AIR QUALITY DETAILED ASSESSMENT REPORT 2016

Peel Hall Planning Appeal Summary document

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Executive Summary

Warrington Borough Council's Progress Report 2014 and Updated Screening Assessment 2015 identified areas with exceedances of, and close to, the nitrogen dioxide annual mean objective for relevant receptors outside of current Air Quality Management Areas (AQMA).

This report presents all the available evidence to consider the likelihood of exceedance for relevant receptors. The report has been prepared in accordance with the relevant Local Air Quality Management Technical Guidance Note LAQM.TG(16).

The areas of concern are:

- Chester Road
- Wilderspool Causeway
- Knutsford Road and Latchford Village
- Winwick Road
- Town centre area: Mersey Street, Crosfield Street, Bewsey Street

It is concluded that for the areas under consideration there remains a 'likelihood' of exceedance in the objective level and the Council should progress to designating these as AQMAs. Nitrogen dioxide levels remain close to the objective level and annual averages can fluctuate due metrological conditions.

The dominant source of nitrogen dioxide has been assessed to be from local traffic emissions. From studying traffic data and road layout there is a clear linkage between the routes, therefore a single AQMA is proposed to enable effective action planning. Our research has shown that pollution levels drop off rapidly from roadside. Due to the levels being close to the objective, the extent of exceedance has been concluded to affect receptors closest to the roadside. The proposed extent of the AQMA is to cover, as a minimum, these receptors.

The current Parker Street AQMA links into Crosfield Street and to Wilson Patten Street into the Bridgefoot area. Similarly, the Sankey Green Island AQMA links between Sankey Way and to Midland Way and the town centre. Therefore the new AQMA is proposed to include these areas with the existing AQMA orders for Parker Street and Sankey Green Island to be revoked.

1 Introduction

1.1 Background

Warrington has monitored its air quality for a number of years, in accordance with the provisions of the Environment Act 1995. The first formal review of air quality was undertaken in June 2000. The review, in common with many local authorities, was largely undertaken on the basis of modelled results from atmospheric dispersion models. This review concluded that the vast majority of Warrington would comply with all the objectives by the relevant year 2010. For reference, a copy of the objectives is included in Appendix 1.

However, subsequent annual reviews have not observed the predicted improvements for the annual nitrogen dioxide (NO_2) objective, which is similar with air quality levels nationally. This is thought to be due to modelled predictions not accurately predicting “real world” engine performance and the increase in diesel vehicles. A summary of the annual reports and conclusions is included within Appendix 2.

The vast majority of the borough complies with all the air quality objectives, however targeted monitoring has indicated a risk of slight exceedances of the annual mean objective for NO_2 for receptors closest to major arterial roads that link into the town centre.

Currently the Council has designated 3 Air Quality Management Areas (AQMAs) due to exceedances in the annual NO_2 objective:

- the motorway network;
- Parker Street;
- Sankey Green Island.

Monitoring, as reported in the annual reports, continues to validate the designation of these existing AQMAs.

Areas close to the busy arterial routes that lead to and from the town centre were believed to be close to, but below, the annual mean nitrogen dioxide objective once modelling uncertainty had been accounted for. Since 2009, the Council expanded its' monitoring programme to investigate further these routes which had always been ruled out following the previous modelling assessments. These four major roads, Chester Road, Wilderspool Causeway, and Knutsford Road to the South and Winwick Road to the north of Warrington contain a number of relevant receptors close to the road side. Chester Road, Wilderspool Causeway and Knutsford Road are major town centre link roads leading across the Manchester Ship Canal via swing bridges from the M56 to the town centre via the Bridgefoot Gyratory System. Operation of the swing bridges can affect traffic flow and congestion on these routes. Winwick Road leads from the M62 to the North of Warrington into the town centre ring road. All routes can suffer major congestion and increased traffic flow where there are traffic incidents on the motorway network that cause traffic to divert through Warrington.

Reporting since the Updated Screening Assessment (USA) 2012 has highlighted a number of locations close to and exceeding the NO_2 mean objective limit. There are no locations measured where the 1 hour mean objective limit would be expected to be exceeded. These reports have concluded that the Council needs to progress to a detailed assessment for the following areas. In addition, the USA 2015 reported continued exceedances along Winwick Road. There are no measured exceedances in any of the other pollutants contained within the objectives

1.2 Purpose of the Detailed Assessment

The USAs have indicated that there is a risk of the air quality objectives for annual mean NO_2 not being achieved in areas outside current AQMAs. Therefore the Council must proceed to a Detailed Assessment.

