4.1.8 Chronic Obstructive Pulmonary Disease (COPD) is the name for a group of lung conditions that cause breathing difficulties.ⁱⁱ In Wembrook ward the proportion the rate of emergency hospital admissions for COPD is 172.9 which is higher than the 110 rate for admissions in Arbury ward and statistically significantly higher than the England average.
- 4.1.9 The ONS release official labour market statistics on an annual basis.ⁱⁱⁱ The Universal Credit claimant count is used to indicate the proportion of the population claiming out-of-work benefits. For Arbury ward the proportion this figure is 1.6% which is lower than the borough and national averages of 2.7% and 2.1% respectively. In contrast to this in Wembrook ward the proportion of residents claiming out-of-work benefits is 4.2%, which is higher than the borough and national averages.

4.2 Description of health effects

- 4.2.1 The wider determinants of health, or social determinants of health, are the conditions of daily living that influence health. They are the conditions that people are born, grow live, work and age in. Figure 4 shows the Dahlgren and Whitehead model of the wider determinants of health. These factors are generally interlinked and connected.

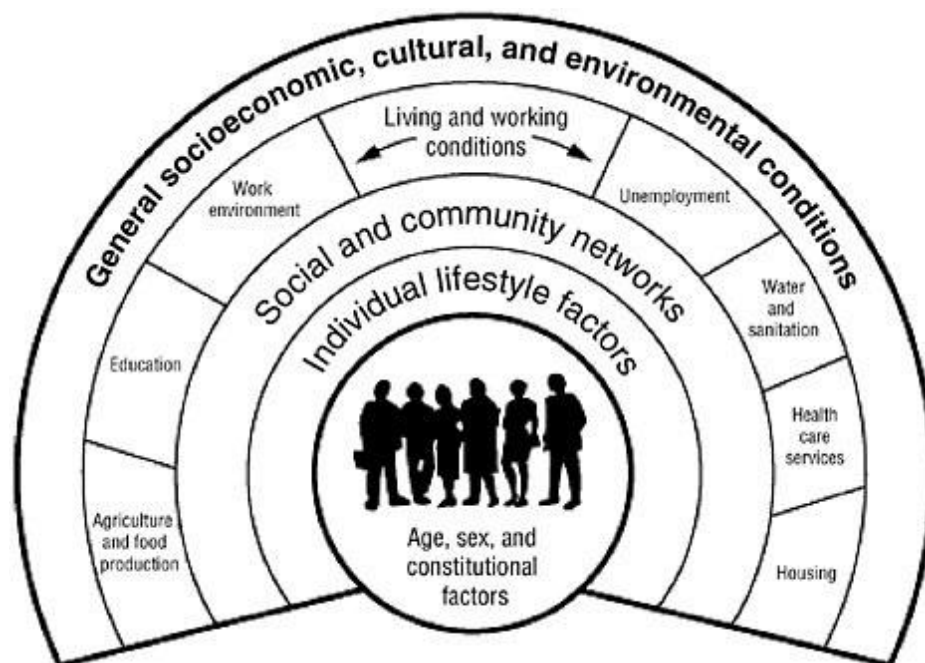


Figure 4: Dahlgren and Whitehead Model of the Wider Determinants of Health (1991)

- 4.2.2 The wider determinants of health (as outlined in the World Health Organisation's 'Healthy Cities' publication) provide a framework for assessing the potential positive

and negative health effects of the proposed Bermuda Connection scheme. They are:

- Transport
- Air pollution
- Road safety
- Neighbourhoods and facilities
- Housing and urban planning
- Green space
- Crime and fear of crime
- The urban environment and climate
- Educational outcomes
- Employment and income

Transport

4.2.3 As previously stated one of the main objectives of the Bermuda Connection is to improve flow rates and decrease congestion levels. Figure 5 shows the projected change in flow rates for peak traffic times both in the morning (am) and in the evening (pm).

