

5. Land Use

5.1. Introduction

This chapter of the ES is concerned with the effects that GARL will have on land and land use. Incorporated within this assessment are the impacts on recreational, residential and industrial/business areas. The assessment covers both existing and, where information is available, future land uses. The assessment draws on, and provides information to, other elements of the assessment including the Planning Policy Review, Socio-economics, Landscape and Visual Impacts, Geology, Soils and Contamination and Transport and Traffic.

This chapter should be read with reference to Figures 5.1 to 5.5, which show the key land uses adjacent to the proposed scheme.

5.2. Methods

The following sub-sections detail the methods used to develop the baseline and future land use situation along both the branch line and mainline.

5.2.1. Baseline Field Survey

A general desk and field survey was undertaken along the rail corridor and extending from that at the western end at St James' Park. The field survey describes key existing land uses, highlighting in particular the more sensitive uses and activities such as educational establishments and residential properties close to GARL, as well as other important areas such as commercial and industrial areas. The survey was limited to a corridor of 200m either side of the proposed GARL route and included potential sites for construction compounds.

Table 5.1 below describes the land use categories that were used during the field survey and form the basis of the land use description along the GARL route.

Table 5.1 Land Use Descriptions

Land Use	Description of Land Use Category
Glasgow Airport	Land associated with the operation of Glasgow International Airport including the fuel farm.
Education	Schools, colleges, etc. including the grounds.
Unoccupied Land	Land that at the time of the survey had no obvious use. This land may be built on or vacant.
Transport Infrastructure	All areas associated with transport have been included in this category including existing railway alignments, existing railway stations, infrastructure associated with railway stations, including car parks and station houses, major roads, roundabouts and park and ride facilities.
Recreational and Amenity Areas	Facilities used for recreational purposes and local amenity areas, for outdoor relaxation and enjoyment, have been put into the category. For example, playing fields, golf courses and associated clubhouses, allotments, cycleways and parkland.
Industrial	This category broadly includes areas of an industrial nature for example factories, garages, scrap yards and waste transfer stations.
Residential	All types of residential properties and their land boundaries. This includes bungalows, semi-detached, detached, terraced, multi-storey flats and tenements including hotels, B&Bs and their associated facilities and grounds.
Commercial	Retail, office and business areas.
Mixed Use	All buildings that have a combined use for residential and commercial purposes.
Agriculture	Land used for agricultural purposes including crops and livestock.
Community Use	Land that is used for community purposes, e.g. local cemetery.
Watercourses	Rivers and burns, including their banks.

It should be noted that there might be discrepancies for some land use descriptions where, for example, commercial properties may be included in residential areas and some commercial premises may have been classed as industrial (particularly if located in a predominately residential or industrial area respectively). This is unavoidable.

5.2.2. Planning Applications and Development Proposals

Future land use was determined from local plans and through a review of current major development proposals, within the relevant local plans, and, planning permissions collected and collated by SPT (Appendix to Chapter 5).

The assessment excluded the following:

- Minor developments (e.g. installation of mobile phone antennae); and
- Proposals or planning permissions beyond 200 metres of the proposed route (except proposals/permissions of significant scale identified in the course of baseline data collection).

In addition to major development proposals, land use allocations identified in the Renfrewshire and Glasgow City development plans were identified.

5.2.3. Land Take

The Parliamentary Bill submission includes Parliamentary Maps and Plans and the Book of Reference and defines the extent of land that is to be acquired or used for the construction and operation of the GARL scheme. The Parliamentary Plans show the centreline of the Works, Limits of Deviation (LODs) and Limits of Land to be Acquired or Used (LLAUs) (see Section 3.5.2 for clarification on the meaning of these terms).

The total areas of land covered by the proposed scheme are as follows:

Table 5.2: Area of Land Required for GARL

Land Required for GARL	Area in m²
Land to be permanently acquired	400,534
Land to be temporarily acquired	346,113
Land for safeguarding (Building at 61 Murray Street)	1,176
Total land-take	747,823
Total area of railway land	350,308
% of land to be permanently acquired that is currently railway land	87%

5.2.4. Sunlight Occlusion Study

A sunlight occlusion study was undertaken to model the shadow that would be cast by the new St James' Park viaduct and to provide information in order to assess the potential impact of shadowing on playability of pitches within the park. Shadowing can affect playability during the winter months as it may mean that some pitches are partially thawed while other portions are still frozen making them unsafe to play on. The study assessed the extent of shadowing on proposed post-construction arrangement of pitches comprising 11 pitches to the west of the viaduct and 9 to the east.

This shadow cast analysis indicates the extent of introduced/new shading that the proposed viaduct will create. However, the introduced/new shading is one of numerous factors that will contribute to ground frost on the sports fields. Other contributing factors, including local ambient temperature, latent soil moisture etc., are independent of the impact of the viaduct and beyond were the scope of the study undertaken.

