

## **Annex 5: NO<sub>x</sub> reduction emissions modelling assumption**

### **Modelling approach**

The Emissions Factors Toolkit (EFT v 4.2) published by Defra and the Devolved Administrations has been used to assess the likely levels of NO<sub>x</sub> and PM<sub>10</sub> reduction from some of the measures included in AQAP3. This toolkit has been developed specifically to assist local authorities with quantifying the impact of air quality improvement measures. More details about the model can be found at <http://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html>

The toolkit requires the following information:

- Annual Average Daily Traffic flows (AADTs) for each of the road links considered (for base and future year scenarios)
- Information about the composition of traffic in the base and future years i.e the relative emission contribution from different types and ages of vehicles.

These inputs can be varied to consider a range of different traffic conditions that might exist in future years due to national changes in the vehicle fleet and the impact of local policies and decisions.

### **Source of model inputs**

- City of York Council's strategic transport model (SATURN) was used to estimate Annual Average Daily Traffic flows (AADTs) on each of the road links contained within the areas of air quality technical breach for a 2011 baseline and a 2021 future year scenario.
- Baseline traffic composition was based on ANPR traffic counts undertaken in the AQMAs during 2010 (relative proportions of each type of vehicle)
- The 2021 future year scenario included the predicted traffic growth impact of planned traffic schemes and development in the city. Table A5.1 identifies which development schemes have been accounted for in the assumed traffic growth figures.

**Table A5.1: Development schemes accounted for within the 2021 SATURN model**

Type	Description	Local Plan Reference
<b>MAJOR SCHEMES</b>	Manor Lane - Hurricane Way Link	-
	A59 Bus Corridor	-
	York Central Link	-
	James St Link	-
	A59 Poppleton roundabout	-
	Great North Way roundabout	-
	A19 Shipton Rd roundabout (Rawcliffe Bar)	-
	Clifton Moor Gate roundabout	-
	Haxby Road roundabout	-
	Wigginton Road roundabout	-
	Strensall Road roundabout	-
	Clifton Moor Park and Ride	-
	Wetherby Road roundabout	-
	Wigginton Road Bus Priority	-
	Clarence Street Bus Priority	-
	Poppleton Park and Ride	-
	Askham Bar Park and Ride	-
	Germany Beck pinchpoint	-
	New Askham Bar Park and Ride	-
	Haxby Station	-
<b>RESIDENTIAL USES</b>	British Sugar	-
	Nestle South (a)	ST17
	Nestle South (b)	ST17
	Land adjacent Hull Road	ST4
	Land at Grimston Bar	ST6
	York Central	ST5
	N Monks Cross	ST8
	E Metcalfe Lane	ST7
	Moor Lane, Woodthorpe	ST10
	North Haxby	ST9
	Former Civil Service Sports Ground	ST2
	New Lane, Huntington	ST11
	Moor Lane, Copmanthorpe	ST10
	Manor Heath Rd, Copmanthorpe	ST12
	Terry's	ST16
	Germany Beck	ST22
	Castle Piccadilly	ST20
	Designer Outlet	ST21
	N Clifton Moor	ST14
	Whinthorpe	ST15
<b>EMPLOYMENT USES</b>	Monks Cross North	-
	York Central	-
	Northminster Business Park	-
	Terry's	-
	Cement Works Monks Cross	-
	Ford Garage Jockey Lane	-
	Nestle South	-
	Hungate	-
	Plot 6b Monks Cross Drive	-
Land N Monks Cross Drive	-	

## Scenarios modelled

A range of traffic composition scenarios for 2021 have been modelled to determine which AQAP3 measures are likely to have the greatest emissions impact. These included:

- Base 2021 Business as usual (no AQAP3 interventions)
- 2021 with various levels of AQAP3 intervention including:
  - 2021 (with 1.5% and 5% electric cars in the fleet respectively)
  - 2021 with 90% hybrid buses in the fleet
  - 2021 with 90% electric buses in the fleet

2021 with various % combinations of electric cars and electric buses.

A more detailed account of the emission impact modelling work (including the results for a wider range of vehicle scenarios) will be provided as a technical annex to AQAP 3.