Appendix

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DATA
The chart above illustrates the projected population growth rates, over the next 20 years, for both Aberdeen City and Aberdeenshire and the comparator locations. The growth is indexed to 2016, i.e. 2016=100.

- Aberdeenshire has one of the highest projected growth rates, similar to that of Edinburgh;
- The growth rate is more than double that of Aberdeen City;
- Aberdeen City displays a similar trend to that of Glasgow City with the largest increase witnessed over the ten year period from 2026 to 2036.

The chart above illustrates the top ten largest settlements in the Aberdeen City Region based on 2016 values.

- Since 2014 Portlethen has seen the largest growth rate, increasing by 11% from 8,200 in 2014 to 9,090 in 2016;
- Inverurie witnessed the second largest growth rate at 7%, moving the settlement from 4th largest in 2014 to 3rd largest in 2016; and
- Stonehaven was the only settlement to witness a decrease in population, showing a -2% decrease from 11,370 in 2014 to 11,170 in 2016.

In terms of mobile phone connectivity, Aberdeen City is marginally lower than that of the other comparable cities 0.1%, while Aberdeenshire is significantly lower for both 3G and 4G signal coverage. The percentages shown illustrate the local authority land coverage and thus Aberdeenshire’s low statistics could be a related to the geographical expanse of the region, rural nature and the Cairngorms National Park.
The types of industry that the population are employed in are shown in the two charts left. The top chart presents results from the 2011 census, whilst the bottom chart provides information from the Annual Population Survey 2017.

- Aberdeen has seen a growth of more than double in Agriculture, Energy & Water, whilst experiencing marginal decreases in all other sectors. This growth is most likely linked to oil industry and the growth of the renewables sector in the region;

- Aberdeenshire on the other hand has witnessed growth across a couple of sectors, in particular Distribution, Hotels & Restaurants (mostly linked to increased tourism) and Public administration, education and health; and

- Overall there have been no significant changes from the 2011 census across sectors or comparator areas.
The map above displays the bus service network in the Aberdeen City Region, whilst the graphics directly above provide comparator costs for bus tickets at the daily, weekly and annual level. As can be seen in the graphic, bus tickets for Aberdeen are comparable at the daily and weekly level, however, prove to be more expensive at the annual level, apart from Edinburgh.

Ticket prices for Aberdeenshire are not shown due to the number of different ticket types that are available across the local authority.
All stations show positive growth in rail patronage over the six year period, in particular significant growth at Inverurie, Dyce and Portlethen;

Aberdeen Rail station is well connected to other key cities in Scotland in terms of direct connections, with further connections available through interchange; and

Travel time from Aberdeen to other key train stations restricts connectivity across Scotland with relatively long journey times to both Glasgow and Edinburgh.

On the page opposite all day connectivity by rail from Aberdeen Rail station is presented. Extending the travel window from that above shows that Northern England can be reached in around five hours and London in around six-seven hours.

The graphics on this page illustrate the connectivity by rail in the Aberdeen City Region. The chart at the top displays rail patronage levels per station from 2010 to 2016. The graphic directly above shows the number of direct services from Aberdeen Rail station to key stations, whilst the image right highlights rail connectivity during the AM peak period from 0600 to 1000. From these graphics the following key points are of note:

- Dip in patronage at Dyce and Aberdeen in 2016, most likely linked to the recession in the energy sector.
Figure 52: All Day Rail Travel Times TRACC 2018

Rail Connectivity All Day
0600 - 2359

- Green: Up to 1 hour
- Light Green: 1 - 2 hours
- Medium Green: 2 - 3 hours
- Dark Green: 3 - 4 hours
- Yellow: 4 - 5 hours
- Orange: 5 - 6 hours
- Red: 6 - 7 hours
- Deep Red: 7 - 8 hours
- Black: Over 8 hours

Contains: OS data © Crown Copyright and database right 2017

Figure 52: All Day Rail Travel Times TRACC 2018
Figure 53: Cheapest Cost (£) of Single Direct flights to key destinations (Airport websites and Skyscanner: retrieved 24/01/2018) for a flight in July 2018.