A copy of this study is included in Appendix to Chapter 5 of the ES (Volume 4). Note that the pitch arrangements shown in the figures in this study are indicative only and may not represent the final configuration of pitches at St James' Park once works are complete.

5.3. Baseline Situation

5.3.1. Land Use

The route passes through various land use types (Figures 5.1 to 5.5), which are summarised below. It has been assumed that the baseline situation at the time of the assessment will also prevail at the commencement of construction, except where there is information regarding planned changes.

5.3.1.1 Glasgow Airport to Arkleston Junction

In the vicinity of the proposed Airport Station there is the Glasgow Airport itself with associated buildings and offices, as well as a number of hotels, multi-storey car parks, a fuel farm and various other offices. To the west of St Andrew's Crescent is an area of open space with a football pitch that is owned by BAA, which is zoned for Airport development. There is a cycleway and foot path and 'trim trail' that runs along side this area and the Paisley Moss Local Nature Reserve (LNR). The Paisley Moss LNR is identified in the Local Plan as a 'unique educational and recreational resource'. It is situated to the south of the airport runway and is used for recreation and environmental education to which both schools and members of the public have access. Where the route crosses St James' Park, there is an area of open space, used for recreation, i.e. football. Further information on St James' Park is provided below.

To the east and southwest of the park are residential properties. Subsequently the route passes through an area of industry, including the grounds of an operational foundry, offices, storage warehousing, a waste transfer station and car parking at the St James' branch line. Once the route joins the main line the main land uses are light industry/warehousing with some residential and office use lining the route.

5.3.1.2 Arkleston Junction to Penilee Bridge

Here the land adjacent to the route comprises mainly agricultural land and the Barshaw Golf Course.

5.3.1.3 Penilee Bridge to Glasgow Central Station

Along the route from Penilee Bridge, land is predominantly industrial/warehousing to the north of the line and residential to the south. The Craigton Cemetery is south of the line in this stretch of rail corridor. A mix of high-density commercial and residential properties surrounds Glasgow Central Station.

5.3.1.4 Elderslie Loop

This section of railway is surrounded by residential properties to the south and industrial land to the north.

5.3.1.5 St James' Park Playing Fields

St James' Park is managed by Renfrewshire Council and is exclusively used for football. Twenty 100m x 50m pitches are currently laid out in the Park although there is space for 22. Of these 20 pitches at least half, lying mainly in the central and eastern areas of the park, are known to be vulnerable to flooding. A sports pavilion lies to the south of the Park providing changing facilities for teams and officials (see Figure 5.1). The area of red blaes next to Greenock Road is occasionally used for fairgrounds.

The use of the Park in the 2003-4 season was as follows:

Table 5.3 St James' Playing Fields – Facts and Figures for 2003-4

Park Use 2003-4	No.
Number of pitches booked during season 2003/4 (September – May)	1406
Number of games played	1135
Games cancelled	251
Maximum number of games on a	
1) Saturday (am)	18
2) Saturday (pm)	18
Average number of games played on a Sunday	6
Number of days lost during 2003/4	2 Saturdays out of 36 weeks

Information provided by Renfrewshire Council

The main playing season runs from August to May (36 weeks). Most games are played on Saturdays with some played on Sundays with a few mid-week games taking place during April and May. At the end of the season in May the posts are taken down and the surface reseeded and repaired. However, some activity does take place during the summer such as the Children's Soccer 7s on Saturdays from June to August, using scaled down pitches. Prior to the main season a major soccer 7s tournament for under-11s is held, typically in the third week of August. Renfrewshire Council also allows other smaller tournaments throughout the season as requested. No training is allowed on the pitches at any time of year. All games must be booked through the Council.

Currently there are between 10-12 leagues using the pitches some of which have divisions (typically 3). The leagues are both local and national and for men, boys, women, girls, and groups including the Scouts and Boys Brigade. Renfrewshire Council estimate that over 100 teams make use of the pitches.

As Table 5.3 indicates only 18 of the 20 pitches are normally used as 2 of the pitches suffer from poor drainage. There is also some rotation to let pitches recover from heavy use. Due to poor weather a number of games are lost each year. However, for the 2003-4 season this amounted to only two Saturdays.

5.3.1.6 Planning Applications and Development Proposals

A summary of proposed development along the GARL route is provided in Table 5.4 below and are identified (using a reference number) on the Land Use Figures 5.1 – 5.5.

