

## ABERDEEN CITY COUNCIL

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COMMITTEE	Communities, Housing and Infrastructure
DATE	16 January 2018
REPORT TITLE	Bridge of Dee – Additional River Crossing Capacity
REPORT NUMBER	CHI/17/297
DIRECTOR	Bernadette Marjoram
REPORT AUTHOR	Ken Neil

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### 1. PURPOSE OF REPORT:-

This report advises Members of the outcomes of the additional work carried out on the Scottish Transport Appraisal Guidance (STAG) Part 2 assessment to consider a new four lane bridge at the Bridge of Dee. The work was instructed to be carried out by this Committee at its meeting on 24 January 2017. A discussion on the findings from the additional work is provided along with recommendations on how the study should progress.

### 2. RECOMMENDATION(S)

It is recommended that Committee:-

- a) Note the findings and outcomes of the Bridge of Dee Scottish Transport Appraisal Guidance (STAG) Part 2 – Concept 7A/7B four lane bridge assessment and approve the publication of a final version on the Council website; and
- b) Agree that the four lane bridge options 7A and 7B should not be progressed further given the negative traffic modelling outcomes and that these options should be removed from the future assessment process.

### 3. BACKGROUND/MAIN ISSUES

#### 3.1 Introduction

- 3.1.1 The STAG Part 1 report identified several concepts to take forward for further assessment in the STAG Part 2 assessment. The STAG Part 2 assessed Concepts 6, 6B and 7 which are detailed in *The Bridge of Dee Study – STAG Report Volume 3 of 4: Part 2 Appraisal, Jacobs, January 2017*.

3.1.2 The STAG Part 2 appraisal was reported to this Committee on 24 January 2017, where the Committee resolved to instruct officers to work up proposals for a four lane bridge subject to it being included in the budget process. ACC instructed Jacobs and SYSTRA to undertake further traffic modelling with respect to modifications to Concept 7, the six lane adjacent bridge option.

3.1.3 Two variants to Concept 7 have been considered as part of this assessment, namely:

- Concept 7A is essentially the same as Concept 7 but only allows for two lanes in each direction on the new crossing.
- Concept 7B is the same as Concept 7A but returns the A90 / B9077 / Leggart Terrace junction back into gyratory formation.

A plan of Concept 7A can be found in Appendix 1.

3.1.4 A summary review of the traffic performance of the 2020 Opening Year and 2035 Design Year of Concept 7A and Concept 7B was carried out using the Paramics microsimulation traffic modelling software, to consider if either concept is worthwhile in taking forward for full STAG assessment.

## 3.2 Assessment

3.2.1 The option to be modified, Concept 7 is outlined in the *Bridge of Dee Pre Appraisal Traffic Modelling Report (SIAS Ref.74486, 11 May 2012)*. A brief summary of Concept 7 includes a new dual three lane crossing (new bridge) adjacent to the existing bridge with the following junction improvements:

- The A90 South Anderson Drive/A90 Stonehaven Road/Garthdee Road Roundabout is enlarged.
- The A90 Stonehaven Road/B9077 Great Southern Road/B9077 Leggart Terrace Roundabout becomes a signalised junction.
- There is a segregated left turn from the new bridge eastbound to Great Southern Road northbound. Traffic does not need to give way.
- The B9077 Great Southern Road/ West Tullos Road/Provost Watt Drive Roundabout is re-configured.
- The junction of the Leggart Terrace Link Road with A90 Stonehaven Road becomes a signalised junction.

3.2.2 Changes were applied to Option 7 as follows:

### **Concept 7A**

Concept 7A is similar to Concept 7, but with the following changes:

- There is a reduction in the new bridge capacity to a dual two lane crossing. Southbound, both lanes can be used for right turning traffic, and the left lane is also for left turning traffic.
- Great Southern Road northbound is only two lanes.
- Traffic from the segregated left turn from the new bridge to Great Southern Road northbound must now give way.

### **Concept 7B**

Concept 7B is a revision of Concept 7A. The following key change is made:

- A90 Stonehaven Road/B9077 Great Southern Road/B9077 Leggart Terrace junction returns to a gyratory format similar to the Reference Case, although with some minor amendments.

Appendix 1 contains a plan of Concept 7A.

### 3.3 Assessment Outcomes

- 3.3.1 Both Concept 7A and Concept 7B have been assessed at the 2020 Opening Year and 2035 Design Year using ASAM4 forecasts, consistent with the Concept 7 Assessment undertaken during STAG Part 1.

Average journey time results in minutes are shown in the following table:

Scenario	2020 AM	2020 PM	2035 AM	2035 PM
Existing Bridge	05:50	05:54	06:46	07:37
Concept 7	05:13	05:16	05:40	06:21
Concept 7A	07:55	12:58	08:34	17:47
Concept 7B	06:53	Fail	Fail	Fail

Where the results are recorded as 'FAIL' the model has gridlocked due to sever congestion and results cannot be obtained for the whole peak period.

