BANGOUR VILLAGE

November 2015

PPiP Application

Health Impact Assessment

NHS Lothian

BANGOUR VILLAGE

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Bangour Village

Health Impact Assessment

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Summary

This report aims to identify and assess the positive and negative health impacts likely to arise from the proposed development of the former Bangour Village Hospital site. It is based on the proposals as outlined in the application for Planning Permission in Principle submitted in August 2015.

The proposed development may affect the following populations:

- The people who will live in the new Bangour Village

- People living nearby, particularly in the neighbouring village of Dechmont

- The wider West Lothian population who may, for example, be employed in the construction of the development, deliver services, or currently use the amenity of the site

The main areas of health impact could occur through changes in:

- Community – including impacts related to the success of the development in creating a cohesive community, anxiety and uncertainty among neighbouring residents in Dechmont, and changes to provision of amenities and services.

- Transport – particularly impacts on physical activity, air quality, noise, injuries and severance from increases in traffic.

- Housing – high quality, affordable homes are beneficial for health.

- Neighbourhood and pubic realm – layout and land use mix will affect the walkability of the development and opportunities for social interaction.

- Open space and environment – access to green space is beneficial for health.

- Employment – the development will provide employment opportunities and good work is good for health.

- Education - the development will include a new primary school, providing opportunities to maintain and enhance the quality of education for children in the development and nearby.

On the basis of this assessment, the following recommendations are made to enhance the positive and mitigate potential negative health impacts of the proposal.

Recommendations

Communities

- There should be continued public engagement to ensure that Dechmont residents are informed about each stage in more detailed planning processes that will precede development. The community council is well placed to assist with this process but it must ensure that the views of people beyond the regular members of the council are considered.

- Some form of memorial or community art might be added to the planning requirement so that the history of the hospital and its staff is commemorated. Involving local residents, ex staff and new residents in design of this artwork could help develop a sense of control over some aspects of development.
- As indicated in the Planning Permission in Principle (PPiP), it would be desirable if access through the site to public areas is retained as part of the masterplan.
- As detailed planning applications are made, the emphasis on mixed uses – housing, village centre, community facilities, open space and parks – should be maintained as a way to encourage sustainable and cohesive communities.
- It will be important to ensure that West Lothian Integration Joint Board is made aware of any change to proposals as an increase in population may require additional health and social care service facilities.

Transport

- The active travel measures outlined in the Transport Assessment and PPiP should be commended. West Lothian Council needs to ensure that developers deliver on these proposals in detailed planning applications and as part of final certification of developments.
- 20mph should be the maximum permitted speed on the Bangour Village site.
- There should be developer contributions to enhance bus facilities at Bangour Village, Dechmont and to enhance sustainable transport options along A89/A899 corridor between Livingston Town Centre and other parts of West Lothian/the City of Edinburgh.
- There should be an upgraded pedestrian crossing on the A89, which includes a cycle crossing to enable safe access to the cycle lane.

Housing

- Affordable Housing must be provided to the targets specified by West Lothian Council.
- West Lothian Council and registered social landlords should monitor both rent and Council Tax payments systems for signs of arrears to identify early signs of financial hardship and link people into appropriate support services.
- As planning applications are submitted, West Lothian council should seek to ensure a range of housing types.
- West Lothian Council and Integration Joint Board should specify the level of Homes for Varying Need that should be built on site.
- Lockable cupboards should be installed in kitchen and bathrooms of new homes. We assume mains-wired fire alarms are installed as per building regulations.
- New housing should be built to highest standards of energy and fuel efficiency. In addition to the direct benefits for health, energy efficiency will contribute to reducing carbon emissions and income maximisation, which have indirect health benefits.

Neighbourhood and Public Realm

- Increased physical activity is very good for public health. The principles of *Designing Streets* should be used to ensure detailed planning applications make active travel the easiest way to move around the Bangour Village neighbourhood.
- There has been research that links negative perception of local neighbourhood with poorer health. As more detailed planning proposals are produced, maintenance of public spaces should be clarified.

Open space and Environment

- Provision of openspace is central to the masterplan. There should be special attention to ensure that a range of play areas is provided for toddlers to teenagers. This might be done in consultation with youth and community workers and co-ordinated with proposals in the West Lothian Open Space Strategy.
- The quality and maintenance of playgrounds should be prioritised during development.
- Those developing more detailed planning applications should consider examples of good practice in Glasgow where play areas and other greenspace have been designed into the urban drainage and SUDS provision.
- The recommendations of the flood risk assessment, specifically those relating to Dechmont Burn, should be implemented.

Employment

- Rigorous site safety standards need to be agreed and imposed on the building site. All appropriate precautions should be in place for removal of asbestos.
- To mitigate noise and risk of accidents involving residents of Dechmont from construction traffic, the site Transport Management plan should be enforced. Heavy Goods vehicles should not use Dechmont Main Street.
- West Lothian Council should consider including a planning requirement for recruiting and training local apprentices during construction.

Education

- The provision of new and upgraded footpaths and cycle paths should be supported and prioritised as a means to achieving active school travel.
- There should be cycle parking at the school to increase attractiveness of active travel.
- Street design around the school should minimise possibilities of speeding vehicles and dangerous parking.
- West Lothian Council and NHS Lothian should consider collaborating with Architecture and Design Scotland to ensure that placemaking delivers a healthy school and a healthy place.

INTRODUCTION

NHS Lothian has submitted an application for Planning Permission in Principle (PPiP) for the development on the site of the former Bangour Village Hospital. The application is supported by a series of surveys and reports as follows:

- Planning Statement
- Pre-Application Consultation Report
- Design Statement
- Environmental Impact Assessment
- Site Investigation
- Transport Assessment
- Extended Phase 1 Habitat Survey
- Archaeological Desk Based Assessment
- Flood Risk Assessment and Drainage Strategy
- Heritage statement

This Health Impact Assessment has been done to identify the key health impacts that may arise from this proposal, in order to recommend measures to mitigate health risks and enhance health benefits. The Health Impact Assessment meets the requirements of West Lothian Council Supplementary Planning Guidance on Health Impact Assessment.

SUMMARY OF THE PROPOSAL

The former Bangour Village Hospital site lies immediately West of the village of Dechmont, with Uphall and Broxburn further to the East and Bathgate further to the West. The M8 and A89 separate it from Livingston to the South. The former hospital opened early in the twentieth century and closed in 2004.

Figure 1: Location map

The proposal is for approximately 800 residential units, with mixed use, a primary school and associated infrastructure including green space, Sustainable Urban Drainage System (SUDS) and public transport access. In future, it is possible that housing numbers could increase to 1,000 depending on the conversion plans agreed for listed buildings. There are four potential masterplan options. The preferred option includes four options for the site of the school.

Fuller details of the proposal are available in the Planning Statement and the Design Statement.

Figure 2: Indicative masterplan preferred option

RELEVANT POLICIES

The West Lothian Local Plan was adopted in 2009. New housing for a growing population is one of the key objectives in both this local plan and the South East Scotland Strategic Development Plan which informs local provision. Although the bulk of new development in West Lothian is scheduled for Core Development Areas such as Heartlands, the Bangour Village site has been identified as a site for residential development.

