

## 1. Introduction

- 1.1 Transport for Greater Manchester, Manchester City Council, and Salford City Council (collectively called the client-group in these Terms of Reference) are carrying out a refresh of the Transport Strategy for Manchester City Centre, published in November 2010.
- 1.2 The Manchester and Salford Inner Relief Route (MSIRR) is increasingly congested and creates severance, limiting the scope for expansion of the city centre.
- 1.3 East of Manchester City Centre, a section of Intermediate Ring Road has been open for some years between Oldham Road and Hyde Road: moving traffic from the MSIRR to that section of the Intermediate Ring Road would reduce severance on the north-east section of MSIRR.
- 1.4 The client-group has carried out some initial option identification on how to reduce severance on the MSIRR on the north-east side of Manchester City Centre, especially in relation to possibilities for shifting traffic outwards onto the section of MSIRR between Oldham Road and Hyde Road.
- 1.5 A separate more detailed study is underway to design options for increasing the capacity of the Regent Street – Water Street junction (A57 – A6042) which has been identified as the critical pinch-point on the MSIRR. Emerging findings of that study indicated that it is appropriate to assume that a substantial capacity increase at that junction will have been achieved.

## 2. Forecast Assumptions

- 2.1 The future year highway networks have been developed for the scheme opening year of 2020. The platform for developing future year networks was the 2014 calibrated and validated MSIRR Regent Road highway model.
- 2.2 Future year networks have been developed to represent traffic conditions for the following time periods:
- AM Peak Hour (08:00 to 09:00);
  - PM Peak Hour (17:00 to 18:00).
- 2.3 The development of the without scheme scenario includes the following key committed schemes:
- Cross City Bus; and
  - Second City Centre Crossing (2CC); and
  - Regent Road Corridor Improvements
- 2.4 These schemes have been included in both forecast years and are considered the most significant for the Regent Road corridor and the Regional Centre as a whole.
- 2.5 The proposed scheme was coded using plan XR\_20919441100 Draft 4 provided by Manchester City Council. The scheme involves reducing capacity on Great Ancoats Street between Oldham Street and Adair Street and restricting access on the parallel routes of Varley Street and Butler Street.
- 2.6 The signal timings and staging were reviewed by the Urban Traffic Control Unit following an initial run of the model.
- 2.7 The Greater Manchester demand model, GMVDM02, was used to generate travel matrix forecasts (constrained to NTEM v6.2) for the forecast year of 2020.
- 2.8 A development uncertainty log has been prepared by Salford City Council and Manchester City Council covering the developments within the vicinity of Great Ancoats Street and on the Regent Road corridor and Middlewood Locks. Table 2.1 below presents an inventory of proposed developments that have been included in the initial forecasts. The geographic location of these developments is shown in Figure 2.1 and listed in Table 2.1.
- 2.9 Developments identified as “Near Certain” or “More than Likely” in the Scheme Uncertainty Log were then added to the cordon model matrices and the overall growth in the model constrained such that the additional traffic generated by the developments did not increase overall growth in traffic demand in the modelled area.
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- 2.10 A number of proposed developments were not included in the modelling as they were not expected to be in place by 2020. These included Woden Street, Middlewood Locks and Middlewood Granada Site in Salford and St John's and Great Jackson Street in Manchester.

District	Location No	Location Description	SATURN Zn	Development Type	Size	Units	2020 Build Out	Model Explicitly?
Manchester	M4	Central Retail Park	994	Retail			All	Yes
Salford	S18	Irwell Street	995	Mixed Use			All	Yes
Manchester	M5	NOMA - new car park	996	Mixed Use			All	Yes
Manchester	M6	Collyhurst	997	Houses non-private	2321	dwellings	All	Yes
Manchester	M7	Miles Platting	998	Houses non-private	1223	dwellings	All	Yes
Manchester	M8	Holt Town	999	Houses non-private	1800	dwellings	All	Yes
Manchester	M9	Lower Medlock Valley	1000	Flats private	800	dwellings	All	Yes
Manchester	M10	New Islington	1001	Flats private	1092	dwellings	All	Yes
Manchester	M11	Ancoats	1002	Flats private	1262	dwellings	All	Yes
Manchester	M12	NOMA	1003	Flats private	1000	dwellings	All	Yes
Salford	S11	Wilburn Basin	1004	Residential	491	dwellings	All	Yes
Manchester	M1	Water Street	1005	Residential	301	dwellings	All	Yes

