

SECTION 4: HUMAN ENVIRONMENT



CHAPTER 16: SOCIO-ECONOMICS

16. SOCIO-ECONOMICS

16.1 Introduction

This chapter, which was prepared by Waterman Infrastructure & Environment Limited (WIE), presents an assessment of the likely significant socio-economic effects of the development on the existing socio-economic conditions within the local area and wider surrounding area.

The chapter provides a description of the methods used in the socio-economic assessment. This is followed by a description of the relevant baseline conditions of the site and surrounding area, and an assessment of the likely significant effects of the development during the construction works and once the development is completed and operational.

Mitigation measures are identified where appropriate to avoid, reduce or offset any significant adverse impacts. The chapter concludes by examining the nature and significance of likely residual effects.

This chapter is supported by a Socio-Economic and Tourism Assessment of the development carried out by BiGGAR Economics (Appendix 16-A: Socio-economics and Tourism of Aberdeen Harbour Nigg Bay Development), and a technical appendix to BiGGAR's report (Appendix 16-B: Economic Impact of Aberdeen Harbour Nigg Bay Development - Technical Appendix to Socio-economic and Tourism Report), which includes the calculations that support the socio-economic assessments.

Related issues such as impacts to green space, ecological receptors, landscape character, views, and access to the site are considered in other chapters of this Environmental Statement, particularly Chapter 11: Terrestrial Ecology; Chapter 17: Seascape, Landscape and Visual Effects; and Chapter 18: Traffic and Transport.

16.2 Legislation, Planning Policy and Guidance

All relevant legislation, planning policy and other guidance documents are summarised in ES Appendix 16-A: Socio-economics and Tourism of Aberdeen Harbour Nigg Bay Development. Policy, legislation and guidance applicable to the wider project can be found in Chapter 4: Planning and Legislation. Where legislation, policy or guidance is directly relevant to the assessment methodology undertaken for this chapter, it is summarised in the Assessment Methodology and Significance Criteria section below.

16.3 Assessment Methodology and Significance Criteria

16.3.1 Assessment Methodology

There are no published standards or technical guidelines that set out a preferred methodology for assessing the likely socio-economic effects of a development. However, there are a series of commonly used methodologies for quantifying economic effects both during the construction of a development and following its completion. Other established qualitative techniques are frequently adopted to assess the social effects of a development. The following section outlines the approach used to conduct this assessment. Where possible, the likely significant socio-economic effects are

quantified, but where this is not feasible, a qualitative assessment is provided using professional judgement.

16.3.1.1 Approach to Economic Impact Assessment

This assessment relates only to the proposed Aberdeen Harbour Expansion Project, not to Aberdeen Harbour Board's (AHB's) existing activities. Six main sources of economic impact associated with the Aberdeen Harbour Expansion Project were identified:

- **AHB:** the direct and indirect impacts of AHB including its expenditure on supplies and the expenditure of its staff;
- **Other on-site operations:** the direct impact of other businesses located within the new harbour and the indirect impact of the expenditure of their staff;
- **Tourism:** the direct and indirect impact of tourism expenditure generated by cruise ships visiting the proposed Aberdeen Harbour Expansion Project;
- **Off-site logistics:** the direct impact of Aberdeen Harbour Expansion Project related logistics activity based outside the harbour and the indirect impact of the expenditure of people employed by these businesses;
- **Industrial development:** the direct impact of new industrial development associated with the Aberdeen Harbour Expansion Project and of the expenditure of people employed in these developments; and
- **Oil and gas:** the direct impact associated with oil and gas activity in Aberdeen City and Shire supported by the harbour and of the expenditure of employees whose jobs are supported by this activity.

Each of these sources of impact is assessed in this chapter. Each potential impact is measured in terms of the value of wealth it creates, measured by gross value added (GVA) and the number of jobs it supports.

GVA is generally regarded as the best measure of the total wealth creation in a given area. It measures the economic contribution of each business. GVA is the difference between the value of goods and services produced (output) and the cost of raw materials and other inputs.

The turnover/GVA ratios and estimates of GVA/employee used in this chapter are all derived from the 2011 Annual Business Survey published by the Office for National Statistics. The effects of subsequent spending rounds are captured using type II GVA and employment multipliers. These are published in the Scottish Government's input-output tables.

For each source of impact, three types of impact are considered:

- **Direct impacts:** the employment and GVA directly generated by the business or group of businesses being considered;
- **Supplier impacts:** impacts generated elsewhere in the supply chain as a result of purchases made by these businesses; and

- **Employee spending impacts:** the effect of employees whose jobs are supported by this activity spending their wages.

For each source of impact, the process for estimating direct impacts, supply chain impacts and employee spending impacts is the same, as described below.

Direct Impacts

The starting point for assessing the direct impact of an activity is the turnover it generates. This is converted into GVA by dividing it by an appropriate turnover/GVA ratio. Where turnover is not available, GVA is calculated by applying an estimate of GVA/employee in relevant sectors to the total employment supported by an activity.

Supply Chain Impacts

The starting point for estimating supplier impacts is the amount spent by an organisation or group of businesses on supplies. The employment impact of this expenditure is calculated by dividing total expenditure by turnover/employee in relevant sector(s). The GVA by these employees is then estimated by multiplying the number of jobs supported by an estimate of GVA/employee in relevant sector(s). Multiplier effects are then captured by applying GVA multipliers for the appropriate sectors to these direct impacts.

Employee Spending Impacts

The starting point for estimating the impact of employee expenditure is the amount of money paid to staff who work in the businesses being considered. In order to estimate how much of the impact of this expenditure occurs within Aberdeen City and Shire, it is necessary to make assumptions about where staff live and how much they spend where they live.

Based on previous experience, it is assumed that 75% of staff working in businesses based in Aberdeen live in Aberdeen City and Shire and the rest live elsewhere. The amount staff spend in Aberdeen City and Shire will vary depending on where staff live but it is assumed that all staff spend around 70% of their wages somewhere in Scotland (i.e. leakage at the national level is 30%). A summary of these assumptions is provided in Table 16.1.

