12 Socio Economic Effects

12.1 Introduction
This chapter considers the socio-economic impact of Edinburgh Tram Line One during its construction and operation.

Two main aspects of the scheme are considered:

- the direct socio-economic impacts of the scheme - this examines the likely impacts on employment, during construction and operation of the scheme; and
- the indirect socio-economic impacts, including the impact of the scheme on accessibility along the route and on communities benefiting from easier access to other areas.

The following section describes the current socio-economic conditions in the area of the proposals. Section 12.3 reports on the assessment of impacts during construction and Section 12.4, impacts in the long term once the tram is operational.

12.2 Baseline Socio Economic Conditions

12.2.1 General
The City of Edinburgh has a strong and growing economy and recent research suggests that this will be fastest growing economy of any major UK city over the next five years (1). Economic growth is closely related to future labour supply and population growth, with a buoyant economy likely to result in both a high level of inward migration and a growth in commuting.

12.2.2 Population
The population of Edinburgh is estimated to grow from 453,000 to 465,000 between 2001 and 2011. Information from the 2001 census indicates a variation in population density across the areas of the city served by Line One. High densities are found in the north of the New Town, along Leith Walk and into Leith, through to Newhaven and across the north west of Edinburgh to the areas of Granton, Pilton and Muirhouse.

The only areas served by Line One with a low population density are those along the Roseburn Railway Corridor, particularly between Telford Road and Roseburn, and in the city centre. The areas of Granton and north Leith in the vicinity of the port currently have low population levels and density, however they are the subject of major development plans involving significant areas of new housing. These plans anticipate up to 15,000 household units with some 30,000 residents, split approximately 60% at Granton and 40% at Leith.

12.2.3 Employment
Unemployment is at a 25 year low in Edinburgh and is expected to decline only slightly from its present level. The total number of unemployed in Edinburgh recorded in the 2001 census was 9,566. The key concentrations of unemployment in the study area for Line One of the tram are in pockets of Leith, and more widespread in areas of Granton, Pilton and Muirhouse. These areas in particular are

addressed in the paragraphs that follow; more information on unemployment in these wards is provided in Section 12.2.5.

12.2.4 Car Ownership

Approximately 31% of households in Edinburgh do not own a car \(^{(1)}\). Census data indicate that areas of low car ownership are broadly correlated to areas of higher population density, with much of Line One serving these areas. In part this reflects the compact nature of much of the city, which allied with the comprehensive bus system, makes car ownership less attractive than is the case elsewhere. However, it is also related to income and deprivation, which are addressed below.

12.2.5 Specific Issues in North Edinburgh

The route of Line One passes through several wards which together comprise the North Edinburgh Social Inclusion Partnership (SIP) Area. In these wards, and a small number of neighbouring wards, issues of lower than average employment, income and other deprivation have persisted for many years. In particular the wards of Muirhouse/Drylaw, Pilton, Granton and Newhaven are amongst the most deprived parts of the city. Population and claimant count unemployment data for these four areas are presented in Table 12.1.

<table>
<thead>
<tr>
<th>Area</th>
<th>Working Age Population (16-74)</th>
<th>Number of Unemployed Residents</th>
<th>Approximate unemployment rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muirhouse</td>
<td>6,404</td>
<td>319</td>
<td>4.9</td>
</tr>
<tr>
<td>Pilton</td>
<td>5,840</td>
<td>176</td>
<td>3.0</td>
</tr>
<tr>
<td>Granton</td>
<td>5,626</td>
<td>244</td>
<td>4.3</td>
</tr>
<tr>
<td>Newhaven</td>
<td>5,792</td>
<td>72</td>
<td>1.2</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>342,431</td>
<td>7,214</td>
<td>2.1</td>
</tr>
</tbody>
</table>


Whilst the data in the table illustrate unemployment for specific areas of North Edinburgh, other parts of Edinburgh through which Line One will pass also have above average unemployment and below average income and education attainment, including Leith in the north eastern part of the route and Royston/Wardieburn, parts of the city which are adjacent to the wards of Pilton and Granton.