The aim of this Detailed Assessment is to determine, with reasonable certainty, whether or not there is a likelihood of the objectives not being achieved. There have been no reported or expected exceedances for any of

the other pollutants within the objectives, therefore this assessment will concentrate on the risk of exceedance for the annual mean NO_2 objective only.

This detailed assessment has been prepared following conclusions from the USAs 2012 and 2015, and the Progress Reports in 2013 and 2014 which highlighted a number of locations, close to, and exceed the mean annual objective limit for NO_2.

This assessment will attempt to assess the level and source of any potential exceedance. The geographical extent of any exceedance and the type and number of relevant receptors will be considered.

A conclusion will be made on whether the Council will need to progress designating any new AQMAs or amending any current designations.

1.3 Locations to be assessed

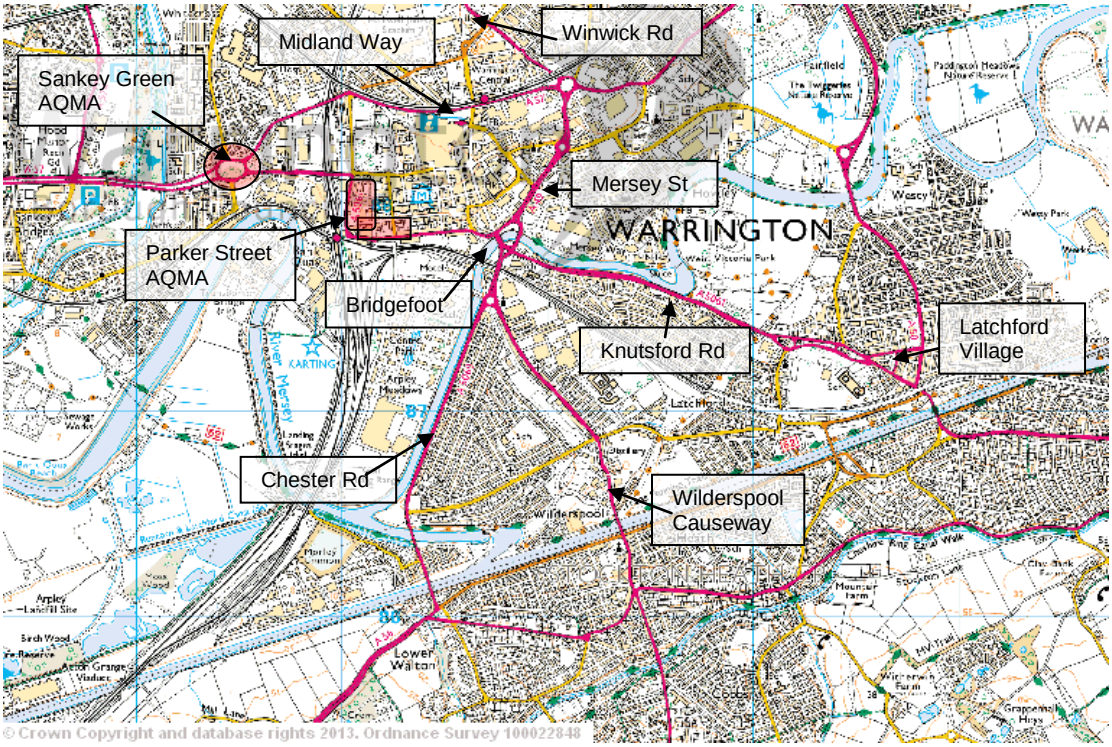
The specific areas under consideration are:

- Town centre area: Mersey Street, Crosfield Street, Bewsey Street
- Chester Road
- Wilderspool Causeway
- Knutsford Road/Latchford Village
- Winwick Road

The assessment is to be conducted by reviewing all sources of existing relevant information.

Key areas that are being assessed are shown in Figure 1.

Figure 1: Areas under consideration



2.5 Winwick Road

2.5.1 Description and Monitoring Locations

Winwick Road is a major road (A49) that leads from junction 9 of the M62 from the north of Warrington south through to Lythgoes Lane to the town centre at the Cockhedge Roundabout. A number of roads intersect Winwick Road at traffic lighted junctions primarily Long Lane, Kerfoot Street/Longford Street and Orford Lane. There is a major retail centre, Alban Retail Park, a sixth form College Warrington Collegiate and a major Supermarket.

