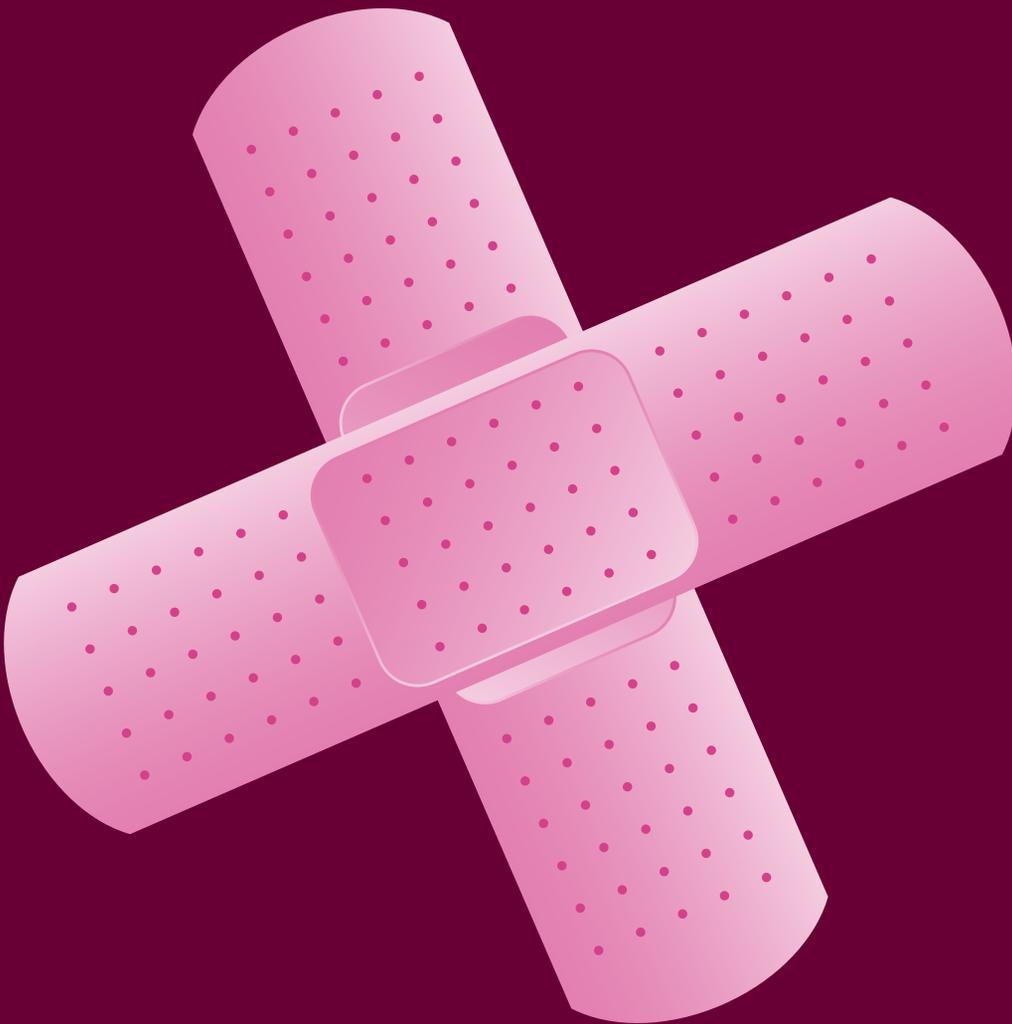

TRAVELLERS' HEALTH MATTERS

A RETROSPECTIVE HEALTH IMPACT ASSESSMENT
OF LOW-GRADE TRAVELLER ACCOMMODATION



**Combat Poverty
Agency** working for a
poverty-free Ireland

GALWAY TRAVELLER MOVEMENT

FUNDED BY COMBAT POVERTY AGENCY UNDER
THE BUILDING HEALTHY COMMUNITIES INITIATIVE
RESEARCH UNDERTAKEN BY TSA CONSULTANCY

TRAVELLERS' HEALTH MATTERS

A retrospective health impact assessment of low-grade Traveller accommodation

The research was commissioned by Galway Traveller Movement (GTM) and managed on its behalf by Anne Costello.

The Combat Poverty Agency funded the research, as part of its 'Building Healthy Communities' Programme.

A Health Impact Assessment Advisory Group advised the research team throughout all stages of the work. Members of the Advisory Group:

- Maria Brennan, Primary Health Care Worker, Galway Traveller Movement
- Colm Byrne, Health Promotion Officer, Health Service Executive West
- Bridget Corcoran, Resident, Carrowbrowne halting site.
- Anne Costello, Community Worker, Galway Traveller Movement
- Siobhan Donoghue, Social Worker, Galway City Council
- Evie Finlay, Community Worker, Galway Traveller Movement
- Dr. Mary Fitzgerald, Senior Medical Officer, Health Service Executive Primary Community Continuing Care, Galway
- Gerard Flanagan, Senior Social Worker, Galway City Council
- Joan Gavin, Primary Health Care Worker, Galway Traveller Movement
- Dr. Marita Glacken, Specialist in Public Health Medicine, Health Service Executive
- Shane Keane, Senior Environmental Health Officer, Health Service Executive
- Councillor Niall Ó Brolcháin, Galway City Council
- Delorus O Loughlin, Public Health Nurse, Health Service Executive.

The research was undertaken by Tanya Lalor and Aoife Fitzsimons, TSA Consultancy. The GP data was collated by Elizabeth O' Leary, RGN.

Callie Phillips, Environmental Resource Management (ERM) advised on the Health Impact Assessment process.

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I.

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 - Margaret O Riada and the Management Committee of the Galway Traveller Movement.
 - Sue Hassett, TSA Consultancy.
-

II. FOREWORD

GALWAY TRAVELLER MOVEMENT is delighted to present this Health Impact Assessment which examines the effects of living in poor accommodation on Travellers' health and well-being.

Studies of the health status of Travellers find their health to be significantly poorer than their settled peers. Moreover, national strategies acknowledge that Travellers' health issues are inextricably linked to standards of accommodation.

In spite of this, there is a dearth of research into how poor accommodation affects the daily lives and health of Travellers.

This study has attempted to address this, and it uses the methodology of the Health Impact Assessment (HIA) to undertake a systematic analysis of the relationship between health and poor accommodation.

The HIA methodology is a powerful one – not only does it capture the lived experiences of Travellers, but it analyses these experiences against established public health research on the health effects of the built environment. HIA is a systematic approach to this important issue, and it lends credibility to findings and conclusions.

This HIA was retrospective: rather than looking at the health impacts of a proposed project or site, it examined the health impacts of an existing one. The site selected was Carrowbrowne halting site in Galway. The site lacked the most basic of facilities such as mains electricity, plumbed water and flush toilets. It was selected as it was felt to be indicative of the conditions for many families living on low grade halting sites in Ireland. Carrowbrowne site underwent a major refurbishment towards the end of the research

period. This enabled the researchers to examine some of the potential health impacts of the newly developed site. The researchers also had an opportunity to assess the consultation process that the Local Authority undertook with the Traveller residents as part of the redevelopment process. The report contains a number of recommendations to ensure that consultations with Travellers for the development of new sites are effective, thus maximising the health benefits.

A number of resources have been produced in addition to this summary document. They include a 'toolkit to help those assessing conditions on Traveller sites', and a 'Planning and Development toolkit' which provides a guide to the planning and development process undertaken when sites are being developed, and tips on how best to influence this process. A DVD was also produced to compare conditions on the site before and after the refurbishment. All of the resources are available through GTM and on the webpage dedicated to this HIA study established by the Irish Traveller Movement and Pavee Point.

We trust that we have produced resources that are practical and accessible to all those with an interest or a responsibility in this area, whether they are residents on Traveller sites, public health or environmental health professionals, Traveller organisations or local and central government officials.

We thank the Combat Poverty Agency for funding this project through their 'Building Healthy Communities' initiative and for their support and guidance throughout the process. We also thank the advisory group members and the residents of the site for their contribution to the research process.

A series of practical and policy measures are recommended in this HIA. We believe that these recommendations not only address the impacts of poor accommodation on Traveller health, but also provide a framework for greater inclusion and participation of Travellers in the development of new sites. We also believe that unless these recommendations are adopted, the costs will be borne by another generation of Travellers in terms of continued poor health, shorter life expectancies, and increased demand for treatment of health conditions that could be prevented. We look forward to engaging with all the interested parties to progress these recommendations.

A handwritten signature in black ink, appearing to read 'Ann Irwin', is written over a horizontal line. The signature is fluid and cursive.

Ann Irwin

Chairperson of The Galway Traveller Movement

TRAVELLERS' HEALTH MATTERS



INTRODUCTION TO PROJECT

1.1 BACKGROUND

This report outlines the findings of research undertaken by Galway Traveller Movement (GTM) between 2007 and 2008 on the health impacts of living on low-grade Traveller accommodation. GTM received funding from the Combat Poverty Agency to undertake research on the issue, as part of its 'Building Healthy Communities' programme. Galway Traveller Movement selected one halting site as a case study: this site was Carrowbrowne official halting site on the Headford Road in Galway City.

Carrowbrowne was built as a transient¹ halting site in 1988 by Galway City Council on land owned by the City Council, and which is located within the functional area of Galway County Council. It was vandalised and subsequently vacated and remained unoccupied for a number of years. Since 2002, the site has been occupied by between 11 and 20 families at any one time.² For most of these families it has been their only place of residence. Conditions on-site have been in a poor state of repair, with no functional service units; no functioning mains electricity; no hot running water or indoor plumbing; and a sanitation provision consisting of portable toilets, serviced twice weekly. As Carrowbrowne has been in existence prior to the establishment of guidelines for Travellers' halting sites by the Department of the Environment, Heritage and Local Government (DEHLG)³ these guidelines do not apply to the site.

Carrowbrowne is currently in the process of redevelopment, but the conditions on the site prior to the redevelopment were, GTM believes, representative of low grade sites in Ireland.

The objectives of the study were:

- To consider the health issues for Travellers living on low-grade halting sites that pre-date the national guidelines established by the DEHLG, using Carrowbrowne site as a case study.
- To describe the characteristics of Carrowbrowne and to compare these against good practice guidelines and minimum standards.
- To document the health status of Travellers on the site.
- To use the methodology of Health Impact Assessment (HIA) in order to identify possible associations between health and the living conditions on this site.
- To influence policy at national level regarding conditions on existing low-grade halting sites.

This report deals specifically with low grade halting sites and it seeks to provide recommendations to improve conditions on these sites.

The methodology of Health Impact Assessment (HIA) was used in this research. This can be defined as 'a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.'⁴ This method was used following discussions and consultation with public health experts, Traveller organisations, and organisations such as the Institute of Public Health in Ireland.

A Health Impact Assessment is usually carried out 'prospectively', so that its conclusions can inform the decision about whether, and how, a proposed development takes place.

1 A site providing the basic facilities, designed for short term use by families pursuing a nomadic way of life, or visiting relatives.

2 The census of Travellers and Traveller Accommodation conducted for the Department of the Environment, Heritage

and Local Government as at the 26th of November, 2004 in preparation for the Traveller Accommodation Plan (2005-2008) reported that 18 families were living on-site.

3 Guidelines, Residential Caravan Parks for Travellers (1998);

Guidelines, Accommodating

Transient Traveller Families (1998); and Guidelines for Traveller Accommodation: Basic Services and Facilities for Caravans Pending the Provision of Permanent Accommodation (1998). Department of the Environment, Heritage and Local Government

4 European Centre for Health Policy (1999): Health Impact Assessment: Main concepts and suggested approach (Gothenburg Consensus Paper). Brussels: European Centre for Health Policy.

1.

INTRODUCTION TO PROJECT

A Health Impact Assessment can also be carried out retrospectively, after a development has been implemented, to assess its impact on health. As the Carrowbrowne site was already in existence, and the plans to redevelop the site were at too advanced a stage to undertake a full prospective HIA, a decision was taken to undertake a retrospective Health Impact Assessment on the old site.

As stated earlier, Carrowbrowne has been in the process of redevelopment (the site works commenced in December 2007 and was completed in March 2009). The fieldwork phase of the research spanned the period before and after the start of the redevelopment. When the redevelopment started, families moved onto an emergency site which is adjacent to Carrowbrowne, to allow works to take place on the old site.

Potential health impacts of new site

The coinciding of the redevelopment with the later stages of the fieldwork provided the opportunity to use the methodology of HIA to undertake a limited study into the anticipated impacts of the redeveloped site on the health and well-being of families and it also examined the consultation process undertaken by the local authority with the families⁵ for the development of the new site. It was hoped that the recommendations arising from this consultation process with the residents would, as far as possible, be incorporated into the proposals for the redevelopment of the site. The key findings of this study are also included in this report.

The timeline of the redevelopment of the site and how it coincided with the HIA is outlined below.



At the outset of the process, an advisory group comprising public health specialists, local authority officials, GTM staff, environmental health specialists, and a local councillor as well as Travellers living on-site was established in order to advise the research process. The research was coordinated by TSA Consultancy, specialists in third sector development and social research with the community sector. Environmental Research Management (ERM), specialists in health impact assessment, acted as HIA advisors to this process.

This report describes the findings of the HIA, including potential impacts on health that could arise from living in conditions such as those in Carrowbrowne and outlines a series of actions and recommendations that could alleviate the poor living conditions of Travellers.

This is a summary report of a research process that was undertaken over the course of over one year. More detailed information including a detailed literature review is available online.⁶

⁵ The plans for refurbishment had already completed the planning process and permission had been granted by Galway County

Council. This meant that the scope of the HIA was limited.
⁶ www.paveepoint.ie,
www.itmtrav.ie

1.2 OVERVIEW OF TRAVELLERS IN IRELAND AND THE POLICY CONTEXT

Travellers in Ireland

There is an estimated 22,435 Travellers living in Ireland.⁷ The following is a short profile of Travellers:

- The Traveller community has a young age profile: those aged between 0-14 years account for 41.4% of the entire Traveller population (compared to 20.4% of the general population). Those aged 65 years and over account for just under 7% of the total Traveller population, (compared to 11% of the general population).⁸
- 30% of Travellers, who stated their type of accommodation, live in caravans and mobile homes, located on permanent,⁹ temporary and emergency¹⁰ halting sites. On the basis of available data on this group¹¹ from Census 2006, almost all have no central heating (91%); over one quarter have no piped water (26%) and over one quarter have no sewerage facility (25%).
- Three quarters of Travellers are unemployed, and over three quarters of all Travellers aged 15 years or over (77%) obtained primary only, or no formal education, (compared to 19% of the total population); and only 4% of Travellers have attained upper secondary education (compared to 30% of the general population).¹²
- According to the DEHLG 2007 Traveller Count,¹³ there is an estimated 8,099 Traveller families in Ireland. A total of 1,140 families (14%) are living in local authority halting sites.¹⁴ Of these, 755 families (9% of all families) are living on permanent sites and 43 on temporary sites. A further 342

families (4% of all families) are living on 'basic service bays.'¹⁵ Of these families:

- o 227 families are living on basic service bays awaiting permanent accommodation,
- o 40 are living in basic service bays while construction of permanent accommodation is underway, and
- o 75 are on basic service bays in 'other' circumstances.
- According to the same statistics, a further 594 families (7%) are living in unauthorised sites (including fields, side of the road, and other sites). Of these, 364 are living without services (e.g., electricity, water, etc.). Of the families without services, 253 have applied for accommodation with their local authority.

Travellers' health

A major national survey of Travellers health was undertaken in 1987 (*Vital Statistics of Travelling People*). It reported that Travellers of all ages have much higher mortality rates than people in the general population, with Traveller men living on average 10 years less than men in the general population and Traveller women living on average 12 years less than women in the settled community. For Traveller children, the combined still-birth, peri-natal death and infant mortality rate in 1987 was three times the national average.¹⁶

7 Source: Census 2006.

8 According to Census 2006 data.

9 Site with individual bays, with the full range of services provided in a small structure on each bay. Bays would be allocated to families on a permanent basis.

10 A short term site, providing basic facilities, for families awaiting permanent accommodation.

11 That is, those who answered the questions in census 2006 on their living conditions.

12 This data is based on the responses to the question in the census.

13 DEHLG (2008): Housing Statistics.

14 Either as local or housing authority tenants or sharing with local or housing authority tenants.

15 A basic service bay is designed for short-term occupancy, on an interim or temporary basis (temporary site), pending the provision of permanent accommodation. Guidelines are developed for provision of basic services in three

incidences: 1) to meet a need during the construction or redevelopment of permanent sites (when families have to move to allow work to proceed and may be located on such sites for 40-50 weeks), 2) to meet a need in other circumstances (for example, unauthorised sites) and 3) other temporary accommodation pending the provision of permanent accommodation (where families can be in accommodation for up to 4-5 years). Guidelines

established for this latter category include the provision of electricity, service units and waste disposal. (DEHLG (1998): Guidelines for Traveller Accommodation: Basic Services and Facilities for Caravans Pending the Provision of Permanent Accommodation.)
16 Barry, J., Herity, B. and Solan, J. (1989): *Vital Statistics of Travelling People, 1987*. Dublin: The Health Research Board, pp. 14-15.