The 2001 Census showed that the number of people employed in North Edinburgh SIP Area was 13,500. The breakdown by ward and industry is illustrated in Table 12.2.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Muirhouse/Drylaw</th>
<th>Pilton</th>
<th>Granton</th>
<th>Newhaven</th>
<th>Edinburgh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>3.0</td>
<td>2.0</td>
<td>2.1</td>
<td>1.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>6.7</td>
<td>8.3</td>
<td>8.5</td>
<td>7.8</td>
<td>7.5</td>
</tr>
<tr>
<td>Construction</td>
<td>8.2</td>
<td>6.9</td>
<td>7.0</td>
<td>4.5</td>
<td>4.7</td>
</tr>
<tr>
<td>Wholesale &amp; retail trade</td>
<td>14.6</td>
<td>15.2</td>
<td>14.1</td>
<td>11.9</td>
<td>11.6</td>
</tr>
<tr>
<td>Hotels &amp; restaurants</td>
<td>8.9</td>
<td>9.3</td>
<td>5.3</td>
<td>6.3</td>
<td>6.5</td>
</tr>
<tr>
<td>Transport &amp; communication</td>
<td>9.0</td>
<td>9.0</td>
<td>7.1</td>
<td>5.6</td>
<td>5.9</td>
</tr>
<tr>
<td>Finance</td>
<td>6.1</td>
<td>6.5</td>
<td>8.6</td>
<td>8.7</td>
<td>11.3</td>
</tr>
<tr>
<td>Business services</td>
<td>11.1</td>
<td>12.3</td>
<td>13.1</td>
<td>18.0</td>
<td>16.1</td>
</tr>
<tr>
<td>Public admin/defence</td>
<td>5.4</td>
<td>5.6</td>
<td>6.7</td>
<td>6.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Education</td>
<td>4.4</td>
<td>4.2</td>
<td>6.3</td>
<td>8.4</td>
<td>9.3</td>
</tr>
</tbody>
</table>

The key sectors of employment include business services, health and social work, and wholesale and retail trade, similar to the pattern in Edinburgh as a whole. It is evident that the service sector plays a significant role in North Edinburgh area in terms of employment.

The North Edinburgh SIP Area has been the subject of a policy initiative, the North Edinburgh Area Renewal (NEAR), which seeks to address social deprivation issues. NEAR is the governing body for regeneration in North Edinburgh and leads the SIP. The SIP is a partnership of public, private and community organisations which is responsible for implementing plans for social regeneration in the NEAR area and integration of the community with the regeneration opportunities associated with the Waterfront Edinburgh developments.

**12.2.6 Deprivation Ranking**

Indices of Deprivation are measured for every ward and local authority in Scotland. They combine a number of indicators covering income, employment, health, education and geographical access to services into a single deprivation score for each area.

*Table 12.3* shows some of the main indicators. The income scale measures the number of people who are on a low income and in receipt of at least one means tested benefit. The employment scale is the number of people who are ‘employment deprived’ – people who want to work but are unable to do so through unemployment, sickness or disability.

The two measures of income and employment deprivation are particularly useful as they are real counts of the absolute number of individuals experiencing these deprivations.

<table>
<thead>
<tr>
<th></th>
<th>Income Index</th>
<th>Employment Index</th>
<th>Education Index</th>
<th>Geographical Access to Services Index</th>
<th>Index of Multiple Deprivation (SIMD 2003)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muirhouse/Drylaw</td>
<td>37</td>
<td>39</td>
<td>29</td>
<td>1009</td>
<td>33</td>
</tr>
<tr>
<td>Pilton</td>
<td>126</td>
<td>289</td>
<td>28</td>
<td>1155</td>
<td>136</td>
</tr>
<tr>
<td>Granton</td>
<td>137</td>
<td>156</td>
<td>564</td>
<td>973</td>
<td>180</td>
</tr>
<tr>
<td>Newhaven</td>
<td>248</td>
<td>392</td>
<td>378</td>
<td>1165</td>
<td>376</td>
</tr>
</tbody>
</table>

Source: Scottish IMD, 2003

The indices are presented in a range from 1 – 1222. A score of 1 indicates that a ward is the most deprived, a score of 1222 the least deprived. Thus, any ward with an index lower than 122 is, on these measures, among the worst 10% in Scotland.

It is clear from looking at the Scottish Index of Multiple Deprivation (IMD - a composite measure of all of the indicators combined) that some of the wards through which the proposed tram passes are among the most deprived in Scotland. According to the SIMD, Muirhouse/Drylaw is one of the 3% of most deprived wards in Scotland, and this also applies to the income, employment and education indicators. Even the best performing ward of the four, Newhaven, is within the worst third of wards in Scotland. The column showing Geographical Access to Services Index demonstrates that most of the wards have relatively good access to the basic local services used as indicators in this variable. The basic local services measured include post offices, food shops, doctors’ surgeries and primary schools;
and the relatively strong performance on this measure can be largely explained by the urban nature of
the wards concerned.

Whilst improved transport provision will not address all the needs of the area, in combination with
other initiatives promoting housing, employment and urban regeneration, it can make a contribution to
improving the wellbeing of this and other parts of North Edinburgh through improved accessibility to
employment and services.