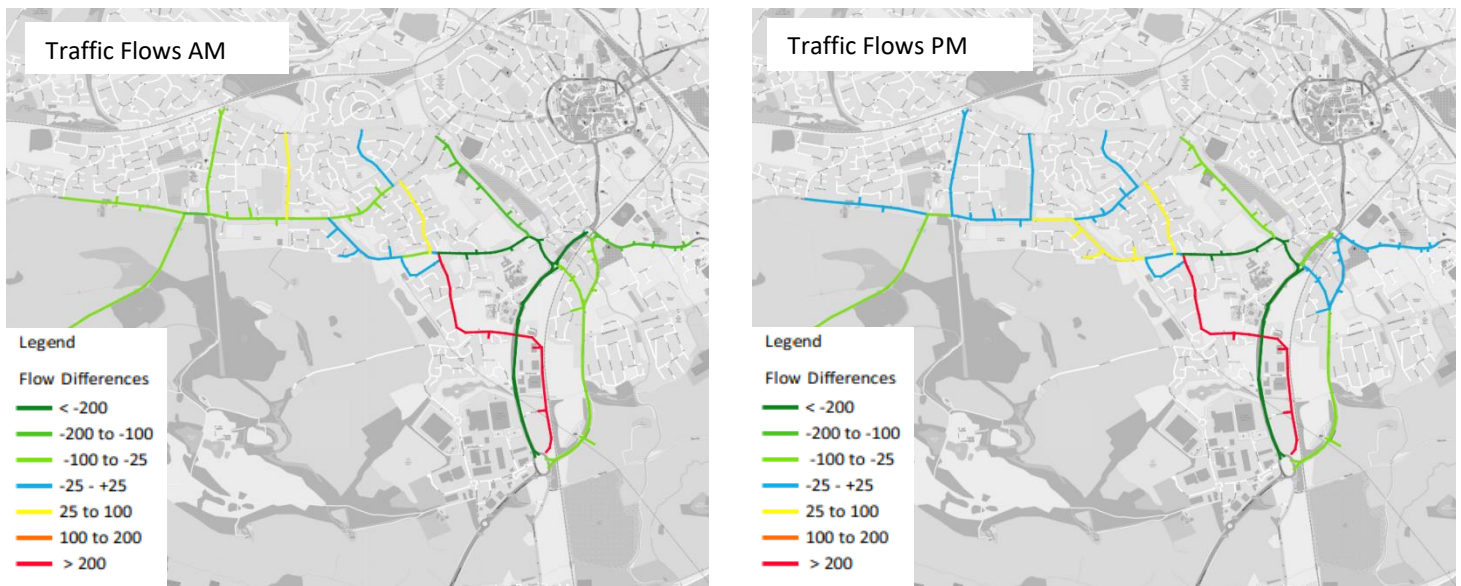


Figure 5: Change in traffic flows for am and pm

4.2.4 The modelled flow rates highlight that the main increase in traffic will be along St George's Way and Bermuda Rd, where the expected increase is estimated to be over 200 vehicles. This large increase is due to the fact that the road is currently only accessible to cyclists and pedestrians. The maps in figure 5 also highlight that a large reduction in traffic (-200 vehicles) is expected at peak times along Coventry Road and Greenmoor Road.

4.2.5 A change to traffic volume has the potential to impact on the health of local residents. For those residents of Wembrook ward the reduction in traffic flows is likely to lead to a reduction in air and noise pollution, which could positively impact on health and wellbeing. People living in more deprived areas tend to have greater

exposure to these conditions and are at a greater risk of developing associated health problems i.e. respiratory conditions such as asthma.^{iv} As previously stated, levels of deprivation in Wembrook ward are some of the highest in the borough and county. A reduction in traffic volume could impact positively on health by potentially lowering the risk of developing respiratory conditions harmful to human health.