Table 5.4 Major developments and planning applications**Development Proposal Details**

- D1: Erection of hotel, restaurant, conference facility and leisure centre (RC Ref: 99/0737/PP)
- D2: Erection of a covered walkway at Bute Road Coach Park Terminal Building (RC Ref 03/014/EN)
- D3: Alterations to Road Network to west of Terminal Building, including formation of coach park, new junction, junction modifications and walkway, relining works to forecourts 1 and 2 and erection of 3 bus shelters (RC Ref: 00/0919/EN)
- D4: Single storey office and erection of a first floor office and stair (RC Ref: 03/1188/PP)
- D5: Erection of hangar and related workshop/offices (RC Ref: 01/0195/EN).
- D6: Change of use of Class 5 premises to car rental premises (RC Ref: 04/0973/PP).
- D7: Erection of a two-storey office building with associated parking, access and landscaping (RC Ref: 05/0358/PP).
- D8: Erection of offices (allowing for demolition of two houses) and formation of new access and associated car park (RC Ref: 00/0789/PP).
- D9: Erection of rail halt with associated access and parking provision (RC Ref: 04/0545/PP).
- D10: To amend the terms of Condition 2 of 02/1304/PP to reflect the re-routing of the footpath to St James' Avenue from application site (RC Ref: 05/0347/PP).
- D11: Erection of one and a half storey dwelling house (RC Ref: 03/1336/PP).
- D12: Erection of 13 townhouses and 87 flats with assoc. roads, parking and landscaping (RC Ref: 05/0121/PP).
- D13: Formation of long stay car park to include the siting of a portable building (RC Ref: 04/0545/PP).
- D14: Mixed Use development comprising hotel, licensed restaurant, Class 6 warehousing, 5 a-side soccer ground, golf driving range, petrol filling station and allotments with new access and associated infrastructure and landscaping (RC Ref: 02/1304/PP).
- D15: Erection of Football stadium and services including 5 a side pitches, ancillary car parking landscaping, means of access and ancillary works (RC Ref: 04600/PP/04).
- D16: Use of land for airport related security parking (RC Ref: 00/0896/PP).
- D17: Change of use of land to form waste recycling facility and erection of vehicular garage (RC Ref: 04/0050/PP).
- D18: Erection of 2 Industrial Units (RC Ref: 04/1175/PP).
- D19: Locally Important Business/Industrial Area (RLP - IB9) and Area for Business & Industry (RDCLP – B2).
- D20: Erection of a single storey prefabricated building for use as a shop fittings equipment store (RC Ref: 04/1041/PP).
- D21: Erection of Residential Flatted development (RC Ref: 04/1575/PP).
- D22: Construction of light Industrial/business park with associated servicing area and car parking and access road works onto Kerr Street to form site access (RC Ref: 03/1002/PP).
- D23: Area for Business & Industry (RDCLP – B2).
- D24: Erection of 41 No. detached and semi-detached houses with new access formed from Arkleston Road and new road junction (RC Ref: 02/1221/PP).
- D25: Mixed Use development comprising business, light industrial use, residential development community facilities, rail halt with associated facilities, primary school, indoor ski arena, velodrome, recreational facilities and associated works including new motorway junction, road access, landscaping and highway infrastructure (RC Ref: 03/01236/PP).
- D26: Potential Freight Yard (RLP – T4).
- D27: Strategic Industrial & Business Location (RLP – IB2) and Area for Business & Industry (RDCLP – B2).

RC = Renfrewshire Council; RDCLP = Renfrew District Council Local Plan; RLP = Renfrewshire Local Plan

5.4. Construction Effects

5.4.1.1 Potential Impacts

Inherent with construction operations, is the requirement for construction compounds and work sites along or close to the route. This is necessary for the storage of plant, materials and locating site offices. The locations of construction compounds have been detailed as part of the parliamentary Bill submission; however the precise location and use of sites would be dependant on the contractor's construction methodology.

Potential impacts on land use are related to the temporary land take associated with the construction works for GARL. Table 5.5 below lists land to be used during construction and the potential impact construction would have on land and land use. It should be noted that potential impacts have only been assessed for that area of land that is likely to be temporarily utilised for construction purposes. For the purpose of this assessment, it has been assumed that construction works would be limited to the route corridor and defined construction compounds.