12.3 Construction Employment Effects

12.3.1 Approach

The economic impacts relating to employment generated during the construction of the scheme have
been considered in relation to:

- direct employment on site; and
- indirect and induced employment.

12.3.2 Direct Construction Employment

Investment in building works for Line One will create jobs. The nature of such employment is that it
is not permanent, but job opportunities will be created over a period of around three years. The scale
of employment will be a function of the scale and type of construction expenditure.

In the absence of detailed information on recruitment practices of the scheme contractor, a series of
assumptions have been made to estimate the likely impact in terms of construction employment. These are:

- capital construction costs are estimated to be to approximately £175 million, excluding
  contingencies, optimism bias, property costs and vehicle costs;

- there will be no fluctuation in the capital costs;

- the construction phase will be completed by 2008.

It has also been assumed that approximately £80,000 (2002 prices) of capital construction expenditure
supports one person-year of employment. This figure is an estimate derived from experience of major
capital works elsewhere in the UK.

Based on this ratio and the estimated capital construction costs of £175m, it is estimated that
approximately 2,190 gross person years of employment will be generated over 3 years.

Using a standard ratio of 10 person years of construction work being equivalent to one permanent job
in the economy, this is equivalent to some 219 permanent gross jobs. Because the project is complex
and will require significant ‘import’ of experience and skills from contractors’ bases outside of the
area, imports could easily amount to as much as 70% of all costs. On this basis around 65 permanent
net job equivalents would be created within the Edinburgh area during the construction period. This
corresponds to slightly less than 1% of current unemployment levels (c 9,500 unemployed in
Edinburgh in 2001).

12.3.3 Secondary (Indirect and Induced) Employment Effects

Indirect employment effects will result from purchases of goods and services need for construction
from local suppliers (e.g. suppliers of temporary buildings, materials and sub-contractors). Induced (or
income) effects will reflect spending in the local economy of incomes earned both in the construction process and the production of purchased goods and services. This spending will generate further local employment.

The magnitude of these effects will depend on many unknown factors, including the proportion of capital equipment purchased locally, the relationship between construction contractors and their suppliers and the ability of local suppliers to meet contractors’ needs. Whilst it is expected that a proportion of construction services will be obtained locally, more technical equipment (including the tram vehicles themselves) will be purchased from national or global markets. This expenditure will not therefore enter the local economy and is excluded from the analysis. This exclusion has been achieved through making an allowance for leakage and displacement \(^{(1)}\).

Existing guidance \(^{(2)}\) indicates that supply linkages and induced or income related multiplier effects within a local area for a project containing average links might be expected to be around 1.10; i.e. they create an additional 10% of activity beyond that created directly. This is a composite multiplier which includes both supply and income effects and has been adopted for the purpose of this assessment.

On this basis a further 7 net indirect and induced jobs, will be generated through the actions of the combined multiplier, bringing the total to 72 net local jobs.

These outputs assume no local displacement of jobs associated with construction employment for Tram Line One (i.e. that those local people building the infrastructure would not otherwise be working on other local construction projects).

### 12.4 Long Term Operational Effects

Impacts during operation of the tram are considered in relation to the following:

- direct and secondary employment creation; and
- impacts on businesses, regeneration and accessibility to employment.

The potential impact of the project has been considered in light of experience from similar infrastructure projects, though it should be noted that reliable quantifiable evidence from such projects is limited and in any case need not be applicable to particular cases.

#### 12.4.1 Long Term Operational Employment

Permanent employment during the operational phase, including drivers, maintenance, administration and other support staff has been estimated in the economic analysis for the STAG2 Appraisal of Line One (November 2003). The number of indirect and direct jobs created from this permanent employment can be calculated using the same multiplier as that applied to the construction phase.

It is anticipated that operation and maintenance of Line One will require 184 staff in permanent jobs in as shown in Table 12.4.

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\(^{(1)}\) Leakage refers to the proportion of outputs which benefit those outside of the project’s target area or group. Displacement refers to the project outputs accounted for by reduced outputs elsewhere.

Table 12.4  Edinburgh Tram Line One: Direct Operational Employment (FTE)

<table>
<thead>
<tr>
<th>Type of Employment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td>40</td>
</tr>
<tr>
<td>Conductors</td>
<td>40</td>
</tr>
<tr>
<td>Other operations staff</td>
<td>41</td>
</tr>
<tr>
<td>Maintenance staff</td>
<td>49</td>
</tr>
<tr>
<td>Management and administration staff</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>184</strong></td>
</tr>
</tbody>
</table>

Source: Data on operations staff provided by SDG on behalf of tie

The degree of additional employment created may be lower than this as a result of leakage if staff concerned live outside of the city, and displacement if the tram leads to lower employment on buses through reductions in service frequency and/or bus routes. These effects are likely to reduce employment but the level cannot be estimated. A reasonable guess might be a reduction of about 30.