- 4.2.6 Conversely, for those residents of Arbury ward where traffic flows are likely to increase, an increase in noise and air pollution is also likely. Unless this is appropriately mitigated, an increase in noise and air pollution has the potential to impact negatively on the health and wellbeing of residents in the lesser deprived ward.
- 4.2.7 As well as alleviating traffic congestion along St George's Way the scheme will also provide a new shared cycleway and footpath along this road which will link to The Bridleway and Bermuda Road. Inadequate cycle routes may be a barrier preventing people from choosing to cycle as a mode of transport. The new shared cycleway and footpath could encourage people to actively travel more, which could in turn increase physical activity levels in adults and has the potential to contribute to a reduction in adult's obesity levels which for Arbury ward are higher than the national average.
- 4.2.8 The route enhancements will consist of a 2.5m shared cycleway / footway from the Griff roundabout to the Bermuda road. This is expected to facilitate improvements in traffic flows between the two wards. Enabling residents to move outside of their own community has been shown to positively correlate with a reduced fear of social isolation and positive mental health.^v Providing a sustainable transport link between the two wards of Arbury and Wembrook will better connect the areas and has the potential to improve community cohesion. WCC Public Health recommends that all new cycleways / footways are well connected to existing routes to allow for people to actively travel across the wider west Nuneaton area.

Air pollution

- 4.2.9 There is a clear association between long-term exposure to particulate air pollution (PM 2.5 and sulphate dioxide) and a reduction in life expectancy caused by cardiovascular disease.^{vi} As well as this, greater air pollution has been linked to deprived neighbourhoods, with mortality rates from air pollution related causes highest amongst groups with lower socioeconomic status.^{vii}
- 4.2.10 By opening up the bridge, there is expected to be a noticeable reduction in traffic volume during peak hours along the A444 and the B4113 (Coventry Road). According to the Indices of Multiple Deprivation (IMD) 2015 'deprivation map explorer'^{viii} 'properties in this area are in an area of high deprivation and so residents could be considered potentially vulnerable in terms of health and wellbeing outcomes. A reduction in traffic volume along these roads may lead to a reduction in urban air pollution, and the level of pollutants that can damage human health.^{ix}
- 4.2.11 Figure 5 shows the main roads likely to be impacted by a reduction in traffic flows as a result of opening the Bermuda Bridge for vehicle access. Both Heath End Road and the A444 (north of The Griff roundabout) are expected to see a reduction of greater than 200 cars at peak times (am and pm). This is expected to positively affect the residents of the 100 properties along the Heath End Road and the A444

who will likely experience a reduction in air and noise pollution as a result of the scheme. Using the ratio of 2.4 people per household it is estimated that at least 240 people residents could be impacted positively by the scheme.

- 4.2.12 Allowing motorised traffic to cross the Bermuda Bridge is likely to create an increase in traffic volume along The Bridleway, Bermuda Road and Tenlons Way (as shown in figure 5). As a consequence of this, it is expected that local air quality will change. The number of houses which are expected to be impacted by changes in air quality along The Bridleway, Bermuda Road and Tenlons Way is approximately 127 residential properties or an estimated 305 residents (using a ratio of 2.4 people per residential dwelling).
- 4.2.13 WCC commissioned Atkins to undertake an air quality assessment as part of the [Environmental Assessment](#) to consider the potential impact during both the construction and operational phases. The assessment concluded that:
- Construction phase: “The proposed scheme has the potential to generate dust emissions which may have a short term adverse impact at nearby sensitive receptors if there is no appropriate mitigation.”
 - Operational phase: “The proposed scheme is expected to have a negligible to slight adverse impact on NO₂ concentrations at the human health receptors. The impact on PM₁₀ concentrations is expected to be negligible in all cases.”
- 4.2.14 The air quality assessment makes recommendations for mitigation measures during construction phase however no mitigation measures are given for the operational phase as, although NO₂ concentrations levels are expected to have a slight adverse impact to human health at a number of receptors the concentrations have been deemed well below the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS) objectives.