Other relevant West Lothian policies include:

- The West Lothian Local Housing Strategy 2012-2017 which puts emphasis on housing supply and especially provision of affordable housing
- The recently refreshed West Lothian Open Space Strategy, the West Lothian Core Paths Network Strategy and the Central Scotland Green Network each of which influence plans for provision and management of open space in the area.
- Transport related plans including the Public Transport Strategy
- The West Lothian Health and Social Care Partnership Strategic Plan (draft) and the West Lothian Health Improvement and Health Inequalities Alliance Action Plans.

The Planning Statement compares the proposal against the requirements of the West Lothian Local Plan and South East Scotland Strategic Development Plan.

METHODS

Evidence sources

This Health Impact Assessment has used the following sources of evidence:

- The planning statement, design statement and other assessments submitted as part of the application.

- A scoping exercise, held with members of Dechmont Community Council on 24th August 2015. This used a health impact checklist to identify potential impacts of the proposal. The health impact checklist is given in Appendix 1. To inform a profile of Dechmont we also asked participants of this exercise to summarise their views of Dechmont village on post-its.

- Interviews with a small number of key informants. Interviewees were three Dechmont residents (who were also included in the scoping exercise), two local health professionals, the coordinator of Dechmont Memorial Hall and the head teacher of Dechmont Infant School. Interviews were either face to face or by phone. These interviews aimed to:
  - Identify informants' views of Dechmont village to contribute to the community profile
  - Identify further views on potential health impacts of the proposal
  - Gather specific information on current services and likely service impact of the proposal

- Demographic and other statistical data on West Lothian and Dechmont

- The report of the pre-application consultation

- A review of research literature relating to potential health impacts

Process

We prepared a community profile using routine data and information from informants. We used findings of the scoping exercise and interviews to summarise potential areas of health impact, and for each impact identified research questions and possible evidence sources. This list of potential impacts, questions and evidence is given in Appendix 2. We then used literature and other evidence to draft a narrative summary for each impact and prepare an impact matrix. We derived the recommendations based on these findings.

COMMUNITY PROFILE

Affected populations

The main populations likely to be affected by the proposed development include:

- The people who will live in the new Bangour Village

- People living nearby, particularly in the neighbouring village of Dechmont

- The wider West Lothian population who may, for example, be employed in the construction of the development, deliver services, or currently use the amenity of the site

It is not possible to profile the people who will live in the new village, as we do not know who they are or where they will come from. However, it is likely that their health status and needs will be similar to the West Lothian population. The current expectation is that new housing will predominantly be family homes.

West Lothian

The total population of West Lothian was 177,150 people at the time of the 2014 mid year estimate. Livingston, just south of the Bangour site, is the largest locality with 56,570 people. The West Lothian population is projected to increase by almost 12% by 2037. West Lothian currently has a relatively young population compared with the rest of Scotland but the proportion of people aged over 75 years is projected to increase very significantly as this population ages.

Life expectancy in West Lothian is rising and is similar to the Scottish average but lower than the Lothian average. There are differences between geographical areas. Life expectancy for women ranges from 87 years in Linlithgow to only 76.6 years in Dedridge; life expectancy for men ranges from 82.6 years in Linlithgow to 74.9 years in Breich. These reflect wider socio-economic inequalities across the area. Overall, West Lothian is less affluent than many other parts of Lothian and has a higher proportion of people living in the most deprived areas.

Table 1: Life expectancy in Lothian 2001-2013

Life expectancy at birth	2001-2003		2006-2008		2012-2014	
	Male	Female	Male	Female	Male	Female
West Lothian	73.5	77.7	75.9	79.2	77.9	80.5
Lothian	74.7	79.5	76.3	80.8	78.0	81.8
Scotland	73.5	78.8	75.1	79.9	77.1	81.1

Source: NRS Life Expectancy 2001-2013

The growing population implies a need for new housing. Estimates prepared for the West Lothian Local Development Plan identify a need for 11,000 new units between 2009 and 2019. By March 2012 only 1,300 had been completed, suggesting a need for 1,447 new homes to be built every year up to 2019. The document noted that need and demand for affordable housing was particularly hard to meet. The proportion of single adult households is increasing and will be more than a third of households by 2037.

The unemployment rate in West Lothian is 1.7% of the 16-64 population, lower than the Scotland rate of 1.9%. However, youth employment is higher at 3.4% of 18-24 year-olds, compared to the Scotland rate of 2.6%.[1] The highest employment sector is Retail, accounting for 12.3 % of people in employment closely followed by Health at 12%. Across Scotland, 16% of people work in Health and 10% in Retail. Currently 44% of working people in West Lothian commute to work in other local authority areas.

Dechmont village

Dechmont is a small village with a total population of just over 700 people. The population is older than the West Lothian average: 24% of people in Dechmont are 65 years or older, compared with 15% in West Lothian as a whole.

Table 2: Age structure of Dechmont and West Lothian residents

Age group	Dechmont		West Lothian
<16	86	12%	20%
16-29	107	15%	17%
30-44	125	18%	20%
45-64	222	31%	28%
65+	166	24%	15%
All ages	706	100%	100%

Source: NRS 2011 census

A higher proportion of Dechmont residents are carers than the Scotland average – 13% of people in Dechmont compared with the Scottish average of 9%. This reflects the older average age in Dechmont.

In the 2011 census, 82% of people in Dechmont said their health was 'good' or 'very good', which is the same as the proportion for Scotland.

The village currently has community amenities including a shop, a café, the infant school, the community hall and a playpark. The school celebrated its 100 year anniversary in 2014. It currently has 13 nursery and 20 Primary 1-3 children on its roll. It makes daily use of the hall, which is next door. The hall is also well used by local organisations and all bookings are approved by a local management committee.

Key informants interviewed for this HIA consistently described Dechmont as a 'nice place' with a 'strong sense of community'. Members of the community council described the village as 'caring', 'community spirited' 'supportive' and 'close knit'. Informants noted that the population was stable with low turnover of residents. They also noted the strong connections with the former Bangour Village Hospital, reporting that many residents of Dechmont previously worked there and still held considerable attachment and affection for the site.

FEEDBACK FROM CONSULTATION AND INFORMANTS

This section summarises the issues identified during interviews with key informants and from the pre-application consultation. The findings of the pre-application consultation have been reported separately, and so are drawn on where relevant but not presented in detail here.

The key issues raised included the following:

Impact of the development on Dechmont

All the key informants reported that Dechmont is close-knit, has a very strong sense of community and that people living there are proud of their village.

Some members of Dechmont community council expressed a high level of anxiety at the prospect of large scale development in Bangour and a sense that they had little control over this. Some expressed suspicion about the motives of NHS Lothian and West Lothian council, suggesting, 'I think they are waiting for the listed buildings to fall down.' The strength of feeling among these respondents was obviously high, one saying, 'I'm terrified at the prospect of a massive scheme at the end of the village.' However, others welcomed development on the site as long as it was of a high quality saying 'we want to see it developed with love and care.' The consultation showed a high level of support for the proposals among those who took part in the events. Some informants identified a need to give local people some influence over the developments to reduce the perceived lack of control.