Table 16.1: Staff spending assumptions

Staff Location	Staff Spending		
	Aberdeen City and Shire	Rest of Scotland	Scotland (Total)
Aberdeen City and Shire	35%	35%	70%
Rest of Scotland	20%	50%	70%

Source: BiGGAR Economics

To estimate the impact of this expenditure it is first necessary to estimate how much staff spend in Aberdeen City and Shire and how much they spend in Scotland. This expenditure is then divided by average turnover per employee in the relevant area to determine how many jobs it supports. The GVA of this expenditure is estimated by multiplying the number of jobs supported by average GVA/employee in the Scottish (or Aberdeen City and Shire) economy. Average employment and GVA multipliers covering all sectors of the economy were then applied to capture multiplier effects.

16.3.1.2 Approach to Social Impacts

The magnitude of potential social impacts was established with reference to published evidence about the value of different types of tourism activity, and informed by consultations with relevant user groups (refer to the Significance Criteria section below for more information). The following organisations were contacted and their responses contributed to the assessment of tourism-related social impacts:

- Aberdeen City and Shire Tourism Partnership;
- Visit Scotland;
- Cruise Scotland;
- Aberdeen City Council, Environmental Planner (outdoor access);
- University of Aberdeen Surf Club;
- Adventure Aberdeen;
- Granite Bay Surf Club; and
- Surfers Against Sewage.

16.3.2 **Significance Criteria**

16.3.2.1 Assessment of Sensitivity

In order to assess the significance of any potential effects to receptors, the sensitivity of those receptors must first be established.

Table 16.2 describes how a level of sensitivity was assigned to each receptor. To avoid confusion, the same terminology is used in this Chapter as is used in BiGGAR Economics' technical report presented in Appendix ES 16.A Socio-economics and Tourism of Aberdeen Harbour Nigg Bay Development.

The sensitivity of cycling and walking routes was assessed by considering the length of the route in relation to the scale of the proposed development. The length of the route is relevant because the sensitivity to change will vary in proportion to how much of the route will be significantly altered by the proposed development. This suggests that the longer the route, the less sensitive it is likely to be to changes that will only affect a small proportion of the route.

The sensitivity of leisure users (e.g. golfers, wildlife watchers, surfers) to any change at the site would depend on the extent to which the proposed development might be expected to interfere with their use or enjoyment of the site.

Table 16.2: Sensitivity criteria for socio-economic assessment

Sensitivity	Description
Very High	The receptor is of very high socio-economic, or tourism value, or of international importance. The receptor is a very popular and unique leisure asset that or one that would be extremely sensitive to any change in current conditions.
High	The receptor is of high socio-economic, or tourism value, or of national importance. The receptor is a popular and uncommon leisure asset or one that would be highly sensitive to any change in current conditions.
Medium	The receptor has some socio-economic, or tourism value, or is of regional importance. The receptor is a popular leisure asset or one that would be moderately sensitive to any change in current conditions.
Low	The receptor is of low socio-economic, or tourism value, or is only of local importance. The receptor is a leisure asset that would be relatively insensitive to any change in current conditions.
Negligible	The receptor is of little socio-economic, tourism or leisure value or would be very insensitive to a change in existing conditions.

Source: BiGGAR Economics

Next, the magnitude of each potential impact was established, based on BiGGAR Economics' previous experience of assessing the socio-economic impacts of capital developments elsewhere in Scotland. The criteria used to do this are presented in Table 16.3.

Table 16.3: Magnitude criteria for socio-economic assessment

Sensitivity	Description
Very High	Major alteration to baseline conditions, e.g.: a major long-term (10+ years) alteration of economic activity, a major change to regional tourism numbers and/or expenditure or the complete (or almost complete) loss of a leisure asset.
High	Total loss or major alteration to baseline conditions, e.g.: a major long-term (5+ years) alteration of economic activity, a major change to regional tourism numbers and/or expenditure or the complete (or almost complete) loss of a leisure asset.
Medium	Material change in baseline conditions, e.g.: a short-term or moderate change in economic activity, a moderate change in regional tourism numbers or expenditure or a major change in the availability of a leisure asset or people's ability to enjoy it as such.
Low	Minor shift away from baseline conditions, e.g.: a noticeable long-term change in economic activity, a small and short-term change to regional tourism numbers and expenditure or a noticeable change in the availability of a leisure asset or people's ability to enjoy it as such.
Negligible	Very little change from baseline conditions, e.g.: change that is barely distinguishable.

Source: BiGGAR Economics

The matrix presented in Table 16.4 was then used to establish the significance of each effect by combining the sensitivity of the receptor with the magnitude of the potential impact.

Table 16.4: Significance of effect

Magnitude of Effect	Sensitivity of Receptor				
	Very High	High	Medium	Low	Negligible
Very High	Major	Major	Major	Moderate	Minor
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

Source: BiGGAR Economics

16.3.2.2 Duration and Extent of Impacts

The duration of the activity that impacts on a resource or receptor, is considered either as temporary (typically those impacts associated with the construction period) or permanent (typically those associated with the completed and operational development).

The geographical extent considers the appropriate area of influence within which an impact occurs. Geographical scale of identified likely significant impacts is assessed as follows:

- **Site wide:** within the boundaries of the site only;
- **Local:** within the Torry, Balnagask and Tullos areas of Aberdeen;
- **District:** within the administrative boundary of Aberdeen City Council;
- **Regional:** within the Grampian area; and/or
- **National:** within different parts of the country, or Scotland as a whole.

Where the assessment identifies a significant adverse effect, mitigation measures are proposed, along with an assessment of the associated likely residual socio-economic effects.

16.3.3 **EIA Scoping Responses**

Table 16.5 summarises the responses received during the EIA Scoping stage that are relevant to socio-economics (as reported in ES Appendix 1-D: Scoping Opinion 2014).

Table 16.5: Consultation responses received during the EIA scoping stage

Consultee	Scoping Comment	Where dealt with in ES
Scottish Fishermen's Federation	Fishing activity in the study area is important	Refer to Chapter 22: Commercial Fishing
Royal Yachting Association Scotland	The EIA should identify the scale of existing recreational use of Nigg Bay for water sports and, if necessary, identify appropriate mitigation measures.	Considered within this chapter
Whale and Dolphin Conservation	Dolphin watching should be added to the section 'Tourism and Recreation Impacts'.	Considered within this chapter
Aberdeen City Council	Consider educational loss of Nigg Bay SSSI	Refer to Chapter 9: Ground Conditions and Contamination
	Consider presence of National Cycle Route 1	Refer to Chapter 18: Traffic and Transport
Marine Scotland	The ES should clearly outline the assessment criteria for the Labour Market Catchment Area and demonstrate consideration of the 'Additionally and Economic Impact Guidance Note'.	Assessment methodology is outlined in this chapter and discussed in more detail in Appendices 16.1 and 16.2.
	Outline the assessment criteria for the Tourism Study Area and The definition of 'local' 'regional' and 'national' with regards to their estimated economic impacts.	
	Economic impacts should include GVA (Gross value added) and employment impacts (direct, indirect and induced/ gross and net) and cumulative impacts should be considered.	Considered within this chapter.
SNH	Consider impacts on the community at Torry.	Considered within this chapter.