- 3.3.2 From a review of the operational outputs from Concept 7A and Concept 7B in both 2020 Opening Year and 2035 Design Year, it is clear that both options generate significant levels of queuing and congestion on the network and perform significantly poorer than both the Reference Case and Concept 7 assessments.
- 3.3.3 The reduction in capacity on the Bridge of Dee to two lanes results in a significant capacity constraint, not only for assigning traffic through the junctions at either end of the Bridge, but also in terms of stacking space on the bridge. As such, queuing at each junction can become significant and ultimately block back through either junction, at times resulting in severe congestion.
- 3.3.5 Several sensitivity tests were undertaken with a view to improving operation of both Concepts 7A and 7B. Results indicate that none of the sensitivity tests resulted in improvements in operation.
- 3.3.6 The overall conclusion is that due to the significant capacity issues associated with a two lane bridge structure, Concept 7A and Concept 7B do not provide adequate levels of network performance. These options are, therefore, not considered viable as a means of providing additional capacity at the crossing.

## 4. **FINANCIAL IMPLICATIONS**

- 4.1 To date this project has been funded through a budget allocation from Nestrans, the Regional Transport Partnership and the Bus Lane Enforcement Fund.

- 4.2 Any future funding to progress the project would require to be identified at each stage but non housing capital funding will be necessary to fully fund the delivery. Developer funding would be sought as a means of contributing to delivery.

## 5. LEGAL IMPLICATIONS

- 5.1 None at this time although all options assessed will have property and environmental implications which will require legal input as part of the delivery of any approved option.

## 6. MANAGEMENT OF RISK

- 6.1 **Financial** - There is no financial risks as a result of the recommendations of this report. However, there is a risk inherent in not progressing a key transport infrastructure improvement set out in the Strategic Infrastructure Plan which will deliver air quality, road safety and economic benefits for the city.
- 6.2 **Employee** - There is a risk that there will be insufficient staff resources available to deliver the proposed infrastructure. This situation will be monitored and workloads of Officers will be managed to optimise resources to best meet future milestones/deadlines.
- 6.3 **Customer/Citizens** - There are risks affecting customers, citizens and visitors alike relating to a transport network which does not reflect the changing needs of the economy, society and personal health and wellbeing and specifically in access requirements for the movement of people and goods to major city facilities within the city.
- 6.4 **Environmental** - There are no environmental risks as a result of the recommendations of this report and further consideration to such risks will be addressed through the detailed design stage and will be reported in future reports to committee at each key stage.
- 6.5 **Legal** - There are no legal risks as a result of the recommendations of this report, however, further consideration to any such future risks will be addressed through the future reports to committee.
- 6.6 **Technological** - There are no technological risks as a result of the recommendations of this report, however, further consideration to any future risks will be addressed through the future reports to committee.
- 6.7 **Reputational** - There is reputational risk to the City of not investing in transport infrastructure that caters for the needs of a high performing international city economy by providing roads with capacity to cope with the demands of a major city.

## 7. IMPACT SECTION

- 7.1 **Economy:**

Positive decision making informing the implementation of Bridge of Dee directly supports a range of policies and strategies that will benefit the economy including:

Aberdeen – the Smarter City vision:

- We will invest in the city where that investment demonstrates financial sustainability based on a clear return on investment
- We will encourage cycling and walking.
- We will provide and promote a sustainable transport system, which reduces our carbon emissions.

Local Outcome Improvement Plan:

The Local Outcome Improvement Plan (LOIP) 2016-26 for Community Planning in Aberdeen (CPA) recognises a commitment to investing in infrastructure that caters for the needs of a high performing international city economy by providing roads with capacity to cope with the demands of business along with extensive air and sea links. Delivery of improvements at Bridge of Dee will assist in the priority of improving access to a key facility within Aberdeen.

## 7.2 **People:**

A defined, fully resourced programme of delivery for transport schemes, which includes Bridge of Dee will assist in improving access to key economic facilities, enabling all people to share in the success that such facilities will provide to the City.

The contents of this report are likely to be of public and media interest as it relates to transport infrastructure at a key location to the south of the city and therefore would contribute to a significant improvement to the movement of people and goods for the City and Region. A Privacy Impact Statement is not required for this report.

An Equalities and Human Rights Impact Assessment (EHRIA) has not been undertaken on this report as the Local Transport strategy and Regional Transport Strategy from which the transport infrastructure scheme is an integral part has been subject to the appropriate assessments. Future Committee reports on the detailed design of any preferred option would be the subject of an EHRIA.

## 7.3 **Place:**

The contents of this report and the recommendations relate to the delivery of transport infrastructure improvements to the south of the city which is a key intervention that will assist in improving access to the City. All options assessed will likely have environmental implications which will require appropriate mitigation as part of the delivery of any preferred and approved option. Consideration will be given to environmental impact through the detailed design process.

#### **7.4 Technology:**

Any approved option will include consideration of the use of appropriate intelligent transport technology to assist the flow of traffic at this location, therefore enabling all people to share in the success that such an improvement will provide to the City.

### **8. BACKGROUND PAPERS**

Report to Council – 24 January 2017 - Access from the South – Bridge of Dee Study – STAG Part 2 Appraisal – [Link to Report: Item 37](#)

Systra Report - Bridge of Dee – Concept 7A/7B Assessment

### **9. APPENDICES**

Appendix 1 – Concept 7A Plan

### **10. REPORT AUTHOR DETAILS**

Ken Neil  
Senior Engineer – Transport Strategy and Programmes  
[kenn@aberdeencity.gov.uk](mailto:kenn@aberdeencity.gov.uk)  
01224 522618

#### **HEAD OF SERVICE DETAILS**

Eric Owens  
Head of planning and Sustainable Development (Interim)  
[eowens@aberdeencity.gov.uk](mailto:eowens@aberdeencity.gov.uk)  
01224 523133