INTRODUCTION TO PROJECT

More recent local studies have indicated that there is approximately twice the incidence of diabetes, pre-diabetes and metabolic syndrome¹⁷ amongst the Traveller population in Galway.¹⁸ Prevalence of these conditions was also associated with onset in younger ages compared with the general population.

At present, the All-Ireland Traveller Health Study¹⁹ is being undertaken and it is hoped that its findings will inform appropriate actions required in the area of Travellers' health. The Institute of Public Health in Ireland has designed the study following an extensive consultation process with Travellers and other stakeholders. The fieldwork commenced in October 2008 and data was being analysed at the time of publication of this HIA (April 2009). Traveller health and housing – the policy context

The inextricable link between poor housing and health of Travellers has been formally acknowledged in a range of national policy and strategy documents.²⁰ According to the last national health strategy for Travellers:

There is little doubt that the living conditions of Travellers are probably the single greatest influence on health status. Stress, infectious disease including respiratory disease and accidents are all closely related to the Traveller living environment. It is clear that an immediate improvement to the living environment of Travellers is a prerequisite to the general improvement in health status.²¹

The need to improve Traveller accommodation has led to a range of policy and legislative measures that have been introduced since 1998. Included in these are the following:

- The establishment of a Traveller Accommodation Unit in the DEHLG and publication of guidelines by the DEHLG for the development of Traveller accommodation. These guidelines are for local authorities developing new or refurbishing transient and permanent halting sites or group housing schemes for Travellers. These guidelines have no statutory basis and they are for the purposes of developing new sites: they do not exist as minimum standards that can be enforced on existing sites.
- The Housing (Traveller Accommodation) Act, 1998 which led to the establishment of the National Traveller Accommodation Consultative Committee (which advises the Minister regarding Traveller accommodation) and Local Traveller Accommodation Consultative Committees (located in each local authority area to advise the authorities on the provision and management of accommodation for Travellers). In addition, each local authority is required under the legislation to prepare and adopt a Traveller Accommodation Programme (TAP) every five years.

The Irish Traveller Movement (ITM) has noted problems and delays in implementing TAPs, and it makes the point that there are no punitive measures for those local authorities that fall well below stated targets in their TAPs. For local authorities, a lack of land and local and political opposition to Traveller accommodation are identified as barriers to their implementation.

17 Pre-diabetes refers to the stage before diabetes, when blood glucose level is slightly higher than normal though medically speaking the individual does not yet have diabetes. Metabolic syndrome refers to a group of conditions including obesity, high blood pressure, abnormal cholesterol levels and resistance to insulin –

which combine to increase the risk of heart disease, stroke and diabetes.

18 Tan, S., Gavin, J., Murphy, D., Dineen, B., Avalos, G., and Dunne, F. (2007): Pilot Study to Determine the Prevalence of Diabetes, Pre-diabetes and Metabolic Syndrome in the Travelling Community. Study undertaken in collaboration with NUIG, GTM, ITM,

Health Research Board.

19 This study is being undertaken jointly by the Department of Health and Children and the Department of Health, Social Services and Public Safety, Northern Ireland.

20 For example, in The Report of the Task Force on the Travelling Community (1995) and Traveller Health – A National Strategy (2002-

2005).

21 Traveller Health – a National Strategy (2002-2005). Dublin: Department of Health and Children.

In light of limited progress in meeting Travellers' accommodation needs, organisations such as the Irish Traveller Movement have called for the establishment of a national agency that would have the brief of meeting the accommodation needs of Travellers.

The relationship between health and housing has led to calls, over the years, for inter-departmental structures to co-operate on the issue: the first reference to this made in the Report of the Task Force on the Travelling Community (1995). Its report recommended that:

The Departments of Health and Children and Environment and Local Government should set up a joint committee of officials and Travellers to explore the possibility of developing initiatives to improve the environmental health of halting sites. (Recommendation E4)

The subsequent Traveller Health Strategy, published in (2002-2005) included in its recommendations that:

Discussions will take place between the Department of Health and Children and the Department of the Environment and Local Government to examine and determine an appropriate liaison arrangement, including representation from Traveller organisations, between the two Departments with a view to addressing issues of common concern relating to Travellers. The two Departments will be asked to examine issues including the inspection of halting sites, health and safety matters on halting sites and the role of the two Departments, Health Boards and local authorities in addressing these issues and to report within 12 months of the publication of this Strategy. (Ch 4, Rec. 7)

The establishment of this structure remains outstanding.

In terms of monitoring actual conditions on sites, it was recommended in the First Report of the Task Force on the Travelling Community (1995) that:

The immediate improvement of the accommodation situation of Travellers is a pre-requisite to the general improvement of the health status of Travellers. Health Boards should periodically inspect all halting sites so as to report on health and safety matters. The resulting reports should be publicly available. (Recommendation ER2)

However, the first report of the Task Force Monitoring Committee was published in 2000, and this report observes that:

No progress to date in implementing the recommendation [ER2]. Health Boards have no legal authority to enforce any recommendations they might have in relation to health and safety on halting sites and would be reluctant to get involved in any sort of 'naming and shaming' exercise vis-à-vis local authorities.²²

In spite of these acknowledged relationships between health and housing, research has indicated continued poor conditions in Travellers accommodation in Ireland.²³

22 First Progress Report of the Committee to Monitor and Co-ordinate the Implementation of the Recommendations of the Task Force on the Travelling Community (2000). Department of Justice, Equality and Law Reform, p. 134.

23 For example, TSA Consultancy (2003): Environmental Health Concerns of Travellers Environmental Concerns and Conditions on Traveller Sites. Dublin: Traveller Health Unit Eastern Region (HSE).

2.

DEFINING HEALTH AND HEALTH IMPACT ASSESSMENT

2.1 WHAT IS 'HEALTH'?

Following best practice, this Health Impact Assessment (HIA) takes the World Health Organization's (WHO) definition, which states that health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."²⁴

2.2 A SOCIO-ECONOMIC MODEL OF HEALTH

The basis of the HIA is a broad socio-economic model of health. For any individual, health is determined by a multitude of factors. Most obviously, there are factors that relate to age and genetics. Next are lifestyle factors, e.g., alcohol consumption, tobacco smoking. Beyond these external factors affect health; these reflect the wider environment and the socio-economic context in which individuals live and work. These factors are summarised in figure 2.1.²⁵

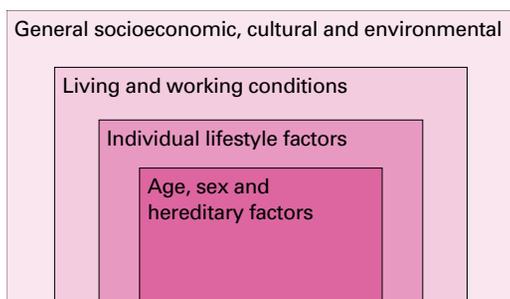


FIGURE 2.1

2.3 MODELS FOR HIA

No statutory guidance exists for undertaking HIAs in Ireland although there is support for undertaking HIAs.²⁶ This HIA employs guidance and methods set out by the Institute of Public Health in Ireland.²⁷ Contributions from the

World Health Organization are also applied based on the Gothenburg consensus²⁸ of HIA:

"Health Impact Assessment is a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population."

2.4 STAGES INVOLVED IN UNDERTAKING A HIA

The Institute of Public Health in Ireland²⁹ outlines five basic actions in undertaking a HIA:

- Screening: a quick and systematic establishment of whether a particular policy, programme or project has an impact on health and whether a HIA is necessary or appropriate.
- Scoping: production of a blueprint for the HIA, establishment of a steering group and production of a work-plan.
- Appraisal: assembly of data (quantitative and qualitative) and evidence, analysis of health impacts, framing of recommendations.
- Statement of influence: demonstration of how the HIA has influenced the decision-making process and outcomes.
- Monitoring and evaluation: assessment of whether the aims and objectives at the outset of the HIA were achieved and whether the methodology was effective or suitable.

The next chapter outlines how the methodology of HIA was used in the research process.

24 World Health Organization, (1948), Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946.
25 Modified from Dahlgren, G., and M. Whitehead. (1995). Tackling Inequalities:

A Review of Policy Initiatives. In Tackling Inequalities in Health: An Agenda for Action, eds. M. Benzeval, K. Judge, and M. Whitehead. London: Kings Fund Institute.
26 Chief Medical Officer Annual Report, (2001): Better Health for Everyone, A

Population Health Approach for Ireland.
27 Institute of Public Health, (2006): Health Impact Assessment Guidance. Developed by the Institute of Public Health in Ireland on behalf of the Ministerial Group on Public Health.

28 Health Impact Assessment: main concepts and suggested approach. Gothenburg consensus paper, December 1999.
29 Elliot, I. (2001): Health impact assessment, an introductory report. Dublin: The Institute of Public Health.

3.

METHODOLOGY AND THE RESEARCH PROCESS

3.1 INTRODUCTION

This HIA was carried out retrospectively. According to Elliot (2001), retrospective HIA is viewed as a useful means to accumulate data and develop knowledge on health impact of policies, programmes and initiatives.³⁰

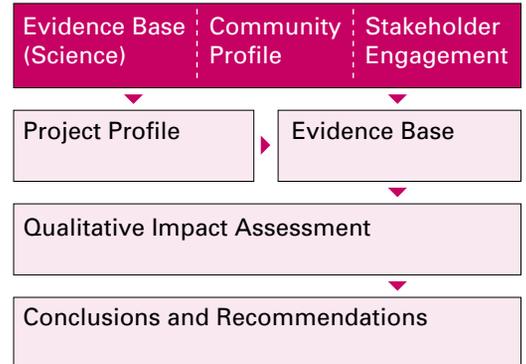
Prior to starting the HIA, a consultation and screening process was undertaken to determine the suitability of the method, and whether it could be done on a pre-existing site. A consultation process was undertaken with residents on-site to establish their views as to what the key issues were that impacted on their health, well-being and quality of life at the outset of the process.

At the outset of the process, an advisory group was established, comprising public health and environmental health specialists, City Council social workers, residents of Carrowbrowne halting site, a local councillor and representatives of Galway Traveller Movement. This advisory group assessed the suitability of the HIA process and decided to proceed with this methodology. It met throughout the HIA process.

The overarching methodology applied in this HIA to meet the objectives of the assessment comprises the compilation of an evidence base; including a project profile, literature review, community profile, stakeholder engagement, analysis and the conclusions on impacts resulting from this process.

The methodology used is summarised in figure 3.1. The application of this methodology to this HIA and report is outlined below.

FIGURE 3.1 HIA METHODOLOGY



3.2 PROJECT PROFILE

The purpose of the project profile was to identify and describe relevant features associated with the site that had the potential to influence the health of the residents. These features include those that arise in relation to:

- The physical environment (e.g., air, land use, noise, water, etc.).
- Lifestyle factors (for example, diet, physical activity).
- Socio-economic environment (for example, education, employment, family cohesion, housing, transport, social cohesion, recreation).

In the current HIA, the project profile in question is the description of the site, i.e., Carrowbrowne, prior to redevelopment.

3.3 COMMUNITY PROFILE

The community profile was devised from two sources of data:

- A survey of the health status of residents living on-site: a health and lifestyles questionnaire was administered to 15 adults (representing 11 families) living in Carrowbrowne. The questionnaire was drawn up to

³⁰ Elliot, I. (2001): Health impact assessment, an introductory report. Dublin: The Institute of Public Health in Ireland.

3.

METHODOLOGY AND THE RESEARCH PROCESS

allow comparisons with national data as far as possible.

- Analysis of General Practitioner (GP) visits: 9 adults consented for the research to access details of GP visits for them and their 31 children (8 families) over a 6 month period (June-December 2007). Information to be accessed was limited to complaints that are typically associated with poor living conditions. A Registered General Nurse collated the data for the research. The data is reported in chapter 5, Community profile (page 23).

Where possible, the profile of families in Carrowbrowne is compared to SLÁN 2007 data, published by the Department of Health and Children in May 2008³¹ as well as the Quarterly National Household Survey (QNHS) published by the Central Statistics Office in 2007.

3.4 EVIDENCE BASE

A literature review was undertaken to collect evidence on the potential health impacts of the conditions that arise in low grade halting sites and those that arise in the context of Carrowbrowne. This is drawn from previous HIAs and reviews of health effects associated with particular aspects and physical characteristics associated with the site. The effects on health of the following topic areas are considered:

- The physical environment
- Employment
- Education
- Access to facilities and services
- Physical activity
- Social capital³²
- Transport

In this report, the key findings of the literature review are outlined in chapter 7, 'Impacts'.

3.5 STAKEHOLDER ENGAGEMENT

Stakeholder engagement is a key stage and inherent principle within HIA, as associated health outcomes are largely dependent on the particular circumstances of communities, lifestyle, issues of equality and subsequent relative susceptibility. Consultation is therefore crucial in gaining local knowledge and insight, alongside the particular concerns of actual and/or perceived health impacts and benefits. In this HIA, stakeholder consultations included semi-structured interviews and focus group discussion with families living in Carrowbrowne with regard to conditions on-site and their perceived health impacts. This is complemented by the resident survey data and analysis of GP visits, both of which are outlined in the community profile chapter of the report.

Consultations were also undertaken with other stakeholders, including local authority staff, public health specialists, environmental health specialists, local elected representatives, national and local Traveller organisations and planners and architects and the findings of these consultations informed the recommendations and outcomes of this report.

3.6 QUALITATIVE IMPACT ASSESSMENT: IMPACTS

The qualitative impact assessment investigates and appraises potential health outcomes, both positive and negative, and incorporates environmental and health data to identify populations at risk.

In this report, this has been achieved by identifying project activities with known health outcomes and applying them to the community profile to identify potential health impacts on the community as a whole, the nature and severity of these potential impacts and also to consider whether certain groups within the community are more vulnerable to impacts than

31 Morgan, K., McGee, H., Watson, D., Perry, I., Barry, M., Shelley, E., Harrington, J., Molcho M., Layte, R., Tully, N, van Lenté, E., Ward,

M., Lutomski, J., Conroy, R., and Brugha, R. (2008): SLÁN 2007: Survey of Lifestyle, Attitudes & Nutrition in Ireland. Main

Report. Dublin: Department of Health and Children.
32 Social capital represents the degree of connectedness in

communities and the quality of social relations in a given population.

others. This assessment is contained in chapter 7 of this report, 'Impacts'.

A qualitative impact assessment can also include consideration of mitigation measures that could counteract negative health impacts and promote positive health impacts identified in the HIA. In this report, mitigation measures are considered in chapter 8, 'Summary potential health impacts and mitigation'.

3.7 RECOMMENDATIONS

Recommendations are drawn from the mitigation measures identified in this HIA, and as mentioned above, have been informed by the broader stakeholder consultation process. The recommendations attempt to overcome some of the institutional, legislative and other structural factors that can limit progress in improving Travellers' living conditions in Ireland. Recommendations are therefore made in relation to practice and policy in respect of monitoring, planning, designing and upgrading or constructing accommodation for Travellers.

THE PROJECT PROFILE – DESCRIPTION OF CARROWBROWNE HALTING SITE

4.1 INTRODUCTION

This chapter describes the characteristics of Carrowbrowne as it stood prior to its renovation. A series of site visits were undertaken between September and December 2007, and this chapter outlines the findings of these visits. The site was closed in preparation for refurbishment in December 2007, when families were relocated to a temporary emergency site (adjacent to Carrowbrowne).

The site

Carrowbrowne is geographically located 5 km to the North East of Galway City on the Headford Road (N84). It was established in 1988 and was intended to accommodate five family groupings³³ on a temporary basis in 5 bays.

In the late 1990s, Carrowbrowne was uninhabited, and lay derelict after having been vandalised. It was re-established as a residential site in 2001, when Traveller families moved onto the site. By 2007 it was observed that 15-20 families were in residence at any one time. At the time this retrospective HIA was being conducted, 11 families (consisting of 44 adults and 57 children) were based on the site for between 2-6 years.

Carrowbrowne is surrounded by a boundary wall and, at the entrance to the site, a non-functioning height restriction barrier. The rear of the site is separated by a ditch from a former landfill site. In areas where boundary walls are insufficient, iron mesh fences have replaced the concrete.



Service Unit

4.2 SITE INFRASTRUCTURE

Service units and utilities

5 service units were built when the site was first constructed; they contained provisions for hot and cold water supply, electricity, WC and washing facilities. However, the roofs have been damaged and removed in some cases and service units can no longer be used for their original purpose.³⁴

Electricity supply

There is no functioning mainstream electricity supply on Carrowbrowne. Electricity is provided through the use of low powered generators purchased and maintained by families themselves.

These generators do not provide enough electricity for washing machines, tumble dryers, adequate lighting or heating and are subject to frequent breakdowns.

Water supply

As mentioned above, there are no functioning service units on-site. As a consequence, there is no hot water and no plumbed toilet facilities. Drinking water is accessed through two external water taps in each of the original 5 bays. However, in practice 2-3 families can share two taps. Some families have attached hoses to taps to secure water for their own use. The photograph above shows a hose resting on the ground, in a poor state of repair, and the water leaking onto the gravel. For families located outside established bays, water is sourced by means of an upright fire hydrant.



Water supply leaking onto gravel

33 An extended family, which can include family members such as siblings (and their spouses), nieces, nephews, parents and/or grandparents.