Informants were concerned that Dechmont village would be 'swallowed up' and lose its own identity. They were keen that Bangour and Dechmont villages should both retain their names and identities.

Informants were also concerned that Dechmont would lose some of its amenities because of competition from similar facilities in Bangour. They appreciated the individual attention that children currently receive in Dechmont Infant School, although they recognised that there may also be benefits from a new school. They were concerned that if the school is no longer there they may also lose the adjoining play park and the community hall, which is used by both school and local groups. They were also concerned the village shop and café would no longer be viable – the shop is currently for sale as the owner plans to retire. They were concerned that losing facilities in Dechmont would 'take the heart out of the village.'

Several participants in the consultation expressed their hopes that the development would improve public transport links.

Social integration and networks

Although informants wanted to maintain separate identities for Dechmont and Bangour, they did not want there to be conflict or division between them. They were concerned to avoid the new development being a 'gated community.'

Respondents also noted that it was important that the development was not just a 'sea of housing' but contained other facilities to encourage people to interact. In particular, several mentioned the importance of the proposed new primary school in bringing the communities together. As one stated, 'a new school on a different site will improve inclusion as all the children will be new.'

Amenity within the Bangour Village site

In both the consultation and interviews, many respondents reported that the current site is well used by dog walkers, cyclists, children for adventurous play and other local people. Inevitably some of the natural space will be built on but there was a strong desire to retain some of the woodland, open space and walking routes with public access. Several respondents noted the importance of encouraging walking and cycling – both recreationally and for transport – by providing safe and attractive routes for pedestrians and cyclists.

Consultation respondents made many different specific suggestions about facilities and amenities that could be provided in the new development. These are detailed in the consultation report.

Several respondents expressed a hope that the new school will be on the Dechmont side of Bangour and have safe walking routes. It was also noted that it should be large enough from the start to avoid the disruption and costs of adding to it at a later time. It was important to consider parking, signage, routes to the school and ensure these were all in place when it opens. It was also noted that a larger school would need other outreach services to meet children's needs. The Head Teacher stated that the benefits of having nursery and infant schooling on one site should be preserved, to improve children's transition to school and minimise disruption to families with children of different ages – otherwise these families were very likely to drive children to both school and nursery.

Some community council members expressed concern that a significant rise in population would increase pressure on local services, particular health services. Health service respondents thought the increased demand would be manageable although some additional resource might be needed.

Heritage

Both the consultation and informants identified the strong attachment that many people hold to the site and the value placed in many of the existing buildings. Many people got married in the church and many local people previously worked in the old hospital and still hold a lot of affection for it - there is even alleged to be a ghost in one of the villas. Informants wanted there to be some way of formally recognising the history of the site. The consultation identified several buildings that local people particularly wished to retain.

Traffic and transport

Concerns about an increase in traffic were raised repeatedly during the consultation and in the interviews. This included construction vehicles and increased traffic from new residents. Members of Dechmont community council noted that they were already disturbed by noise and pollution from traffic along the A89, which runs along the south of the village. They were concerned about the potential for 'rat running' along Main Street in Dechmont, and wondered if the street should be closed to through traffic. They also suggested that there could be greater screening from the A89 using trees. They also noted that there is a cycle lane towards Uphall but it is on the other side of the A89 and there is no safe crossing over the road for cyclists or pedestrians.

Housing

Several consultation participants and key informants identified a shortage of affordable housing, which the development could help to address. Informants expressed a wish for a mixed community with different housing types and tenures. Consultation participants and informants expressed a desire for the housing designs to be traditional and appropriate to the heritage of the site.

Economic impacts

Informants noted that there would be construction jobs arising from the development, although they were sceptical about whether any of these would benefit local people. There may also be wider economic benefits for companies that provide services to the new development.

Some informants noted that there are few jobs available locally so most of the residents of the new development would commute to work in Edinburgh.

IMPACTS AND PATHWAYS

This section of the HIA uses literature review and other evidence sources to answer questions that arose from the scoping for this assessment. The questions are listed in full in Appendix 2. This review considers potential health impacts related to new settlements such as housing, community cohesion, schooling, transport, and workplaces.

Age, gender, socioeconomic status, ethnicity, lifestyle, behaviour, education and employment are just a few of the factors that can affect how people and place interact. There is an extensive research literature that addresses the links between health and the built environment.[2-9] It still remains true, however, that 'How to design and build good homes, schools and workplaces remains a pressing … health question."[10] In 2008, the Scottish Government published *Good Places, Better Health.*[11] Building on the work of Good Places and Better Health, the Scottish Government supported the Environmental Determinants of Public Health in Scotland research programme. This programme has led to the development of a Healthy Place Standard led by Scottish Government to encourage consideration of health within placemaking.

Communities

- What evidence is there about integration or detachment of different communities? For example, long-term residents and in-comers, young and old people.
- Are there any impacts related to general uncertainty or loss of control associated with development?
- Are there health impacts associated with provision of and access to community facilities such as community centres, places of worship, libraries, schools and sports centres?
- What are health impacts related to loss or development of a sense of identity?
- What interventions and approaches reduce conflict and promote integration between existing and new communities?

There is good evidence of a positive association between social capital and health.[12] However the available literature on the health effects relating to integration of communities is quite small. There are, however, some clear messages about community facilities and health. The association of community facilities with healthier populations is well established. [13] Uptake and quality and maintenance of facilities are significant factors relating to community resources.[14] Appropriate facilities can contribute to better mental health outcomes, more physical activity and improved social cohesion. One of the major concerns is the creation of two sets of facilities that are not used enough to support both while also contributing to community separation. Provision of buildings or designing spaces for interaction may need to be complemented by community development teams working from facilities in the area. The loss of resources at Dechmont, however, would be a negative impact for that village.

As noted in the previous section, the consultation revealed strong feelings about retaining and restoring old buildings on site, especially the church, recreation hall, village shop and cricket pavilion. It is worth noting that access to the site as an informal recreation location has evolved mostly since the hospital closure. Many of the hospital buildings are listed by Historic Scotland and the PPiP provides some indication of how they will be used in future. There is a commitment to retain buildings and provide access through the site as well as open space and community facilities that will benefit both new residents at Bangour as well as Dechmont residents. A new village centre will function as a focal point for the development.

Many people who have been consulted during the PPiP process or during the preparation of this HIA acknowledge that development represents an opportunity to revive buildings on the site and improve the environment. For some Dechmont residents however, there is a feeling of helplessness about impending change in their locality and concern about a loss of identity for Dechmont. Some expressed consideration distress about the potential impacts on Dechmont.