16.4 Baseline Conditions

This section summarises the information presented in the Socio-Economic and Tourism Assessment; for further detail, including data sources, refer to ES Appendix 16.A: Socio-economics and Tourism of Aberdeen Harbour Nigg Bay Development.

16.4.1 Population and Demographic Characteristics

The population of Aberdeen City and Shire is approximately 484,800, which is 9.1% of the total population of Scotland. The General Register Office of Scotland provides mid-year population estimates. This gives the population of the data zones in the local area (Figure 16.1) as 10,582. This represents approximately 2.2% of the population of Aberdeen City and Shire.

The proportion of people who are over 65 is slightly lower in Aberdeen City and Shire (16%) than in Scotland as a whole (18%). This is more pronounced in the local area, where only 12% of the population is aged 65 or over, indicating a demographic profile which is considerably younger than both Aberdeen City and Shire and Scotland as a whole. The local area in particular has a significantly higher proportion of working age people (71%) than the average across Scotland (65%).

The City of Aberdeen attracts large numbers of young people. This is likely to be as a result of the University of Aberdeen, Robert Gordon University and north-east Scotland College (formerly Aberdeen College) all being located in the City. There are more than 32,000 students at these institutions¹, equivalent to around 14% of the city's population.



- Nigg Development Boundary
- Local Study Area



Project Details	WIB14221-100: Aberdeen Harbour
Figure Title	Figure 16.1: Local Study Area for Socio-Economic Assessment
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Figure 16.1: Local study area for socio-economic assessment

16.4.2 Economy and Labour Market

16.4.2.1 Local Economic Profile

Aberdeen City and Shire has higher economic activity and employment rates for those of working age than the rest of Scotland. The economic activity rate (i.e. the percentage of the total population which is either employed or actively seeking employment) in Aberdeen City and Shire is 82.3% whereas the average across Scotland is 77.5%.

There are 245,200 individuals employed in Aberdeen City and Shire, equivalent to an employment rate of 78.3%, which is significantly higher than the Scottish average of 72.0%.

In June 2014, almost 5% of the working age population was unemployed in Aberdeen City and Shire. This was 2.3 percentage points below the Scottish unemployment rate of 7.2%. Of those who were economically inactive the proportion who were seeking a job in Aberdeen City and Shire (31%) was higher than the average across Scotland (26%).

16.4.2.2 Educational Attainment

In 2013 the proportion of 16 years to 64 year olds with NVQ4+ qualifications in Aberdeen City and Shire was 42.3% compared to 39.4% for Scotland as a whole. The proportion of people aged 16 years to 64 years with no qualifications was 7.5% in Aberdeen City and Shire and 10.3% in Scotland. This suggests that regional workforce has an above average level of qualifications.

16.4.3 Income and Deprivation

16.4.3.1 Income

The level of income for full-time workers is around 13% higher in Aberdeen City and Shire than in the rest of Scotland. In 2014, the average (mean) weekly pay for full-time workers in Aberdeen City and Shire was £681 compared to £600 for Scotland. Data on income is not available at the Scottish data zone level and therefore cannot be reported in the same way for the local area.

16.4.3.2 Scottish Index of Multiple Deprivation (SIMD)

Analysis of the SIMD indicates that:

- Of the 13 data zones which comprise the local area, all but one are designated within the most deprived 20% or within the most deprived 40% data zones in Scotland;
- Three of the data zones in the local area are in the 40% most deprived areas in Scotland;
- Nine of the data zones are in the most deprived 20% in Scotland; and
- The most deprived data zone in Aberdeen City in the SIMD 2012 is found in Torry East. It is amongst the 5% most deprived areas in Scotland.

16.4.4 Industrial Structure

16.4.4.1 Aberdeen City and Shire

The oil and gas industry is hugely important to the economy of Aberdeen City. 10.2% of the working age population are directly employed in the mining, quarrying and utilities sector, almost four times the

Scottish average. The sector is the second largest source of private sector employment in Aberdeen City and Shire.

The oil and gas sector also has a large support base and supply chain within Aberdeen City and Shire. This is shown in the relatively high proportion of the workforce who are employed in the professional, scientific and technical sector (13.7%) and in manufacturing (8.8%).

The public sector (health, education and public administration and defence sectors) employs 23% of the workforce in Aberdeen City and Shire compared to 29% across Scotland as a whole.

16.4.4.2 Local Area

Employment in the mining, quarrying and utilities sector in the local area is lower than might be expected (3.0%). The largest sector for employment in the local area is manufacturing (17.6%), which is more than double the Scottish average. Employment in the public sector (27.6%), in the local area, is higher than across Aberdeen City and Shire as a whole. In particular, 14.3% of the working age population are employed in public administration and defence, which is considerably higher than the proportion across Aberdeen City and Shire (4.1%) and Scotland (5.8%) as a whole.

16.4.4.3 Aberdeen Harbour

In 2013 BiGGAR Economics was commissioned by Scottish Enterprise to undertake an assessment of Aberdeen Harbour's current and potential future economic impact. The study estimated that in 2013 Aberdeen Harbour was generating around £1.5 billion GVA and supporting around 12,000 jobs for the Scottish economy. This included £1.4 billion and 9,500 jobs for the economy of Aberdeen City and Shire.

The assumptions that were used in 2013 to estimate the economic impact of Aberdeen Harbour were reviewed during the preparation of this chapter and discussed with AHB. The conclusion of this process was that current levels of on-site activity have changed very little since the 2013 report was published and that the assumptions used to estimate economic impacts continue to provide an accurate representation of the current level of on-site activity.