Figure 54: Domestic Air Travel Source: CAA, 2017
The image on the page opposite highlights the number of domestic passengers by main airports. As can be seen from the map, Heathrow is the busiest destination from all three Scottish airports. Manchester airport is the only domestic airport where there is a greater number of passengers from Aberdeen than Glasgow and Edinburgh;

Looking further afield the top five passenger transits to/from Aberdeen are to the offshore oil rigs (400,601), Amsterdam (280,993), Frankfurt Main (127,324), Paris Charles de Gaulle (99,975) and Stavanger (97,640);

The diagram also displays a comparison of the costs of flights from each of the three airports to key destinations. Flights from Aberdeen tend to be more expensive than flights from Glasgow and Edinburgh, in particular flights to Amsterdam from Aberdeen are significantly higher than from Glasgow (+£127) and Manchester (+£121);

The chart top, illustrates the trend in air freight passing through all three Scottish airports. Aberdeen shows a consistent level of air freight passing through the airport over the ten year period from 2006 to 2016. Both Glasgow and Edinburgh displays fluctuating trends over this same time period with Edinburgh experiencing roughly a 55% decrease in the amount of tonnage passing through the airport from 2006 to 2008, whilst Glasgow witnesses a significant growth between 2011 and 2014;

In terms of destination for freight passing through each of the three airports there are quite contrasting trends. Freight passing through Aberdeen is heavily weighted towards other destinations within the UK, Edinburgh is more equally balanced between the UK and the EU, while 89% of freight passing through Glasgow destinates internationally.
Aberdeen Harbour provides an important and essential strategic link to Orkney and Shetland. Serco Northlink operates from the harbour providing essential life-line services to the islanders, 7 days a week. The diagram above show the change in carryings of the ferry services from 2013 to 2017. As can be seen from the combined figures, although both car and coach carryings have increased over the five-year period, passenger numbers have decreased by -7,359 from 2013 (-4.9%). The biggest reduction in patronage was experienced between 2015 to 2016 when numbers decreased by -6,918 (-4.4%). Other types of carryings have steadily increased over the years, although there has been a slight decrease in the total commercial lane metres since 2013.

Sea freight is a vital element to the world economy with around 90% of the worlds’ trade carried out by the shipping industry. Aberdeen Harbour plays a large role in the shipping industry and acts the main commercial port in the north east of Scotland. In addition to Aberdeen the ports of Peterhead and Fraserburgh also play important roles for not only the dishing industry but the shipping industry too.

In the period from 2006 to 2016, the tonnage of cargo passing through Aberdeen Harbour has decreased by -19%. This is a trend that is evident across Scotland, with total sea freight in Scotland decreasing by -34% over this time period. Fraserburgh witnessed a -29% decrease, whilst conversely Peterhead experienced a 21% increase in cargo tonnage passing through the port. The chart below displays the trends in cargo tonnage passing through five of the main ports on the Scottish North-East coast.
The chart above provides a comparison of both petrol and diesel prices across the comparator areas. Interestingly, Edinburgh has the lowest price for both petrol and diesel. Aberdeen is next lowest with Aberdeenshire having one of the highest priced fuel rates.

Aberdeen has a significantly lower daily parking cost than both Edinburgh and Glasgow. The prices above represent an average cost for nine hours worth of parking. Aberdeen is almost half the price of Glasgow, and combined with the availability of parking in the city is probably an indication to the high car mode share for travelling to work.

The chart above displays the mode share for travel from home to 14 of the key employment areas within the Aberdeen City Region.

- As expected and shown through previous analysis, car is the most dominant mode of travel for all 14 of the destinations.
- Cycling mode share is significantly low, even for city centre locations;
- Just under 50% of employees walk or take the bus to access the harbour, Bridge of Don area and the West End Office Area.
ASAM Analysis

The charts below and the maps on the following pages illustrate analysis of the outputs from ASAM14.

The charts below highlight the step change in total vehicle kilometres and vehicle travel time in the forecast years compared to the 2014 base year.

These increases are likely linked to the increased development forecast for the Aberdeen City Region particularly in Aberdeenshire and the introduction of the AWPR.

The maps on the following pages illustrate the predicted impacts on the Aberdeen road network in the forecast year and the locations which are likely to see the most impact.

The results demonstrate some areas of the network gaining some relief as a result of infrastructure such as the AWPR, however, there are several areas of the network that are still likely to see significant impacts as a result of the planned land development.

% Change in Vehicle Kms (2014 - 2037)

% Change in Vehicle Travel Time (2014 - 2037)
Figure 67: Link Vehicle Volume over Capacity 2037 AM Peak

Figure 68: Link Vehicle Volume over Capacity 2037 PM Peak