Table 5.5 Construction Effects - Potential Impacts

Land use	Location	Temporary Land Use Impacts
Transport Infrastructure	Area at the junction of dismantled Arkleston Branch to the north of the line (within Network Rail (NR) Land)	<ul style="list-style-type: none"> Temporary land take for a construction compound. This construction compound is within NR land with access from an existing NR access on Wallneuk Road. This should have a negligible impact on the operation of the railway.
	Area to the south of Fifty Pitches Road immediately to the north of Cardonald Junction (with temporary access from Fifty Pitches Road)	<ul style="list-style-type: none"> Temporary land take for a works area. This should have a negligible impact on the operation of the railway.
Recreational and Amenity Areas	Southern half of the playing fields to the west of St Andrews's Crescent (with temporary access from this road)	<ul style="list-style-type: none"> Temporary land take for a construction compound. This would temporarily prevent the use of the playing field.
	Area adjacent to LNR for access creation to the site proposed for the fuel farm	<ul style="list-style-type: none"> Temporary land take for a construction compound. The cycleway and footpath will be negatively impacted due to disruption during construction works. It is likely that they will be closed during construction works, potentially for an extended period. During construction of both the fuel farm and the access to the fuel farm there will be a negative impact on the recreational experience for users of the trim trail and of the Paisley Moss LNR.
	Eastern half of St James' Park (with a temporary access from the A726)	<ul style="list-style-type: none"> Temporary land take for a construction compound. The main impact will be the temporary loss of a total of 11 pitches at St James Park during construction, and these temporary impacts on the pitches will extend for periods both before and after the Works to construct the viaduct and M8 bridge.
	Area of land owned by NR to the south of Arkleston Road bridge next to Barshaw Golf Course (with access from Arkleston Road)	<ul style="list-style-type: none"> Temporary land take for a works area. The impact on the adjacent golf course should be negligible and not effect the operation of the golf course.
Mixed Use	Area of land immediately to the south of the Paisley viaduct between Renfrew Road and East Buchanan Street owned by NR (with access from East Buchanan Street)	<ul style="list-style-type: none"> Temporary land take for a works area. The impact on this land use during construction should be negligible.
Industrial	Area of land owned by SPT adjacent to a Transco Gas Holder north of the railway (with access from Broomloan Road near the junction with Paisley Road West)	<ul style="list-style-type: none"> Temporary land take for a construction compound. The impact on this land use should be negligible.
	Area of land on the site of an abandoned works adjacent to the railway at Shields Junction (with access from Cornwall Street South)	<ul style="list-style-type: none"> Temporary land take for a works area. The impact on this land use during construction should be negligible.
Commercial	Area of Central Station undercroft to the south of Midland Street (using an existing access from this street)	<ul style="list-style-type: none"> Temporary land take for a construction compound. The impact here is considered to be minor as there may be some disruption to commercially activities including disrupted access to shops etc.

It is likely that the construction programme will follow a construction sequence divided into work sections. Work sections have been determined as a means of estimating the duration of construction and the probable locations for the construction compounds. The appointed contractor would determine the exact sequence of works. Furthermore, the nature of design and build schemes means that the contractor will be given flexibility within the limits of deviation. The contractor's construction methodology may also mean that sites identified for construction purposes may not be required. The following work sections have been considered for the outline construction programme:

- Airport Branch Line
- New Junction to Airport Branch
- Wallneuk Junction
- Wallneuk Junction to Arkleston Junction Main Line
- Arkleston Junction
- Arkleston Junction to Cardonald Junction Relief Line
- Cardonald Junction
- Cardonald Junction to Gower Street to Relief Line
- Gower Street Junction
- Shields Junction to Glasgow Central Station
- Glasgow Central Station
- Elderslie Loop
- Fuel Farm

The location of Construction Compounds are listed in Chapter 2 and shown in Figures 4.1–4.5.

5.4.1.2 Mitigation

In specific relation to the impacts on land use during construction, the following mitigation measures will be implemented. As far as possible, construction compounds will be located in areas that will cause the least disturbance to existing land uses.

Table 5.6 Construction Effects - Mitigation

Land use	Location	Mitigation
Transport Infrastructure	Area at the junction of dismantled Arkleston Branch to the north of the line (within Network Rail (NR) Land)	<ul style="list-style-type: none"> • During construction, where necessary, topsoils will be stripped and stored to prevent soil structure damage. • Land used for temporary construction works will be reinstated.
	Area to the south of Fifty Pitches Road immediately to the north of Cardonald Junction (with temporary access from Fifty Pitches Road)	<ul style="list-style-type: none"> • During construction, where necessary, topsoils will be stripped and stored to prevent soil structure damage. • All land used for temporary construction works outside the area to be developed will be reinstated.
Recreational and Amenity Areas	Southern half of the playing fields to the west of St Andrew's Crescent (with a temporary access from this road)	<ul style="list-style-type: none"> • Playing fields to the west of St Andrew's Crescent will be realigned and reinstated to the same or better condition following construction.
	Area adjacent to LNR for access creation to the site proposed for the fuel farm	<ul style="list-style-type: none"> • Where existing cycleways and footpaths are affected by temporary closures, alternative routes will be maintained as close as practicable to the original alignment; this could be through nearby public roads. However, cycle diversions of 200 metres are regarded as the upper limit of acceptability. • During construction, where possible, hoarding will be in place to largely screen the construction activities at the proposed fuel farm site.