2.5.2 Monitoring Locations

Winwick Road 1 is located outside 379 Winwick Road housing association flats close to the main road near the junction to Orford Jubilee Hub. Winwick Road 2 is located by a car sales dealership near the junction with Long Lane and represents the distance of residential close by from roadside. Additional monitoring has been carried out at Long Lane for residential closest to the junction with Winwick Road opposite Warrington Collegiate.

Harvey Court and Winwick Road 3 locations were placed out following a planning application air quality assessment which highlighted potential exceedances at these locations along Sandy Lane West. Monitoring locations are shown in table 24 and figure 15.

Figure 15: Map of Winwick Road monitoring locations

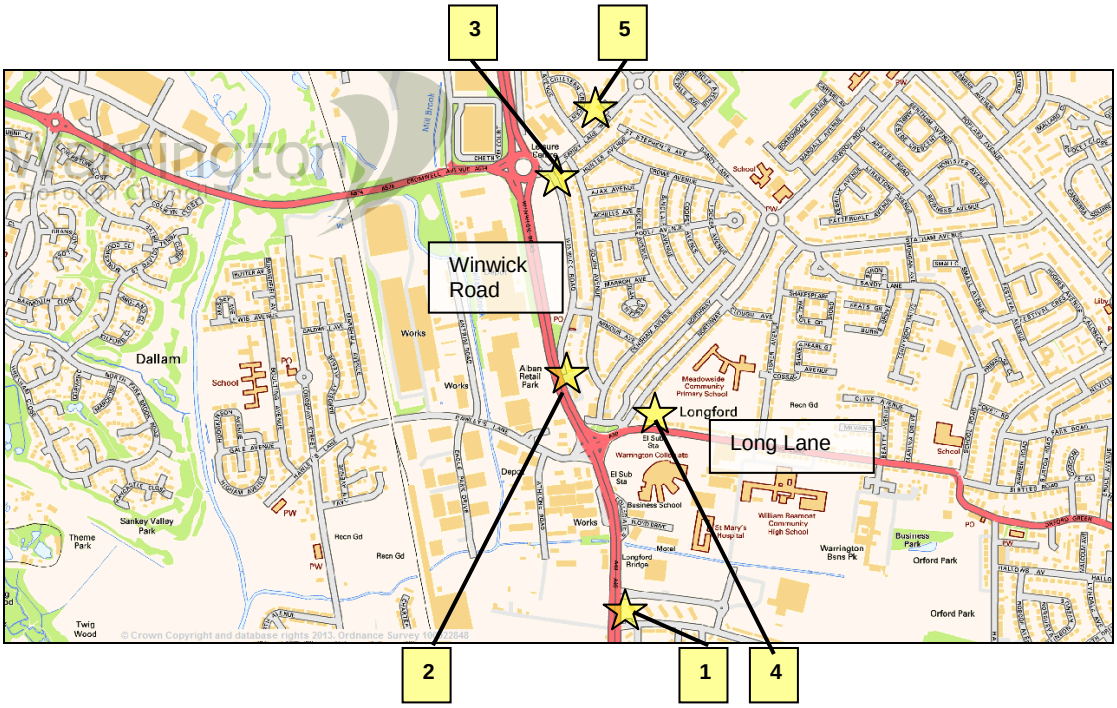


Table 24: Winwick Road monitoring locations

	Site Name	Monitoring type	Monitoring distance to kerbside	Receptor distance to kerbside	Grid Reference	Description of site
1	Winwick Road 1	Diffusion Tube	5m	10m	360,598 389,820	Located outside 379 Winwick Road Flats closest to main road
2	Winwick Road 2	Diffusion Tube	5m	8m	360,484 390,416	On Lamp post outside Skoda dealership but at distance representing closest residential to Winwick Road
3	Winwick Road 3	Diffusion Tube	5m	5m	360,434 390,968	Located on corner of Sandy Lane West/Winwick Road junction outside residential
4	Long Lane	Diffusion Tube	8m	13m	360,647 390,362	On telegraph pole outside residential at 129 Long Lane opposite Warrington Collegiate
5	Harvey Court Sandy Lane West	Diffusion Tube	5m	5m	360,564 391,127	On lamp post at 1 Harvey Court off Sandy Lane West.