The assumptions that were used to estimate the off-site economic impact supported by Aberdeen Harbour were also reviewed during the preparation of this chapter. Particular consideration was given to the implications of low oil prices for the oil and gas sector in the region and to the effect that this could have on levels of employment in the sector. The conclusion of this process was that, despite some high profile job losses within the sector, these effects have largely not yet taken full effect. It was also noted that if low oil prices persist then this could actually help to intensify demand for the proposed Aberdeen Harbour Expansion Project by accelerating the requirement for decommissioning works. The assumptions used in 2013 to estimate the off-site economic impact of Aberdeen Harbour therefore remain an accurate reflection of the current baseline.

16.4.5 **Future Baseline Economic Conditions**

In order to assess the potential socio-economic impact of the proposed development it is important first to understand what the future socio-economic baseline might look like if the proposed development does not proceed. Refer to Appendix 16-B: Economic Impact of Aberdeen Harbour Nigg

Bay Development - Technical Appendix to Socio-economic and Tourism Report for a detailed assessment of this 'reference case'.

A key driver of the future socio-economic baseline will be the future performance of the Scottish energy sector. The economic impact analysis is based on the assumption that in 20 years' time employment in the Scottish oil and gas sector is likely to be around 80% of current levels. This estimate is however based on the implicit assumption that businesses within the sector will be able to operate efficiently and behave in a way that enables them to maximise their own competitiveness and that of the sector as a whole.

If the proposed development does not proceed then this could prevent businesses in the sector from behaving in this way. This is likely to mean that the operational costs faced by the sector will increase faster than currently expected, which would reduce the competitiveness of the sector. It could also mean that firms within the sector are unable to exploit new opportunities (such as decommissioning activity) or diversify into emerging markets (such as off-shore renewables). All of these factors would serve to accelerate the sector's decline.

If this were to occur then it would have a knock-on effect on the amount of related on-site activity within the existing harbour and the amount of off-site logistics activity that occurs elsewhere in the region. It is also reasonable to expect that vacant and under-occupied industrial land surrounding the existing harbour would be developed at a slower rate than might otherwise be expected.

Under this scenario it is estimated that in 20 years' time Aberdeen Harbour could be supporting £1.1 billion GVA and around 8,375 jobs across Scotland. It was estimated that around £1.0 billion of this GVA and around 6,800 of these jobs could be in Aberdeen City and Shire. This equates to a reduction of around 30% in the current economic impact of the Harbour. The assumptions used to model this impact are described in Appendix 16-B: Economic Impact of Aberdeen Harbour Nigg Bay Development - Technical Appendix to Socio-economic and Tourism Report.

16.4.6 Tourism and Leisure

16.4.6.1 Tourism Value and Volume

Data from the Business Register and Employment Survey shows that in 2013, sustainable tourism accounted for 6.1% of employment in Aberdeen City. This is significantly lower than the proportion of tourism related employment across Scotland as a whole (8.5%). Visit Scotland estimate that 0.6 million people from the rest of the UK and 0.2 million people from overseas visited the Aberdeen and Grampian region in 2013². It is estimated that these visitors spent a combined total of £370 million.

The most important reason for visiting Aberdeen City and Shire, as mentioned by 28% of visitors, was the scenery and landscape³. Other important reasons included the visiting family in the area (mentioned by 21% of visitors) and the history of the area (20%). The most popular tourist activities were visiting a historic venue (mentioned by 53% of visitors) and short walks or strolls (51%).

Consultation with Visit Scotland suggests that business tourism is a particularly important feature of the tourism sector in Aberdeen City and that this is largely driven by the energy sector. It is estimated

that business travellers account for around 60% of passengers using Aberdeen Airport, which is unusual in the UK outside London. Consultation with Visit Scotland also highlighted the role that Aberdeen plays as a gateway for leisure tourists to visit attractions elsewhere in Aberdeenshire.

16.4.6.2 Tourist Attractions

Consultation with Visit Scotland has confirmed that there are no important tourist attractions in and around Nigg Bay and that the main reason that tourists might go to the bay would be to watch for dolphins.

16.4.7 **Cruise Tourism**

In 2013 Cruise Scotland estimated that the cruise market was worth £50 million to the Scottish economy⁴. Although the cruise market currently represents a very small proportion of activity at Aberdeen Harbour, this is an area where there is potential for future growth. In 2012 nine cruise vessels docked in Aberdeen Harbour, the same number as the year before.

The current expenditure generated by cruise ships using Aberdeen Harbour and their passengers and crew amounts to around £150,000 per year. This expenditure generates around £35,000 GVA for the Scottish economy and supports 1 permanent job. Further details are contained in Appendix 16-B Economic Impact of Aberdeen Harbour Nigg Bay Development - Technical Appendix to Socio-economic and Tourism Report.

According to Visit Scotland the most popular excursions for cruise passengers visiting Aberdeen are:

- Aberdeen City/Old Aberdeen;
- Balmoral Castle and Royal Deeside; and
- Other Aberdeenshire castles and whisky distilleries.

16.4.8 **Tourist Routes**

Refer to Figure 18.2 and Figure 18.3 in Chapter 18: Traffic and Transport for existing walking and cycling routes in the vicinity of the site.

16.4.8.1 Cycling Routes

National Cycle Route One connects Dover and the Shetland Islands mainly via the east coast of England and Scotland. A stretch of this route begins in Edinburgh passing through Dundee and ending in Aberdeen. This Edinburgh to Aberdeen stretch of the route is 277 km in length and Greyhope Road, which runs alongside Nigg Bay, within the Site, forms part of the route.

The EuroVelo 12 route (also known as the North Sea Cycle Route) is a 6,000 km route based on existing national, regional and local cycle routes in all the countries bordering the North Sea. The route opened in 2001 and was awarded a Guinness record certificate in May 2003 as the world's longest cycle route. The Edinburgh to Aberdeen stretch of National Cycle Route One is also part of the EuroVelo 12 Route.

The length of these routes in relation to the size of the site means that any change that might occur within the site would not have a discernible effect on their present character. This suggests that the sensitivity of the routes would be negligible; however, as there will be a requirement to divert a small portion of the routes to accommodate the proposed development the sensitivity has been assessed as **low** to ensure that any potential impacts are be fully considered.