Land use	Location	Mitigation
	<p>Eastern half of St James' Park (with temporary access from the A726)</p>	<ul style="list-style-type: none"> • The pitches lost on the eastern side of St James' Park during construction will be provided elsewhere at locations to be agreed with Renfrewshire Council. • The pitches on the western half of St James' Park will remain in operation and be realigned to accommodate 11 pitches during construction and the remaining 11 will be relocated elsewhere as agreed with Renfrewshire Council from the possible sites listed below: - <ul style="list-style-type: none"> - Ferguslie Park, Paisley (2 pitches to be permanently upgraded to league standard plus 2 new pitches to be constructed. Possible improvements to changing facilities). - Lochend Playing Fields, Paisley (2 pitches to be upgraded plus provision of temporary changing facilities). - Ralston Playing Fields, Paisley (2 pitches to be upgraded plus possible extension of existing pavilion). - Seedhill Playing Fields, Paisley (1 pitch to be upgraded plus possible extension of existing pavilion). - Thomas Shanks Park, Johnstone (2 pitches to be upgraded plus provision of temporary changing facilities). • These alternative sites will need various upgrade measures to meet league standards, and in sufficient time for works commencement in St James' Park. It is envisaged that these replacement pitches will substitute for the St James' pitches on the west side of the alignment initially, whilst these are being realigned and upgraded, and then used to substitute for those pitches temporarily lost on the eastern side of the alignment within the construction compound. Once construction works are complete, the pitches on the eastern side will be reinstated, with adequate ground improvement works undertaken as required. • All pitches provided will be to league standard and include suitable changing facilities. • Works will be phased to ensure that relocation of temporary pitches elsewhere and the realignment of pitches on the western half of St James' Park will take place before resumption of the eastern half of St James' Park as a construction compound. • The phasing of works will also take into account the time required to prepare pitches including levelling, drainage, and seeding or turfing.
	<p>Area of land owned by NR to the south of Arkleston Road bridge next to Barshaw Golf Course (with access from Arkleston Road)</p>	<ul style="list-style-type: none"> • During construction, where necessary, topsoils will be stripped and stored to prevent soil structure damage. • All land used for temporary construction works outside the area to be developed will be reinstated.
<p>Mixed Use</p>	<p>Area of land immediately to the south of the Paisley viaduct between Renfrew Road and East Buchanan Street owned by NR (with access from East Buchanan Street)</p>	<ul style="list-style-type: none"> • Access to businesses will be retained where possible, or alternate access will be arranged if necessary.

Land use	Location	Mitigation
Industrial	Area of land owned by SPT on the same site of a Transco Gas Holder north of the railway (with access from Broomloan Road near the junction with Paisley Road West)	<ul style="list-style-type: none"> • During construction, where necessary, topsoils will be stripped and stored to prevent soil structure damage. • All land used for temporary construction works outside the area to be developed will be reinstated.
	Area of land on the site of an abandoned works adjacent to the railway at Shields Junction (with access from Cornwall Street South)	<ul style="list-style-type: none"> • As above
Commercial	Area of Central Station undercroft to the south of Midland Street (using an existing access from this street)	<ul style="list-style-type: none"> • Access to businesses will be retained where possible, or alternate access will be arranged.

5.4.2. Residual Impacts

Generally, the implementation of the mitigation measures above would ensure that residual impacts from construction will be negligible as all land would be returned to its original state and land use. See Table 5.7 below for residual impacts relating to construction for specific areas including recreation and amenity.

Table 5.7 Construction Effects - Residual Impacts

Land use	Location	Residual Impacts
Transport Infrastructure	Area at the junction of dismantled Arkleston Branch to the north of the line (within Network Rail (NR) Land)	<ul style="list-style-type: none"> • With the implementation of the proposed mitigation measures the impacts are considered negligible.
	Area to the south of Fifty Pitches Road immediately to the north of Cardonald Junction (with temporary access from Fifty Pitches Road)	<ul style="list-style-type: none"> • As above
Recreational and Amenity Areas	Southern half of the playing fields to the west of St Andrews's Crescent (with a temporary access from this road)	<ul style="list-style-type: none"> • As above
	Area adjacent to LNR for access creation to the site proposed for the fuel farm	<ul style="list-style-type: none"> • It is likely that the cycleway near Paisley Moss will be closed during construction works in this area potentially for an extended period. The impact of the construction works will therefore be of moderate significance due to disruption as there are limited alternative routes for cyclists to take in this area. • Although mitigation screening of the construction of the fuel farm and access to the fuel farm will be in place, both the recreational experience and access to the LNR and trim trail will be impeded. Therefore the impacts are considered to be moderate.