2.5.3 Winwick Road monitoring results

Monitoring results are shown in table 25. Distance corrected results, where applicable, to the façade of the nearest sensitive receptor to roadside are shown in brackets.

Table 25: Winwick Road monitoring results and trend

	Location	Annual Mean Concentration (µg/m^3)		
		2013	2014	2015
	Selby Street urban background	26	21	25
1	Winwick Road 1	**46 (42)**	32 (30)	**40** (37)
2	Winwick Road 2	**59 (55)**	**45 (42)**	**47 (44)**
3	Winwick Road 3	-	**40**	**52**
4	Long Lane	**42 (40)**	32 (30)	**43 (40)**
5	Harvey Court Sandy Lane West	**-**	27	38

Winwick Road 1 continues to show levels that are close to and can exceed the objective limit at the façade of the flats closest to the main road.

Winwick Road 2 shows exceedances in the objective limit due to the close proximity of the residential to roadside. These exceedances would be expected due to queuing traffic approaching the junction with Long Lane.

Winwick Road 3 and Harvey Court on Sandy Lane West show exceedances and support the findings of the modelling report received for this area. These properties will be affected by queueing traffic for the main Winwick Road junction and accessing the Fordton retail park.

Long Lane location had a number of missing tubes over the 12 month period in 2015 resulting in a poor data capture of 50%, so care should be taken in assessing the 2015 figure. This location is likely to be affected by queuing traffic at the junction with Winwick Road but previous results show this location to be likely to be slightly at or below the objective level.

Despite the levels at locations in 2014 being generally below the objectives across Warrington, there were still exceedances observed at Winwick Road 2 and 3.

2.5.4 Additional Information

There was a planning application (ref 2011/19315) received in 2011 for the Orford Hub Jubilee Park, a new Leisure Centre development off Winwick Road. Modelled receptor results are shown in figure 16 and table 24. This modelling suggested that levels would breach the national objective for properties closest to Winwick Road, which is confirmed by our monitoring. The receptors on Alder Lane show the drop off in emissions 20m further away from the main Winwick Road. The Long Lane receptors show possible exceedance 200m from the junction with Winwick Road that drops off to objective level which is supported by the monitoring.