16.4.8.2 Driving Routes

The Deeside Tourist Route and the Angus Coastal Route have Aberdeen as their end point. The Angus Coastal Route is 93 km in length and the Deeside Tourist Route is 171 km in length. The length of these routes in relation to the size of the Site means that any change that might occur within the site would not have a discernible effect on their present character. As there will be no requirement to divert the route to accommodate the proposed development, its sensitivity has therefore been assessed as **negligible**. Using the criteria described above this implies that there is no possibility of the proposed development having any significant adverse impact on driving routes so this effect is not considered any further.

16.4.8.3 Walking Routes

The North Sea Trail aims to create a series of footpaths around the North Sea Coast to enable people to enjoy walking in coastal landscapes. Twenty-six regions in Norway, Sweden, Denmark, Germany, the Netherlands, England and Scotland are currently involved in the initiative, including Aberdeen City.

Aberdeen's section of the North Sea Trail is approximately 20 km long, following the coast along Aberdeen Beach, around the existing harbour, toward and around Nigg Bay and then onwards down the coast.

A key feature of the existing route is Aberdeen Harbour so the proposed development would be very much in keeping with the existing character of the route. This implies that it would be insensitive to change. However, as there will be a requirement to divert a small portion of the route to accommodate the proposed development, the sensitivity has been assessed as **low** to ensure that any potential impacts are be fully considered.

16.4.9 **Terrestrial Leisure Users**

16.4.9.1 Walking Routes

There are three core paths within 2 km of the site. Core Path 78 runs from the existing Aberdeen Harbour south towards Nigg Bay, following the route of Greyhope Road, eventually following the coastline along the southern extent of Nigg Bay and onwards to the south. This route connects to the wider core path network including routes locally along St Fittick's Road (Core Path 104) and at the back of the water treatment plant at the edge of Nigg Bay. Core Path 108 was also recently upgraded as part of the £300,000 East Tullos Burn restoration project, which involved restoring the burn in St Fittick's Park to a more natural state.

There are also a number of themed walks associated with Torry including Torry Coastal Trail and Torry Industrial and Maritime Trail. These trails are promoted by Aberdeen City Council (ACC) as part of its 'Regenerating the South of the City' initiative. The Coastal Trail follows the route of Core Path 78

with key features of interest including the Inner South Breakwater, Torry Point Battery, Breakwater and Goliath, 'Torry Coo' Foghorn and Lighthouse.

As the descriptions above demonstrate, the character of all of these routes is heavily influenced by industrial and maritime activity. The proposed development is entirely in keeping with this character so the sensitivity of these routes to change has therefore been assessed as **low**.

16.4.9.2 Wildlife Watching

In the Aberdeen Local Development Plan 2012, Nigg Bay is classed as a district wildlife site (now part of the Balnagask to Cove Local Nature Conservation Site). Nigg Bay, Girdle Ness and Greg Ness are sites where wildlife watching of birds and sea life takes place. The existing harbour mouth is a good location to watch dolphins from the vantage point of the Torry Battery. The RSPB also employs two Engagement Officers to run the 'Date with Nature Dolphinwatch' at the Torry Battery during the summer months. Dolphinwatch Aberdeen has been supported by the Aberdeen Harbour Board's Community Action Fund and the RSPB reported that the 2015 Dolphinwatch, between mid-April and mid-August, attracted 5,038 visits.

Although it is possible that some tourists who visit Aberdeen make a trip to Nigg Bay to watch wildlife, the majority of users are likely to be local leisure users. This means that any impact on this activity would not affect the local tourism sector.

The fact that there are a number of other Local Nature Conservation Sites in the local area means that Nigg Bay is not a unique leisure resource. For this reason the sensitivity of the site as a destination for wildlife watching was assessed as **low**.

16.4.9.3 Golf

Balnagask Golf Course is an 18 hole course, with associated 9 hole pitch and put facility located on the Balnagask headland to the east of the existing harbour and immediately adjacent to the northern side of Nigg Bay.

As views over Aberdeen Harbour are already part of the character of Balnagask Golf Course, the golf course's sensitivity to change was assessed as **negligible**. Using the criteria described above this implies that there is no possibility of the proposed development having any significant adverse impact on golfers so this effect is not considered any further.

16.4.10 **Marine Leisure Users**

All marine leisure uses (e.g. recreational boating, diving) other than surfing have been scoped out of the assessment as they would not be impacted by the development.

16.4.10.1 Surfing

The physical characteristics of Nigg Bay mean that it is particularly well suited to surfing. The bay is relatively sheltered from the wind and also has a stone (rather than sand) base, which helps to make wave conditions more predictable. These conditions mean that the bay is a relatively safe place for surfers.

There are currently two active surf clubs in Aberdeen: the University of Aberdeen Surf Club and the Granite City Surfers. Both of these groups were consulted during the course of preparing this chapter. The club representatives reported that their combined membership was around 300 but suggested that the total number of surfers in the local area was likely to be substantially higher than this because not all surfers choose to join a club.

The Scottish Surfing Federation (SSF) is the representative body for surfing in Scotland. A report⁵ published by the SSF in late 2012 estimates that there are around 1,500 regular surfers in Scotland who surf more than 4 times a year and that around 165 of these surfers (11% of the total) may be based in Aberdeen.

The SSF report also estimates that there may be a further 8,500 non-regular surfers in Scotland. Assuming the geographic distribution of these people is similar to the geographic distribution of regular surfers, it can be estimated that there may be a further 914 non-regular surfers in and around Aberdeen. This means that the total number of people participating in the sport in the local area may be around 1,100.

While many of these individuals are likely to use Nigg Bay, they are also likely to use other local locations, in particular Aberdeen Beach. The relative popularity of the two locations was explored during the consultation programme.

On the advice of local surfing groups, information was sought from Magic Seaweed, a major on-line surf retailer that also provides surf reports and forecasts for Aberdeen Beach and Nigg Bay. The data provided showed that the pages for Nigg Bay and Aberdeen Beach are viewed around 8,190 times per year and that 29% of these views are of the Nigg Bay page. From this it can be inferred that Aberdeen Beach is more than twice as popular as Nigg Bay as a surfing destination.

The sensitivity of Nigg Bay as a surfing destination depends largely on how unique the bay is as a leisure resource and how popular it is with local leisure users. The fact that there is another surfing resource in the local area means that the resource is not unique and there is evidence to suggest that Nigg Bay is not the most popular location for surfing in the city. This suggests that it would be reasonable to assess the sensitivity of the resource as low.