Land use	Location	Residual Impacts
	Eastern half of St James' Park (with a temporary access from the A726)	<ul style="list-style-type: none"> • With respect to St James' Park the phasing of works would ensure that 22 league standard football pitches remain in use at all times during construction. 11 of these pitches will be at St James' Park and 11 located at other locations (Table 5.6 above) to be agreed with Renfrewshire Council. • While no net loss in playing fields would occur there would be some disruption to teams using the facilities, for example, having to travel further distances. As there will be the same number of pitches available during construction together with associated changing facilities, the overall impact of construction is assessed as negligible.
	Area of land owned by NR to the south of Arkleston Road bridge next to Barshaw Golf Course (with access from Arkleston Road)	<ul style="list-style-type: none"> • With the implementation of the proposed mitigation measures the impacts are considered negligible.
Mixed Use	Area of land immediately to the south of the Paisley viaduct between Renfrew Road and East Buchanan Street owned by NR (with access from East Buchanan Street)	<ul style="list-style-type: none"> • As above
Industrial	Area of land owned by SPT adjacent to a Transco Gas Holder north of the railway (with access from Broomloan Road near the junction with Paisley Road West)	<ul style="list-style-type: none"> • With the implementation of the proposed mitigation measures the land use impacts are considered negligible.
	Area of land on the site of an abandoned works adjacent to the railway at Shields Junction (with access from Cornwall Street South)	<ul style="list-style-type: none"> • As above
Commercial	Area of Central Station undercroft to the south of Midland Street (using an existing access from this street)	<ul style="list-style-type: none"> • As above

5.5. Permanent and Operational Effects

5.5.1. Potential Impacts

It is considered that the potential permanent impacts on land use from the operation of the GARL would be related to the following:

- Impacts on land use resulting from the demolition of buildings;
- Impacts on land use due to permanent land take (not involving demolition of buildings);
- Loss of designated recreational land, for example, loss of two football pitches at St James' Park playing fields;
- Impacts on the recreational experience at LNR
- Shadowing of St James' Park playing fields leading to playability issues during the winter months;
- Loss of industrial land; and
- Loss of airport land at the fuel farm.

5.5.2. Mitigation

In general, mitigation will involve minimising land take and building demolition where possible. Where these are required then compensation will be agreed in accordance with the compensation code.

Table 5.8 Permanent and Operational Effects - Mitigation

Land Use	Specific Location	Mitigation
Glasgow Intl Airport	Airport car parking at St. Andrew's Drive	<ul style="list-style-type: none"> Discussions with BAA for possible relocation and /or compensation agreed in accordance with the compensation code.
	Hertz /Avis St Andrew's Drive West.	<ul style="list-style-type: none"> Discussions with BAA for possible relocation and /or compensation agreed in accordance with the compensation code.
	St Andrew's Drive West, Glasgow Airport; National Alamo Depot	<ul style="list-style-type: none"> This business is to be relocated elsewhere in BAA land.
	Fuel Farm - St Andrew's Drive West, Glasgow Airport	<ul style="list-style-type: none"> A plot of unoccupied land to the west of the Paisley Moss LNR has been included within the LLAU, which will provide for the relocation and rebuilding of the Fuel Farm in this area. Details of the proposal will continue to be negotiated and refined with BAA. It should be noted that this site is zoned for airport operational use (including a fuel farm).
	Derelict Building (next to nursery) - No.4 St Andrew's Crescent, Glasgow Airport	<ul style="list-style-type: none"> Compensation for lost portion of land will be agreed in accordance with the compensation code.
Education	Nursery - St Andrew's Crescent, Glasgow Airport	<ul style="list-style-type: none"> BAA to relocate as part of lease agreement.
Unoccupied	Land east of the Paisley Moss LNR for the proposed relocation of the fuel farm	<ul style="list-style-type: none"> As mentioned above this site is zoned for airport operational use (including a fuel farm).
Recreational & Amenity	Paisley Moss LNR and adjacent cycleway	<ul style="list-style-type: none"> The cycleway and footpath that runs from St Andrew's Crescent towards and then across the Paisley Moss will be retained, although its route will cross the access into the new fuel farm. The new route will be realigned so that it crosses the access road at its narrowest point and will be demarcated similar to that elsewhere in the vicinity of the airport (see Volume 3 Figure 2.1). Details of proposed mitigation are discussed in relevant chapters of the ES including Chapter 7 Landscape and Visual Impact, Chapter 9 Ecology and Nature Conservation, Chapter 10 Surface Water and Chapter 11 Geology, Soils and Contamination.
	St James' Park Playing Fields	<ul style="list-style-type: none"> A total of 20 pitches will be reinstated at St James' Park (see Figure 7.5). Two permanent league standard football pitches, with associated changing facilities, will be provided at a location to be agreed with Renfrewshire Council (Ferguslie Park). It should be noted that this is arrangement is a starting point in negotiation and will be discussed further with the key stakeholders. Mitigation measures at St James' Park such as moving the pavilion to alleviate shadowing and playability of pitches and provision of additional ball catch fencing are also being considered. In addition, relocation of the pavilion will allow the 20 pitches that will remain at St James' Park to be more easily configured as well as providing changing facilities that meet modern minimum standards. Current landscape mitigation proposals are shown on Figure 7.5. However, it should be noted that this drawing is indicative and precise pitch layouts may change, although it is intended that the number of pitches that will be provided (20) will not change. Note that improved drainage will be provided at St James' Park to improve playability of pitches.