Figure 16: Orford Jubilee Park modelling plot

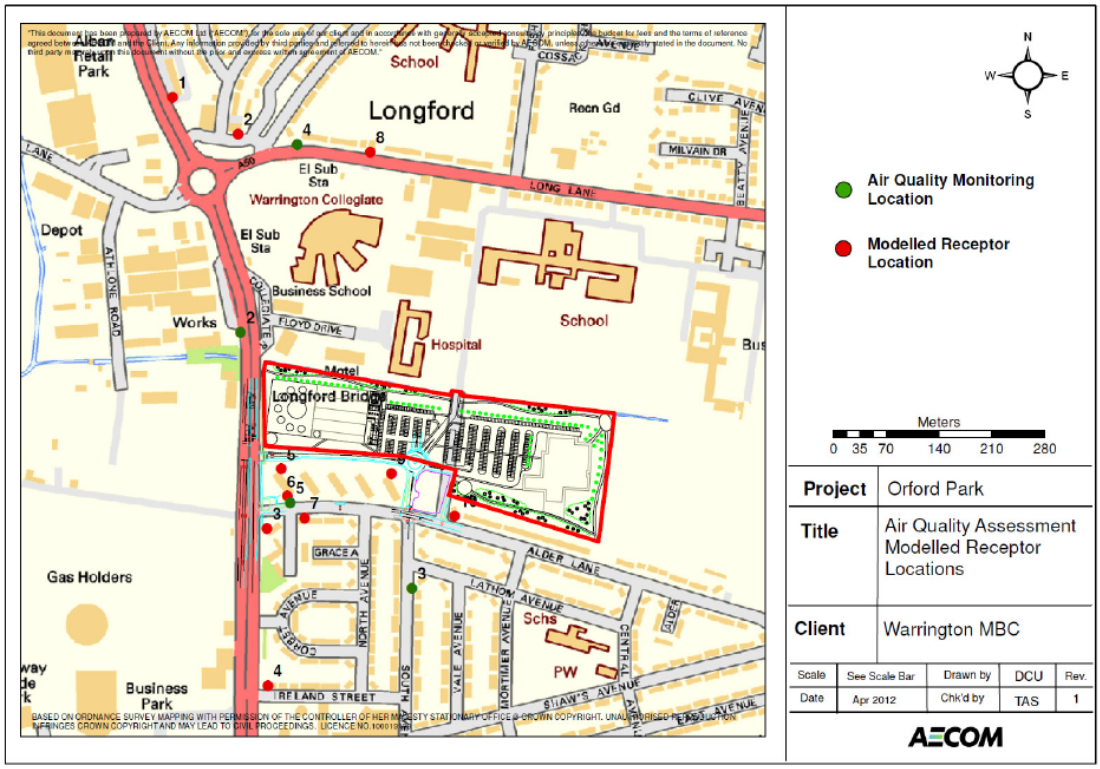


Table 26: Orford Jubilee Park receptor results

Modelled receptor	2012 predicted
1 – 451 Winwick Road residential	**51.9**
2 – 133 Long Lane residential	**42.9**
3 – 391 Winwick Road flats	**40.3**
4 – 2 Ireland Street flats	38.5
5 – 2 to 6 Alder Lane flats	36.7
6 – 8 to 12 Alder Lane flats	36.0
7 – 27 Alder Lane residential	34.4
8 – 103 Long Lane residential	39.7
9 – 50 to 54 Alder Lane flats	32.4
10 – 72 Alder Lane residential	31.9

A planning application for the demolition of the Fordton Leisure Centre (ref: 2013/21745) and for the development of a new supermarket, coffee shop and pub restaurant on the site provided an air quality assessment. This highlighted existing potential exceedances along Winwick Road and on Sandy Lane West that had not previously been monitored. Therefore following this information Sandy Lane West and Winwick Road 3 tubes were placed out to confirm the models findings. The contour plots, figure 17, and receptor modelling, table 27, show potential exceedance there is potential exceedance up to 30m from the main Winwick Road and for properties closest to Sandy Lane West. The modeling also demonstrates the drop off along Sandy Lane West and from Winwick Road. The exceedances would include Harvey Court on Sankey Lane West and on Toll Bar Road for the properties within 30m of Winwick Road.