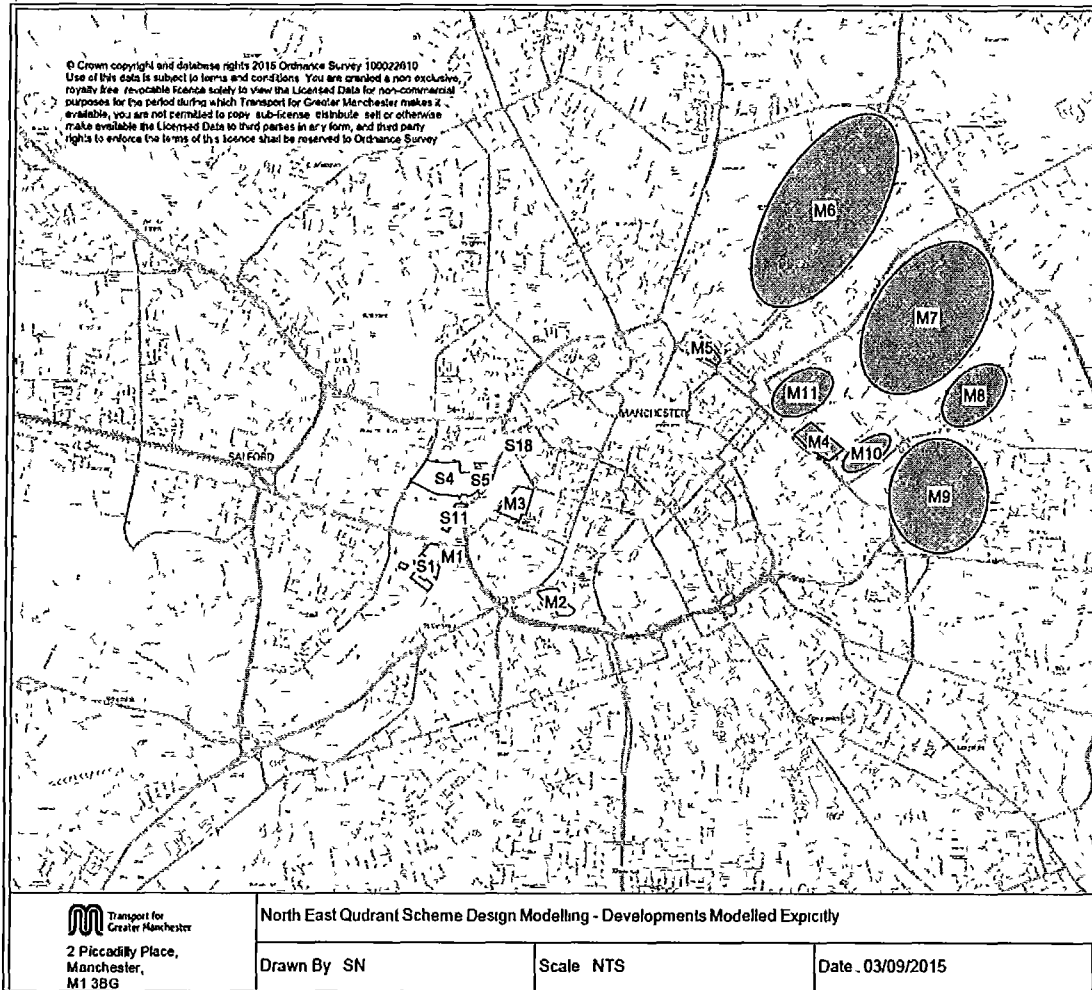
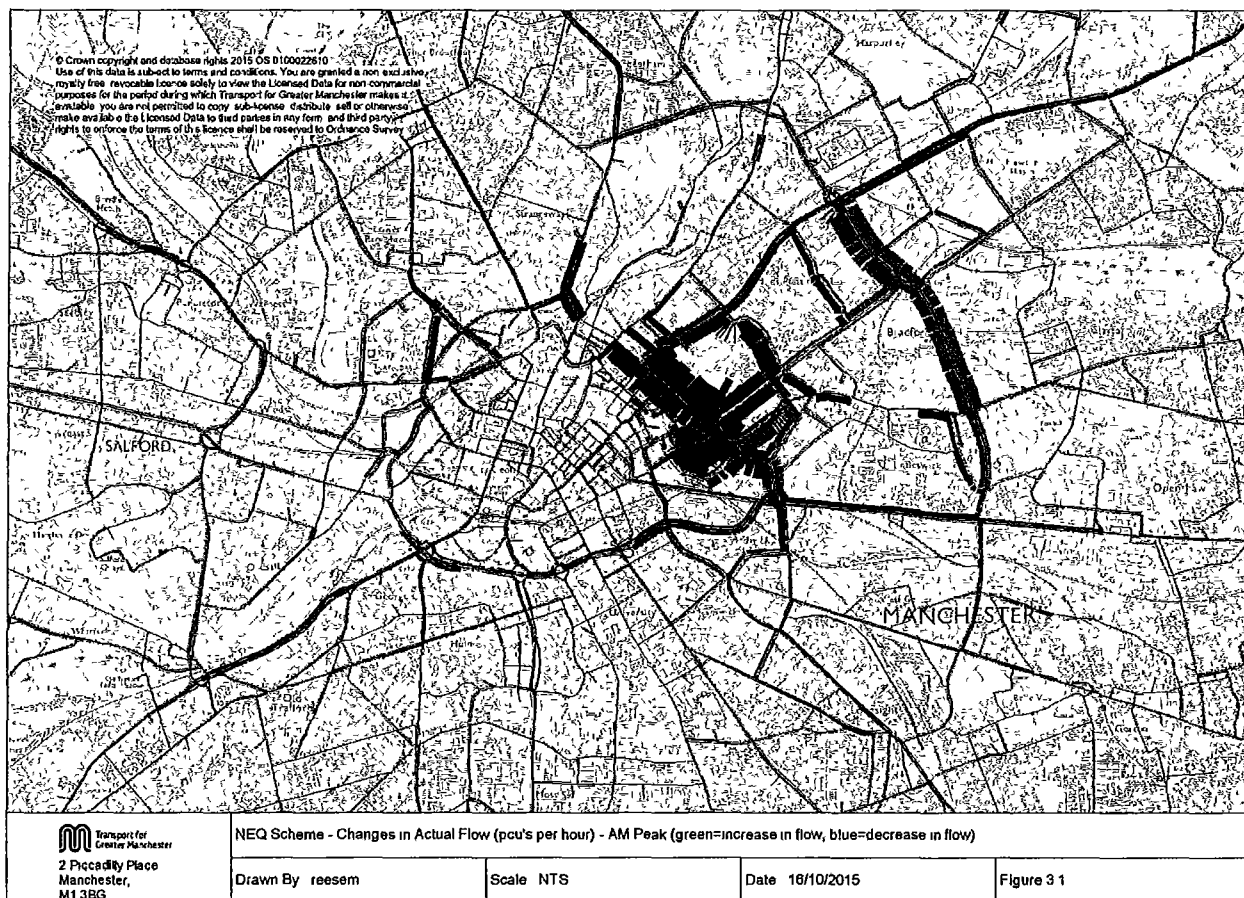