34 According to the DELHG's Guidelines: Residential Caravan Parks for Travellers, 'the service unit should have a minimum floor area of 30 m²...and should have[...]adequate water system, including provision for hot water

supply, a bath or shower and WC, and plumbing for a washing machine/ dryer and be connected to a sewer or other suitable drainage disposal system. Provision should also be made for a food preparation/ cooking area[...]electrical

connection points to facilitate the installation of a cooker and washing machine/dryer should also be provided. Wiring of a telephone connection should also be considered.' (DELHG, 1998, p.7)

Sanitation and hygiene

There are no plumbed sanitation facilities on-site. Sanitation facilities consist of 22 portable toilet cabins: these have been provided by Galway City Council. Servicing consists of emptying the toilets twice weekly. As the portable toilets are not plumbed into a sewer, refuse and waste water is stored in the unit. The flush water is replaced twice weekly. A single tank of water is included in the portable toilet, which is used for flushing. Once this water is used up, the same water is used repeatedly for flushing.

Site surface and drainage

The site surface consists primarily of gravel (rather than a hard tarmac surface): each of the original 5 bays has a sand gravel surface. The internal site road surface is tarmac.

On each site visit there was also evidence of blocked drains to the rear of the site. No equipment, for example drainage rods, is provided to families for unblocking drains.

The gravel based site surface results in water logging. During heavy rain the site is often flooded, and in many cases, this restricts access to the portable toilets.

Overcrowding

Caravans within the original 5 bays are located on average between 1.75 and 3 metres apart (recommended minimum is 6 m).

In 5 cases, caravans were observed to be parked outside of the bay areas. In 2 particular cases the caravans were parked on the internal circulation road of the site.

Fire safety

There is 1 fire hydrant visible on the site. There are no stand pipes, hose lengths, hose reels or nozzles available of suitable length to efficiently use the hydrant in the event of a fire. Fire resistant screen walls between caravans are not in existence. There is no notice for action in the event of fire. No central "fire point" was established on the site. Cylinders of flammable liquids (petrol, kerosene and diesel) were observed in close proximity to caravans.

4.3 SITE LOCATION

Adjoining land and building uses

Carrowbrowne is located adjacent to a former landfill site and a recycling and composting facility with associated heavy vehicle movement.



Fire hydrant used as source of drinking water



Gravel site surface



Flooding on site impeding access to portable toilet



Caravans on internal footpath & drainage problems

THE PROJECT PROFILE – DESCRIPTION OF CARROWBROWNE HALTING SITE

The rear boundary of the site is separated by a strip of marshland from the composting facility. There is an odour on-site which appears to arise from the waste management facilities. This odour is a nuisance odour and is offensive. In terms of its frequency, the odour was present on-site on all but one site visit (present on 5 site visits), and those living on-site report the odour as a frequent occurrence, particularly during damp or foggy weather.

Rat infestation

Residents report the presence of rats running along the boundary walls of the site and rat droppings are evident on the site. Rat poison is administered on-site by contractors working on behalf of the local authority.

Availability of amenities and services

There is no public transport available to the residents of Carrowbrowne. There is no footpath or hard shoulder on the road external of the site, so it is not safe for residents to leave the site on foot. There is no green space in the proximity of the site which is suitable for leisure activity. Therefore, access to a private vehicle is necessary to access amenities and services, none of which are located within walking distance. Local amenities include:

- 2 retail parks (including four supermarkets) are located approximately 4km from Carrowbrowne. These are Terryland Retail Park and the Headford road shopping centre.
- A number of schools are located within 5/6 km distance from Carrowbrowne.
- University College Hospital Galway (UCHG) is approximately 9 km from Carrowbrowne.
- There is a children's play bus that comes to the site 3 days a week. For 1.5 hours in the morning, it is used as a pre-school service provided by the City & County Childcare Committee, and in the afternoon, it is used by Galway Traveller Movement (on a pilot basis)

to provide an after-school service for 3 hours a day, 4 days a week. Over the period of the HIA, the bus was prevented from accessing the site for a period approximating 2 weeks as a result of the presence of a height restriction barrier, and the absence of a key to open the barrier.

- A school bus service; children attending primary school are collected and dropped off at the entrance of the site by the school bus service on each school day.
- There is no community facility on-site, and no space for meeting, consulting, or accessing health and other services on-site.

4.4 TRAFFIC AND EXTERNAL ROAD

Carrowbrowne is located on the main Galway to Headford road (N84) which is a national route. This is a busy road with constant traffic and can become congested at peak travel times. A specific traffic survey was conducted as part of this HIA.³⁵ In summary, key features of the road include:

- A 100 KM speed limit.
- No signs indicating a concealed entrance or the presence of a residential community.
- No pedestrian crossing or pedestrian lights.
- No footpaths on either side of the road.
- No hard shoulder.
- Large presence of Heavy Goods Vehicles.

³⁵ For the full traffic survey findings, please see www.paveepoint.ie and www.itmtrav.ie

4.5 SITE FACILITIES

Children's play area

A play area was developed in Carrowbrowne in 2006, comprising a tarmac area in the middle of the site, with no play equipment, no line markings, no play safety surface or use of primary colours. No wind breakers or shelters were present, leaving the area exposed. Although the area was fenced, it was observed that parts of the fencing had fallen down.

Public lighting

There is public lighting towards the centre of the site, but no public lighting was evidenced around the boundary of the site and on the public road outside the site.

Telephones

There is no telephone or emergency call facility on-site.

Enterprise

The site has no designated space for enterprise activity, but the configuration of space within bays has enabled some enterprise activity to take place (for example, storage of materials).

4.6 SITE MAINTENANCE AND MANAGEMENT

Site management plan and caretaker

No site management plan for Carrowbrowne was identified, and there were no caretaking provisions on-site.

Entrance control (height restriction barriers)

There had been a height restriction barrier at the entrance to the site when the site was originally built but it was broken. It was replaced on a temporary basis in September 2007 to restrict the movement of the caravans of non-resident families onto the site. The barrier inadvertently prevented high-roofed vans from moving onto or out of the site. Access to the site by other vehicles (such as emergency vehicles) required the use of a key.

Waste/ recycling containers

Bin collections are organised by the City Council and occur once weekly. Landfill, food and recycling bins are provided and observed in each of the established bays. There is some evidence of scrap metal on-site.



Headford Road (N64) at Carrowbrowne entrance



Children's play area

In order to profile the families in Carrowbrowne, the HIA undertook a health and lifestyle survey of residents. In addition to this, an analysis of GP visits for some of the families in Carrowbrowne was undertaken. This chapter presents the findings of these actions. Where possible, we compare the findings to national and regional research such as the SLÁN 2007 findings³⁶ and the Quarterly National Household Survey (QNHS).³⁷

5.1 THE HEALTH STATUS OF TRAVELLERS IN CARROWBROWNE

Survey on health and lifestyles

15 adults (representing 11 families) participated in the survey. While this is too small a population to assign significance to the results, it provides us with an indication of the health of residents in Carrowbrowne. It is compared to national data where comparable information is available to help inform the discussion.

A copy of the questionnaire is available on the website accompanying this HIA.³⁸

General profile of those surveyed

- 15 adults were surveyed. These represented 11 families (out of an approximate 18 families) that were living on-site at the time.³⁹
- Nearly three quarters of respondents were female (73%).
- There were 2 clusters of age groups: over half of respondents were aged between 20-34 years (53%) and the remaining 47% were aged between 45-59 years.
- All adults surveyed with either married or cohabitating. None were single, separated, divorced or widowed.
- Over one quarter of respondents (4 individuals) reported no schooling whatsoever, and a further 60% (9 individuals) received primary education

only – combined, this means that 86% had less than secondary education attainment.

This is a lower educational attainment than the Traveller population in Ireland as a whole. Only one individual had completed their secondary education and none had accessed third level education.

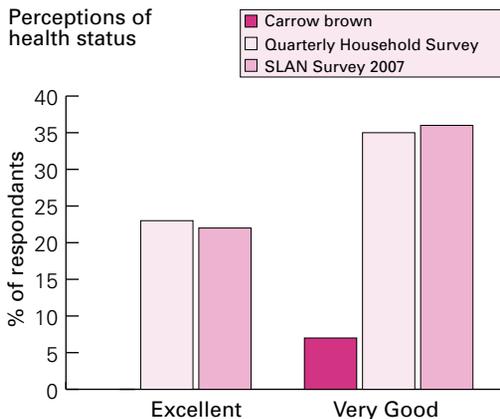
- Most households consisted of 4 or more individuals, and all but 1 of the families lived in 1 caravan or mobile home on-site.

General health status

Perceptions of health

No-one surveyed believed their health to be excellent – this compares negatively to other surveys undertaken with the general population. For example, over one fifth of the SLÁN survey respondents and almost one third of those in the 2007 Quarterly National Household Survey QNHS perceived their health to be excellent.

Perceptions of health status



40% of residents in Carrowbrowne perceive their health status as poor, according to the survey. The corresponding figures in the QNHS (Western region) and SLÁN surveys were 2.5% and 3% respectively.

What would improve health status

Respondents were provided with a list of options and were asked to select⁴⁰ those that

36 Morgan, K., McGee, H., Watson, D., Perry, I., Barry, M., Shelley, E., Harrington, J., Molcho M., Layte, R., Tully, N., van Lent, E., Ward, M., Lutowski, J., Conroy, R., and Brugha, R. (2008):

SLÁN 2007: Survey of Lifestyle, Attitudes & Nutrition in Ireland. Main Report. Dublin: Department of Health and Children.
37 Regional and national research undertaken by the

Central Statistics Office, in 2007.

38 Please see www.paveepoint.ie or www.itmtrav.ie

39 Over the HIA period, some families moved in and off

the site. It was estimated that 11 families lived on the site on a permanent basis, but up to 18 families may have been staying on the site at various times throughout the period.

they believed would improve their health status. Responses included 'less local pollution', selected by all respondents and 'less stress', selected by almost three quarters of respondents.

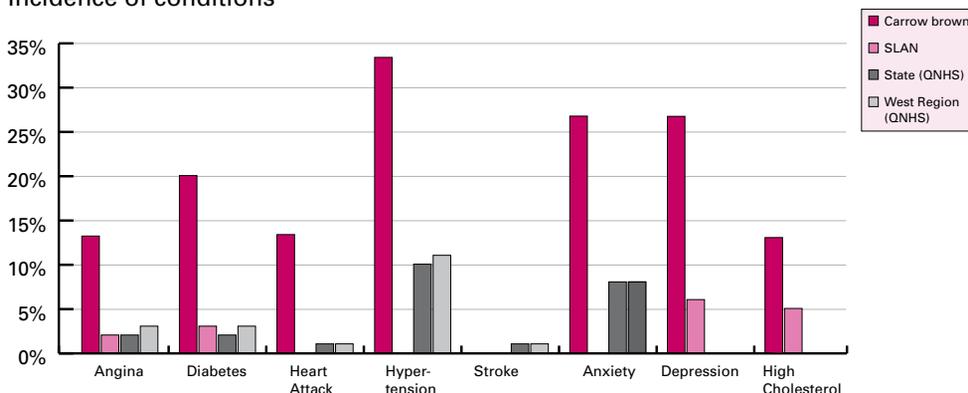
Long-term illnesses

Respondents were asked if they had a long-term illness, health problem or disability that interfered with their daily activities. 40% of respondents responded positively. This compares to 11% of the population in the SLÁN survey.

Incidence of conditions

Survey respondents reported higher incidences of diagnosed conditions such as angina, diabetes, heart attack, hypertension, high cholesterol, anxiety and depression than respondents in other national or regional surveys such as the QNHS⁴¹ and SLÁN survey for 2007. The comparison in incidence is illustrated in the figure below.

Incidence of conditions



The data on diabetes arising from the survey data can also be compared to the aforementioned research by Tan et al (2007) on the incidence of diabetes amongst Travellers in Galway⁴² as well as national figures: data produced by the IPH on the prevalence of diabetes on the island of Ireland reports that the overall prevalence of diabetes in Galway is 4.7% (in 2005).⁴³ The highest and lowest national figure is 6.8% and 3.6% respectively. The Galway study found that diabetes, pre-diabetes⁴⁴ and metabolic syndrome⁴⁵ amongst Travellers in Galway city is approximately twice the national incidence.

Difficulty in taking medication

40% of those surveyed reported taking regular medication, and half of these reported difficulties in reading instructions.

Visits to GPs

Two thirds of those consulted in the survey reported having visited their GP in the past 6 months (66%, N=10). The most common reasons were stomach complaints and kidney complaints. This is broadly comparable with national data even if the periods of time are not the same (for example, the CSO's QNHS figures for 2007 report that 69% of adults visited their GP in the previous 12 months). The HIA also undertook an analysis of GP records of some families with their consent – this is discussed in the next page.

40 The list was based on those used in the SLÁN survey.

41 The Quarterly National Household Survey, undertaken by the Central Statistics Office.

42 Tan, S., Gavin, J., Murphy, D., Dineen, B., Avalos, G., and Dunne, F. (2007):

Pilot Study to Determine the Prevalence of Diabetes, Pre-diabetes and Metabolic Syndrome in the Travelling Community. Study undertaken in collaboration with NUIG, GTM, ITM, Health Research Board.

43 The Irish Diabetes

Prevalence Working Group: Making Diabetes Count. A systematic approach to estimating population prevalence on the island of Ireland in 2005. Institute of Public Health. www.publichealth.ie/files/file/Making%20

Diabetes%20Count%201.pdf
45 Pre-diabetes refers to the stage before diabetes, when blood glucose level is slightly higher than normal though medically speaking the individual does not yet have diabetes.

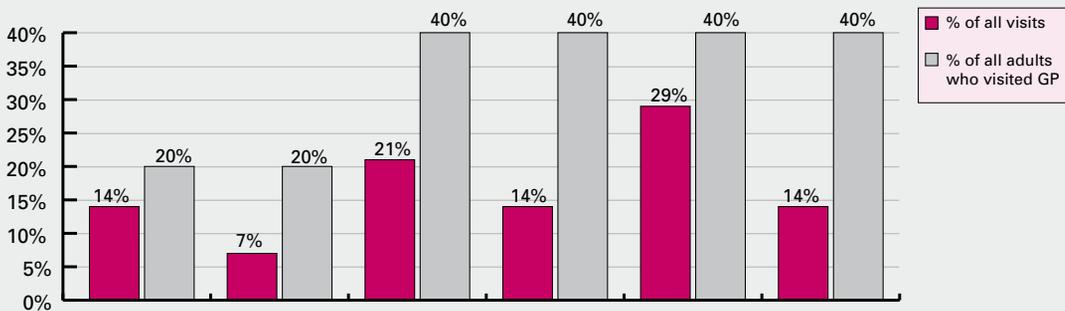
Details of GP visits

As part of this HIA, an analysis of GP visits over a 6 month period (June-December 2007) was undertaken. 8 families consented to data being extracted from their GP files. This group is made up of 9 adults (7 women and 2 men) and 31 children. This group is a different sample to the surveyed group. The key findings are presented for adults and children.

Adults

- 5 adults (55% of those who consented) visited their GP at least once in the six month period. Four of the five adults were female.
- The 5 adults had a total of 14 visits.
- 2 individuals had pre-existing conditions: heart condition and asthma.
- The most common complaint for adults was kidney complaints (4 visits), and antibiotics were prescribed on three occasions.
- Ear, nose and throat problems accounted for three visits, by 2 adults (40% of adults who attended their GP). Treatment consisted of prescribed medication (antibiotics) in all 3 cases. Aches and pains and muscle problems⁴⁶, stomach complaints/gastro-enteritis, and respiratory problems each accounted for 2 visits to GPs. Medication was prescribed in all cases other than 1 visit for stomach complaints/gastro-enteritis.

Profile of adults' visits to GPs (June - Dec 2007)



All individuals who presented to their GP were prescribed antibiotics: 1 individual was prescribed with antibiotics on 3 occasions within the 6 month period.

Children

- 12 of the 31 children (39%) attended their GP in the 6 month period. 7 of these were female and 5 were male.
- 1 child had a pre-existing condition (Asthma).
- These 12 children had a total of 24 visits to their GP between them (average 2 per child in the stated period).
- Ear nose and throat problems were the most common reason for visits, and accounted for 13 visits (7 children). 8 cases were treated with prescribed medication (mostly consisting of antibiotics).
- Respiratory problems accounted for 6 visits to GPs by children (4 children). Treatment consisted of prescribed medication in 3 of these cases (consisting of antibiotics).
- Stomach complaints and gastro-enteritis accounted for 2 visits in the stated period (2 children).⁴⁷

⁴⁶ Metabolic syndrome refers to a group of conditions including obesity, high blood pressure, abnormal cholesterol levels and resistance to insulin – which combine to increase the

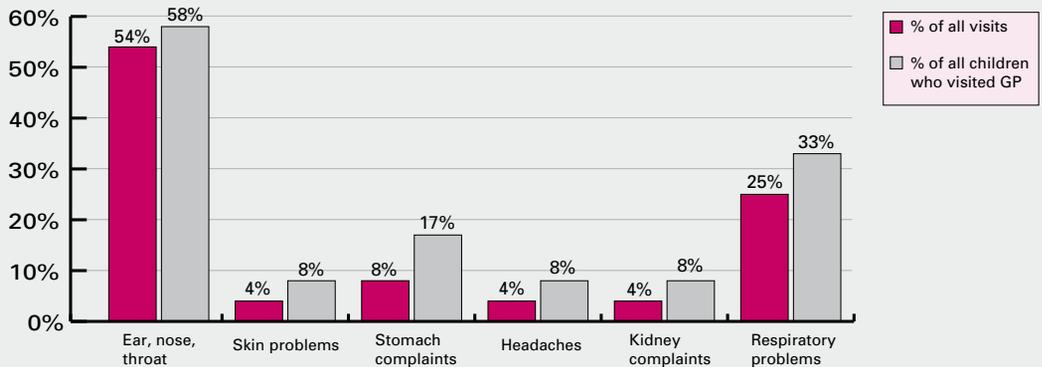
risk of heart disease, stroke and diabetes.
⁴⁷ The incidence of GP visits for kidney complaints is lower than the reported incidence of kidney infections by families in the

consultation process (see chapter 6). Possible reasons for this include the fact that fewer families participated in GP survey than the interviews; the short timeframe of the GP visit

analysis (6 months); or families not attending their GP for all cases of kidney problems arising.