Figure 17: Fordton Leisure centre redevelopment contour plot

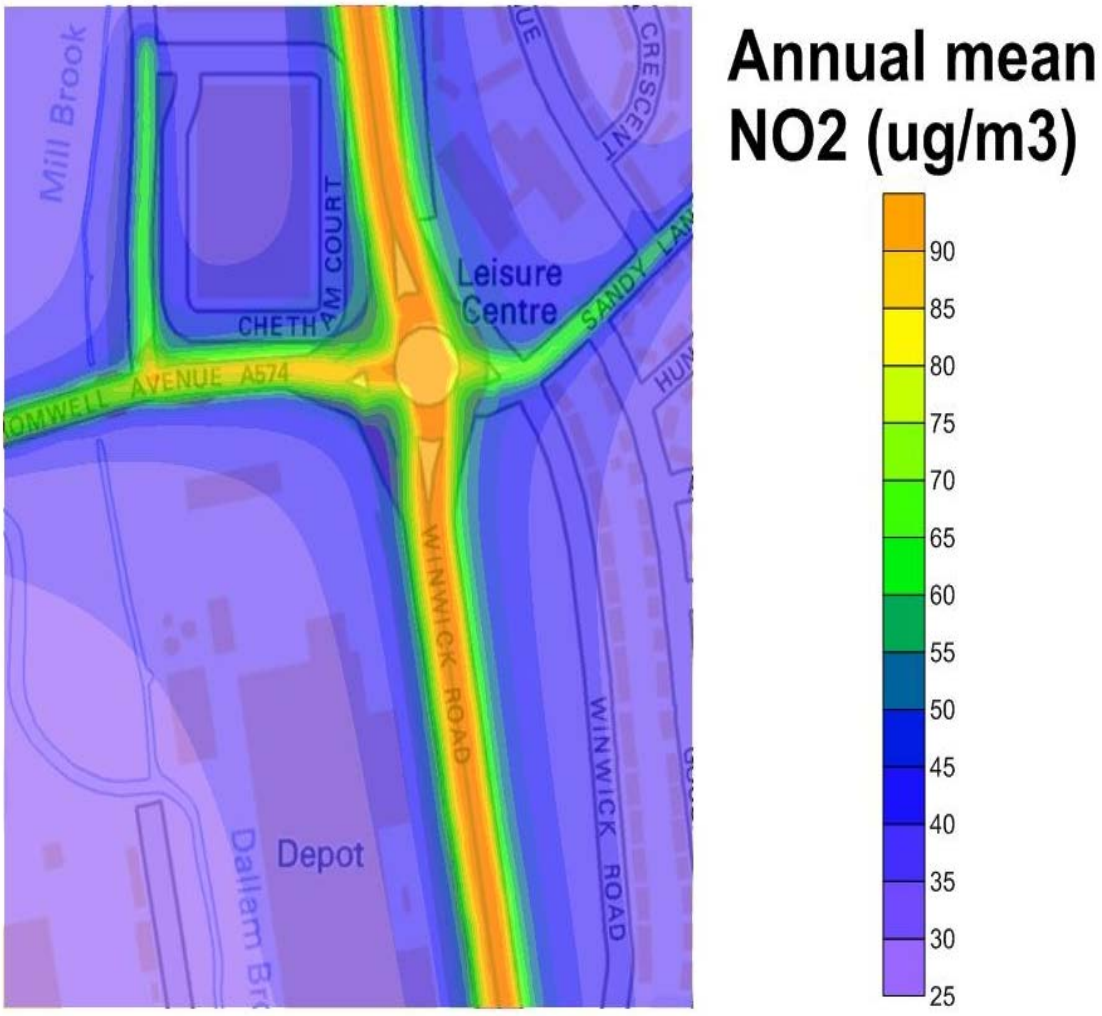
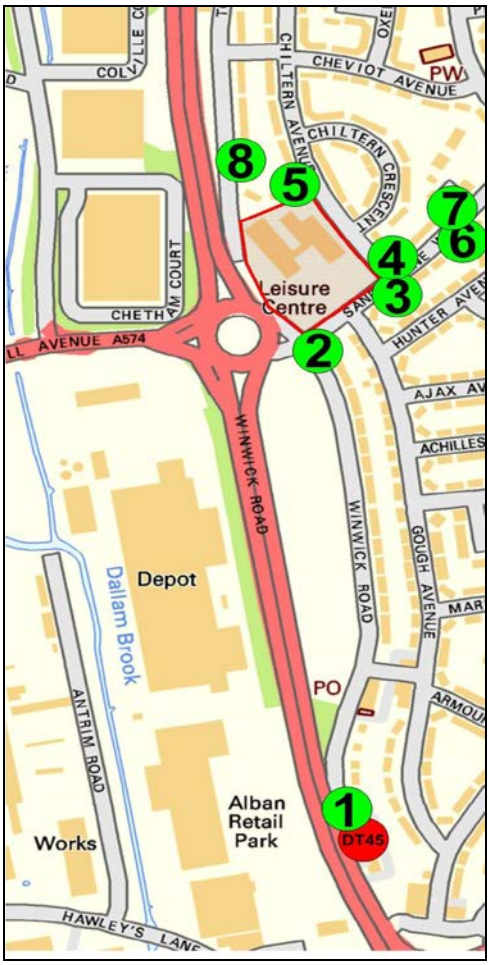


Table 27: Fordton Leisure centre redevelopment receptor

Receptor	2012
1 – 451 Winwick Road (represents monitoring point 2)	**56.7**
2 – 599 Winwick Road (represents monitoring point 3)	39.6
3 – 7 Sandy Lane West	38.7
4 – 2 Chiltern Road	**41.3**
5 – 1 Chiltern Road	36.0
6 – 29 Sandy Lane West	35.1
7 – 1 Harvey Court (represents monitoring point 5)	**43.2**
8 – Toll Bar Road	**45.0**



The planning application (ref: 2015/27031) for the new town centre Bridge Street quarter MSCP contained an air quality assessment that modelled 200 St Peters Way, the closest residential receptor to Lythgoes Lane on the approach to the Cockhedge roundabout. This highlighted that at this location there could be a slight exceedance on the annual objective limit. This helps to define the distance from road side for likely exceedance on the approach to the Cockhedge roundabout to approximately 20m.