Figure 2.1 – Forecast Development Locations

### 3. SATURN Model Impacts

- 3.1 The revised scheme was coded into 2020 forecasts of the SATURN model for the two modelled time periods; weekday and evening peak hours. Figures 3.1 and Figure 3.2 show the overall reassignment impacts of the proposed scheme for the AM and PM peak hours respectively.
- 3.2 In the morning peak, the proposed scheme would result in a maximum reduction in flow on Great Ancoats Street of approximately 850 pcu's two-way north of its junction with Old Mill Street. It should be noted that a proportion of that decrease is as a result of localised reassignment of forecast traffic onto parallel routes into the Regional Centre. The majority of that traffic (approximately 500 pcu's) is forecast to reassign onto the Intermediate Ring Road between Ashton Old Road and Oldham Road.
- 3.3 Within the Regional Centre the changes in flow are lower with the major increases in flow as a result of traffic on the Inner Relief Route accessing the Regional Centre via an alternative route such as Adair street (increase of approximately 200 pcu's) and Ducie Street (increase of approximately 300 pcu's) rather than Store Street (decrease of approximately 500 pcu's). Excluding these parallel routes the majority of changes in flow within the Regional Centre are within +/- 50 pcu's



- 3.4 In the evening peak, the proposed scheme would result in a maximum reduction in flow on Great Ancoats Street of approximately 1200 pcu's two-way occurs south of its junction with Old Mill Street. Again, it should be noted that a proportion of that decrease is as a result of localised reassignment of forecast traffic onto parallel routes into the Regional Centre. The majority of that traffic (approximately 600 pcu's) is forecast to reassign onto the Intermediate Ring Road between Ashton Old Road and Oldham Road and approximately 200 pcu's onto the M60.
- 3.5 Within the Regional Centre the changes in flow are lower with the major increases in flow as a result of traffic on the inner Relief Route accessing the Regional Centre via Adair street (increase of approximately 175 pcu's) and Ducie Street (increase of approximately 400 pcu's) rather than Store Street (decrease of approximately 230 pcu's). Excluding these parallel routes the majority of changes in flow within the Regional Centre are within +/- 50 pcu's. However, the changes on Great Ancoats Street result in a decrease in flow on the Mancunian Way (westbound) of approximately 200 pcu's
- 3.6 Table 3.1 provides a more detailed comparison of flows for a selection of links in the vicinity of the scheme.