- 3 referrals were made (for 3 children): 1 to Accident and Emergency for an ear, nose and throat complaint, and 2 referrals to an ear, nose and throat specialist.
- 7 of the 12 children who attended a GP were prescribed antibiotics (58%). 1 child was prescribed antibiotics on 2 occasions in the 6 month period and 1 child was prescribed antibiotics on 3 occasions.

Incidence of conditions



Exercise and lifestyle

- Men report undertaking strenuous physical activity to a greater extent than women.
- The main source of exercise for women was light household work: 60% of respondents (and 82% of women) report undertaking light household work⁴⁸ on a daily basis. In terms of heavy household work,⁴⁹ 53% of respondents (and 73% of women) engage in it on a daily basis.

Smoking

- Almost three-quarters (73%) of those surveyed smoke at least on an occasional basis, and over half on a daily basis (53%).⁵⁰ The SLÁN survey reports that 29% of those surveyed are current smokers.

Food

Nearly three-quarters of respondents (73%) believed that they could eat healthier. Some of the reasons for not eating healthily are outlined in the chapter that follows (interviews with families) and they include a lack of space and ability to store food (particularly the absence of refrigeration), as well as limited access to healthy food supplies. The inability to store food means that food cannot be prepared at short notice, and a greater reliance on food that is not perishable. This implies a financial strain: a lack of refrigeration means that uneaten food will be disposed of, and a lack of storage means that families cannot avail of bulk buy offers. Key findings of the survey include:

- None of the survey respondents interviewed read food labels, and the majority did not follow any specialised diets (73.3%). 2 people followed a diabetic diet. Only 3 people (20%) had taken vitamins, minerals or food supplements in the past 12 months.
- The majority of respondents fall below the recommended intake of 5 portions of fruit and vegetables, with the most frequent response being 1-2 portions per day (53.3% of

48 Illustrated by examples such as dusting, washing dishes, repairing clothes.

49 Illustrated by examples such as washing floors and windows, carrying rubbish bags and vacuuming.

50 Smoking behaviour is

strongly related to a person's socio-economic class, and is increasingly concentrated among lower income and social class groups both in Ireland (Layte, Russell, & McCoy 2002) and the UK (Marsh & McKay 1994). In

addition to this, Layte and Whelan (2004) found that socio-economic factors such as living standards and unemployment, contextual factors and deprivation in family of origin account for around half of

the differential in smoking across social classes, giving support to the view that class differential is largely structured by socio-economic differences and levels of disadvantage.

respondents). One fifth of respondents (3 individuals) reported eating at least four portions of fruit and vegetables (combined) and 1 individual reported that she rarely ate fruit and vegetables. This falls short of the SLÁN surveys: in terms of consuming the recommended amounts of food, 68% in 2002 and 77% in 2007 reported eating recommended portions of fruit and vegetables.

5.2 SUMMARY

The information presented above indicates that residents of Carrowbrowne have a poorer health status (as well as a perceived poor health status) when compared with the rest of the population of Ireland. Children in particular seem to be vulnerable to ill-health and, in particular, ear, nose and throat infections. For adults, angina and diabetes is common. Many residents feel that their diet is poor and they have a lack of exercise opportunities, both of which have negative health impacts. Furthermore, the reported incidence of anxiety and depression is almost three times as high as other available data.

Living conditions identified in the site description, such as lack of mains electricity, sanitation conditions and lack of opportunities for exercise for both adults and children are associated with health issues such as those identified above. The next chapter presents the views and perceptions of site residents in relation to how living conditions impact on their health, lifestyle and well-being.

PERCEIVED IMPACTS OF SITE CONDITIONS – THE VIEWS OF THE RESIDENTS

6.1 INTRODUCTION AND METHODOLOGY

A series of qualitative interviews were conducted with the residents in Carrowbrowne between September and December 2007. These interviews were undertaken with 11 families (comprising 22 adults and 42 children). The interviews took place primarily with the adults in the families, but in the course of some of these consultations, younger family members were present and contributed to the discussion (11 informal interviews took place with young people on-site).

All families were very welcoming and very open in discussing matters related to health including mental health issues.

Provision of electricity

The lack of a mainstream electricity supply is regarded as the single most significant issue affecting all the families on the site:

"...with a little taste of electricity...life would be so much easier."

"The lack of electricity affects everything... if there was electricity, it would mean that washing and drying of clothes could be done... we would save money... the trailers would be warm..."⁵¹

"...fear strikes through me... (that the generator will break)... it broke down last Christmas day...a whole family to feed and no cooker...the kids were crying...I didn't know what to do...I felt rotten...like it was my fault."

"I am a diabetic; I have to keep a store of insulin in case of an emergency...these have to be kept in the fridge. This is impossible in Carrowbrowne as the generators can't be left on constantly...I have to use cooler bags to stock medicine but I can't store much."

Impact on mothers and babies

Mothers state that night feeds are problematic as there is no electricity at night time. Keeping milk and formula fresh is also a problem without access to constant refrigeration:

"The fact that you cannot use an electric kettle⁵² for heating water for feeding makes it very hard. Imagine what this is like at night in the winter time or during the day when the generator is not working – when you can't even heat the water."

"I use my mobile phone at night for light to feed my baby after dark. I used a candle before and the curtains took fire, so I don't use that now. If one caravan went up in flames, the whole site would go up as the caravans are so close to each other."

Impact on cost of living

The cost of living on the site is a problem for many of the residents and this is partly due to the lack of functioning mains electricity, and reliance on costly alternatives. These additional costs relate to the expense of fuelling generators, cost of fuel for heating homes, reliance on laundrettes and the purchase of small quantities of food (in the absence of space for storage):

"Gas is usually bought twice a week... [€26 per bottle]... Petrol or diesel for the generators is between €50-70...we take one large bag of laundry to the laundrette ...but we often have to go several times because there's no storage in the vans...that can cost up to €60 per week..."

This can lead to an average weekly spend of at least €162 on heating, electricity and laundry costs.

51 Figures vary for different households and are also seasonally adjusted.

52 The voltage on an electric kettle and other household appliances such as a toaster would cause the generator to blow.

PERCEIVED IMPACTS OF SITE CONDITIONS – THE VIEWS OF THE RESIDENTS

Laundry

The lack of electricity necessitates washing of clothes in laundrettes:

"...a bag of laundry can cost €27 a go... to clean and dry one blanket costs €15...you drop the clothes down to be cleaned on one day, and when you go to collect them again, you drop another bag down...if a child wets the bed, you might not be able to change the bedclothes, as they may be down being cleaned at the time."

"Sometimes I hand-wash clothes outside and then will dry them inside the caravan over a heater, then the caravan gets damp..."

Impact on cost and food poverty

As there is limited storage for food, families must travel to the shops every day. There is also limited space for food preparation, and fast food is often used as an alternative to healthy meals:

"I have to do the shopping everyday...you can only do the amount you need...there's no chance for extra...if they want more I can't give it them."

"Even when... there is some food left over, it usually has to be thrown out as it cannot be kept fresh for the next day without use of a fridge at night time. This also means that if someone [a visitor] calls unexpectedly, there can be no food offered to them,"

Impact on household management

Women find the daily routine unrelenting and very tiring and this reduces their sense of well-being and quality of life:

"...the morning starts at 7 – 7.30 am with me turning on the generator...I have to get up and wash and get the kids washed...its over to the tap (upright fire hydrant)...one by one with the kids...even if it's cold...then I have to feed them on the beds...the breakfast is always, always spilt..."

"... Living on Carrowbrowne isn't living but surviving..."

6.2 WATER SUPPLY

There is no hot water available on-site and the only way to heat water is to boil water in a pan.⁵³ This makes life very difficult for residents in Carrowbrowne. The lack of hot water also impacts on the adolescents on-site:

"...the morning rituals...are like a nightmare... like you haven't woken up...you don't want to wake up sometimes...the kids are outside even in October being washed down in their knickers."

"...we fill the tubs (baby baths) with hot water at about 5.30pm...we keep the kettles boiling to top them up...the baths are finished at 8.00pm...we do dinner at the same time...one eats and one is washed...that's the way we do it..."

"It's particularly difficult for the girls who have no access to showers before school and who get called names."

6.3 SANITATION

The reliance on portable toilets on-site is believed by families to lead to kidney infections, diarrhoea and vomiting bugs, particularly with children. The effects of poor sanitation are exacerbated by poor drainage on-site and the presence of rats, and families reported these circumstances as contributing to their poor quality of life. Other reported impacts of the poor sanitation include delayed toilet training for small children:

"All of our kids have had numerous kidney infections in the past year alone..."

⁵³ Electric kettles are not compatible with low powered generators.

"It's just one more thing that we have to deal with out here...when it floods we need to put on the wellies to wade to the loos..."

"Most of the babies are in nappies long after they should be...because they can't be properly toilet trained when you have to use the [portable toilets]...how are you meant to use them at night, when it is dark and wet...when you have to walk over the gravel and chippings and you can't see where you are going? Or when there are rats around, and the toilet is so far away from the trailer?"

"My kids won't use the loo at night, when it is dark..."

"...it cannot be healthy ...can it"? Why...in the 21st century ...are we forced to live like this?"

"How many kidney infections can the kids suffer before their kidneys are damaged permanently, and how sick will someone have to become before someone takes responsibility?"

6.4 SITE SURFACE

The site surface of Carrowbrowne consists mainly of gravel. Parents are concerned about the impact of this on their children in terms of risks of infection if they fall while playing. In addition, the drainage problems on-site results in waste water retention on-site, and parents are fearful of allowing children to play outside in such conditions:

"...the gravel holds every infection going. It is hardest on the kids..... they cannot play anywhere on the site; it is so dirty outside – that even if they go out, they are dirty nearly right away."

"...the kids are not allowed out of the bays... it's always 'don't', they'll ... be afraid of their own shadows...they're barely allowed move in this place."

"When kids are stuck inside all the time, and there is nothing for them to do, so they fight... when the kids are stressed the parents are stressed..."

6.5 PROXIMITY TO LANDFILL AND COMPOSTING

Residents complain of an offensive and nuisance odour which appears to emanate from the waste management facilities. They feel that living so close to these facilities is having a negative effect on their physical health:

"...I don't know what the smell is...or if it's harmful...but the fact is that smell makes me feel sick."

"It is disgusting.... I am sure it comes from the composting. It is worse in the morning and evening time and during fog or frosty weather, and in the winter. You can't open the doors; it gives you a headache..."

6.6 RATS

The presence of a large number of rats is also a worry for site residents who are concerned about infections that may result from their presence:

"...I feel paranoid using the loos in my condition...(four months pregnant)...I bring disinfectant with me all the time...even though I clean the loos every day"

"...if its dark I bang on the loo door with a stick just in case of rats."

"I was awoken one night by a rat at the end of the bed...now we block the vents, the windows and any little gaps we can find in the caravan..."

PERCEIVED IMPACTS OF SITE CONDITIONS – THE VIEWS OF THE RESIDENTS

6.7 TRAFFIC AND TRANSPORT HAZARDS

Carrowbrowne is located next to a busy main road. Parents are primarily concerned that their children will wander into the road, risking accidents and injury. The lack of a pavement or a hard shoulder next to the site exacerbates these concerns and makes walking anywhere difficult as people fear there will be accidents. This reduces opportunities for physical activity and increases petrol costs:

"...you can't take the kids for a walk or let the older ones go for an ice cream...once the kids are on-site there is nowhere else for them to go...sometimes it feels like a cage altogether..."

6.8 ENTRANCE (HEIGHT RESTRICTION) BARRIER

Families support the idea of an entrance barrier but feel that a key should be available on-site. Their primary concern was whether emergency vehicles could access the site, and families felt that opening the entrance barrier should be electronically controlled (for example, by means of a code or automated access) to ensure emergency vehicles can quickly access the site. They also feel strongly that an entrance barrier should enable high roofed vans (used by some for economic activity) to access the site and were concerned that this would not be facilitated in the new site. For families with children attending the play bus on the site, the disruption to the service as a result of the barrier was a concern.

"...what happens us if, God forbid, if there's a fire...or an accident...how are they going to get to us."

"...the only services for the kids are the play-bus⁵⁴ and the home-work club⁵⁵...but the bus⁵⁶ is a double decker and won't fit under the locked barrier."

54 The play-bus is a service for pre-schoolers provided via the Galway Childcare Committees' childcare initiative.

55 GTM provides an after school service on the playbus.

56 A double decker bus provides the venue for the

6.9 SITE FACILITIES

Children's play area

The tarmac space provided in 2006 is regarded by residents as "too little too late..." Families feel that more effort could have gone into the design of the area, for example, by including a basketball hoop or play equipment.

Pre-school and after-school facility

Parents see the educational services as crucial for their children's development and future social mobility. These activities are also crucial for mothers with large families, who noted that they may not have the time, the physical space or the educational background to support children in completing their homework:

"...they [the kids] have more confidence when they see that they can learn just as well as the other [settled] kids in school...just 'cause they live here doesn't mean they're not clever."

"The after-schools is important because the kids need help with homework and parents might not be able to help them...this could be because of no education or no time."

"As soon as my kids woke up, they asked about the play bus."

Children too had a view on this:

"Living here is boring but we love the play bus."

Community facilities

There is no communal area on-site. Lack of any community space means that there is no place for families to meet, to engage in services that could be provided on-site (such as educational or health programmes) or to enable consultation to take place on-site:

"...we have no hobbies...unless cleaning is counted as one."

play bus and after-school service in Carrowbrowne.

"There are no real positives in living here... there's no place for the women...nothing to do...very little has changed in the last eight years."

6.10 SITE MAINTENANCE

All families claim that site management is required. Residents feel that overcrowding on the site coupled with the lack of services impacts on people's motivation to keep the place clean:

"...you look outside sometimes and it gets you down...rubbish, muck and rats...that's what we call home...the only way is to look after your own area..."

Site maintenance concerns were also raised in respect of the site once it is redeveloped:

"...to keep it clean.....how will the bays be distributed...will there be doubling up and overcrowding?"

6.11 PERSONAL AND MENTAL HEALTH IMPACTS

Residents on Carrowbrowne feel strongly about how they are perceived. The point was made that a power cut incident in another part of the West generated media attention, which was contrasted with a perceived lack of concern that residents have been living without electricity for years. The impact is most keenly felt by female residents.

Residents note the visible health risks on-site (e.g. rats) but they also note the stress attached to living in Carrowbrowne:

"...there's a lot of stress here and that causes fighting between families...and distress among families."

The frequency of visits to doctors is a worry for parents, and one parent believed that there can be a perception that Travellers don't care

for their children. He explained how he feels embarrassed in front of health care and other professionals. He gives the example of his son's operation. For post-operative care he was told by the doctors to keep his son in a warm, clean, dry environment and to change the blankets/sheets daily:

"...but, the trailer is damp; there are holes in the windows, no running water or hot water and no washing facilities...there is a rat infestation on-site. But these living conditions are not seen by those doctors who were shocked by the fact that a parent could let the child's open wound become infected."

Families identify how the mounting stress and the conditions on-site affect the moods of all family members.

"You're constantly cleaning but the place doesn't look any better....and the public still view us as dirty, rough people."

"Its demoralising to hear that Carrowbrowne is terrible and the people living there just don't care. [They say that] '...no sooner have they a roof, but they tear it down.' We still get blamed for the vandalism that occurred on the site... nothing has changed."

"Society seems to have more of an interest in animal welfare than welfare of Travellers."

"At night there are 5 of us in a small caravan (1 bedroom). Once the beds are made there's nowhere to sit...unless you sit on top of the kids...you can't go out in the cold...you can't have anyone over..."

"...All my life I've been coping and now I'm wondering if I will ever see any good from all the effort."

The pressure of household management has particular impacts on women:

"I have good days and bad days and when I have one of my bad days, I get very upset....I'd commit suicide if I it wasn't for my kids to keep

PERCEIVED IMPACTS OF SITE CONDITIONS – THE VIEWS OF THE RESIDENTS

me going.”

“...the worries ...they never let up...the kids, washing, cleaning, and money...there’s nowhere even to walk”.

