Briefing Paper

To: York Local Plan Examination

From: City of York Council

Date: 6th July 2022

Subject: Comparative Effect of Different Spatial Distributions of Development in York

Introduction

At Phase 2 of the York Local Plan Examination a request was made for an analysis of the effect of placing the development on site ST15 in a different location in York to be presented to Phase 3 of the Examination. This short paper presents the analysis of this option.

Methodology

The test described here was undertaken using the York VISUM transport network model. The model was used to compare two scenarios in terms of the journey times/ delays on the road network of York and on greenhouse gas emissions and atmospheric pollution. The scenarios compared are:

- The current Local Plan spatial distribution, in which housing is constructed on site ST15, west of Elvington Lane. The tests presented here assume that 70% of traffic from ST15 at full build out leave the site using a grade separated junction onto the A64, with 30% using Elvington Lane; and
- An alternative where two-thirds of the development foreseen for ST15 is provided, proportionally, by increasing allocations on ST7 (land east of

Metcalf Lane) and ST14 (land west of Wigginton Road. The remaining third of the development is assumed to be in York city centre/ York Central.

The same trip generation factors have been used in both scenarios and overall trips in the matrices are constrained to TEMPRO.

The table below shows the impacts on links on the highway network, as against a base position for 2019.

			2019 Base		2033 DS Local Plan		2033 No ST15 dist.		Diference DS/LP v No ST15	
			AM	PM	AM	PM	AM	PM	AM	PM
1	A1237	NB	27.7	34.9	33.8	35.8	33.5	35.1	-1%	-2%
	A1237	SB	27.8	31.8	33.3	35.7	32.1	34.8	-4%	-3%
2	A64	NB	17.5	16.7	18.2	17.5	18.3	17.5	1%	0%
	A64	SB	16.7	16.6	17.4	17.1	17.4	17.1	0%	0%
3	A1036 Tadcaster Rd	IB	18.5	17	20.2	18.1	20.3	17.4	0%	-4%
	A1036 Tadcaster Rd	OB	14.7	15.9	16.5	17.1	16.5	17.2	0%	1%
4	A19 Fulford Road	IB	20.1	14.6	21.9	16.6	21.7	16.9	-1%	2%
	A19 Fulford Road	OB	11.8	16	12.3	18.2	12.4	18.2	1%	0%
5	A1079 Hull Road	IB	18.5	16.2	20.9	19	20.4	19	-2%	0%
	A1079 Hull Road	OB	14	16.7	15.9	20	15.6	19	-2%	-5%
6	A1036 Malton Road	IB	9.6	10.3	11.2	10.5	13.2	10.5	18%	0%
	A1036 Malton Road	OB	8.3	9	9.6	9.8	9.6	9.6	0%	-2%
7	B1363 Wigginton Road	IB	16.9	15.6	18.3	15.4	19	16	4%	4%
	B1363 Wigginton Road	OB	13.3	14.9	14	15.2	14.3	15.5	2%	2%
8	A19 Shipton Road	IB	17.4	14.8	20	13	20.9	13.6	4%	5%
	A19 Shipton Road	OB	11.6	12.7	12.6	13.5	12.3	13.7	-2%	1%
9	A59 Boroughbridge Road	IB	15.9	15.4	17.4	16.7	17	16.4	-2%	-2%
	A59 Boroughbridge Road	OB	15	14.6	16.9	14.9	16.1	14.9	-5%	0%
10	B1224 Wetherby Road	IB	11.1	11.5	11.7	12	11.7	11.9	0%	-1%
	B1224 Wetherby Road	OB	10.3	10.2	10.6	10.2	10.5	10.2	-1%	0%
11	Haxby Road	IB	15.6	14.1	16.9	16.3	17.1	15.5	1%	-5%
	Haxby Road	OB	14	14.9	14.4	15.8	14.4	15.8	0%	0%
12	Waterend	NE	3.7	4	5.7	4.5	5.6	4.4	-2%	-2%
	Waterend	SW	6.6	3.9	6.9	6.5	6.7	7.2	-3%	11%
13	Leeman Rd	IB	0	0	5.2	5.1	5.2	5.1	0%	0%
	Leeman Rd	OB	0	0	8.1	7	8.6	7	6%	0%
14	Bishopthorpe Rd	IB	15.3	14.5	18.9	17.5	18.9	17.6	0%	1%
	Bishopthorpe Rd	OB	12	12.7	12.7	13.9	12.7	13.9	0%	0%
15	Strensall Rd	IB	20.3	17.9	21.1	18.3	21.1	18.4	0%	1%
	Strensall Rd	OB	16.6	17.3	17.4	18.2	17.4	18.1	0%	-1%
16	Inner Ring Road	CW	21.9	24.2	24.9	28.7	25.1	28.4	1%	-1%
	Inner Ring Road	ACW	23	25.2	25.6	28.9	25.7	29.3	0%	1%

As can be seen, on the vast majority of corridors, journey times are similar in 2033 under the two scenarios. The differences being:

- In the AM peak the journey time on Malton Road is 18% slower in the No ST15 scenario. This equates to a 2 minute journey time increase
- In the PM peak the journey time on Water End is 11% slower in the No ST15 scenario. This equates to an 18 second increase in journey times

Generally, in the “No ST15” scenario, journey times are a little worse in the northern sector of York (Malton Road, Wigginton Road, Shipton Road) which would expect to see more trips from the greater development at ST7/14. Journey times on Fulford Road appear to change very little, although journey times on Hull Road are slightly faster in the No ST15 scenario (though no more 5% different).

Over all 16 corridors the “No ST15” scenario journey times are slightly faster, but the difference between the two forecasts is less than 1%, which is assessed to be within the margin of error of the model. Consequently, it is concluded that journey times are not significantly different under the two scenarios.

Greenhouse gases

We were also asked to assess the impact of the two scenarios on greenhouse gas emissions in York. This analysis was undertaken by applying DfT Data Book values to the number of vehicle kms/ operated minutes within the modelled scenarios. Crucially, the analysis took account of forecast changes in the composition of the vehicle fleet between the 2019 base and 2033, at which point a significant electrification of the vehicle fleet is anticipated, as well as a removal from the UK vehicle fleet of many older vehicles with poorer emissions standards. Table 2 shows the anticipated changes in principal pollutant levels.

	Tonnes per Annum			
	NOx	PM2.5	PM10	CO2
Baseline (2019)	324.01	18.13	29.51	175,120.34
Do Something local Plan	113.37	16.47	28.40	123,499.97
No ST15 scenario	112.62	16.36	28.19	122,435.63

It can be seen that, despite increasing numbers of trips on the network, changes in vehicle fleet composition mean that forecast CO2 emissions for the Local Plan scenario are 71% of the 2019 level, whilst NOx levels fall to 35% of 2019 levels. PM 2.5/10 levels also fall, but not by as much. “No ST15” scenario levels are generally slightly below those for the Local Plan scenario, but the difference between them is less than 1% and they could be considered as essentially the same.