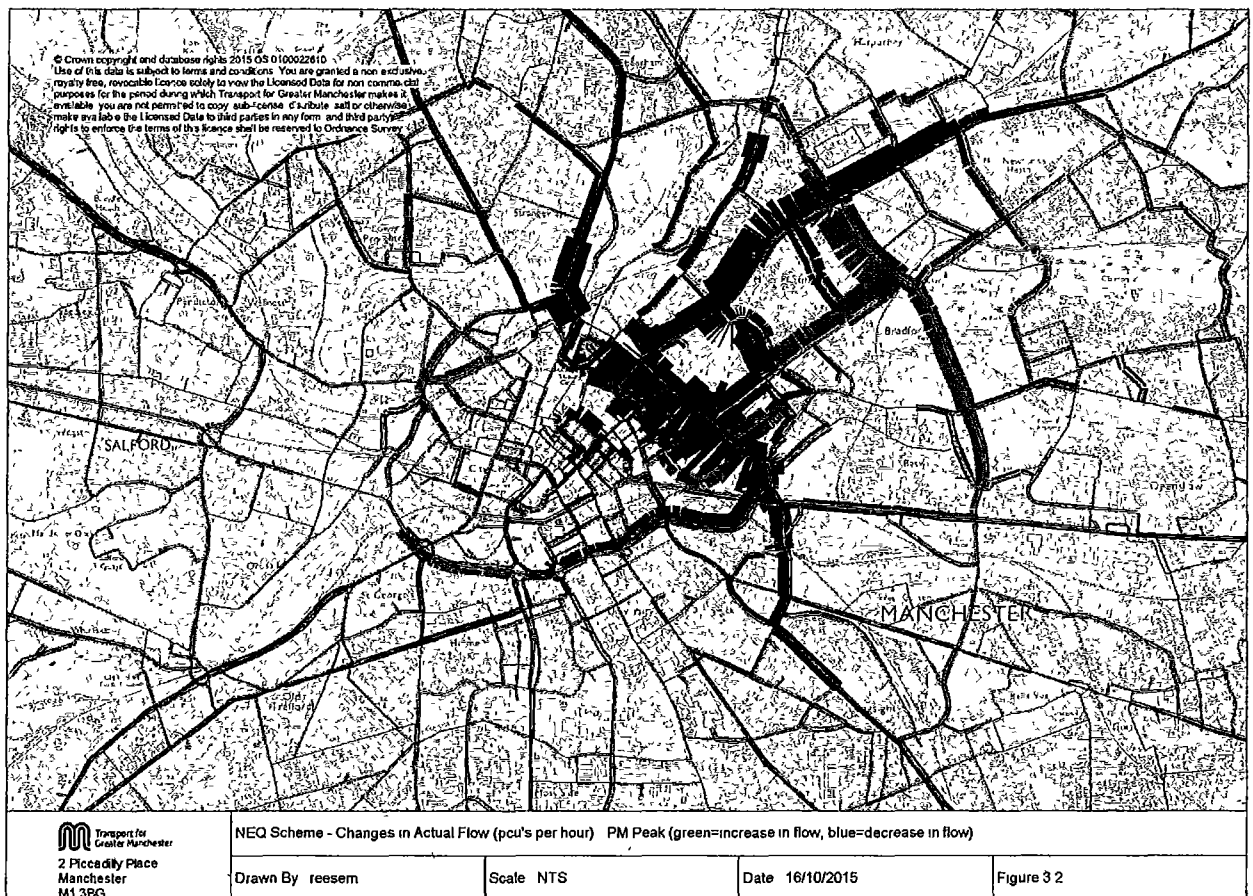


Table 3.1: NEQ - Flow Changes on Specific Links (pcu's per hour)								
Location	From/To	Direction	AM Peak			PM Peak		
			Do-Minimum	Do Something	Difference	Do-Minimum	Do Something	Difference
Great Ancoats Street	Oldham Street to Lever Street	Southeast bound	1309	947	-362	1086	801	-285
		Northwest bound	1339	1133	-206	2118	1231	-886
	Ducie Street to Old Mill street	Southeast bound	1402	758	-644	1435	860	-575
		Northwest bound	1207	1010	-197	1600	947	-653
	Old Mill Street to Pollard Street	Southeast bound	1248	961	-287	1176	775	-401
		Northwest bound	1224	899	-325	2009	1180	-829
Oldham Road	Varley Street to Intermediate Ring Road	Northbound	855	807	-48	1505	1101	-404
		Southbound	1314	1312	-2	838	940	102
Bradford Street	Varley Street to Intermediate Ring Road	Northbound	193	305	112	444	777	333
		Southbound	1042	1092	50	542	632	91
Queens Road	Rochdale Road to Monsall Street	Southbound	1019	1032	13	955	1036	81
		Northbound	1123	1163	41	766	832	66
Alan Turing Way	Oldham Road to Bradford Street	Southbound	1037	1234	197	797	958	161
		Northbound	668	941	273	621	1049	428
Lever Street	South of Great Ancoats Street	Northbound	224	336	112	438	364	-73
Newton Street	South of Great Ancoats Street	Northbound	18	27	9	267	201	-66
		Southbound	94	121	27	234	128	-106
Port Street	South of Great Ancoats Street	Northbound	229	244	16	164	249	85
Laystall Street	South of Great Ancoats Street	Northbound	278	582	303	135	360	225
Ducie Street	South of Great Ancoats Street	Southbound	14	8	-6	114	88	-26
Store Street	South of Great Ancoats Street	Northbound	82	82	0	221	241	20
		Southbound	568	85	-483	373	137	-236
Adair street	South of Great Ancoats Street	Northbound	77	53	-24	408	336	-72
		Southbound	402	613	211	217	380	163
Mancunian Way	East of London Road	Eastbound	1711	1681	-31	2595	2398	-197
		Westbound	2629	2579	-49	1500	1538	38

3.7 Table 3.2 summarises network summary statistics for the Do-Minimum and Do-Something scenarios at 2020.