On this basis it is estimated that net operations and maintenance employment would be in the range of 150-155 jobs. These jobs will in turn create induced and indirect permanent employment of around 15 people, bringing the total number of permanent jobs to an estimated 170, or about 2% of those currently unemployed.

12.4.2 Impacts on Business

The assessment of impacts on business, regeneration and access to employment has drawn closely from surveys and analysis undertaken for the STAG appraisal of the scheme, in particular on the assessment of the Economic Activity and Location Impacts (EALIs). These identified both positive and negative effects of the tram on existing businesses.

- A positive impact would result from provision of better access to labour, particularly in the retail, financial services and health sectors, with up to 30 vacancies per year which surveyed businesses presently could not fill, being filled through greater accessibility provided by the tram, to pools of labour in regeneration areas of north Edinburgh.

- The negative impact would be a perception of inconvenience to customers arising for some businesses through interruption of car parking immediately outside of business premises.

On balance the impact was considered to be neutral

12.4.3 Impacts on Regeneration

The focus of the STAG assessment was on property development with an assessment of development outcomes based on discussions with developers to identify the role of the tram in regeneration. Property related impacts were assessed in relation to the large urban regeneration projects in north Edinburgh. The most significant of these is the Waterfront Edinburgh Ltd (WEL) development, which comprises a mixed use high density development near Granton.

In addition to the Waterfront site, there is also a large amount of new development along the edge of the Firth of Forth from Granton to Leith. This includes new housing, retail, leisure and hotel accommodation, some of which is currently under construction. There are also further proposals for future development around Granton Harbour, Newhaven and Leith Port.

Since development of the WEL site, and many of the other sites along the Forth, has always been planned to be integrated with the alignment of Line One, development and employment opportunities at these locations are directly related to Line One.
A large proportion of office and industrial space will be marketed to the service sector, which will create jobs suitable for low skilled workers resident within the regeneration areas of North Edinburgh. Other developments such as retail outlets and leisure facilities will also provide a significant number of low skilled vacancies suited to the local labour base. Increased accessibility as a result of Line One will allow North Edinburgh residents to fill these vacancies and this opportunity can be capitalised on by investigating training needs and providing training. This will be important to ensure that there is a net benefit in employment terms rather than a net outflow (1).

Employment impacts of the tram through take up of development sites (distributional impacts) have been estimated using a land use–transport interaction (LUTI) model. This model provides a top-down assessment of employment impacts alongside corresponding expected land use changes. The assessment using the LUTI model predicted that 110 job vacancies per annum would be filled as a result of Line One operation. These would be additional to those generated via construction and operation.

12.4.4 Access to Employment

The north Edinburgh area through which Line One passes contains four of the ten most deprived areas (wards) in the City of Edinburgh (2) in:

- Muirhouse/Drylaw West;
- Pilton;
- Granton;
- Newhaven.

Each of these wards is served by Edinburgh Tram Line One and will benefit from increased accessibility, in particular to new jobs created as part of the regeneration of North Edinburgh, but also to employment opportunities in the city centre and other areas of Edinburgh.

Levels of unemployment in these wards are in the 1-5% range. Activity rates are below average city levels and a proportion of people in employment are under-employed. Accordingly, a labour resource exists which could in principle be drawn upon in order to fill some of the employment opportunities which will be generated in North Edinburgh.

Total employment in the WEL and other development sites in North Edinburgh is predicted to range from 14,000 to 20,000 jobs. The mix of skills is not known, however if only 5% of opportunities were for low or unskilled activities, this would still amount to 700 to 1,000 jobs accessible to the labour pool in North Edinburgh. Given the proximity and travel to work characteristics of the labour force with these skills level in Edinburgh, it is reasonable to predict that some 10-20% of these jobs (70 to 200 jobs) could be filled by residents of the North Edinburgh regeneration areas.

It is not the case that all of these would be additional jobs, as some jobs coming to North Edinburgh sites would be relocations from, or would impact on jobs in other regeneration areas in Edinburgh and the Lothians. Consequently an allowance needs to be made for this and it has been conservatively assumed that such displacement would amount to 50%. The net impact is therefore predicted as 35 to 100 jobs in north Edinburgh, which is equivalent to 4% to 12% of the total unemployed (October 2003 figures) in the four wards identified.

(1) Implementation of the tram will also facilitate travel into North Edinburgh, enabling non-residents to compete with residents for employment positions there.

(2) Deprivation reported in the Scottish Index of Multiple Deprivation (2003) which measures deprivation according to income, employment, health, disability, education, skills and training and geographic access to services.