Land Use	Specific Location	Mitigation
Industrial	No. 33-35 McFarlane Street - Rentokil Ailsa Environmental Services & Four Seasons Roofing Ltd.	<ul style="list-style-type: none"> Most of this industrial unit is empty; therefore although the GARL is going through the site relocation within the site is a possibility.
	Land at rear of 33 to 35 McFarlane Street – Rentokil Ailsa Environmental Ltd & Kenyart Ltd.	<ul style="list-style-type: none"> As above.
	Warehouse & car park at Clark Street – Airlink Ltd, Datastore Solutions Ltd, Drampac Ltd & Fast Aid Products Ltd.	<ul style="list-style-type: none"> There is potential for some of the land to the east of the retained embankment to be returned its previous use as the adjacent site is also in their ownership.
	55 Clark Street – Airlink Ltd, Datastore Solutions Ltd & JM Estates (Scotland) Ltd.	<ul style="list-style-type: none"> As above.
	80-104 Greenhill Road and 88 Clark Street – Big Discounts Ltd, Carlton Die Casting Limited, Colour Traders Ltd & Kenyart Ltd,	<ul style="list-style-type: none"> Compensation for lost portion of land will be agreed in accordance with the compensation code, as required.
	82, 84 & 86 Clark Street – Carlton Die Castings Ltd, McGarvey Constructions Ltd & Phoenix Outdoor Advertising Ltd.	<ul style="list-style-type: none"> As above.
	61 Murray Street – JML Construction Contracts, McConechy's Tyre Service, Paisley VW Centre Ltd & Underwood Cooperage Company Ltd.	<ul style="list-style-type: none"> As above.

5.5.3. Residual Impacts

Information on land boundaries and ownership details for those areas within the proposed LOD and LLAUs are contained in the Book of Reference and Route Alignment Plans, as part of the parliamentary submission. These documents should be referred to for clarification on land take.

Table 5.9 below lists the likely permanent residual impacts due to GARL on land use. Along the main line of GARL the land within the LOD mostly comprises NR land, the impact on this land is therefore considered negligible.

Table 5.9 Permanent and Operational Effects – Residual Impacts

Land Use	Specific Location	Residual Impact
Glasgow Intl Airport	Airport car parking at St. Andrew's Drive	<ul style="list-style-type: none"> The airport parking would need to relocate - minor negative impact.
	Hertz/Avis St Andrews Drive West.	<ul style="list-style-type: none"> The entire property is not required and should be capable of continuing use – negligible impact.
	St Andrews Drive West, Glasgow Airport; National Alamo Depot	<ul style="list-style-type: none"> National Alamo would need to be relocated – minor negligible impact.
	Fuel Farm - St Andrews Drive West, Glasgow Airport	<ul style="list-style-type: none"> The demolition of the Pentland Fuel Farm is required for the proposed GARL alignment. This would affect the operation of the Airport and would have to be relocated (see mitigation proposed above) negligible impact. With regard to the cycleway it is considered that with the implementation of the proposed mitigation measures the impacts are considered negligible.

Land Use	Specific Location	Residual Impact
	Derelict Building (next to nursery) - No.4 St Andrews Crescent, Glasgow Airport	<ul style="list-style-type: none"> Demolition of this derelict building is required – negligible impact.
Education	Nursery - St Andrews Crescent, Glasgow Airport	<ul style="list-style-type: none"> Demolition of the Nursery is required for the proposed GARL alignment – negligible impact.
Unoccupied	Land east of the Paisley Moss LNR for the proposed relocation of the fuel farm	<ul style="list-style-type: none"> Land that is currently unoccupied is to be used for the relocation of the fuel farm. The entire area would be used for the fuel farm. This land is located to the east of the Paisley Moss LNR used for recreation and environmental educational purposes. There would be no permanent effects at the playing fields adjacent to this site – negligible impact.
Recreational & Amenity	Paisley Moss LNR and adjacent cycleway	<ul style="list-style-type: none"> The cycleway and footpath crossing at the fuel farm access road at the narrowest point would be similar to any other crossing within the airport road network. However, as this is a permanent disruption to the cycleway and footpath there will be a minor negative impact on this route. There will be a negative permanent impact of the fuel farm and access road on the recreational experience of the Paisley Moss LNR as it could introduce industrial features, nuisance odours and noise closer to the LNR (see relevant chapters of the ES). However, with the mitigation measures proposed in the other sections of the ES as above, the impact is assessed as minor as they should largely screen the fuel farm from the LNR.
	St James' Park Playing Fields	<ul style="list-style-type: none"> A strip of land through the centre of St James' Park approximately in a north-south direction will be required for the operation of GARL. The remaining land will accommodate 20 pitches (see Figure 7.5.), additional catch-ball fencing and relocated car parking. 2 pitches will be provided at a location agreed with Renfrewshire Council (Ferguslie Park) to compensate for those lost. There will therefore be no net loss in pitches in Renfrewshire – neutral to minor beneficial impact. The sunlight occlusion study indicated that four of the realigned pitches on the western side of the playing fields would experience shadow effects. Of these, two would be shadowed only briefly and two, those closest to the viaduct, would be shadowed more extensively. However, the time of shadowing and the height of the viaduct indicate that the impact on the playing fields in terms of delayed thawing, etc. would not be significant. The impact is assessed as being Minor negative. The sunlight occlusion study is included in Appendix to Chapter 5. Furthermore, mitigation measures at St James Park such as moving the pavilion could alleviate shadowing by ensuring that pitches do not lie within significantly shadowed areas. Therefore the impact in this scenario is assessed as being negligible.
Industrial	No. 33-35 McFarlane Street - Rentokil Ailsa Environmental Services & Four Seasons Roofing Ltd.	<ul style="list-style-type: none"> Part of the site would be acquired with no requirement for building demolition. The businesses should not need to relocate – negligible impact.
	Land at rear of 33 to 35 McFarlane Street – Rentokil Ailsa Environmental Ltd & Kenyart Ltd.	<ul style="list-style-type: none"> As above.