Opportunities for participation, for social interaction, and sense of perceived control are all important determinants of mental wellbeing.[15] Perceived control can be enhanced by community consultation that is perceived to be meaningful and supported over time. Social support may be encouraged by provision of community amenities that permit social gatherings for a range of groups. [16] Design features that encourage interaction include proximate positioning of entrances and provision of focal points. Using *Designing Streets* as a placemaking template should minimise the possibility of road severance.

Key points
- *Well designed and maintained public spaces may encourage social interaction.*
- *Residents of Dechmont and ex-hospital staff value the amenity of the site, both buildings and natural landscape. The PPiP indicates that many old buildings will be restored and public open space will feature throughout the site. It would be desirable for access through the site to public areas to be retained as part of the masterplan.*

Transport

- What are the health impacts of transport relating to housing development?
- Are there specific impacts associated with commuting?

There are many ways in which transport affects health. Good, affordable transport connections enable access to employment, services and amenities that may all benefit health. However traffic and car dependence have many adverse health impacts. Although there is evidence about the impacts of different transport modes for commuting, we found little other evidence on the impact of living in a commuter community.

Traffic–related air pollution causes direct health impacts including premature deaths from cardio-respiratory causes, respiratory hospital admissions, exacerbations of pre-existing asthma, respiratory symptoms, reductions in lung function, cardiac hospital admissions and other measures of cardiovascular morbidity [16-19].

Physical activity prevents and helps to manage conditions such as coronary heart disease, type 2 diabetes, stroke, mental health problems, musculoskeletal conditions and some cancers. It also has a positive effect on wellbeing, mood, sense of achievement, relaxation and release from daily stress.[20, 21]. Only a minority of adults achieve the recommended level of physical activity to support health, which is 30 minutes moderate physical activity most days per week. Regular cycling and walking are a good way for people to gain physical activity as part of their daily routine. Places with high levels of motorised traffic discourage cycling and walking. There is evidence of a reduction over time in children's physical activity, which has been associated with fewer children walking to school, again a process with socioeconomic connotations and negative health impacts.[22] Systematic reviews of walking and cycling initiatives have emphasised the value of tailored interventions which encourage individuals to increase levels of walking. [23, 24]

 Other impacts of transport on health include risk of injuries and death; noise pollution; stress, mental health and quality of life as a result of transport-related activity; impacts on personal safety

and perceptions of safety; community severance and social inclusion; impacts on climate change.[16, 25] Car dependency also has an adverse mental health impact and decreases social capital through reductions in positive social contact and integration.[26]

A Transport Assessment has been submitted as part of the PPiP. The assessment uses current modal activity in Dechmont as a baseline for future movements. (It remains to be seen whether the older population of Dechmont compared to the West Lothian average represents a suitable benchmark for Bangour Village.)The assessment says that the site is well located in terms of links with strategic road and cycling routes. The assessment projects the increases in traffic that might be associated with new development (see Table 4 below). Many residents of Bangour Village and Dechmont will commute to jobs away from the settlements and this has been taken into account as part of the modelling for the transport assessment. Car parking standards are set nationally with four bedroom houses at Bangour listed to have three parking spaces per household and fewer spaces for smaller houses. Local residents expressed concerns about the safety of road crossings on the A89 and the quality of footpaths in Dechmont and within Bangour Village just now.

The overall package of transport actions proposed in the Transport Assessment is summarised as follows:

- a pedestrian and cycle route runs through the centre of the development;
- links for traffic have been designed to reflect the higher priority afforded to pedestrian and cycle movements;
- a bus turning facility and waiting area has been incorporated within the development in a location which is accessible on foot by residents throughout the development;
- new pedestrian routes … provided through the site
- upgraded 'safe route' footpath and cycle link to Dechmont

Table 4: Total Vehicle Trips for Each Proposed Land Use (from PPiP Transport Assessment)

LAND USE	AM PEAK 08:00 – 9:00		PM PEAK 17:00 – 18:00	
	ARRIVAL	DEPARTURE	ARRIVAL	DEPARTURE
Residential 500 Units	55	236	169	97
Residential 750 Units	83	354	253	146
Residential 1000 Units	110	472	338	194
Primary School – Pupils*	0	0	0	0
Primary School – Staff	36	0	0	36
Local Shops**	0	0	0	0

*School trips considered to be either internal or included within residential trips.
**Retail trips considered to be included in above residential/school trips.

There will be an increase in vehicle movements in and around Dechmont as a result of development. A key consideration for this HIA is the direct impacts as a result of vehicle movements and possible mitigation or alternatives. Many of the mitigation actions are already in the PPiP but the success of these will be dependent on the extent to which active travel policies are implemented and

supported over time.[27] Minimising road trips will have health benefits in terms of reducing the risk of accidents and minimising air pollution.

The Transport Assessment maps recent road traffic collisions near Dechmont. There were 28 incidents between 2009 and 2013 with three causing serious injury and one fatality. Most of these incidents occurred at or near the A89/Dechmont roundabout. The increased volume of traffic caused by the opening of Dobbies garden centre is cited as the cause for the cluster of accidents. There is no indication within the Transport Assessment of what scale of road traffic collisions might be predicted with the new vehicle movements associated with Bangour development. All road junctions, as identified and agreed in pre-application scoping of the Transport Assessment, have been assessed to have capacity to cope with the estimated increase in vehicle numbers. The assessment says design of the Bangour estate will be intended to restrict vehicle speeds to 20mph. Children, particularly those living in poorer communities, appear to be at greater risk of injuries and fatality in road traffic accidents. The level of fatalities and injuries above 30km/hour is far higher than at speeds below this.[16] All changes to roads should prioritise pedestrian safety.

There is limited public transport at present to Dechmont. Both the Transport Assessment and the PPiP note that the increased population at Bangour Village means that more bus services will run through the two sites. The Transport Assessment of rail facilities comments on provision at Livingston North and Bathgate but it does not comment on Uphall Station, which has the most direct routes. Community consultation suggests that parking capacity may already be a problem at Uphall. It is important to ensure safe cycle routes to stations are available, signposted and publicised.

The Transport Assessment states that the transport hierarchies of Scottish Planning Policy and design principles established in *Designing Streets* will be used to masterplan the site. Additional measures to support sustainable transport activity include Safer Routes to School and Travel Packs for new residents. There will also be cycle parking facilities at destination locations throughout the development. It would be desirable to ensure that the upgraded A89 junction includes space for cyclists to cross to the cycle path on the south side of the road.

Key points

- *Provision of cycle parking and safer routes to school are positive public health measures.*
- *Plans for cycle paths and footpaths are in accordance with high quality public health advice as well as government good practice.*
- *Reducing reliance on motor vehicles has benefits by encouraging physically active forms of travel such as walking and cycling, and reducing air and noise pollution, injuries, and severance.*
- *20mph should be the maximum permitted speed on the Bangour Village site.*

Housing

- What are the health impacts of new housing?
- What impact does housing layout have on health?
- What impact does housing density have on health?
- Does housing tenure have any health effects on residents?
- Are there any health impacts associated with mixed tenure housing developments?
- What features of houses affect health?