This would, however, ignore the fact that the physical characteristics of Nigg Bay are very different to the physical characteristics of Aberdeen Beach. Consultation with local surfing groups suggests that the nearest surfing location with comparable physical characteristics to Nigg Bay is Gills Bay on the north coast of Scotland. For this reason, the sensitivity of Nigg Bay as a surfing location was assessed as **medium**.

Surfing Related Expenditure at Nigg Bay

In 2013, the pressure group Surfers Against Sewage published a report⁶ that suggested that surfers in the Moray Firth area (the closest geographical area surveyed in the report) spend on average £1,662 per year on surfing (on surfing equipment, car parking, food and drink and local shops). This estimate was based on a self-selected sample of surfers so it is likely that that it reflects the expenditure of regular surfers (who would be more likely to respond) rather than all surfers. In order to estimate total

surfing expenditure in Aberdeen it was therefore assumed that non-regular surfers might spend around half this amount each year.

By applying these assumptions to the number of surfers in Aberdeen it was estimated that the total amount that surfers based in Aberdeen spend on surfing each year could be just over £1.0 million. This estimate does not, however, account for leakage of expenditure out of the local economy.

Consultation with local surf groups indicates that there is one dedicated surfing shop in Aberdeen and that most surfers purchase the majority of their equipment on-line, much of it from on-line retailers such as Magic Seaweed (which is based in Devon). To estimate the amount of surfing related expenditure retained within Aberdeen it was therefore assumed that leakage might account for around 50% of total expenditure. This suggests that the total amount of surfing related expenditure retained in Aberdeen City and Shire could be up to £256,000.

As highlighted in the previous section, Nigg Bay is one of two surfing locations in Aberdeen. By using the number of page views of each location as an indication of the relative popularity of each site, it was estimated that the surfing related expenditure directly associated with Nigg Bay could be in the region of £74,700 per year (i.e. 29% of total expenditure of £256,000).

16.5 Assessment of Effects

16.5.1 Construction Phase

16.5.1.1 Economic Effects

It is expected that the construction of the proposed development would require a total capital investment of approximately £320 million (at current prices). Refer to Appendix 16-B: Economic Impact of Aberdeen Harbour Nigg Bay Development - Technical Appendix to Socio-economic and Tourism Report for further technical information.

The construction of the proposed development is predicted to:

- Support 1,215 man years of construction related employment in Scotland, of which 175 could be in Aberdeen City and Shire; and
- Generate approximately £74 million GVA for the Scottish economy, of which approximately £11 million could be retained within Aberdeen City and Shire.

The magnitude of these effects for the Scottish and regional economy would be low; however, the effect at the local level could be higher.

It is not possible to accurately assess how much of the economic effect could accrue within the local area but it is likely that opportunities would be available for suitably skilled people in the local area, particularly during the construction stage. While Aberdeen as a whole has a very tight labour market, the area local to the proposed development has higher levels of unemployment, which would make it easier for contractors to recruit local labour. However, it should be noted that the nature of the construction activity involved in creating the proposed development is likely to be highly specialised, so any new employment opportunities created could be relatively skilled. For these reasons the magnitude of this impact at the local level is assessed as **medium**.

This implies that the significance of the economic effect during the construction of the proposed development would be:

- **Negligible** at the national level, which is not significant in EIA terms;
- Temporary, **minor beneficial** at the regional level, which is not significant in EIA terms; and
- Temporary, **moderate beneficial** at the local level, which is significant in EIA terms.

16.5.1.2 Tourism and Leisure Effects

Diversion of Paths and Routes

Construction of the proposed development would require parts of the core path network around Nigg Bay to be permanently diverted, as shown on Figure 18.4 in Chapter 18: Traffic and Transport. Cycle route NCN1 currently uses Greyhope Road which would be temporarily closed between Coast Road and Girdleness Lighthouse during construction works. Cyclists would therefore have to either use St Fittick's Road or the diverted coastal path instead.

It is likely that there would be some loss of amenity during the construction phase while the coastal path is being rerouted. Parts of the rerouted section of path would be reinstated to its current route once the proposed development is operational, and other parts will be subject to a permanent diversion, as discussed in Section 16.5.2.2. A continuous coastal path will be maintained for the duration of the construction phase. As this effect would only apply to sections of the path and would not obstruct recreational use of the area as a whole, the magnitude of the impact is assessed as **medium**. The sensitivity of local walking and cycling routes to change has been assessed as **low**.

The temporary rerouting of a short section of the core path network within the site would therefore represent a **permanent, minor adverse effect** at the **local** level, which is not significant in EIA terms.

Wildlife Watching

Nigg Bay is one of a large number of locations within the local area from which it is possible to watch wildlife. Therefore, the lack of public access to much of Nigg Bay during construction works is unlikely to have a significant effect on wildlife watchers. It is likely that local wildlife watchers would instead choose to pursue their hobby from an alternative location in the local area. For this reason the magnitude of this impact is assessed as **low**. As the sensitivity of the site as a destination for wildlife watching has been assessed as **low** (see Section 16.4.9.2), the overall significance of the effect would be **negligible**, which is not significant in EIA terms.

Cruise Tourism

There would be **no effect** on levels of cruise tourism during the construction phase of the proposed development.

Amenity of Marine Leisure Users

The commencement of construction of the Aberdeen Harbour Expansion Project would remove surfers' current access to Nigg Bay. The magnitude of this permanent adverse effect depends on the availability of suitable local alternative locations.

As noted above, the nearby Aberdeen Beach is also used for surfing and other marine leisure activities and evidence suggests that it is the more popular of the two local surfing locations. For this reason, it is reasonable to conclude that for the majority of surfers the magnitude of this impact would be negligible.

It may be the case, however, that a minority of surfers have a strong preference for Nigg Bay and would not regard Aberdeen Beach as a suitable alternative. As noted above, the nearest comparable alternative location for these users is likely to involve a 5 hour car journey to Gills Bay on the north coast. The magnitude of the effect on these users is considered to be medium.

As the number of surfers who would not regard Aberdeen Beach as an acceptable alternative to Nigg Bay is likely to be very small, the overall magnitude of this effect on the surfing community as a whole was assessed as **low**. This implies that the overall significance of this effect to the amenity of these surfers would be a **permanent, minor adverse** effect at the **local** level which is not significant in EIA terms. The effect to most surfers as a result of the completed development would be **negligible**, which is not significant in EIA terms.