Land Use	Specific Location	Residual Impact
	Warehouse & car park at Clark Street – Airlink Ltd, Datastore Solutions Ltd, Drampac Ltd & Fast Aid Products Ltd.	<ul style="list-style-type: none"> Part of this site would be lost and the Airlink Office will be required to be demolished. As this land will be compensated for as agreed in accordance with the compensation code, this is a negligible impact.
	55 Clark Street – Airlink Ltd, Datastore Solutions Ltd & JM Estates (Scotland) Ltd.	<ul style="list-style-type: none"> As above
	80-104 Greenhill Road and 88 Clark Street – Big Discounts Ltd, Carlton Die Casting Limited, Colour Traders Ltd & Kenyart Ltd,	<ul style="list-style-type: none"> As above
	82, 84 & 86 Clark Street – Carlton Die Castings Ltd, McGarvey Constructions Ltd & Phoenix Outdoor Advertising Ltd.	<ul style="list-style-type: none"> As above
	61 Murray Street – JML Construction Contracts, McConechy's Tyre Service, Paisley VW Centre Ltd & Underwood Cooperage Company Ltd.	<ul style="list-style-type: none"> As above

5.6. Summary

The main impact on land use is the requirement for buildings to be demolished to accommodate the GARL at the branch line towards the airport, and the impact on St James' Park.

The Glasgow Airport Fuel Farm will have to be relocated and this is proposed on land that is currently unoccupied. This land however is adjacent to the Paisley Moss LNR, which is used for recreation and environmental education purposes, and therefore mitigation will have to be in place to ensure that the proposed fuel farm does not impact negatively on this land and land use. Details of proposed mitigation are discussed in relevant chapters of the ES including Chapter 7 Landscape and Visual Impact, Chapter 9 Ecology and Nature Conservation, Chapter 10 Surface Water and Chapter 11 Geology, Soils and Contamination.

There is a negligible impact on land use along most of the main line of the GARL as most of the land is within the Network Rail boundary. Land take for construction compounds would have a temporary impact on land use, however residual impacts from construction are considered to be negligible, as all land would be returned back to its original state.

Construction of the viaduct and M8 Bridge means that there will be an impact on the 22 football pitches at St James' Park. However, a programme of works will be implemented to ensure that an equivalent 22 league standard pitches will remain available for use in the Paisley area at all times both during and after construction of GARL.

It is intended that during the construction and reinstatement period 11 of these 22 pitches will be maintained on the western side of St James' Park and the remaining 11 will be provided temporarily elsewhere. Four of these temporary pitches will be provided at Ferguslie Park where the 2 existing pitches will be upgraded to league standard and 2 new league standard pitches will be provided.

Following completion of construction, 9 pitches will be reinstated on the eastern side of the park making a total of 20 league standard pitches that will be available at St James' Park. The shortfall of 2 will be accommodated by the retention of the 2 permanent replacement league standard pitches at Ferguslie Park.

A key aspect in reinstating pitches at St James' Park has been to ensure that the number of league standard pitches is maximised. Furthermore, Renfrewshire Council's concerns regarding the playability of some of the pitches due to potential shadowing effects caused by the new viaduct has been taken into account. It is therefore proposed that the existing pavilion be demolished and a replacement pavilion be relocated within the park in order to maximise the available area for laying out the replacement pitches and also to minimise any shadowing effects from the new viaduct on the re-laid pitches.

The exact configuration and marking of pitches would be subject to detailed design and agreement with Renfrewshire Council. However, the arrangement shown on Figure 7.5 shows one possible configuration that demonstrates twenty pitches can be accommodated at St James' Park.

A neutral to minor benefit is therefore predicted as the overall number of league standard pitches available will not be increased, although there may, in effect, be benefit from improved minimum standards for the pavilion to be relocated as well as the opportunity for temporary league standard pitches provided elsewhere to be maintained after construction of GARL has been completed.