The Bangour PPiP indicates that up to 800 new homes will be built on the site at densities of between 30-37 dwellings per hectare. As noted earlier, these figures may increase. Seven Character Areas have been identified across the site and these will be constructed in three phases. The first areas to be developed will be on the land at the south west of the site; these areas will have the highest housing densities. Current West Lothian Council planning policies specify that developments such as Bangour should include at least 15% Affordable Housing. All homes should be within 15 minutes walking distance of the primary school and other neighbourhood facilities.

Demand for housing currently outstrips supply in West Lothian so more housing, especially Affordable Housing, is much needed. Moving to new housing results in improved health, particularly mental health, for people whose previous housing situation was poor.[28, 29] Moving from overcrowded accommodation also has health benefits. Overcrowded housing has negative health impacts, most notably the increased childhood risk of infection by *helicobacter pylori* and later incidence of gastric illnesses.[30, 31]

Owner occupiers have better health than people who rent their homes although it seems likely that income rather than housing is the most important factor in this relationship. Home ownership is associated with higher income, and with security and control, all of which contribute to wellbeing.[32] [33]

Evidence about housing tenure mix is unclear. There is an observable gap between the health outcomes of people living in different housing tenures but the reasons for this are unclear.[34, 35] Recent housing policy has sought to mix tenures to achieve a more economically and socially viable neighbourhood.[36] Mixing tenure is posited to be beneficial for health on the basis that it 'encourages population stability, rising aspirations, better self-image and increased social capital' [37]. It appears that less than 30% socially rented housing in a community may confer some benefits when measured in terms of health and determinants of health [37, 38]. But this data relies on comparison between census output areas which are larger than the Bangour or Dechmont neighbourhoods. There is no evidence at smaller population levels about optimal tenure mix.[35, 39, 40]

Pepper-potting housing tenure to avoid segregation is often advised as a way to avoid explicit differentiation of households by tenure. While it is possible to develop private and public sector residences side by side, evidence suggests that achieving interaction or cohesion between different communities is not just a matter of location, design and architecture. While owner occupiers may help regenerate an area more effectively than renters, they can be "critical of the neighbourhood environment and socially distanced from the tenants of social housing nearby."[41] In some instances, it is reported that existing residents can feel marginalised by the processes that entice new buyers to an area.[42] It is notable that the Design Statement identifies higher density housing for the areas at the south of the site. It would be undesirable if housing layout and tenures became physical markers of social differentiation at Bangour as this is a potential contributor to differential health outcomes.

Some research suggests that close physical proximity of tenures can create social tensions (qtd in [38]) while other research has suggested that mixed tenure does not necessarily lead to neighbourhood interaction or integration [41]. Research suggests that effective community capacity building that engages all sections of the community – not vested interests – is essential if some kind of neighbourhood integration is to be achieved.[43]

While there are benefits to ownership, there are also disbenefits linked to mortgage arrears in particular and more general uncertainties about the translation of housing assets to financial assets and then to health benefits.[6, 44, 45] For people with fewer economic resources, the uncertainty and struggle of mortgage commitments or rent and housing values can have a negative impact on

health. There is evidence that shows that health inequalities increase if people living in neighbourhoods become more segregated by income and wealth.[46] Income inequalities, which are a possible corollary of mixed developments, are associated with serious negative health impacts for people with lower incomes.[47] There is good evidence to show that health outcomes are poorer in areas defined by residents as suffering from neighbourhood incivilities, vandalism and poor maintenance.[48-50]

Some research suggests that age composition and associated provision of a range of housing types is an important determinant of 'mixed, balanced or sustainable communities'.[51] This would avoid the dilemma which means that the preponderance of falling populations in areas of multiple deprivation may lead to 'those who moved from decreasing areas may have been healthier than those left behind.' [52] Age mix is also an important element of sustainable communities. New housing needs to be built to barrier-free standards so that an ageing population can be accommodated in the community.

Safety devices such as smoke alarms and lockable cupboards may reduce unintentional injury especially if targeted at parents of children at greater risk of injury. [53, 54] [55] There is some evidence that falls prevention programmes can help reduce injuries among older people at high risk, for example visual impairment.[56].

Improved energy efficiency has a positive impact on health. Reducing fuel poverty and improving insulation reduces excess winter mortality. Reducing dampness and mould can benefit people with respiratory conditions. In Scotland in 2013/14 there were over 1,600 'additional' deaths in winter; in the previous ten years excess winter deaths in Scotland averaged more than 2,700. In West Lothian this number has varied between 40 and 120 deaths a year.[57] Excess winter mortality is associated with the difference between indoor and outdoor temperature which can be exacerbated by poor housing insulation. Older people with low incomes are often less likely to heat their houses adequately as a result of concern about expensive heating bills.[6] There is good evidence that housing improvements that enhance insulation can improve health.[58, 59]

Previous public health campaigns have ranged from standards for clean water and drainage systems to removal of hazards such as lead from a range of house-related items such as paint or piping. There is some evidence that respiratory illnesses, notably asthma, may be linked to indoor allergens. Well-designed and constructed homes are obvious preventive measures in relation to this latter impact and energy efficient homes reduce demands on a variety of other resources. Basic standards relating to construction materials and methods can help alleviate concerns about allergens and other unhealthy outcomes. Waste management is also a key sustainability issue. Ensuring that there are well-designed waste management and recycling facilities – especially for flats – is important.

<u>Key points</u>

- *Owner occupiers are likely to experience better health than social renters although this is most likely a function of income rather than housing. People moving to new housing from poor quality housing are likely to see an improvement in health.*
- *Overcrowding has a negative health impacts on children and later in the lifecourse, adults.*
- *Home ownership is correlated with better health and wellbeing. But wellbeing improvements are less evident for homeowners whose mortgage costs are relatively high in relation to income and whose perception of personal wealth is wedded to housing.*
- *Evidence about tenure mix is still uncertain but less than 30% social renters appears to offer more prospect of health improvement in a community.*
- *A range of housing types and a population structure closer to the national average may contribute to more effective mixing of communities.*

Neighbourhood and Public Realm

- How does neighbourhood layout affect physical activity?
- How does neighbourhood layout relate to road traffic accidents?
- How does neighbourhood layout relate to air pollution?

The health benefits of physical activity, and impacts of car dependency, are noted above.