16.5.2 Operational Phase

16.5.2.1 Economic Effects

The magnitude of the operational economic impacts of the proposed development was assessed by considering the scale of the net additional economic impact that Aberdeen Harbour could generate if the proposed development proceeds. This was estimated by subtracting the potential economic impact of the harbour in 20 years' time if the proposed development does not proceed (the reference case) from the potential economic impact of the harbour in 20 years' time if the proposed development does proceed. The assumptions used to estimate these two scenarios are discussed in detail in ES Appendix 16-B: Economic Impact of Aberdeen Harbour Nigg Bay Development - Technical Appendix to Socio-economic and Tourism Report, which also provides a breakdown of the effect by source.

Accordingly, it is estimated that in 20 years' time the proposed development could be:

- Supporting an additional 3,020 jobs, of which 2,470 could be in Aberdeen City and Shire; and
- Contributing an additional £383 million GVA/year to the Scottish economy, of which £354 million GVA/year could be retained within Aberdeen City and Shire.

This implies that over the 20 year period selected for the assessment of economic effects, the proposed development could contribute a total of £5.3 billion additional GVA (in today's prices) to the Scottish economy. It is estimated that almost £5.0 billion of this could be retained within Aberdeen City and Shire. The magnitude of this impact would be **medium** at the national level and **high** at the regional and local level.

Therefore, the proposed development could generate:

- A permanent, **minor beneficial** effect at the national level, which is not significant in EIA terms; and

- A permanent, **moderate beneficial** effect at regional and local levels, which is significant in EIA terms.

16.5.2.2 Tourism and Leisure Effects

Diversion of Paths and Routes

Although it will be necessary to permanently reroute part of the core path network, as shown on Figure 18.5 in Chapter 18: Traffic and Transport, access to the coastal areas for recreational users will be maintained. Access would be restricted only where it is necessary to do so for safety or security reasons associated with harbour activities. Only the operational areas of the harbour would be restricted to the public. The temporary construction areas would be reinstated and access would no longer be restricted. Figure 18.5 in Chapter 18: Traffic and Transport shows that access to the southern part of Nigg Bay would be reinstated once the proposed development is operational. There would therefore be no permanent loss of amenity for leisure users. AHB is also anticipating undertaking some amenity improvements to areas of the site where amenity use would be interrupted, which should help to improve the amenity value of the area for leisure users in the longer term. Such amenity improvements would include the implementation of a Habitat Creation and Management Plan (see Chapter 11: Terrestrial Ecology).

The sensitivity of the receptor is assessed as being **low** and the magnitude of the effect as being **low**. For this reason the likely potential effect of the permanent diversion of part of the core path network in the vicinity of the proposed development would be **negligible** which is not significant in EIA terms.

Wildlife Watching

Lack of unlimited public access to areas of Nigg Bay once the proposed development is operational is unlikely to have a significant effect on wildlife watchers. As noted above, only the operational areas of the harbour would be restricted to the public. The temporary construction areas would be reinstated and access would no longer be restricted. Figure 18.5 shows that access to the southern part of Nigg Bay would be reinstated once the proposed development is operational. The coastal path around the Girdle Ness and Greg Ness headlands to the north and south of Nigg Bay, which due to their elevation would provide some of the best vantage points for wildlife watching in the area, would be unaffected by the operational phase of the development. For this reason the magnitude of this impact is assessed as low. The sensitivity of Nigg Bay as a destination for wildlife watching is low. Therefore the overall significance of the effect would be **negligible**, which is not significant in EIA terms.

Cruise Tourism

The proposed development is expected to attract between 30 and 40 cruise ships each year. The new harbour would also accommodate much larger ships than can visit the existing harbour. If the proposed development proceeds as planned, in 20 years' time the expenditure generated by these ships and their passengers and crew is predicted to amount to around £4.4 million/year across Scotland (of which around £3.9 million is predicted to be retained in Aberdeen City and Shire). This represents an increase in turnover of around £4.2 million for the regional tourism industry each year (see ES Appendix 16-A: Socio-economics and Tourism of Aberdeen Harbour Nigg Bay Development for further details).

This expenditure is expected to generate around £0.7 million GVA for the regional economy and support around 30 new jobs. This impact has been included as part of the economic impact assessment presented above. However, in addition to this, there would be a wider beneficial impact to the local and regional tourism sector.

The magnitude of this impact at the national level would be negligible and even at the regional level the creation of 30 new jobs would be of low magnitude compared with the scale of the regional tourism sector. For individual tourism businesses in the local area, however, the impact would be of **high** magnitude. This implies that the proposed development would generate a **permanent, moderate beneficial effect** at the **local** level for tourism businesses as a result of an increase in the number of cruise ships visiting the city, which is significant in EIA terms.

Expenditure by Marine Leisure Uses

As noted above, most surfers are likely to use Aberdeen Beach or another similar location rather than Nigg Bay once the proposed development is operational. Therefore, the expenditure of most marine leisure users in the local area would be unchanged.

It cannot be ruled out, however, that small number of users might instead choose to give up the sport or even leave the area altogether. This number is likely to be extremely small. Nevertheless, it would have an adverse effect on the local economy as a result of a reduction in expenditure.

It was noted above that the total surfing related expenditure currently associated with Nigg Bay that is retained in Aberdeen City and Shire is estimated to be around £74,700 per annum. This includes expenditure by both the vast majority of surfers who would be expected to switch to another location and the extremely small minority who would not. As it is not known how many surfers may take this extreme position, this assessment has considered the worst-case scenario where all of this expenditure is lost entirely – i.e. all of the surfers currently using, or considering using, Nigg Bay stop surfing in Aberdeen entirely. It is important, however, to emphasise that this scenario is extremely unlikely.

Accordingly, it is estimated that the direct and indirect effect of this expenditure might support around one job and £25,800 GVA within the local economy. For the reasons discussed above, this is likely to be an overestimate. Even under the worst case scenario where all of this expenditure is lost (which is highly unlikely) the magnitude of the impact on the local economy would be **negligible**, so the significance of this effect would be **negligible**, which is not significant in EIA terms.

16.6 Mitigation and Enhancement Measures

16.6.1 Construction Phase

16.6.1.1 Economic Effects

Potential beneficial economic effects associated with the construction of the proposed development have been identified, and measures to enhance these effects have been considered. For example, beneficial effects would arise as a result of additional expenditure made by AHB, their appointed contractors and their employees during the construction phase. The magnitude of these beneficial

effects in the local area and wider region would depend on the proportion of expenditure that occurs in these areas.

