



Preliminary Environmental Information Report Volume 2

Appendix 10.1 Health and Wellbeing Evidence Review

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1 Environmental amenity

- 1.1.1 Environmental amenity comprises aspects of the physical environment that contribute to the quality of public and private spaces. The construction phase of the Proposed Scheme may impact environmental amenity through changes in traffic, noise and vibration, air quality and visual amenity, either individually or in combination. Changes in environmental amenity can affect people's willingness to use outside spaces, and the ways in which they are used. The quality of the public realm and outdoor spaces affects people's mental wellbeing, satisfaction with their local environment, sense of place and the value people attach to their neighbourhood. Attachment to place, is identified as a characteristic of resilient communities, is closely related to strong social networks.
- 1.1.2 The following aspects of environmental amenity have the potential to affect health and wellbeing and are therefore considered in this assessment:
- a. Noise: influences sleep, stress, anxiety, blood pressure and mental health. Noise also affects the perceived pleasantness or usage levels of public spaces.
 - b. Air quality: impacts on respiratory and cardiovascular health. Concerns about air quality may influence choices that affect health indirectly, such as the decision to use public spaces or engagement in active travel.
 - c. Visual environment: visually appealing streets and public spaces provide more incentive for people to use these spaces and affects people's mental wellbeing, enjoyment of and attachment to places.
 - d. Traffic: heavy traffic can make streets less appealing due to increased stress, safety concerns, noise, air quality and visual impacts.

1.2 Evidence

- 1.2.1 A study in 2015 (Ref 1) was undertaken to quantify the relationship between environmental aesthetics and human health by comparing geographic data against self-rated health. This found that inhabitants of more scenic environments report better health, across urban, suburban and rural areas, even when taking core socioeconomic indicators of deprivation into account such as income, employment and access to services.
- 1.2.2 Dust can cause eye, noise and throat irritation and lead to deposition on cars, windows and property therefore impacting neighbourhood amenity (Ref 2).
- 1.2.3 Noise has been noted to produce an impact on amenity for a local community by causing annoyance. As a result, people may experience anger, disappointment, dissatisfaction, anxiety and stress among other symptoms (Ref 3).
- 1.2.4 Furthermore, families with lower income tend to have lower mobility but greater exposure to the adverse environmental conditions related to transport such as air and noise pollution, and road traffic.

2 Active living

2.1.1 Active living comprises intentional and unintentional physical activity. It includes active travel and access to community resources which facilitate physical activity, such as a park. The health benefits of regular physical activity are well-established and wide ranging and have significant positive implications for mental health and wellbeing. In general, the more time spent being active, the greater the health benefits.

2.2 Evidence

2.2.1 Government Guidelines summarise the direct benefits as *'reducing the risk of disease, managing existing conditions, and developing and maintaining physical and mental function'*. Wider benefits include: *'improved learning and attainment; managing stress; self-efficacy; improved sleep; the development of social skills; and better social interaction'* (Ref 4).

2.2.2 An overview of Cochrane systematic reviews has concluded that the plethora of evidence evaluating the effectiveness of physical activity/exercise suggests that it reduces mortality rates and improves quality of life with minimal to no safety concerns (Ref 5).

2.2.3 A literature review of studies from various countries examining the relationship between physical activity and happiness showed that as little as 10 minutes of physical activity per week resulted in increased levels of happiness (Ref 6). A systematic review undertaken by the Department of Health and Human Services in the US, noted that a major finding of the evidence was that regular physical activity reduced the risk of clinical depression and depressive symptoms among people both with and without clinical depression. Physical activity was also found to reduce the severity of those symptoms irrespective of number of depressive symptoms. The review also found that perceived quality of life is improved by regular physical activity (Ref 7). A cross-sectional and longitudinal study found that walking had positive associations with psychological and social wellbeing, strolling in nature with emotional and social wellbeing and endurance training with subjective health (Ref 8).

3 Employment and training

- 3.1.1 There is evidence that employment influences health, both from an economic standpoint and in terms of quality of life. Good quality work protects against social exclusion through the provision of income, social interaction, a core role and identity and purpose. Therefore, the generation of secure, fulfilling jobs is beneficial to mental and physical health outcomes.

3.2 Evidence

- 3.2.1 The Marmot Review (2010), commissioned by the Department of Health to examine health inequalities in England, looks at the differences in health and wellbeing between social groups. The report identified the importance of work for health: 'being in good employment is protective of health. Conversely, unemployment contributes to poor health' (Ref 11).
- 3.2.2 Many of the documented linkages between access to work and health are often related to the negative impacts of unemployment, rather than the positive impacts of employment. However, it should follow that maintaining high levels of employment opportunities could be expected to be positive in health terms.
- 3.2.3 Employment is related to social and psychological wellbeing; a study commissioned by the Department of Work and Pensions found that 'work meets important psychosocial needs in societies where employment is the norm' and that 'work is central to individual identity, social roles and social status' (Ref 12).

4 Access to community facilities

- 4.1.1 Accessibility to healthcare, community facilities and public services has a direct positive effect on mental and physical health. Accessibility includes the ability to easily and affordably reach facilities and the capacity of facilities to provide high quality services.

4.2 Evidence

- 4.2.1 According to the Institute of Medicine (United States.), barriers that prevent or limit access to health care services may increase the risk of poor health outcomes and health disparities. Barriers to health care include inconvenient or unreliable transportation (Ref 13).
- 4.2.2 A study by Iwasaki in 2010 (Ref 9) suggests that access to social infrastructure including leisure and cultural facilities has been shown to play a key role in the recovery of people with mental illness and have an overall positive impact on health and wellbeing. A report by the New Zealand Government in 2007 (Ref 10) identifies a number of reasons for participation in cultural and leisure activities including personal growth and development, to learn new skills for enjoyment and for entertainment, all of which can benefit health and wellbeing.

5 Ground and water contamination

- 5.1.1 Ground and water contamination refers to the occurrence of harmful substances entering and polluting the soil or underground water sources.
- 5.1.2 Contaminated ground water can have serious adverse effects on human health, including spreading infectious disease and increasing the risk of long-term chronic conditions and developmental and reproductive issues.
- 5.1.3 Contaminated soil can impact health through inhalation of contaminate dust particles, ingestion of food grown in polluted soil, or by leeching into groundwater and affecting drinking water supplies. This can result in skin irritation and respiratory issues, and long-term effects including cancer and neurological damage.

5.2 Evidence

- 5.2.1 As referenced in the State of the Environment Report, contaminated land can release harmful chemicals into soil and groundwater. It also highlights that areas with poor access to clean green and blue spaces show higher disease burden and lower life expectancy (Ref 14).

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