3.8 In the morning peak, the total pcu hours and pcu km both increase, so forecast traffic is required to travel greater distances and take longer to get to its destination but the overall speed across the simulation area stays constant at 32.1 kph. There is a slight increase in the overall queuing on the network of 20 pcu hours.

3.9 In the evening peak, again the total pcu hours and pcu km both increase albeit by a greater margin than the morning peak, so forecast traffic is required to travel greater distances and take longer to get to its destination and the overall speed across the simulation area reduces from 33.6kph to 33.5 kph. There is a slight increase in the overall queuing on the network of 337 pcu hours.

3.10 Given the nature of the scheme which is reducing capacity on a more direct link coupled with restricting access on the parallel routes of Varley Street and Butler Street the increase in time and distance travelled would be expected. The evening peak does show a greater increase but this is reflected in the reassignment impacts shown in Figure 3.2 which are over a broader area than the morning peak.

Network Statistic	2020 - AM Peak		2020- PM Peak	
	Do-Minimum	Do-Something	Do-Minimum	Do-Something
Over capacity queuing (PCU hrs)	10378	10398	10936	11273
Total travel time (PCU hrs)	137,958	138,084	134,749	134,749
Total travel distance (PCU Km)	4,433,328	4,434,547	4,503,875	4,507,876
Average network speed (Kph)	32.1	32.1	33.6	33.5
Total Trips Loaded (PCUs)	981,495	981,495	929,018	929,018

3.11 Following discussions with the Urban Control Traffic Unit it was decided that any junction which experiences an increase in flow greater than 10% should be assessed further. Those junctions are;

- Queens Road/Rochdale Road
- Queens Road/Oldham Road
- Ten Acres Lane/Briscoe Lane
- Ashton New Road/Hulme Hall Lane
- Ashton Old Road/Alan Turning Way
- Briscoe Lane/Alan Turing Way
- Hulme Hall Lane/Oldham Road
- Junctions around The Gateway/Monsall Road
- Trinity Way/Blackfriars Road
- Rochdale Road/Topley Street/Scropton Street
- Regent Road/Water Street (Scheme in place)
- Trinity Way/Chapel Street