16.6.1.2 Tourism and Leisure Effects

Diversion of Paths and Routes

No mitigation is necessary as only minor adverse effects are predicted. A continuous coastal path will be maintained for the duration of the construction phase.

Wildlife Watching and Cruise Tourism

Negligible effects on wildlife watching are predicted and there would be no effects on cruise tourism during the construction phase. Therefore, no mitigation measures are necessary.

Amenity of Marine Leisure Users

Permanent, minor adverse effects are predicted to the amenity of a very small number of marine leisure users as a result of restrictions in access to Nigg Bay associated with the construction of the proposed development. No mitigation is necessary as only minor adverse effects are predicted.

16.6.2 Operational Phase

16.6.2.1 Economic Effects

Significant effects to the national, regional and local economies are predicted as a result of the operation of the proposed Development. No further enhancement measures are considered necessary.

16.6.2.2 Tourism and Leisure Effects

Diversion of Paths and Routes

Negligible effects are predicted due to the diversion of paths and routes once the proposed development is operational. Therefore, no mitigation measures are necessary.

Wildlife Watching

Negligible effects to wildlife watching are predicted once the proposed development is operational. Therefore, no mitigation measures are necessary.

Cruise Tourism

Beneficial effects are predicted to arise as a result of increased cruise ship activity once the proposed development is operational.

Expenditure by Marine Leisure Users

Negligible effects are predicted in terms of the amount of expenditure lost to the local area due to marine leisure users either ceasing activity or relocating further afield once the proposed development is operational. Therefore, no mitigation measures are necessary.

16.7 Residual Effects

16.7.1 Construction Phase

16.7.1.1 Economic Effects

The following residual economics effects of the construction phase are predicted:

- **Negligible** at the national level, which is not significant in EIA terms;
- Temporary, **minor beneficial** at the regional level, which is not significant in EIA terms; and
- Temporary, **moderate beneficial** at the local level, which is significant in EIA terms.

16.7.1.2 Tourism and Leisure Effects

Diversion of Paths and Routes

The residual effect of rerouting of a short section of the core path network within the site would represent a **permanent, minor adverse effect** at the **local** level during the construction phase, which is not significant in EIA terms.

Wildlife Watching

Residual effects to wildlife watchers during the construction phase would be **negligible**, which is not significant in EIA terms.

Cruise Tourism

There would be **no effect** to levels of cruise tourism during the construction phase of the proposed development.

Amenity of Marine Leisure Uses

The effect to most marine leisure users as a result of the commencement of the construction of the proposed development would be **negligible**, which is not significant in EIA terms. The number of marine leisure users who would not regard Aberdeen Beach as an acceptable alternative to Nigg Bay once construction commences is likely to be very small. Nevertheless, the residual effect to the amenity of these particular marine leisure users is predicted to be a **permanent, minor adverse effect** at the **local** level, which is not significant in EIA terms.

16.7.2 Operational Phase

16.7.2.1 Economic Effects

The operation of the proposed development is predicted to generate:

- A permanent, **minor beneficial** effect at the national level, which is not significant in EIA terms; and
- A permanent, **moderate beneficial** effect at regional and local levels, which is significant in EIA terms.

16.7.2.2 Tourism and Leisure Effects

Diversion of Paths and Routes

The residual effect of the permanent diversion of part of the core path network in the vicinity of the proposed development would be **negligible**, which is not significant in EIA terms.

Wildlife Watching

Residual effects on wildlife watchers during the operational phase would be **negligible**, which is not significant in EIA terms.

Cruise Tourism

The operation of proposed development would generate a **permanent, moderate beneficial effect** at the **local** level for tourism businesses as a result of an increase in the number of cruise ships visiting the city, which is significant in EIA terms.

Expenditure by Marine Leisure Uses

Negligible residual effects are predicted in terms of the amount of expenditure lost to the local area due to marine leisure users either ceasing activity or relocating further afield once the proposed development is operational, which is not significant in EIA terms.

16.8 **Cumulative Assessment**

A review of other proposed developments in and around the area, either in planning or that have been granted planning permission (and not yet built) was carried out, based on the projects listed in Section 15.12 of Chapter 5: Environmental Impact Assessment Process. It was considered that there are no proposals on the list that would have a significant cumulative impact when assessed in combination with the proposed harbour expansion and therefore a cumulative socio-economics impact assessment of any other specific proposed scheme has not been conducted.

Nevertheless, refer to Section 4.5 of Appendix 16-A: Socio-economics and Tourism of Aberdeen Harbour Nigg Bay Development for an assessment of:

- The cumulative effect that could arise as a result of additional commercial development which may be stimulated elsewhere in the local area by the proposed development; and
- The cumulative effect that could arise if the combined effect of the proposed development on different groups of leisure users resulted in a significant reduction in the quality of life available in the local area.

16.9 Summary

Table 16.6: Summary of likely significant effects, mitigation and enhancement measures and likely residual effects

Issue	Likely Significant Effects	Mitigation and Enhancement Measures	Likely Residual Effects
Construction Phase			
Economic effects	Negligible at the national level Temporary, minor beneficial at the regional level Temporary, moderate beneficial at the local level	None required	Negligible at the national level Temporary, minor beneficial at the regional level Temporary, moderate beneficial at the local level
Diversion of paths and routes	Permanent, minor adverse at the local level	None required	Permanent, minor adverse at the local level
Wildlife watching	Negligible	None required	Negligible
Cruise tourism	No effect	None required	No effect
Amenity of marine leisure uses	Mainly negligible. Some permanent, minor adverse at the local level	None required	Mainly negligible. Some permanent, minor adverse at the local level
Operational Phase			
Economic effects	Permanent, minor beneficial at the national level Permanent, moderate beneficial at regional and local levels	None required	Permanent, minor beneficial at the national level Permanent, moderate beneficial at regional and local levels
Diversion of paths and routes	Negligible	None required	Negligible
Wildlife watching	Negligible	None required	Negligible
Cruise tourism	Permanent, moderate beneficial at the local level	Collaboration with Aberdeen City Council and local tourism bodies.	Permanent, moderate beneficial at the local level
Expenditure by marine leisure uses	Negligible	None required	Negligible

16.10 References

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