Road safety

- 4.2.15 There are a number of HGVs which use St. Georges Way to access industrial estates and units. There is concern that by opening the bridge to allow for motorised vehicle access, there will be an increased presence of HGVs within Arbury ward and a fear of accident levels increasing. However, the updated traffic modelling for the scheme shows that the number of HGVs typically remains the same as per the current situation, as these are currently seeking access to local businesses and properties which are presently located.
- 4.2.16 Fear of accidents is highest when speeds flow. To ensure that speed is kept to an acceptable level, and that fear and perceptions of the risk of accidents is reduced the scheme should seek to ensure that traffic calming measures are used. WCC Public Health is therefore pleased to see that traffic calming islands are to be installed at various points along the route from St George’s Way to Bermuda Road.
- 4.2.17 If access routes are poorly conceived, difficult to access, poorly maintained or perceived as unsafe these can act as a barrier to encouraging the use of active travel. The proposed shared cycleway / footway along St George’s Road has been designed to a 2.5m width, which is reported to be too narrow within the schemes Road Safety Audit. The Designers Response to the Road Safety Audit states that there may be future opportunities to widen parts of the shared cycleway / footway

as part of a separate scheme surrounding the Bermuda Park Rail Station. WCC Public Health would support and encourage this element to be implemented as part of the separate scheme.

Neighbourhoods and facilities

- 4.2.18 Inability to access local facilities can disproportionately affect more disadvantaged members of society and contribute towards feelings of loneliness and social isolation. Opening up the bridge to allow new traffic flows will improve Wembrook wards residents' opportunities to access local facilities in the west of Nuneaton, and similarly the same for residents of Arbury ward.
- 4.2.19 The scheme provides an opportunity to connect services and encourage physical activity and social cohesion through sustainable active travel. The proposed shared pedestrian / cycle path would be approximately 1.7km in length and would provide connectivity to existing pedestrian / cycle paths which provide access to:
- Bermuda Village;
 - EPIC;
 - George Eliot Hospital
 - Connection to Hill Top and the Town Centre; and
 - Griff Roundabout

Housing and urban planning

- 4.2.20 Environmental noise problems can lead to sleep disturbance, cardiovascular disease and impaired mental health. During the construction phase, the scheme is anticipated to generate noise and mitigation plans are in place to keep noise to a minimum by adopting 'best practice' techniques. During the operational phase, the increased traffic flow is likely to have an adverse noise impact to a number of properties along The Bridleway, Knights Road Flats and Bermuda Road. We recommend that monitoring of noise is undertaken during the construction and operational phase of the scheme so that mitigation measures can be put in place if the impact is likely to be significant.

Green space

- 4.2.21 The assessment hasn't revealed any green space which could be affected.

Crime and fear of crime

- 4.2.22 The Warwickshire Observatory produced a piece of analysis to examine the levels of reported crime and anti-social behaviour (ASB) in an area around the current footbridge. This is because opening up the footbridge to allow for vehicle access may have implications on crime and community safety. Between the period January 2010 and August 2015, both crime and ASB levels around the footbridge area remained consistently high. St. George's way has been identified as experiencing high levels of anti-social behaviour.
- 4.2.23 Locality profiles produced by the Warwickshire Observatory show that rates of the individual categories of crime in Abbey and Wembrook ward range between two and three times the average for the County and that anti-social behaviour incidents are more than twice the County average.

- 4.2.24 There is a suggestion that by converting the footbridge into a road at this location it will become less of a desired place for groups to congregate, therefore potentially resulting in reductions of crime and ASB and positively contributing to the mental health and wellbeing of local residents.
- 4.2.25 As well as allowing for social policing, enhancing and improving the transport infrastructure will improve the aesthetics of the area, which is associated with better health outcomes.
- 4.2.26 To further improve perceptions of safety, and to allow for connectivity and access between the Bermuda Bridge and localities to the east and west during the day or at night, the scheme should ensure that adequate lighting is provided along the route and around the new Bermuda Station.