There is a strong emphasis in the Bangour PPiP on Scottish Government planning and design guidance such as *Designing Streets* and *Creating Places*. A key theme is walkable neighbourhoods within the new neighbourhood and connections to Dechmont. The Design Statement also includes the following proposals:

- new dedicated pedestrian crossing facilities on the A89 as part of the new three arm roundabout site access junction
- upgrade to existing pedestrian footway on the Old Bathgate Road
- upgrade existing network of footpaths throughout the development site
- provision of new and / or diverted bus services within the proposed development
- quality enhancements to the existing bus stops (shelters, seats, timetables etc.)
- safer routes to school for pupils of the new primary school
- cycle parking to encourage cycling to the new local shops and school
- Travel Pack for residents

Bangour will be a suburban development. People will need to travel out of the new settlement to access jobs, secondary schools, shopping centres and other destinations. So, from a health improvement perspective, the development needs to accommodate these travel needs but retain the emphasis on active travel when possible. Many of the Bangour proposals echo guidance produced by the National Institute for Health and Clinical Excellence, which recommends that: planning applications should prioritise need for physical activity as part of daily life including accessible local facilities and play space for children; pedestrians and cyclists should be given highest priority when developing or maintaining roads; a comprehensive network of walking and cycling routes should be provided; public open spaces and paths should be well maintained and accessible on foot and bicycle; workplaces and public buildings should be linked by and to walking and cycling routes; staircases should be designed and positioned to encourage their use; schools should be designed to facilitate active play.[60]

The layout of neighbourhoods is clearly linked to land-use patterns, housing and transport.[61] Obesogenic environments discourage physical activity and encourage the consumption of energy-dense foods, high in fat, salt and sugar.[62] Recent urban development has reduced possibilities to walk, cycle or use public transport effectively, something recognised by the Scottish Government.[63] [26, 64] Suburban sprawl creates an environment that constrain the amount of physical activity that people routinely exert on a daily basis.'[65]

Neighbourhood design can either encourage or discourage walking and cycling.[66-68]Street connectivity and an avoidance of culs-de sac and crescent type structures is viewed as good practice with regard to encouraging physical movement, neighbourliness, and also having potential to reduce reliance on private cars and enabling public transport provision. Areas that are deemed most 'walkable' are those with varied, higher density land use mix including local shops and services, good connectivity, safety and that are aesthetically attractive.[13, 69, 70] There should also be good quality footpaths and clearly marked cycle paths. In essence, these are design solutions that go on to shape or determine lifestyles and behaviour. There is limited evidence of causality of such

associations[68] and it should be noted that, for example, culs-de-sac may increase children's physical activity levels and parents' feelings of security.

Research from Glasgow suggests that 'the effects of [environmental] interventions are likely to vary between populations and between socioeconomic groups within populations.'[71] It suggested that close access to shops and safe cycle paths were environmental factors that influenced active travel in a positive way. The research suggests that residents' social and economic motivations and circumstances are also important determinants of travel. Addressing these issues is also an important aspect of effecting active travel. This research reiterates the sequence whereby fundamental determinants of health such as income and employment need to be in place for behaviour and lifestyle change to be possible.[72, 73]

UK government guidance in recent years has stressed the importance of developing approximately 50 dwellings per hectare in order to provide sufficient population numbers to sustain facilities and services in urban and suburban settings such. Much of the recent design guidance in the UK and Scotland is an attempt to curb low density, car dependent suburbs. Recent research highlights the contradictions and complexity of this subject.

> Firstly, outcomes relating to neighbourhood pride and attachment, stability, safety, environmental quality, and home satisfaction all display a negative, nonlinear relationship with density. Secondly, outcomes relating to social interaction and group participation tend to improve as density rises up to a medium level, and then fall off at higher levels. Thirdly, outcomes relating to the use of local services are broadly positively related to density. This third group represents the `equity' aspect of social sustainability, whereas the previous two groups represent the `community' aspect. …

> An exclusive emphasis on high density, particularly if this takes the form of apartment accommodation with little provision of gardens, is unlikely to produce happy, well-functioning communities. Compromises between the arguments (particularly from the sustainable transport perspective) for high density and the social and quality of life considerations will be needed. [74] (see also [75])

Housing density levels in the Bangour proposals is below 40 dwellings per hectare. Public transport for instance generally requires 40 dwellings per hectare over sustained distances so that demand exists.[76] However, housing density is also linked to neighbourhood type. Suburbs have varying densities dependent on the type of housing provided and Bangour will have lower density housing at the north of the site. A further complication when considering density issues is the interests of developers, particularly costs and profit-margins. Further research into the topic of housing density, its relationship to neighbourhood cohesion and effectiveness and the impacts of population health, is required.

The Bangour development will include a new primary school. There will also be demands on other public services, notably health and social care. At present, it is anticipated that primary healthcare will be provided mostly from existing practices at Strathbrock Resource Centre. But this would be dependent on negotiations with the local practices and other local NHS services and would depend on the total size of population increase. It is important that West Lothian Integration Joint Board is consulted early on when full planning applications are made as there may be a need for additional health and social care service facilities.

- *High density development supports more neighbourhood services. But neighbourhood pride, safety and environmental satisfaction are less easy to generate in high density areas.*
- *Areas that are deemed most 'walkable' are those with varied, higher density land use mix including local shops and services, good connectivity, safety and that are aesthetically attractive.*

Open space and Environment

- What are the impacts of open space provision on health?

Many people living in Dechmont and nearby appreciate the natural, wooded landscape of the Bangour site and the walking opportunities it provides. There are many paths through the site -- some have been poorly maintained in recent years – but the use of the hospital site for recreational activity has evolved informally. The PPiP recognises the value of the landscape as an asset so there is a commitment to retain mature trees and construct and maintain pathways. There is also a preference given to preserve open space at the playing field (the old cricket pitch).

There is good evidence linking access to greenspace with improved mental health although the pathways and processes that create these benefits are not always straightforward.[77, 78] This is both because of the direct positive impact of experiencing greenspace on mental health, and also because greenspace may encourage physical activity which in turn has beneficial impacts on mental health. In addition to open space, it is important that a range of play areas are provided to meet the needs of young people and parents and carers. Practice guidelines have highlighted the importance of shade as a design feature to minimise exposure to the sun.

Supportive environments are particularly important for children to facilitate healthy development. Positive parenting is important in building resilience that is important for mental wellbeing in children's later life.[79] This is supported by provision of adequate playspace to allow structured and unstructured play, as well as space for services that provide support for parents.

The northern and southern edges of the site are at higher risk of flooding according to SEPA's flood risk assessment maps. The PPiP indicates that drainage solutions will use the principles of Sustainable Urban Drainage Systems. There has been research that shows that flooding is exacerbated by high levels of non-porous surfaces such as concrete and tarmac. Flooding can have negative impacts on both physical and mental health.[80-85] Projections for future climate change suggest that there will be more rainfall in Scotland with more instances of thunderstorms. SUDS are one way of managing the risk of flash flooding in particular.

Key points

- *Good quality green and open space can provide specific health benefits including stress reduction and improved general health and wellbeing.*
- *Easily accessible, well maintained green and open spaces can enhance opportunities for physical activity.*
- *Government guidance stresses the importance of a variety of play areas suited to different age groups. These can offer important spaces particularly for child development.*

- *There are examples of good practice in Glasgow where play areas and other greenspace have been designed into the urban drainage and SUDS provision of new developments.*

Employment

- What are the health impacts associated with construction projects?
- What are the potential economic impacts associated with the Bangour development?

The scale of development at Bangour means that there will be many years of construction work. There are very specific risks at Bangour because of the presence of asbestos in the old buildings on the site. There will also be heavy lorries moving through the site and along the A89 at Dechmont during construction.