There are particular impacts for young people. *“There is no privacy for teenagers, particularly for young women when they get their periods...it’s hard for them to cope, without space or hot water.”*

One father is worried about the perceptions his kids will grow up with – he sees them already registering their inferiority to their school peers. Another father points to the extra responsibilities that children have on-site:

“..they are always on the lookout for the younger kids, and have too much responsibility – they can’t be carefree and enjoy their childhood.”

There is a feeling of exclusion amongst the Travellers on this site:

“We have been left to live in bad conditions for the past few years, with all the money in the country.”

Residents feel that there is a stigma to living here and that they are being ignored:

“I’ve stayed here because even though I knew we have to fight for everything because I want to make it my home and my children’s...I’m not well and I have no energy left. I’m discriminated against because I’m a Traveller and even more so because I’m a sick Traveller.”

access to Galway city. In addition, during the summer time, there is good fun on-site, as the good weather allows people to socialise and enjoy outdoor living and also because relatives coming to visit from other parts of Ireland and the UK can stay on the site. For others, in particular male Travellers, the benefit of living here is the space for the animals and economic activity. However, families expressed their concern that such activities will not be facilitated on the new site:

“There are 4 generations of the family on this site, the oldest is 82 the youngest 10 months. Us women love living on a site and love the freedom it gives us...with a proper site with all services...a prefab for after-school...communal kitchens...you have all the luxury of a house and you can still be near your family...even the mother in law.” [they all laugh]

“I can work [pallet recycling], but I mightn’t be able to have my work and business on the new [redeveloped] site.”

“Here I can keep my horses...what keeps me sane..., and share the traditions with my children...the best thing about Carrowbrowne is that there is land to keep animals, something we could not do on a council estate.”

“I know there’s stigma attached to being a Traveller but especially a Traveller living in Carrowbrowne. Still, here we won’t be evicted, we are close to family, we can keep animals and at least on the site we don’t face discrimination.”

6.12 POSITIVE ASPECTS AND SOCIAL CAPITAL⁵⁷

Despite the hardships of living on Carrowbrowne most families believe there is a positive side to living on the site, for example, the location of the site and the

57 Social capital represents the degree of connectedness in

communities and the quality of social relations in a given population.

IMPACTS

7.1 INTRODUCTION

In this chapter, we draw together the research undertaken during the HIA and report on the potential health impacts arising from the living conditions found at Carrowbrowne:

- A more detailed and indepth overview of the health issues associated with different site conditions drawn from the literature review is presented.⁵⁸
- The status of Carrowbrowne in relation to these health issues is then presented.
- A set of potential health impacts is presented for each of the site conditions and issues. These potential impacts are drawn from the health status of residents and the consultation process around life as it has been on Carrowbrowne. The headings reflect those used in the project profile chapter of this report, as well as key issues arising in the consultations. Under each heading, the site conditions and features are considered in terms of their effects upon the health determinants and potential health impacts. The headings are:
 - Site infrastructure
 - Site location
 - Traffic and external road
 - Site facilities
 - Social capital

7.2 SITE INFRASTRUCTURE

Lack of functioning mainstream electricity

Health issues associated with the lack of electricity

Lack of electricity can lead to a range of health impacts:

- Fuel poverty⁵⁹ is linked to excess winter

mortality (especially from Cardio Vascular Disease) and respiratory illness⁶⁰ partly due to decreased resistance. Other impacts of fuel poverty include mental health impacts and decreased quality of life.⁶¹

- Risk of increased Carbon Monoxide (CO) emissions from un-vented kerosene heaters, with associated respiratory effects.⁶²
- Poor housing conditions (cold and damp) can lead to respiratory conditions. Poor housing conditions are also associated with depression and anxiety amongst people, particularly women and children.^{63,64} In addition to dampness and mould causing depression, research has found that lack of control over one's home also has an independent role in causing depression.⁶⁵
- Inability to store and refrigerate foods leads to risks of contamination and food poisoning and in particular, food poverty, especially amongst Travellers.⁶⁶ This leads to poor diet and specific impacts on children include difficulties of concentration and lack of vital nutrients.⁶⁷
- Fire hazards associated with use of candles and alternative sources of light in the absence of electricity.

Status of Carrowbrowne

- Carrowbrowne has no functioning mainstream electricity supply.
- Provision of electricity on-site is dependent on the use of low powered generators provided and maintained by families.
- Generators must be turned on and off manually, and for safety and cost reasons no electricity is available at night time. This leads to the use of mobile phones, torches and candles for light at

58 A detailed review of the literature and previous research is available online www.paveepoint.ie and www.itmtrav.com

59 The inability to heat ones home to an adequate (safe and comfortable) temperature owing to low income and poor (energy inefficient) housing.

60 Housing and health: building for the future: BMA 2003, British Medical Association. Board of Science and

61 Education, May 2003. Henwood, M. (1997): Fuel Poverty, Energy Efficiency and Health. A report to the EAGA Charitable Trust.

62 Williams, R., Walsh, D., White, J., Jackson, M., and Mumford, J. (1992): "Effect on Carbon Monoxide Levels in Mobile Homes Using Unvented Kerosene Heaters for Residential Heating", *Indoor and Built Environment*, Vol. 1, No. 5, pp. 272-278 .

63 British Medical Association (2003): *Housing and Health: Building for the Future*. BMA: London.

64 Martin, C., Platt, S. and Hunt, S. (1987): 'Housing conditions and poor health. London', *British Medical Journal*, p. 294.

65 Shenassa, E., Daskalakis, C., Liebhaber, A., Braubach, M., and Brown, M. (2007): 'Dampness and Mold in the Home and Depression: An examination of mold-related

illness and perceived control of one's home as possible depression pathways'. *American Journal of Public Health*, October 2007, Vol 97, No. 10, pp. 1893-1899. 66 Friel, S. and Conlon, C. (2004): *Food Poverty and policy: for Combat Poverty Agency, Crosscare and the Society of St. Vincent de Paul*.

67 Ibid.

night time.

- Lack of night time electricity means that there is no adequate or constant refrigeration for food.
- The lack of central heating means that there is reliance on solid fuel or kerosene indoor heating systems, which are costly and can be dangerous. Heating systems can only be turned on manually, and cannot be set to come on in the morning before the family gets up.

Potential health impacts

The lack of electricity was cited by families as the most significant factor affecting quality of life, and residents reported that it results in extreme hardship in relation to most aspects of daily living. This has negative impacts on general well-being for all family members.

Other potential impacts are as follows:

- Fuel poverty is reported arising from high costs of fuel for generators and for other means of indoor heating. This is compounded in some cases by poor standard of housing (poor insulation, old caravans in poor condition) leading to increased risk of respiratory diseases and decreased well-being.
- Safety risks including, at worst, carbon monoxide (CO) poisoning for families using un-vented kerosene heaters, which are used by families in the absence of reliable sources of electricity or alternative means of heating.⁶⁸ This risk is compounded by poor ventilation (due to reluctance to open windows in some cases because of bad odours or fears of rats entering the caravans).
- Fire hazards arise when families use candles to provide light at night-time. Families have reported curtains taking light as a result of use of candles, resulting in damage to home and decreased well-being.
- Nutrition and food poverty: lack of refrigeration at night time leads to food being discarded if it is not eaten, and a reliance on non-perishable foods. Perishable items can only be bought in small quantities limiting residents' ability to plan their diet resulting in an increased risk of obesity and increased cost of living and a reduction in money available for other activities. This is consistent with a concern amongst families on-site of obesity and poor diets.
- Obesity and poor diets can contribute to the onset of type 2 diabetes: research has shown that Travellers have a far higher rate of diabetes than the whole population in Galway.⁶⁹ This study supports these findings. This also impacts on the ability of those suffering from diabetes to store stocks of insulin which need to be refrigerated.
- The economic impacts and high costs of reliance on basic services (e.g., use of third party showers, laundry facilities) can increase stress and negatively impact on well-being.
- Poor housing, reports of dampness and mould amongst some families (compounded by reports of families' drying laundry indoors during winter) leading to respiratory complaints as well as impacting negatively on well-being and depression.
- Increased anxiety and stress around unreliable source of electricity (especially where generators in poor condition are used) – reports of loss of electricity at critical times resulting in decreased well-being.

68 The majority of families living in Carrowbrowne have used un-vented, kerosene heaters at some

stage.
69 Tan, S., Gavin, J., Murphy, D., Dineen, B., Avalos, G., and Dunne, F. (2007):

Pilot Study to Determine the Prevalence of Diabetes, Pre-diabetes and Metabolic Syndrome in the Travelling

Community. Study undertaken in collaboration with NUIG, GTM, ITM, Health Research Board.

Water supply, sanitation and hygiene

Health issues associated with sanitation and water supply

Evidence highlights the following relationships:

- According to the WHO, sanitation is a cornerstone of public health: poor provision of sanitation and hand washing personal hygiene facilities can contaminate food; lead to spread of infections and impact on well-being, especially for women and girls.
- The quality of water, whether it is used for drinking, irrigation or recreational purposes, is significant for health in both developing and developed countries worldwide. Water quality can have a major impact on health, both through outbreaks of waterborne disease and by contributing to the background rates of disease.⁷⁰
- Amongst the problems associated with low quality toilets are bowel problems, bladder problems, urinary tract infections, bedwetting, and constipation.
- Infections and disease can arise from contaminated water supply: for example, cryptosporidiosis can be caused by contamination arising from rat droppings.

There are some difficulties in establishing causality between sanitary conditions, water supply and health effects. However when this occurs the 'precautionary principle' is recommended. This means actions and measures to potentially improve health should not be delayed as a result of scientific uncertainty (i.e., 'it is better to be safe than sorry'). This has been endorsed at the 1992 Rio Conference (UNCED 1992).⁷¹

Status of Carrowbrowne

- The majority of caravans on-site have no internal plumbed water supply.
- Sanitation is provided by portable toilets on-site and these are emptied twice a week.
- Overcrowding on-site results in some families' reliance on the use of a fire

hydrant for water supply.

- There are no showers on-site. Residents pay €7 to use the showers at a local leisure centre once a week, or else they wash outdoors using the cold water taps or fire hydrants. Smaller children wash indoors in basins.
- Quality testing of water supply (undertaken previously) has reported standards consistent with the chlorinated, mainstream drinking water supply. However, the use of makeshift hoses and water pipes on-site could potentially lead to contamination.
- Makeshift hoses used by some families to link water pipes to caravan area can be seen to be resting on-site gravel and leaking.

Potential health impacts

- Residents report a high incidence of kidney problems for adults and children alike (GP data indicates kidney complaints as a frequent reason for adults attending their GP). Families believe that the spread of infection is compounded by overcrowding. While causality cannot be established between these infections and sanitary conditions, the following views were expressed by residents:
 - o General site conditions make residents (and in particular children) uneasy about using toilets at night-time (in particular owing to the presence of rats, site surface, poor drainage and the distance between caravans and portable toilets), leading to increased risk of kidney and urinary tract infections.
 - o Residents report children's delay in toilet training, use of 'pull up' nappies at 6-7 years at night, and bedwetting amongst older children as a result of their reluctance to use the portable toilets, in particular at night, thereby affecting well-being.
 - o Residents report the emptying of portable toilets twice a week as insufficient arising from the numbers

70 Fewtrell, L., and Bartram, J., (eds.) (2001): *Water Quality Guidelines, Standards and Health: Assessment of risk and risk*

management for water-related infectious disease. Cornwall; IWA Publishing and World Health Organisation.

71 UNCED (1992). Report of the United Nations Conference on Environment and Development. Annex I Principle 15. Available at

<http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>

- of individuals using each one, and report a recycling of waste water in the flushing process between uses, leading to increased exposure to pathogens.
- o Residents report the impacts of the use of the toilets as leading to stress and anxiety.
- Lack of hot water for washing and the inability of residents to have showers on-site compromises personal hygiene, potentially leading to the spread of infection. Families report that this also leads to low self-esteem, embarrassment and depression (particularly for young women and adolescents), and parents who have difficulty washing their children.
- Families' lack confidence in the water supply. Fears around contamination leads to increased anxiety, increased stress and decreased well-being. Furthermore the cost implications affect residents' disposable income, as residents buy bottled water and pre-packaged baby milk formula (as an alternative to dry formula) which is more expensive.

Site surface and drainage

Health issues associated with site surface and drainage

The literature identifies the following relationships:

- Poor waste water drainage can lead to spread of infections.
- Inadequate site surfacing can impede drainage (water logging) and can likewise lead to spread of infections.

Status of Carrowbrownne

- There is large scale use of sand gravel, which absorbs water and liquefies to mud. This is exacerbated by leaking water pipes in some bays.
- There is a large amount of hard gravel on-site.

- Drains were observed to be blocked resulting in flooding on wet days.

Potential health impacts

- Poor drainage can compound the impacts of other site conditions: it can prevent access to the portable toilets (leading to the effects mentioned above) and can increase the risk of infection arising from rat droppings and other animals on-site.
- The uneven gravel surface can increase the likelihood of falling for children playing outdoors, and the gravel could exacerbate the impacts of accidents and falls.
- Anxiety and stress is reported by mothers as a result of the health risks to children from gravel and puddles. Parents also report restricting children from playing outside, due to potential cuts from gravel and the possibility of infection.
- The site surface makes difficult the maintenance of clean households and the surrounding bay. The inability to keep their homes clean was reported as contributing to poor self-image and depression amongst women on-site.
- Families report that poor site conditions increase laundry costs, particularly among families with children. This reduces disposable income that could be used for other things, for example, better food.

Overcrowding and housing conditions

Key issues associated with overcrowding and housing conditions

Overcrowding and housing conditions are associated with the following health risks:

- As overcrowding is usually associated with other factors such as poverty and poor nutrition, it is difficult to isolate direct impacts arising solely from overcrowding.
- Overcrowding⁷² is associated with mental health issues (especially with women) and impacts on children's and

72 Section 63 of the Housing Act, 1966 stipulates that a house shall be deemed to be "overcrowded" when the number of persons ordinarily sleeping in the house and the number of

rooms therein either: (a) are such that any two of those persons, being persons of 10 years of age or more of opposite sexes and not being persons living together as husband and

wife, must sleep in the same room, or (b) are such that the free air space in any room used as a sleeping apartment, for any person is less than 400 cubic feet (the height of the room,

if it exceeds eight feet, being taken to be eight feet, for the calculation of free air space), and "overcrowding" shall be construed accordingly.

adults⁷³ health with regard to respiratory diseases, TB, meningitis and poor self-rated health in adults.⁷⁴

- An association has been found between poor mental health and lack of space within the home as well as lack of social space for interaction inside and outside the home.
- Poor housing is associated with economic, social, physical and mental well-being. The health effects are also long-term: those who have experienced poor housing in the past are more likely to become ill, regardless of their current housing status.⁷⁵
- Dampness and mould in homes can contribute to, and exacerbate, respiratory illness and increases the risk of children developing wheezing and chest problems. Moulds and fungi can produce allergens which can lead to asthma, respiratory and skin problems.
- Evidence suggests that defective housing particularly affects children's health with aches and pains, nerves, diarrhoea, headaches and significantly more respiratory problems among children in damp housing compared to children in non damp housing.⁷⁶ Asthma sufferers are also 3 times more likely to be found in a damp home than in non-damp homes.⁷⁷

Status of Carrowbrowne

- Internal housing is overcrowded in the majority of cases. As there are no functioning service units, dining, studying, food preparation, sleeping and family communal activity all typically take place in one small space.
- Most caravans or mobile homes have a maximum of 2 bedrooms. The average family size is 4-5 persons. However, the largest family comprised 12 persons.
- The site itself is overcrowded, with caravans located close to each other and on the internal footpath. There is a lack of space in most bays for families to provide a second mobile home or caravan, which

might alleviate overcrowding in mobile homes.

- Poor housing features include lack of functioning service units; no internal plumbed water supply or electricity supply, lack of adequate food preparation area, lack of shower and washing facilities, and cold and damp internal conditions arising from inadequate heating systems.

Potential health impacts

- Overcrowding within caravans can lead to stress and conflict in intra-familial relationships. This is compounded by limited opportunities for children to access external leisure and recreation space. It can also impact on education opportunities for children (owing to lack of space for homework and study, etc.) resulting in decreased opportunities in the future: those with a lower education are more likely to be unemployed and remain in lower socio-economic status groups with the associated impacts on their health.
- Overcrowding on-site compounds other health impacts, such as exposure to infection. This is supported by families' reports of the rapid spread of infection and illness (especially respiratory diseases) amongst the children on-site.
- Overcrowding on-site compromises fire safety, as caravans locate in close proximity to each other within bays, contrary to fire safety guidelines issued by the DEHLG for Travellers' halting sites. This results in increased risks of fire, accidents and injury.
- Poor housing and overcrowding can impact upon mental health and families have cited anxiety and depression arising from housing conditions.
- The demoralising impact of overcrowding on adolescents on-site, arising from a lack of privacy was also noted by residents.

73 Gabe, J., Williams, P. (1987): 'Women, housing, and mental health', *International Journal of Health Services*, 1987;17(4):pp. 667-79.

74 World Health Organisation Europe. Fourth Ministerial Conference on Environment

and Health, 2004; Budapest, cited in Teresa Lavin, T. Higgins, C., Metcalfe, O., and Jordan, A. (2006): *Health Impacts of the Built Environment a review*. Dublin: Institute of Public Health in Ireland.