The urban environment and climate

- 4.2.27 The assessment hasn't revealed any climate factors which could impact the scheme (such as flooding/drought).

Educational outcomes

- 4.2.28 Educational attainment has a strong social gradient and is significantly correlated with health as school achievements are key predictors of subsequent outcomes including physical and mental health. By improving connections between wards, the scheme opens opportunities to facilitate travel to schools and educational institutes, which could help reduce health inequalities.

Employment and Income

- 4.2.29 Being in good employment protects health. Conversely, unemployment contributes to poor health. Getting people into work is critically important in reducing health inequalities. The connection will open access and facilitate movement between Wembrook ward, which currently has higher employment rates when compared to the average for the Borough and the County, and employment opportunities in the west of Nuneaton.
- 4.2.30 The scheme will also ensure that west Nuneaton is better connected to Bermuda Park Railway Station and to the employment and training opportunities available there. In terms of access for all, the project aims to enable a bus service to access the new railway station which, providing it can be well accessed by residents who are currently car less, could remove barriers to employment.

5. Conclusion

- 5.1.1 The assessment has highlighted that there will be changes to traffic flows in the area, some of which will be increases and some decreases. For those areas likely to experience an increase in traffic flows this could lead to increased noise and air pollution which could negatively impact on health and wellbeing. On the other hand those areas likely to experience a decrease in traffic flows may experience the opposite as a reduction in noise and air pollution could impact positively on health and wellbeing.
- 5.1.2 Within Wembrook ward, there is expected to be a shift in road use, as volume reduces along the B4113, but increases along St. George's Way. This may alleviate

congestion concerns, and could contribute towards improving the health outcomes within the ward, particularly if opportunities for active travel are supported.

- 5.1.3 The scheme has the potential to contribute towards lessening health inequalities by alleviating traffic congestion, opening and/or enhancing movement and connections between localities and services, and strengthening opportunities for active travel.

5.2 Recommendations

- WCC Public Health recommends that all new cycleways / footways are well connected to existing routes to allow for people to actively travel across the wider west Nuneaton area.
- We recommend that traffic calming measures are implemented as part of the scheme, as per the proposed design drawings.
- We recommend that the air quality along the route is monitored during the construction phase of the development. Existing monitoring methods will help indicate if there are any changes to air quality during the operational phase of the development.
- We recommend that noise levels are monitored during the construction phase and the operational phase of the scheme. For those roads expected to see an increase in traffic volume of +200 cars during peak times (The Bridleway, Bermuda Road, Tenlons Way) we recommend that mitigation measures, such as triple glazing, are considered to reduce the impact to health and wellbeing that increased noise pollution can cause.
- We recommend that adequate lighting is provided along the shared pedestrian / cycle way route and around the new Bermuda Station to improve perceptions of safety and reduce the risk of crime.

6. References

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- ⁱⁱⁱ ONS (2018) Nomis 2011 [ward profile for Arbury](#) [accessed 15/06/2018] and [ward profile for Wembrook](#) [accessed 15/06/2018]
- ^{iv} Ben Cave Associates Ltd (2014), *Health Impact Assessment – Nuneaton and Bedworth Borough Plan*. Leeds, England
- ^v Ben Cave Associates Ltd (2014), *Health Impact Assessment – Nuneaton and Bedworth Borough Plan*. Leeds, England
- ^{vi} World Health Organization Regional Office for Europe (2010) [Urban planning environment and health: from evidence to action](#). Copenhagen, Denmark.
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- ^{viii} Open Data Communities (2015). [Deprivation map explorer](#). 2015 [accessed 15/06/2018]
- ^{ix} Ben Cave Associates Ltd (2014), *Health Impact Assessment – Nuneaton and Bedworth Borough Plan*. Leeds, England