Construction injuries are common.[86-88] Rigorous site safety standards need to be agreed and imposed although there is no compelling evidence about effective interventions promoting construction safety.[89] A particular concern would be exploitation of migrant workers who may end up on site.[90] There is evidence that such employees are neither paid properly nor aware of their basic health and safety rights. It is important that appropriate precautions are implemented to deal with asbestos in old buildings. There also needs to be adequate security to ensure children do not trespass on site.

During construction there will be employment opportunities on site. If possible, it would be good for West Lothian Council to include a provision for apprenticeships as part of the planning permission. Over the long term, the economic impact of the development is most likely to be felt in terms of increased opportunity for services and trades working at people's homes on site as most of the Bangour development will be residential.

Key points

- *Construction has a high rate of injury and death compared to many other occupations.*
- *The presence of asbestos in old buildings on site presents a cancer risk to people in the vicinity if material is not handled with appropriate precautions during construction.*
- *There will be job opportunities for services and trades once the development in complete.*

Education

- What features of schools enhance health?
- How can schools contribute to active travel?

Education is a key determinant of health.[91] One of the main proposals in the Bangour PPiP is the plan to build a new seven form primary school for children in Dechmont and Bangour. This will replace the infant school currently in Dechmont. The PPiP suggests that the school will be located in one of two central locations which will be linked by footpaths and cyclepaths to Dechmont and all parts of the new development. A series of potential health impacts can be identified organised around the themes of school design, health promoting schools and travel to school.

Parental or carer perceptions of road safety, car ownership and a variety of individual level factors such as employment location influence the decision to drive to school.[92, 93] A review of the built environment and influences on children walking identified traffic calming and presence of playgrounds/recreation areas with more walking and less pedestrian injury.[94] There is also evidence that safe cycle and walking routes can encourage higher rates of active travel among schoolchildren.[95, 96] Evidence also suggests that 'to increase walking safety in children, a primary focus should be on minimizing or mitigating road crossings'.[97] *Designing Streets* is cited as a key influence in the Bangour PPiP. The emphasis on walkable environments and reduced car speeds that provides means that there ought to be fewer barriers to active school travel. Cycle parking at school is another option to increase active travel. Some parents and carers will choose to drive to school as part of a commute. Street design around the school should minimise possibilities of speeding vehicles and dangerous parking.

More generally, a health promoting school environment focuses on school food and opportunities for activity within school grounds. There is some research evidence to suggest that schools with larger play areas are associated with higher levels of physical activity.[98, 99] The Environmental Determinants of Public Health in Scotland (EDPHiS) project emphasised the importance of activities that encourage activity, collaboration and risk-taking. As a result, a Good School Playground Guide (www.creatingplacesscotland.org/people-communities/project/good-school-playground-guide) has been produced in Scotland to inform development of school play areas.

There are many ways in which schools and school food can impact on health. A recent systematic review reports on Healthy Eating Design Guidelines for schools. It suggests that a series of domains that interact to create a school 'healthy eating loop': access to water, on site kitchen, teaching kitchen, school garden, well designed eating areas, clear signage and links to healthy food education within the school curriculum and local environment.[100, 101] There is promising evidence about how a focus on these features of the school eating environment can impact positively on health. However, the transferability of what is mostly a north American evidence base to central Scotland needs to be considered. Architecture and Design Scotland have produced guidance and worked on ways in which schools can be designed to optimal health effect while also linking school provision into the wider placemaking agenda. The links between schools and wider neighbourhood design for health is fundamental.[66]

Key point

- *Well designed schools can contribute to healthy eating and increased levels of physical activity among children.*

IMPACTS MATRIX

Table 3: Potential health impacts and pathways from Bangour Village development

Issue	Pathways	Potential health impacts	Type of impact	Probability	Affected populations
Communities					
Uncertainty	Uncertainty and perceived loss of control over environmental change may lead to psycho-social stress.	Psychosocial stress and related health impacts Social capital	Negative	Probable	Dechmont residents
Community integration and cohesion	There may be mistrust between existing and new residents. There may be a perceived loss of identify within Dechmont if it becomes subsumed within a larger development. New village may be primarily dormitory housing with minimal links to Dechmont Alternatively, new population may enhance community networks.	Social capital	Negative/ Positive	Possible	All
Heritage	Many ex- employees of BVH and others have a strong attachment to the site and fear losing this heritage. Others look forward to restoration of listed buildings and redevelopment of BVH site	Psychosocial stress	Negative/ Positive	Probable	Dechmont residents Ex Bangour Village residents

Issue	Pathways	Potential health impacts	Type of impact	Probability	Affected populations
Amenity and open space in Bangour site	Bangour Village is currently used by nearby residents for walking and other activity. New development is likely to reduce the available open space.	Less physical activity Lower social capital	Negative	Probable	West Lothian residents, particularly in Dechmont, who currently use the site
	The location of the development will allow access to wide range of recreational activities available. Links to core path network and other outdoor activity should be enhanced.	Improved physical activity with access to play areas.	Positive	Definite	New Bangour residents
Amenity in Dechmont	Potential impact on current Dechmont amenities if village centre moves to Bangour. Dechmont residents may then drive, rather than walk, to access social spaces and amenities.	Reduced physical activity Lower social capital	Negative	Possible	Dechmont residents
Amenity in Dechmont and Bangour Village	Access to improved amenities and infrastructure as a result of increase in population. More access to services and facilities.	Opportunities for physical activity. Improved social capital	Positive	Probable	All

Transport					
Traffic	Increased population will increase car ownership and use. This will increase risk of road traffic accidents, increase air emissions and may have a severance effect and discourage physical activity.	RTA injuries Air pollution Severance	Negative	Probable	All residents, especially children
	Potential that traffic emissions are higher due to lower speeds	More exposure to pollution	Negative	Possible	All in residential areas, especially people with pre-existing respiratory illness
Vehicle use	Location of development may primarily attract commuters to work. If most residents are absent during the working day this may reduce social capital within Bangour. If most commuting is by car this will also reduce daily physical activity. Greater mixed use on the site may reduce the impact of and reliance on car based travel.	Physical activity Social capital RTAs	Negative	Probable	Bangour residents
Bus services	Increased bus services should improve access to services, amenities and employment and may reduce car use and so reduce physical inactivity.	Access to services Physical activity	Positive	Probably	Residents of Dechmont and Bangour

Aircraft activity	Proximity of the airport and flight path may cause noise pollution	Stress and sleep disturbance	Negative	Possible	Bangour Village and Dechmont residents
Housing					
Housing provision	Provision of new housing will include affordable housing. This helps address problems with housing supply. Improved housing conditions are associated with positive physical and mental health for people moving from poor quality homes.	Physical and mental health	Positive	Probable	Bangour residents, particularly if moving from poorer quality accommodation
Housing design	New housing designed to be accessible and homes for life may improve health for older people and people living with disabilities	Physical health	Positive	Possible	Bangour residents
Layout	If the development provides a walkable environment this may encourage walking and cycling and social interaction between residents. Alternatively, if the layout is not walkable this may increase car dependence.	Physical activity