75 Marsh, A., Gordon, D., Pantazic, C. and Heslop, P. (1999): *Home sweet home? The impact of poor housing in health*. The Policy Press.

76 Martin, C., Platt, S., and Hunt, S., (1987): *Housing conditions and poor health*.

London: British Medical Journal, p. 294.

77 Department of Health (1999): *Saving Lives: Our Healthier Nation*. Government White Paper, Cm 4386. London: The Stationery Office.

Fire safety

Health issues associated with fire safety

- Lack of fire safety can lead to increased risk and accidents, leading to fatality or serious injury.
- Fire safety measures can prevent fires arising, and can ensure that the effects of fire are mitigated by emergency responses.

Status of Carrowbrowne

- No fire safety provisions such as stand pipes, hose lengths, reels or nozzles of suitable length or fire resistant screens between caravans were evident on Carrowbrowne.
- There is one fire hydrant visible on the site.
- Cylinders of flammable liquids on-site (petrol, kerosene and diesel) in close proximity to caravans.
- Families have reported fire accidents (for example, accidents arising from the use of candles at night-time to light the caravans).
- Presence of a height restriction barrier at entrance to the site.

Potential health impacts

- The conditions could lead to fatal and/or non fatal injuries as a result of fire.
- Families have reported that access of emergency vehicles may be compromised as there is no barrier key available on-site, increasing the risk by fires arising from delayed response from emergency services.

7.3 SITE LOCATION

General location (including proximity to former landfill/ composting)

Health issues associated with location

- As environments deteriorate, so does the physical and mental health of people who live in them.⁷⁸
- Natural environments are associated with positive effects such as less anger and reduced blood pressure.⁷⁹
- Studies have reported that general housing location was a health influencing factor⁸⁰ and that there are indirect effects of location on health, caused by lack of access to jobs, education, services, etc.⁸¹ Those who are unemployed are less likely to be healthy⁸² and more likely to die prematurely.^{83,84}
- There is no definitive data on the impacts of living close to waste and composting facilities. However, it is acknowledged that nuisance odour can arise from composting facilities.⁸⁵ Even though there is no scientific evidence linking odour to health outcomes, odour can be a significant nuisance which can give rise to anxiety and can undermine well-being.⁸⁶ In addition, poorly designed or managed waste facilities (especially landfill and composting) can have a nuisance impact due to odours, dust, bio-aerosols (composting), noise and traffic. Other impacts can include ground or surface water pollution, and impacts on landscape.⁸⁷ Cré (the Composting Association of Ireland) recommend a guideline buffer zone

78 Jackson, R. and Kochtitzky, C. (2002): Creating a healthy environment: the impact of the built environment on public health. Centre for disease control and prevention. Available online: <http://www.cdc.gov/healthypplaces/articles/Creating%20A%20Healthy%20Environment.pdf>

79 Passchier, W., Knottnerus, A., Albering, H., Walda, I. (2000): 'Public Health Impact of Large Airports', Reviews on Environmental Health, 2000 Jan-Jun;15(1-2):pp. 83-96.

80 Blackman, T., Evason, E., Melaugh, M., Woods, R. (1989): 'Housing and Health: a case study of two areas of West Belfast', Journal of Social Policy, 18(1): pp. 1-26.

81 Ellaway, A., Macintyre,

S., and Kearns, A. (2001): 'Perceptions of Place and Health in Socially Contrasting Neighbourhoods', Urban Studies, Vol. 38, No. 12, pp. 2299-2316.

82 Mathers, C.D., and Schofield, D.J. (1998): 'The health consequences of unemployment: the evidence'. Medical Journal of Australia 168; pp. 178-182.

83 Gerdtham, G., and Johannesson, M. (2003): 'A note on the effect of unemployment on mortality', Journal of Health Economics, 22, pp. 505-518.

84 Van Lenthe et al (2005) Neighbourhood unemployment and all cause mortality: a comparison of six countries. Journal of Epidemiology and

Community Health, 59, pp. 231-237.

85 In 2006, the Environmental Protection Agency took a prosecution against Ballinasloe Town Council in relation to an offence under Sections 39(1) and 39(9) of the Waste Management Acts 1996 to 2005 for a breach of its Waste Licence (Reg. No. 27-2) at Pollboy Landfill, Ballinasloe, Co. Galway. The prosecution related to the failure by the Council to ensure that odours did not give rise to nuisance either at its facility at Pollboy, or in the immediate area of that facility.

86 According to Reinthaler et al (1998/1999), Austrian law, in relation to potential hazard to neighbouring residents, requires a distance of

300 meters for large scale composting facilities (>4,000 tonne per annum). In Germany, various regulations in different German states require between 200 meters and 500 metres (Ruf 1994): these legal regulations target odour, which according to Reinthaler may often be a more significant problem than bacteria or fungi in the ambient air. Cited in Cré (2004).

87 EPA (2005): Pilot Strategic Environmental Assessment of the Replacement Midlands Waste Management Plan 2005-2010.

of 200m⁸⁸ from a composting facility, and monitoring of bio-aerosol emissions is recommended for particulate matter.

Status of Carrowbrowne

- Carrowbrowne is 5km from Galway city.
- Carrowbrowne is located adjacent to a waste management treatment and composting facility and a former landfill facility. There is no landscaped buffer zone.
- There is no landscaping on the site or at the site boundaries.
- There are no residential areas adjoining the site.

Potential health impacts

- The strong odour arising from the waste management treatment facilities⁸⁹ presents a significant nuisance to those living on-site. Many of those consulted associate the odour with headaches.
- The site's location close to the waste management facilities is an ongoing health concern for families, affecting their well-being.
- The location of the site was cited by families as contributing to their ability (particularly in the case of the men) to engage in economic (recycling of materials) and cultural activity (maintenance of horses and animals), and both were perceived to have positive health impacts and to enhance well-being. The height restriction barrier that was present on the site prior to redevelopment facilitated the entry of high roofed vans necessary for economic activity. Families were concerned that the redevelopment would lead to stricter enforcement of site policies by the local authority which would limit their ability to engage in cultural and economic activity.
- There is a risk that Travellers may accept poor conditions on-sites in order to continue economic and cultural activities (as site improvements may be associated with restrictions on these activities).

- Families also report a positive aspect of the site location: it is close to Galway city, accessible to Tuam, an area of association for one family grouping, leading to enhanced well-being.
- Families have noted the poor visual environment of the site as giving rise to anxiety and decreased well-being.
- Families also expressed fear and anxiety around the possible effects of living close to waste management facilities and the possible impact of this on rat infestation.

Presence of rats

Health issues associated with the presence of rats

- Rats contribute to the contamination of their environment through hair, droppings and urine. This leads to the potential spread of infection and diseases including Leptospirosis (also known as Weils disease), TB, Salmonella, E.Coli and parasites (ticks, mites, fleas, tapeworm).
- Gnawing through wires by rats can cause damage to electrical equipment, which could potentially lead to electrocution and fire.

Status of Carrowbrowne

- There is a presence of rats on-site, and rat poison has been placed at different locations on-site. Families report that vermin control equipment and procedures have been put in place with no consultation or communication.

88 Prasad, M., Van der Werf, P., and Brinkmann, A. (2004): Bioaerosols and Composting: A Literature Evaluation. Composting Association of Ireland (Cré).

89 Also reported in a risk assessment undertaken of the site commissioned by Galway City Council, 2007.

Potential health impacts

- The fear of some residents to adequately ventilate their caravans as a result of rats⁹⁰ could contribute to poor internal housing conditions, respiratory illness or CO poisoning.
- Other site features could compound potential risks associated with rats. These include poor site surface (unable to clean, wash or sanitise); poor drainage (puddles) and evidence of makeshift water supply taps resting on the gravel.
- The fear of rats is reported to act as a deterrent to using toilets at night time, and this could contribute to kidney infections. It was also cited as leading to delayed toilet training in younger children.
- The presence of rats is reported to lead to restrictions on children to play outdoors, arising from the concerns of their parents. Potential impacts include limited opportunities for physical activity, increased overcrowding in the home and increased stress within the home.
- Increase in anxiety and depression.

in increased obesity, risk of heart disease, diabetes and blood pressure.⁹³

- Transport can contribute to noise pollution, and this can lead to sleep disturbance and annoyance resulting in increased stress.
- Transport contributes to air pollution – leading to increased respiratory diseases and, cardiovascular diseases. Traffic pollution has been identified as one of four major triggers for asthma.⁹⁴ There is also evidence that air pollution impacts on the cardiovascular as well as the respiratory system.⁹⁵ Furthermore, those who live close to busy roads may be at increased risk of exposure to potentially carcinogenic pollutants from diesel.^{96,97}
- Traffic leads to an increased risk of injuries and deaths from accidents; children from lower socio-economic groups tend to be more susceptible to serious road accidents.⁹⁸

Status of Carrowbrowne

- The speed limit on the N84, adjacent to Carrowbrowne is 100 kph. In urban areas, the speed limit is normally 50 kph.⁹⁹
- There were no visible signs indicating a concealed entrance or any other indication that people are living in close proximity to the road.
- The road is a national road, with high volumes of traffic, particularly at peak travel times.¹⁰⁰
- There is no hard shoulder on the road outside the site exacerbating the dangers to pedestrians.
- There is no pavement along the side of the road, or 'gate' into Carrowbrowne to prevent exit onto the road.

7.4 TRANSPORT AND EXTERNAL ROAD

Health issues associated with transport and traffic

In summary the following associations have been identified:

- Transport can enable access to goods and services and plays a vital role in the health and well-being of communities.⁹¹
- Reliance on cars as a means of transport can lead to community severance⁹² and can also promote a sedentary lifestyle, resulting

90 For example, residents in caravans located alongside site boundary walls report sightings of rats running along walls at the same height as windows. As a result, windows are kept closed.

91 World Health Organisation (2000): Transport, Environment, and Health. WHO Regional Publications, European Series, No.89. Copenhagen: WHO.

92 Community severance can be defined as the separation of residents from facilities and services they use within their community, caused by new or improved roads or by changes in traffic flows.

93 World Health Organisation (2000): Transport, Environment, and Health. WHO Regional Publications, European Series, No.89. Copenhagen: WHO.

94 National Institute for Health and Clinical Excellence. Asthma: Breathtaking epidemic. <http://www.publichealth.nice.org.uk/page.aspx?o=500709>

95 World Health Organisation Europe (2004): Health Aspects of Air Pollution.

96 World Health Organisation Regional Office for Europe (2000): Transport, Environment and Health. WHO Regional Publications, European Series, No.89.

Copenhagen: WHO.
97 The literature states that the effects of air pollution are compounded in heavy traffic, when low average speed journeys such as those taken on congested routes, are less efficient in their use of fuel and result in greater congestion.

98 Health Development Agency (2005).

99 With special speed limits in selected pedestrian and residential areas of 30 kph and in selected suburban and other routes of 60 kph.

100 The traffic survey undertaken as part of this HIA in February 2008 reported 1,203 vehicles

travelling at morning peak time in 1 hour in the 2 directions. A further traffic survey reported traffic levels at 1,032 during early afternoon non-peak time in one hour. For details of the traffic survey please see www.pavepoint.ie. www.itmtrav.com

Potential health impacts

- Increased risk of fatal and non-fatal injuries – danger to the community and to individuals. Children and toddlers are especially vulnerable as they are more likely to wander onto the road when playing. 1 family reported a near accident involving a toddler on the main road.
- Increased respiratory and cardiovascular disease – due to air pollution from the road. However, there is no evidence that the air quality is poor, and national studies undertaken on similar roads indicate compliance with European minimum standards.¹⁰¹
- Lack of footpaths contributes to constraints on mobility, with the community reporting being entirely dependent on motorised transport to exit the site. A sedentary lifestyle is evident on-site and this can contribute to obesity and the development of diabetes and other illnesses.
- Safety concerns leads to restrictions on young children playing outdoors as well as increased (supervisory) responsibilities for older children (that is inappropriate for their age) can undermine well-being and increase stress and anxiety.

Status of Carrowbrowne

- There is no community or communal facility on-site.
- The tarmac play area has no line markings, soft surface or play equipment.
- A mobile play bus provides pre-school and after-school services on-site (on occasion the service has been interrupted).

Potential health impacts

- The lack of any community facility limits opportunities for primary health care provision on-site, including health promotion and health education facilities. This is important, as research has shown that those suffering ill-health can be less likely to access health services.¹⁰³
- The presence of children in confined spaces results in increased stress and limits opportunities for exercise which is associated with increased risk of childhood obesity. Furthermore parents report an increase in their stress levels when children are confined to the caravans.
- Parents noted a direct improvement in children's behaviour and self-esteem which they associate with the pre-school and after-school facilities. They believe that facilities play an important part in promoting social interaction and education.

7.5 SITE FACILITIES

Community amenities and infrastructure

Health issues associated with community amenities

The availability of, and access to, defined community space helps to promote the following:

- Access to health and information services; educational activities; recreation and leisure opportunities.¹⁰²
- Community and civic engagement.
- Social capital.

¹⁰¹ In addition, the EPA's 'Air Quality in Ireland, 2007' report shows that all monitoring stations throughout the State met EU standards.

¹⁰² The importance of recreation space for children is recognised at national level: 1 of the National Children's Strategy 2000-2010 objectives is to ensure that children benefit from a built and natural environment which supports their physical and emotional wellbeing.

¹⁰³ Parry, G., Van Cleemput P., Peters, J., Moore, J., Walters, S., Thomas, K., and Cooper, C. (2004): *The Health Status of Gypsies & Travellers in England: a report to the Department of Health*. Sheffield: University of Sheffield.

7.6 SOCIAL CAPITAL¹⁰⁴

Health issues associated with social capital

- High levels of social capital and social support are positively associated with good self-rated health, good health chances, lower levels of anxiety and depression, greater sense of safety and freedom from crime; improved recovery from mental illness and better recovery prognoses.^{105,106}
- Low levels of social capital are viewed as eroding an individual's sense of justice and inclusion, leading to anxiety as well as mental illness.¹⁰⁷

Status of Carrowbrowne

- Residents report strong social support networks on the site.
- There is, in general, a stable community in Carrowbrowne. Some tensions have arisen as a result of uncertainty around how bays will be allocated on the site once the redevelopment is complete.

Potential health impacts

- Residents report that having extended family members living on-site as neighbours is one of the most positive aspects of living in Carrowbrowne. Residents noted the importance of having others immediately available to assist with childcare and household management issues.
- Residents report that strong social networks alleviate problematic site conditions.¹⁰⁸ This particularly arises for older residents who are more reliant on outside support. Families are also satisfied that extended family members can move on and off the site and that there are minimal restrictions on this.
- The stigma attached to Carrowbrowne leads to high levels of social exclusion and isolation experienced by residents in Carrowbrowne. However, this has the effect of fostering strong feelings of unity

and co-operation on-site.

- Families believe that social networks are maintained by the poor conditions of Carrowbrowne in that as it is an undesirable place to live, this acts as a deterrent to other families (who are not known to residents) moving onto the site. Residents expressed some concern that this could be undermined with the redevelopment of the site, as they were uncertain as to who would be living on the new site.
- Families also report that crime levels are low and that their ability to undertake cultural activity on the site (for example, horse care) promotes cohesion and reduces the risk of young people engaging in anti-social or criminal behaviour.

This chapter outlined the potential health impacts, both positive and negative, arising from conditions on the Carrowbrowne site. The following chapter considers what measures should be undertaken to mitigate adverse health outcomes and to promote positive health outcomes.

104 Social capital represents the degree of connectedness in communities and the quality of social relations in a given population.

105 Pevalin, D. and Rose, D.

(2003): Investigating the links between social capital and health using the British Household Panel Survey. London: Health Development Agency.

106 Pearce, N. and Davey-Smith,

G. (2003): 'Is social capital the key to inequalities in health?', *American Journal of Public Health*, 93 (1): pp. 122-129.

107 Ibid.

108 For example, support around

access to goods and services for those without cars; assistance with faulty generators; alleviating blocked drains.

SUMMARY POTENTIAL HEALTH IMPACTS AND MITIGATION

In this chapter, a summary of the potential health impacts (both positive and negative) arising from conditions on Carrowbrowne is provided. A series of mitigation measures to promote positive health impacts and address negative health impacts are also provided. The mitigation measures are not all directly relevant to Carrowbrowne, as the site has been redeveloped and the HIA was retrospective, but they will have application to other halting sites of similar status (for example, those with a lack of plumbed water, lack of electricity, proximity to main road in geographically isolated areas and proximity to waste treatment facility). The mitigation measures identified should be used as a basis for a checklist or set of indicators that can be used to assess other halting sites in the country, by local authorities, health professionals or Traveller organisations.¹⁰⁹

Site feature	Description	Potential impacts	Possible mitigation measures
Infrastructure	Lack of mainstream electricity	<ul style="list-style-type: none"> - Fuel poverty arising from high cost of alternative fuel. Safety and CO¹¹⁰ emissions – use of hazardous unvented kerosene heaters. - Fire hazards – use of candles. - Food poverty - lack of refrigeration. - Contamination and food poisoning – lack of refrigeration. - High costs of accessing basic services such as laundrettes, leisure centres for showers, etc. - Dampness and mould arising from inadequate heating systems. - Anxiety and hardship – unreliable or no electricity, quality of life and wellbeing. 	<ul style="list-style-type: none"> • Service units should be provided with an internal electricity supply for cooking facilities, washing facilities (laundry and personal). • Mainstream electricity should be provided on all sites. • Consideration should be given to the provision of high powered generators to residents where there is a delay in mainstream electricity provision.
	Inadequate sanitation and water supply	<ul style="list-style-type: none"> - Kidney problems – arising from reluctance to use toilet facilities at night. - Delayed toilet training amongst children and bedwetting. - Increased spread of infections through lack of hand washing and personal hygiene facilities. - Low self esteem and depression – no showers or warm water. - Cost – using leisure centres for showers, buying water and pre-mixed baby formula, use of laundrettes for washing clothes, etc. 	<ul style="list-style-type: none"> • Adequately plumbed service units should be provided with sufficient access to hot and cold water, and with toilet and showering facilities. • Until a service unit is provided, portable showers and high grade portable toilets with wash hand basins should be provided in consultation between residents and providers regarding their location, features, frequency of servicing, etc. This should be monitored in a site management plan. • An analysis of the water supply should be conducted to alleviate fears of possible contamination.

¹⁰⁹ Please also see 'Toolkit for assessing conditions on Traveller sites', developed as part of this HIA, and available online

www.paveepoint.ie and
www.itmtrav.com
¹¹⁰ Carbon Monoxide

SUMMARY POTENTIAL HEALTH

IMPACTS AND MITIGATION

Site feature	Description	Potential impacts	Possible mitigation measures
	Gravel based Site surface and inadequate drainage	<ul style="list-style-type: none"> - Poor drainage and flooding compounds other impacts, e.g., restricts use of portable toilets and can lead to infection. - Risk of cuts and wounds and infection arising from gravel and uneven site surface. - Anxiety and stress amongst mothers arising from fear of accidents with children on the gravel surface. - Depression and poor self-image – unable to keep home space clean. - Restricted exercise and play opportunities for children. - Economic impacts – increased laundry costs arising from the frequency of changing children's clothes due to dirty site. 	<ul style="list-style-type: none"> • Hard site surface with sloping levels, consistent with guidelines should be in place in all sites and bays. • Site management plan (developed in consultation with residents) would ensure drainage is inspected and addressed if insufficient. • Provision of adequate play surface for children to mitigate chance of injury. Should be developed in consultation with residents.
	Overcrowding and housing conditions	<ul style="list-style-type: none"> - Stress and intra-familial and inter-familial conflict. - Education impacts - limited space for study. - Potential to increase spread of infection and illness. - Site overcrowding compromises fire safety – risk of fire. - Poor self-image, especially with adolescents, arising from lack of privacy. 	<ul style="list-style-type: none"> • Bays in new developments should enable sufficient space for two mobile homes or caravans. • Improved housing conditions may be facilitated by the application of rent supplements for caravans (to enable residents to rent caravans privately). Alternatively high quality mobile accommodation (for example, chalets) should be provided to families.
	Lack of fire safety procedures and equipment	<ul style="list-style-type: none"> - Lack of fire safety provision increases risk of fatalities arising from accidents. - Risk of fire accidents compounded by overcrowding (proximity of caravans), as well as presence of fuels and combustible materials on-site. - Risk of minor accidents indoors arising from the use of candles. - Fears around access to site by emergency vehicles arising from the presence of the height restriction barrier. 	<ul style="list-style-type: none"> • Provision of safety equipment and procedures through site management plan. • Provision of mains electricity would undermine the need for combustible fuel on the site, and risk of fire through use of candles. • Use of code system for access by emergency vehicles rather than key (uncertainty around access to the site in case of emergency).

Site feature	Description	Potential impacts	Possible mitigation measures
Site services and facilities	Lack of community amenities and limited play	<ul style="list-style-type: none"> - Little opportunities for communal or community activities and for exercise/ recreation for children. - Undermines access to some health services: lack of opportunities for individual consultation with Primary Health Care Project on-site. - Mobile bus service (pre-school & after school) impacts positively on children (education, play, providing both a pre-school and afterschool service). 	<ul style="list-style-type: none"> • Consultation should take place between site residents and local authorities around play and recreation space to be developed. • Communal and community space should be mandatory, for example, portable cabin space. This should also provide for the needs of young people and adolescents (e.g., youth work activities).
Site location	General location (incl. proximity to landfill / waste treatment)	<ul style="list-style-type: none"> - Presence of nuisance odour – impacts negatively on residents' wellbeing. - Poor visual environment undermines well-being. - Proximity to city: the location is generally favoured by residents. - Fear and anxiety of families around the perceived and potential impacts of living close to waste management sites. 	<ul style="list-style-type: none"> • Location of sites close to any waste management or former landfill facility should be avoided. • At a minimum, no site should be located within at least 200m of any waste management or former landfill site.¹¹¹ • If an existing site is close to such a facility, there should be landscaping between site and facility to improve the visual environment, and to act as a buffer zone. • Regular consultation and communication between Traveller representative organisations and management of waste treatment facilities should take place regarding facilities management, including odour testing¹¹² and monitoring of air and bio-aerosol emissions, etc. • Referral to Environmental Protection Agency should be considered for compliance with waste management license if odour persists.

¹¹¹ As recommended by the Composting Association of Ireland (Cré), 2004. In some European states, the recommended buffer zone is set at a minimum of 500 m.

¹¹² Odour monitoring includes olfactometric measurements; analysis of hydrogen sulphide, ammonia, mercaptans and amines and odour modelling.

Burke, D. (2006): Green Waste Composting: Technology, design and environmental management. Presented at Cré themed seminar 'Green Waste

Composting', 14 March 2006.

SUMMARY POTENTIAL HEALTH IMPACTS AND MITIGATION

Site feature	Description	Potential impacts	Possible mitigation measures
	Economic and cultural activity enabled on the site	<ul style="list-style-type: none"> - Good opportunities for economic and cultural activity are believed to be enhanced by the site's isolation and lack of restrictions on using the space for economic activity. - These opportunities enable men to undertake physical exercise on site. - Fears that redeveloped site may diminish opportunities for economic/cultural activity. - Height restriction barriers prevent high roofed vans from entering the site, limiting opportunities to engage in economic and cultural activity. 	<ul style="list-style-type: none"> • Positive impacts of older sites (e.g., ability to undertake economic/cultural activity) should be maintained. • If barriers are to be constructed on sites, these should have width restriction barriers rather than height restriction barriers, to allow high roofed vans to enter, without compromising barriers' ability to restrict movement of caravans onto the site. • If there is no space on new or existing sites for economic or cultural activities, these activities should be facilitated by identifying other sites which could be used (e.g., those zoned for non-residential and commercial uses). This should be undertaken in consultation with residents.
	Presence of rats	<ul style="list-style-type: none"> - Rats carry diseases, some fatal. - Risks are increased by the requirement of families to use external services (toilets, water pipes) and the general poor condition (e.g., risk of water hose contamination in poor drainage areas). - Fear and stress arising from rat infestation, contributing to overall poor sense of well-being. - Restricted mobility for children. Rats deter against use of toilets at night time increasing risks associated with poor sanitation. 	<ul style="list-style-type: none"> • Site management plans should be developed to monitor and address conditions that give rise to rats. A site management plan should be developed in consultation with families and should be reviewed regularly. • Residents on-site should ensure that waste and food is properly disposed of to minimise infestation. • Consultation and communication should take place between the local or housing authority, vermin control company and residents re: rat poison placed on sites.

Site feature	Description	Potential impacts	Possible mitigation measures
Traffic and Transport	Proximity to N84	<ul style="list-style-type: none"> - Risk of fatal and non-fatal accidents: no fatalities reported but risk of serious injury and one incident reported involving toddler and traffic on N84. - Restrictions on young children playing outdoors – arising from safety concerns. - Increased (supervisory) responsibilities for older children. - Constraint on mobility and sedentary lifestyle arising from total reliance of all community on motorised vehicles to exit the site. - Air pollution – unlikely to be significant. - Noise causes annoyance for families living closest to the road. 	<ul style="list-style-type: none"> • Landscaping by site boundary. • Road markings and signage (internal and external). • Reduced speed limit on main road. • Footpath and pedestrian provisions – no new sites to be developed without adequate provision. • Improved internal site play and recreation space and equipment for children. • Public transport provision. • Improved internal road network and provide exercise space and facilities (e.g., community space). • No overtaking policy on the stretch of road adjacent to the site.
Social capital	General location (incl. proximity to landfill / waste treatment)	<ul style="list-style-type: none"> - Strong social networks present. - Extended family members available on-site viewed as a significant contribution to support and promotes well-being. - Fear that redevelopment may undermine social networks – new families. - Some tensions amongst families around allocations of bays in redeveloped site. - Stigma – around how Carrowbrowne is perceived by general public. - Overcrowding on-site can present tensions. 	<ul style="list-style-type: none"> • Efforts should be made to maintain family groupings in existing/new sites. • Regular and ongoing consultation and communication with families as new sites are being developed around allocation issues in order to alleviate or prevent tensions between families.

RECOMMENDATIONS

RECOMMENDATIONS TO IMPROVE CONDITIONS ON LOW GRADE SITES

The following recommendations are made based on the findings of the HIA and the set of mitigation factors identified in the previous chapter. The outcomes of the consultations undertaken as part of this HIA with policy makers, Traveller residents on site, service providers, Traveller organisations and technical experts played a key role in informing the development of recommendations.

They are proposed as practical measures to address the conditions on Traveller halting sites at a national and local level.

9.1 LOCAL MONITORING OF SITES

- Regular programmed visits to monitor conditions on temporary sites should be undertaken. The visits could be led by Environment Health Officers, and could also include other professionals, for example, public health specialists.
- These professionals should undertake an assessment of conditions on-site, including built environment issues, with potential health impacts, such as (but not limited to) those identified in this HIA. They should report to the local or housing authority on the potential impacts and make recommendations as to what remedial measures that should be undertaken to address these issues. This was previously recommended by the Task Force on the Travelling Community and the Traveller Health Strategy. A cross departmental structure¹¹³ with Traveller representation should explore mechanisms to oversee these assessments.

9.2 ADDRESSING CONDITIONS ON EXISTING SITES THROUGH A REGULATORY SYSTEM

- Sites in existence prior to the introduction of the Department of the Environment, Heritage and Local Government's (DEHLG) guidelines should be brought within a new regulatory framework, to ensure that refurbishment is undertaken to improve sites. A possible procedure (based on previous regulations introduced to register and license quarries¹¹⁴) is as follows:
 - o Each local or housing authority undertakes an audit of official halting sites that are in existence.
 - o The audit should detail conditions on sites according to indicators and with reference to minimum guidelines as recommended by the DEHLG. Indicators would include an audit of infrastructure elements such as mains electricity, plumbed water supply, drainage, sanitation, site surface, etc. The audit should identify the level and range of potential health impacts that may affect human beings residing on each site.
 - o A risk assessment methodology should be considered in undertaking the audit. This might establish a health risk rating attached to each feature of a site.¹¹⁵ These would be weighted and would dictate the timescale and urgency for remedial action. Each audit would imply a course of action depending on the outcome of the risk assessment.
 - o Each local or housing authority should establish an action plan for remedial works to be undertaken, (in addition to provisions in the Traveller Accommodation Plan).

¹¹³ Comprising officials from the Department of the Environment and the Department of Health

and Children as previously recommended in the Traveller Health Strategy (2002-2005).

¹¹⁴ Under Section 261 of the Planning and Development Act, 2000.

¹¹⁵ Such as those used in a 'traffic light' rating system.

- o The mitigation measures identified in this report (chapter 8) should be considered as a basis for remedial action.
- o The audits should be published as a status report of each low-grade halting site.
- o The audit of sites and conditions and timescale for addressing same should be included on a national register which should be publicly available.
- o The performance of local authorities with regard to undertaking the audit and achieving targets for refurbishment of sites should be included in the local authority service indicators.¹¹⁶
- o Financial penalties should be put in place by the DEHLG for local authorities whose targets have not been reached (sites that have not upgraded within a targeted time-scale).

The National Traveller Accommodation Consultative Committee (NTACC) should monitor and evaluate the achievement of targets for the upgrading of (registered) sites.

9.3 IMPROVING THE QUALITY OF ACCOMMODATION OF TRAVELLERS

- Local authorities should give consideration to providing mobile or chalet-type accommodation to Travellers, as part of a site development process.
- If this is not possible, in order to improve the standard of housing accommodation,¹¹⁷ Travellers should be able to apply for rent subsidies for rented accommodation from their community welfare officer in order to be able to avail of rented caravan accommodation.

9.4 DATA COLLECTION

- The Irish Traveller Movement and the Department of the Environment, Heritage and Local Government should develop a comprehensive database of Traveller halting sites in Ireland and classify them according to some key indicators (for example, whether they have pre-dated guidelines; whether they have been redeveloped since the guidelines, whether they have mains electricity, plumbed water, and other facilities such as those outlined in this report). The classification developed should be used as a basis for undertaking the Traveller census by local authorities.

RECOMMENDATIONS FOR NEW OR REDEVELOPED SITES

These recommendations are drawn from the views of residents in Carrowbrowne in relation to the following issues: how the new site (when refurbished) would address the health issues and potential health impacts identified, as well as the consultation process that was undertaken for the new site. They are also drawn from the findings of the HIA, the consultations undertaken throughout the process as well as from best practice.

9.5 RECOMMENDATIONS FOR THE DEVELOPMENT OF NEW SITES

Site location is one of the initial stages in the development of a new site. Traveller halting sites are often located in non-residential and industrial areas (partly due to resistance from settled communities). Difficulties in accessing land should not lead to the locating of Traveller accommodation on inappropriate sites. Any site selection process should adhere to best practice guidelines for site selection that have been developed by the Department

¹¹⁶ Service indicators across 42 headings were introduced to the local authority system in 2004, as part of a major initiative

designed to measure performance by local authorities.

¹¹⁷ For example, supplementary welfare allowance

('rent allowance') or rental accommodation scheme.

RECOMMENDATIONS

of the Environment, Heritage and Local Government.¹¹⁸

For every new site or site being re-developed, a steering group should be established, which should report to the Local Traveller Accommodation Consultative Committee (LTACC).¹¹⁹ A steering group should be instigated early in the development process, and no later than project design stage.¹²⁰ Possible membership of such as steering group should include:

- HSE public health professionals, including public health specialists, community medical officers, environment health officers and public health nurses.
- Primary health care programme staff.
- Local or housing authority staff (planning, housing, and social work departments).
- Representatives of existing or proposed residents (male and female).
- Traveller organisations.
- Elected representatives.

This structure should oversee the development or re-development of sites from concept stage to completion, and it should oversee consultation processes as recommended below.

9.6 PLANNING NEW SITES IN CONSULTATION WITH TRAVELLERS

There is a need to ensure that Traveller residents' views are considered at the earliest stages in the development and location of new and re-developed halting sites. A consultation process should commence at the pre-planning stage, as the cost of changes as the design process progresses may be prohibitive. Presentations and meetings with Traveller organisations and Travellers should take place at key stages of the design process. A possible approach is as follows:

- **Design brief stage:** the design brief is drawn up to inform the sketch and concept drawings, and will describe the purpose and function of the development, assumptions made about its size, the rationale for certain design features; its general size, number of units and its layout, etc.
 - o The consultation process should ensure that Traveller representatives are engaged at this early stage of the design process. A meeting should take place between representatives and the local or housing authority to discuss the design brief.
 - o It should be endeavoured to have the content of the design brief signed-off between the local authority and a Traveller representative. The outcome of this will be an agreed written design brief statement.
 - o The mechanism for facilitating this process could be the Local Traveller Accommodation Consultative Committee, or the steering committee established for each site.
 - o The design brief should be guided by good practice design brief guidelines which should be developed by the Irish Traveller Movement and should be circulated to the project architect.
- **Design sketch stage:** at this stage, it is common that three concept drawings are produced, informed by the design brief. One of these designs will be selected for further, detailed design work. Prior to the selection of one of the designs, the following actions should be undertaken:
 - o A presentation of all 3 sketches/ concepts should be made by the engineer / architect (an example of a design sketch is outlined across and in the appendices) to proposed residents. The 'pros' and 'cons' of each should be discussed.