Social capital | Positive or negative | Possible | Bangour residents |

	Commitment by developers to provide affordable housing at Dechmont -- Family/executive homes on fringes of development site. Lower density development seems more reliant on cars for access.	Less pollution and increased physical activity	Negative	Possible	Residents in lower density developments
Neighbourho od and Public Realm					
Land use mix	Clearly defined uses with good road access for business and safer routes for school. Reduces reliance on cars, may increase social interaction Still some of separation of land uses, notably residential and business park, which may discourage walking and cycling to work especially	Increased physical activity, reduced exposure to pollution and reduced community severance Less physical activity	Positive Negative	Possible Possible	All local residents
	Development unlikely to house significant numbers of poor people. Less health inequalities in areas with equitable distribution of wealth. Conversely, poor social cohesion related to poor interaction of tenants and owner occupiers in regenerated areas.	Better general health	Positive	Possible	All

Health and social care service provision	Increased population may increase pressure on local services.	Reduced access to health and social care services	Negative	Unlikely	Bangour, Dechmont and Broxburn residents
Open space and Environment					
Sustainable Urban Drainage systems	Improved access to recreational green space and managed natural environment. Reduced risk of flooding	Increase in physical activity and general wellbeing (if SUDs integrated into landscaping) Increased risk of drowning Depression and stress as a result of reduced risk of flash flooding	Positive	Probable	All
River flooding	Risk of flooding	Depression and stress; vector-borne disease	Negative	Possible	New residents on flood plain
Employment					

Construction employment opportunities	There will be employment opportunities resulting from the development. Employment is associated with improved physical and mental health outcomes, particularly if it provides high quality employment	General health	Positive	Probable	Local unemployed population
Employment services opportunities	There will be employment/economic opportunities -- trades etc -- resulting from the demand generated by people living in the new village.	General health	Positive	Probable	
Impact on local business	If village centre moves this could threaten the viability of Dechmont businesses. Alternatively, population growth could provide opportunities for local business.	Social capital General health	Positive or Negative	Possible	Existing traders in Dechmont
Construction risks	Existing buildings are reported to contain asbestos. If not correctly handled during removal this could cause exposure of construction workers and others to asbestos.	Cancer mortality	Negative	Unlikely if correct procedures followed	Construction workers
Construction risks	Exposure to toxins, pollutants and allergens if non-sustainable materials used in construction.	General health	Negative	Possible	Construction workers
Construction risks	There is a risk of injuries related to construction sites.	Injuries	Negative	Possible	Workers on sites, children

	During construction phase, increased HGVs are likely to increase risk of accidents and pollution Construction Environmental Management Plan should minimise impact	RTA injuries Air pollution Severance	Negative	Possible	Dechmont residents, especially children, older people, people with respiratory illness
Education					
School provision	Planned new school may enable high quality education and increase local pride. Alternatively, if the school offers poorer experience than current school this would have adverse effect on education and health. Increased population may increase pressure on local secondary schools High quality education is determinant of general health.	Social capital General health	Positive/ Negative	Possible	School age children in Bangour, Dechmont and Broxburn
School travel	Parents commuting to jobs outside Bangour Village and Dechmont – car parking near school	RTAs and congestion Less routine physical activity	Negative	Possible	School children

School design	There is potential to ensure best practice regarding school design in relating to health: active travel, safe routes to school, cycle parking, internal layouts, kitchens and eating areas, playground facilities	Social capital Better nutrition Physical activity General health	Positive/ Negative	Possible	School age children in Bangour, Dechmont

CONCLUSION

Bangour Village has potential to be a high quality development that provides a healthy environment for residents. It will be important not to disadvantage people in Dechmont and to involve them where possible as the new development is planned and delivered. Bangour is a suburban development and the majority of building will be new housing. To maximise the health benefits, developers should include design features that avoid car-dependence. Walkability and community cohesion can be supported by high quality design. National planning policies, notably *Designing Streets*, provide clear guidance about how to produce settlements that encourage activity and reduce the dominance of cars in a residential setting. Ensuring developers comply with relevant policy guidance will help deliver a healthy environment within Bangour Village.

Detailed recommendations arising from this health impact assessment are listed at the front of this document.

Appendix 1: Health Impact Scoping Checklist

HEALTH IMPACT ASSESSMENT SCOPING CHECKLIST

People

Who do you think is likely to be affected by the proposal?

Impacts

Do you think the proposal could impact on the following (positively or negatively)?

Physical infrastructure

Living and working conditions

Housing quality, mix, flexibility

Natural space – quality and access

Care and maintenance of buildings and spaces

Impact of vehicles

Pollution – air, water, soil

Connections

Walking and cycling routes

Public transport provision

Streets and spaces

Social networks

Identity and belonging

Social status and inclusion

Social interaction and participation

Support networks

Influence and sense of control

Equality of opportunity

Safety

Healthy behaviours

Services and facilities

Quality of and access to facilities, services and amenities

Play and recreation

Local economy, work and learning

Other impacts

Appendix 2: Potential health impacts, research questions and evidence sources

A series of research questions or issues was identified as a result of community consultation (see above) and analysis of the documents submitted as part of the PPIP.

Area of impact	Questions	Sources
Community	What health impacts are associated with general uncertainty or loss of control associated with development?	Literature search
	What are health impacts related to loss or development of a sense of identity	Literature search
	What interventions and approaches reduce conflict and promote integration between existing and new communities?	Literature search
	What evidence is there about integration or detachment of different communities? For example, long-term residents and in-comers, young and old people.	Literature search
	Are there health impacts associated with provision of or removal of and access to community facilities such as community centres, places of worship, libraries, schools and sports centres?	Literature search
Transport	What are the health impacts of transport associated with development?	*HIA of Transport Initiatives: a Guide* and literature search
	Are there specific impacts associated with commuting?	*HIA of Transport Initiatives: a Guide* and literature search
Housing	What are the health impacts of new housing?	*HIA and Housing Improvements: a guide* and literature search
	What features of houses affect health?	*HIA and Housing Improvements: a guide* and literature search
	What impact does housing density have on health?	*HIA and Housing Improvements: a guide* and literature search
	Does housing tenure have any health effects on residents?	*HIA and Housing Improvements: a guide* and literature search
	Are there any health impacts associated with mixed tenure housing developments?	*HIA and Housing Improvements: a guide* and literature search
	What impact does housing layout have on health?	*HIA and Housing Improvements: a guide* and literature search
Neighbourhood layout and public realm	How does neighbourhood layout affect physical activity?	*HIA and Housing Improvements: a guide* and literature search
	How does neighbourhood layout relate to road traffic accidents?	*HIA and Housing Improvements: a guide* and literature search
	How does neighbourhood layout relate to air pollution?	*HIA and Housing Improvements: a guide* and literature search
Open space and Environment	What are the impacts of open space provision on health?	Literature search and *HIA of Greenspace: a Guide*

Employment	What are the health impacts associated with construction projects?	Literature search
Education	What are the health impacts associated with school building projects?	Literature search

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