¹¹⁸ Department of the Environment, Heritage and Local Government: (2007), Quality Housing for Sustainable Communities Best Practice Guidelines for Delivering Homes Sustaining

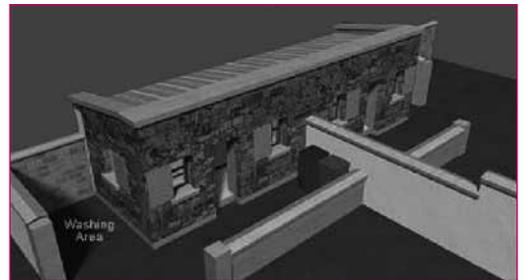
Communities. Dublin: DEHLG. Available online: <http://www.environment.ie/en/Publications/DevelopmentandHousing/Housing/FileDownload,1979,en.pdf>

¹¹⁹ Such a steering group was established for the redevelopment of the Carrowbrowne halting site in Galway, on the instruction of the Department of the Environment, Heritage and

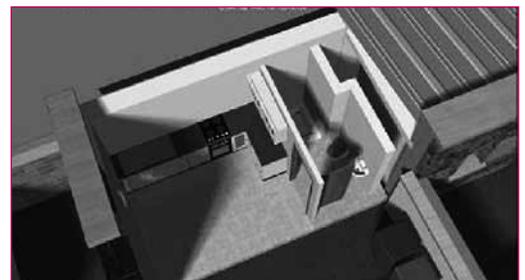
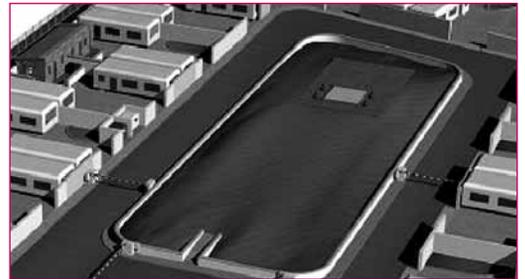
Local Government and this structure was highly regarded. ¹²⁰ During the stage at which the design of the site and its units is being developed.

- o It is usual that a single concept or design is recommended for acceptance by the client. At this stage, it might be expected that each sketch would include a layout of each bay. 3D computer generated graphics should be developed at this stage, such as those commissioned by Galway Traveller Movement, as part of this HIA, which are illustrated below.
- o Sign-off of the selected sketch should be a requirement for the project to progress onto the next stage.
- o An adequate time frame should be allocated to allow for on site discussion amongst Traveller representatives to 'tease out' the sketches before final sign-off.
- o Small, minor issues and 'snags' can be amended at this stage, subject to the regulations.
- o A set of precise and scaled 3D images should be prepared at this stage to describe the entire area graphically, including an internal perspective view of the internal bays and a number of external perspective views should be provided and presented. The images above and below provide examples of 3D images, and were developed as part of this HIA.¹²³

These provisions should be pursued by the Department of the Environment, Heritage and Local Government and the National Traveller Accommodation Consultative Committee.



- **Detailed design:** detailed design drawings will be developed following the outcomes and sign-off reached at design sketch stage. The detailed drawings will be technical, scaled drawings and can include the structural, electrical, mechanical, civil and architectural drawings containing exterior elevations, foundation plans, interior elevations, detailed floor plans, and structural details. At this stage of design, fundamental concepts of layout and design cannot be changed. In addition, the drawings must have regard to building regulations (such as the location and size of windows, distances between structures, size of entrances, etc.).



¹²¹ 'Sign off' requires a mechanism to be put in place in the event that no agreement and sign off can be reached. The process should agree that objections to sign-off by any party should be seen to be reasonable. In the event that

agreement cannot be reached, a last resort could be to appoint a third party, such as the RIAI or others who have the expertise to provide or act as advisor.
¹²² If, as can be the case with transient sites, there are no identified residents, then the

consultation process should be undertaken with a local Traveller representative organisation.
¹²³ Additional examples of 3D images are available in the appendices.

9.6 PROVISIONS FOR ECONOMIC AND CULTURAL ACTIVITY

- Positive health impacts are associated with employment, social and cultural activities and this HIA identifies a strong preference amongst Travellers for provision of space for economic and cultural activities (for example, space to contain horses) adjacent to sites.
- In some cases local authorities are restricted in the availability of space and are required to manage competing demands on land, in particular, land zoned for residential use. Where this arises, it is recommended that local authorities give consideration to providing space for cultural and economic activities in sites that are zoned for non-residential use (where no space is available on existing sites). Such sites may not be in demand to the same extent as residential zoned sites. Furthermore, other lands that are not suitable for development, as indicated in their development plans¹²⁴ could be explored. This could be a short-term solution to a lack of space for horses and economic activity and could in some way provide positive health impacts and outcomes for Travellers.

9.7 MONITORING OF OUTCOMES AND IMPLEMENTATION OF RECOMMENDATIONS

HIA is concerned with evaluation of outcomes and monitoring. It is recommended that no later than 8 months after this report is published, the Galway Traveller Movement should initiate a review of the outcomes of the HIA process. The advisory group established for this HIA should reconvene and consider the following actions:

- Examine whether any of the above recommendations have been adopted. For example, the relevant agencies to which the recommendations are addressed could be requested to respond to the recommendations, and to outline what action they are likely to take in relation to them.
- Consult with the families living on the newly developed site at Carrowbrowne, to establish how they perceive their health and well-being have been affected by their new accommodation.

¹²⁴ For example, road reservations.

- Barry, J., Herity, B., and Solan, J., (1989): *Vital Statistics of Travelling People*, 1987. Dublin: The Health Research Board, pp. 14-15.
- Blackman, T., Evason, E., Melaugh, M., Woods, R. (1989): "Housing and Health: a case study of two areas of West Belfast", *Journal of Social Policy*, 18(1): pp. 1-26.
- Board of Science and Education (2003): *Housing and Health: Building for the Future*. British Medical Association: London.
- Burke, D. (2006): *Green Waste Composting: Technology, design and environmental management*. Presented at Cré themed seminar 'Green Waste Composting', 14 March 2006.
- CSO (2008): *Health Status and Health Service Utilisation Quarterly National Household Survey Quarter 3, 2007*. Available online: http://www.cso.ie/releasespublications/documents/labour_market/current/healthstatus.pdf
- Dahlgren, G., and Whitehead, M. (1995): 'Tackling Inequalities: A Review of Policy Initiatives', in *Tackling Inequalities in Health: An Agenda for Action*, (eds). M. Benzeval, K. Judge, and M. Whitehead. London: Kings Fund Institute.
- Department of the Environment, Heritage and Local Government (1998): *Guidelines - Residential Caravan Parks for Travellers*. Dublin: DEHLG.
- Department of the Environment, Heritage and Local Government (1998): *Guidelines - Accommodating Transient Traveller Families*. Dublin: DEHLG.
- Department of the Environment, Heritage and Local Government (1998): *Guidelines for Traveller Accommodation: Basic Services and Facilities for Caravans Pending the Provision of Permanent Accommodation*. Dublin: DEHLG.
- Department of the Environment, Heritage and Local Government (2007) *Quality Housing for Sustainable Communities Best Practice Guidelines for Delivering Homes Sustaining Communities*. Dublin: DEHLG. Available online: <http://www.envron.ie/en/Publications/DevelopmentandHousing/Housing/FileDownload,1979,en.pdf>
- Department of Health and Children (2001): *Better Health for Everyone: A Population Health Approach for Ireland, Annual Report of the Chief Medical Officer 2001*. Dublin: Department of Health and Children.
- Department of Health and Children (2002): *Traveller Health Strategy (2002-2005)*. Dublin: Department of Health and Children.
- Department of Justice, Equality and Law Reform (2000): *First Progress Report of the Committee to Monitor and Coordinate the Implementation of the Recommendations of the Task Force on the Travelling Community*. Dublin: DJELG.
- Department of Justice, Equality and Law Reform (1995): *The Report of the Task Force on the Travelling Community*, Dublin: DJELG.
- Department of Health (1999): *Saving Lives: Our Healthier Nation*. Government White Paper, Cm 4386, London: The Stationery Office.
- Eastern Regional Health Authority (2004): *A Health Impact Assessment of Traffic and Transport in Ballyfermot*. Dublin ERHA.
- ECHP (1999), *Health Impact Assessment: Main concepts and suggested approach* (Gothenburg Consensus Paper), European Centre for Health Policy, Brussels.
- Ellaway, A., Macintyre, S., and Kearns, A. (2001): *Perceptions of Place and Health in Socially Contrasting Neighbourhoods*. *Urban Studies*, Vol. 38, No. 12, pp. 2299-2316.
- Elliot, I. (2001): *Health impact assessment, an introductory report*. Dublin: The Institute of Public Health in Ireland.

BIBLIOGRAPHY AND REFERENCES

- Environmental Protection Agency. (2005): *Pilot Strategic Environmental Assessment of the Replacement Midlands Waste Management Plan 2005-2010*, EPA.
- Environmental Protection Agency (2008): *Air Quality in Ireland 2007 Key Indicators of Ambient Air Quality*. EPA.
- European Centre for Health Policy (1999): *Health Impact Assessment: main concepts and suggested approach*. Gothenburg consensus paper, December 1999. World Health Organisation, Regional Office for Europe. Available online: <http://www.euro.who.int/document/pae/gothenburgpaper.pdf>
- Fewtrell, L., and Bartram, J., (eds) (2001): *Water Quality Guidelines, Standards and Health: Assessment of risk and risk management for water-related infectious disease*. Cornwall; IWA Publishing and World Health Organisation.
- Friel, S. and Conlon, C. (2004) *Food Poverty and Policy*, report produced for Combat Poverty Agency, Crosscare and the Society of St. Vincent de Paul.
- Galway City Council (2005): *Traveller Accommodation Programme 2005-2008*. Galway: Galway City Council. Available online: <http://www.galwaycity.ie/AllServices/Housing/SocialHousing/TravellerAccommodation/>
- Gabe, J., and Williams, P. (1987): 'Women, housing, and mental health', *International Journal of Health Services*, 1987;17(4):pp. 667-79.
- Gerdtham, G., and Johannesson, M. (2003): 'A note on the effect of unemployment on mortality', *Journal of Health Economics*, 22, pp. 505-518.
- Henwood, M. (1997): *Fuel Poverty, Energy Efficiency and Health*,. Report to the EAGA Charitable Trust.
- Institute of Public Health in Ireland (2005): *Making diabetes count. A systematic approach to estimating population prevalence on the island of Ireland in 2005*. First report of The Irish Diabetes Prevalence Working Group, Ireland and Northern Ireland's Population Health Observatory (INIsPHO), Institute of Public Health in Ireland. Dublin: IPHI Available online: <http://www.publichealth.ie/files/file/Making%20Diabetes%20Count%201.pdf>
- Institute of Public Health in Ireland (2006): *Health Impact Assessment Guidance*. Developed by the Institute of Public Health in Ireland on behalf of the Ministerial Group on Public Health. Available online: <http://www.publichealth.ie/publications/healthimpactassessmentguidance>
- Jackson, R. and Kochtitzky, C. (2002): *Creating a healthy environment: the impact of the built environment on public health*. Centre for disease control and prevention. Available online: <http://www.cdc.gov/healthyplaces/articles/Creating%20A%20Healthy%20Environment.pdf>
- Lavin, T., Higgins, C., Metcalf, O., and Jordan, A. (2006): *Health Impacts of the Built Environment a review*. Dublin: Institute of Public Health in Ireland.
- Layte, R., Russell, H., and McCoy, S. (2002): *The Economics and Marketing of Tobacco: An Overview of the Existing Published Evidence*, Economic and Social Research Institute, Dublin, 46.
- Layte, R., and Whelan, C. T. (2004): *Explaining Social Class Differentials in Smoking: The Role of Education*, Research Programme on "Health Services, Health Inequalities and Health and Social Gain", Working Paper No. 12. Ireland: ESRI, ISSC and University of Ulster. Available online: <http://www.esri.ie/UserFiles/publications/20080903160823/OPEA043.pdf>
- Marsh, A. & McKay, S. (1994): *Poor Smokers* PSI Publishing, London.
-

- Marsh, A., Gordon, D., Pantazic, C., and Heslop, P. (1999): *Home sweet home? The impact of poor housing in health*. Bristol: The Policy Press.
- Martin, C., Platt, S., and Hunt, S. (1982): *Housing conditions and poor health*. London: British Medical Journal, 294.
- Mathers, C.D., and Schofield, D.J. (1998): The health consequences of unemployment: the evidence. *Medical Journal of Australia* 168; pp. 178-182.
- Morgan, K., McGee, H., Watson, D., Perry, I., Barry, M., Shelley, E., Harrington, J. Molcho M., Layte, R., Tully, N, van Lente, E., Ward, M., Lutomski, J., Conroy, R., and Brugha, R. (2008): *SLÁN 2007: Survey of Lifestyle, Attitudes & Nutrition in Ireland*. Main Report. Dublin: Department of Health and Children.
- Parry, G., Van Cleemput, P., Peters, J., Moore, J., Walters, S., Thomas, K., and Cooper, C. (2004): *The Health Status of Gypsies & Travellers in England: a report to the Department of Health*. Sheffield: University of Sheffield.
- Passchier, W., Knottnerus, A., Albering, H., Walda, I. (2000): 'Public Health Impact of Large Airports', *Reviews on Environmental Health*, 2000 Jan-Jun;15 (1-2): pp. 83-96.
- Pearce, N. and Davey-Smith, G. (2003): 'Is social capital the key to inequalities in health?', *American Journal of Public Health*, 93 (1): pp. 122-129.
- Pevalin, D. and Rose, D. (2003): *Investigating the links between social capital and health using the British Household Panel Survey*. London: Health Development Agency.
- Prasad, M., Van der Werf, P., and Brinkmann, A. (2004): *Bioaerosols and Composting: A Literature Evaluation*. Composting Association of Ireland (cré).
- Reinthal, F.F., Haas, D., Feier, G., Schlacher, R., Pichler-Semmelrock, F.P., Köck M., Wüst, G., Feenstra, O., Marth, E. (1998/1999): 'Comparative Investigations of Airborne Culturable Micro-Organisms in Selected Waste Treatment Facilities and Neighbouring Residential Areas', *Zentralblatt für Hygiene und Umweltmedizin*, 202-1-17.
- Shenassa, E., Daskalakis, C., Liebhaber, A., Braubach, M. and Brown, M. (2007): Dampness and Mold in the Home and Depression: An examination of mold-related illness and perceived control of one's home as possible depression pathways. *American Journal of Public Health*, October 2007, Vol. 97, No. 10, pp. 1893-1899.
- Tan, S., Gavin, J., Murphy, D., Dineen, B., Avalos, G., and Dunne, F. (2007): *Pilot Study to Determine the Prevalence of Diabetes, Pre-diabetes and Metabolic Syndrome in the Travelling Community*. Study undertaken in collaboration with NUIG, GTM, ITM, Health Research Board.
- TSA Consultancy (2003): *Environmental Health Concerns of Travellers Environmental Concerns and Conditions on Traveller Sites*. Traveller Health Unit Eastern Region (HSE).
- UNCED (1992). Report of the United Nations Conference on Environment and Development. Annex I Principle 15. Available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>
- Van Lenthe, F.J., Borrell, L. N., Costa, G., Biez Roux, A.V., Kauppinen, T. M., Marinacci, C., Martikainen, P, Regidor, E., Stafford, M., and T Valkonen (2005): 'Neighbourhood unemployment and all cause mortality: a comparison of six countries', *Journal of Epidemiology and Community Health*, 59, pp. 231-237.

BIBLIOGRAPHY AND REFERENCES

Williams, R., Walsh, D., White, J., Jackson, M., and Mumford, J. (1992): "Effect on Carbon Monoxide Levels in Mobile Homes Using Unvented Kerosene Heaters for Residential Heating", *Indoor and Built Environment*, Vol. 1, No. 5, pp. 272-278.

World Health Organisation (2000): *Transport, Environment, and Health*. WHO Regional Publications, European Series, No.89.

World Health Organisation Europe (2004): Fourth Ministerial Conference on Environment and Health, 2004; Budapest.

World Health Organisation Europe (2004): *Health aspects of air pollution results from the WHO project "systematic review of health aspects of air pollution in Europe"*. World Health Organisation.

World Health Organisation, (1948), Preamble to the Constitution of the World Health Organisation as adopted by the International Health Conference, New York, 19-22 June, 1946.

Methods of imaging that can be used as part of a design process

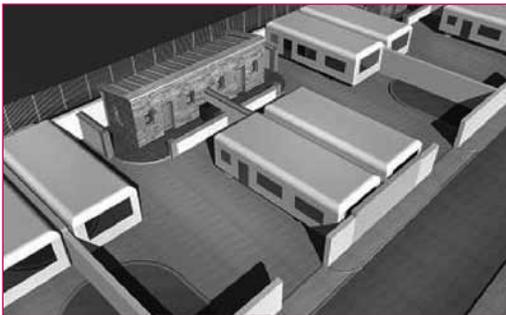
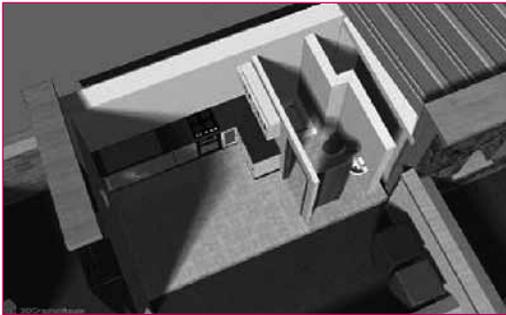
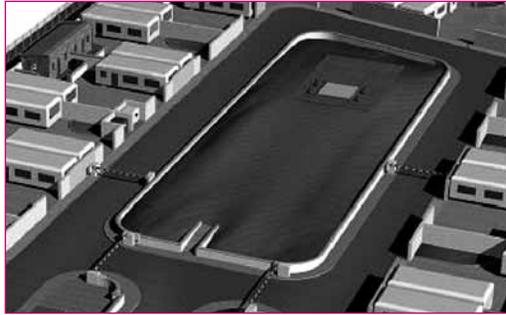
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Design sketch



3D imaging samples



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