2.5.5 Traffic data

Traffic flow along Winwick Road was measure using ANPR just north of the Lythgoes Lane End. At this point section of Winwick Road there is an AADT of 23,000 vehicles with a significant number of HGV and bus movements. This highlights potential exceedances in the objectives for any relevant receptors close to roadside.

Table 28: Winwick Road traffic data

		AADT	% cars	%LGV	%HGV	%Bus
Winwick Road	North bound away from Cockhedge roundabout	**10,956**	87.7% (9,608)	7.4% (811)	3.5% (383)	1.4% (153)
	South bound towards town centre	**12,167**	88.0% (10,707)	7.4% (900)	3.3% (402)	1.3% (158)
Total		**23,123**	20,315	1,711	785	311

Table 29: Winwick Road traffic destinations

Mode	Town Centre	Through traffic	Wilderspool Causeway	Chester Road	Wilson Patton Street	Mersey Street	Knutsford Road
Cars	54%	46%	12%	18%	8%	42%	7%
LDVs	42%	58%	18%	22%	8%	53%	7%
HGVs	49%	51%	13%	23%	7%	49%	5%
Buses	59%	41%	4%	17%	4%	36%	12%
TOTAL	53%	47%	13%	19%	8%	43%	7%

2.5.6 Relevant Exposure

Monitoring and modeling shows that along Winwick Road for relevant receptors closest to the roadside there continues to be exceedance or likely exceedance in the annual mean objective. Due to the mix of commercial and industrial areas, there are relatively few residential receptors close enough to the main Winwick Road/Lythgoes Lane which would exceed the objective limit. There are 90 residential houses and 47 flats with a risk of exceedance at the façade closest to the roadside. These receptors are not isolated to one area of the road but spread along the length although there is a cluster near the Sandy Lane West junction, the Long Lane Junction and the access to

Orford Jubilee Hub. There are no schools, children's nurseries or care homes on this stretch of road that would be affected.

Table 30: Receptors with a likelihood of exceedance

	Housing	Apartments/flats	Children's Nurseries	Care Homes
Newton Road	9	0	0	0
Winwick Road	24	13	0	0
Sandy Lane West	23	0	0	0
Harvey Court	2	0	0	0
Chiltern Road	1	0	0	0
Long Lane	7	0	0	0
Alder Lane	0	9	0	0
Corbett Avenue	4	0	0	0
Hale Street	3	0	0	0
Ireland Street	2	0	0	0
Melville Close	2	0	0	0
Watkin Street	2	0	0	0
Orford Lane	0	2	0	0
St Peters Way	11	1	0	0
Central Way	0	22 (Bailey Court)	0	0
Total	**90**	**47**	**0**	**0**

2.5.7 Conclusions

At monitoring points on Winwick Road, Long Lane and Sandy Lane West, there are measured levels close to and above the objective limit at facades of sensitive receptors closest to the roadside. These areas of likely exceedance are not currently designated as an AQMA.

Due to the levels measured being at and around the objective level, consideration of the modelling fall off of levels from the road side, there is not expected to be breaches further away beyond the nearest properties.

Due to the levels measured being at and around the objective level, consideration of the modelling fall off of levels from the road side, there is not expected to be breaches further away beyond the nearest properties more than 30m from Winwick Road roadside.

There are exceedances shown on Sandy Lane West for residential locations at roadside that should be designated within an AQMA. These exceedances are expected to be from Fordton roundabout at the Winwick Junction along Sandy Lane West to the roundabout junction with Sandy Lane.

The monitoring and modelling data for Long Lane shows potential exceedances for residential properties up to 200m from the junction with Winwick Road. These receptors need to be included within an AQMA.

Due to the traffic link between the M62 AQMA and to the town centre at Cockhedge roundabout it is proposed to extend an AQMA 25m either side of Winwick Road and to include Sandy Lane West and properties on Long Lane.

Figures 18 to 18.5 show the extent of the proposed AQMA.

Box 5: Action for Winwick Road

Progress to designating Winwick Road an AQMA. Boundaries to be:

- To extend to the M62 AQMA from the Cockhedge roundabout.
- To extend 25m either side of Winwick Road and Lythgoes Lane
- Sandy Lane West between Fordton roundabout east to Sandy Lane. To extend 15m either side of roadway
- Long Lane from Winwick Road junction to 119 Long Lane. To extend 25m either side of roadside.

Figure 18: Map of proposed Winwick Road AQMA

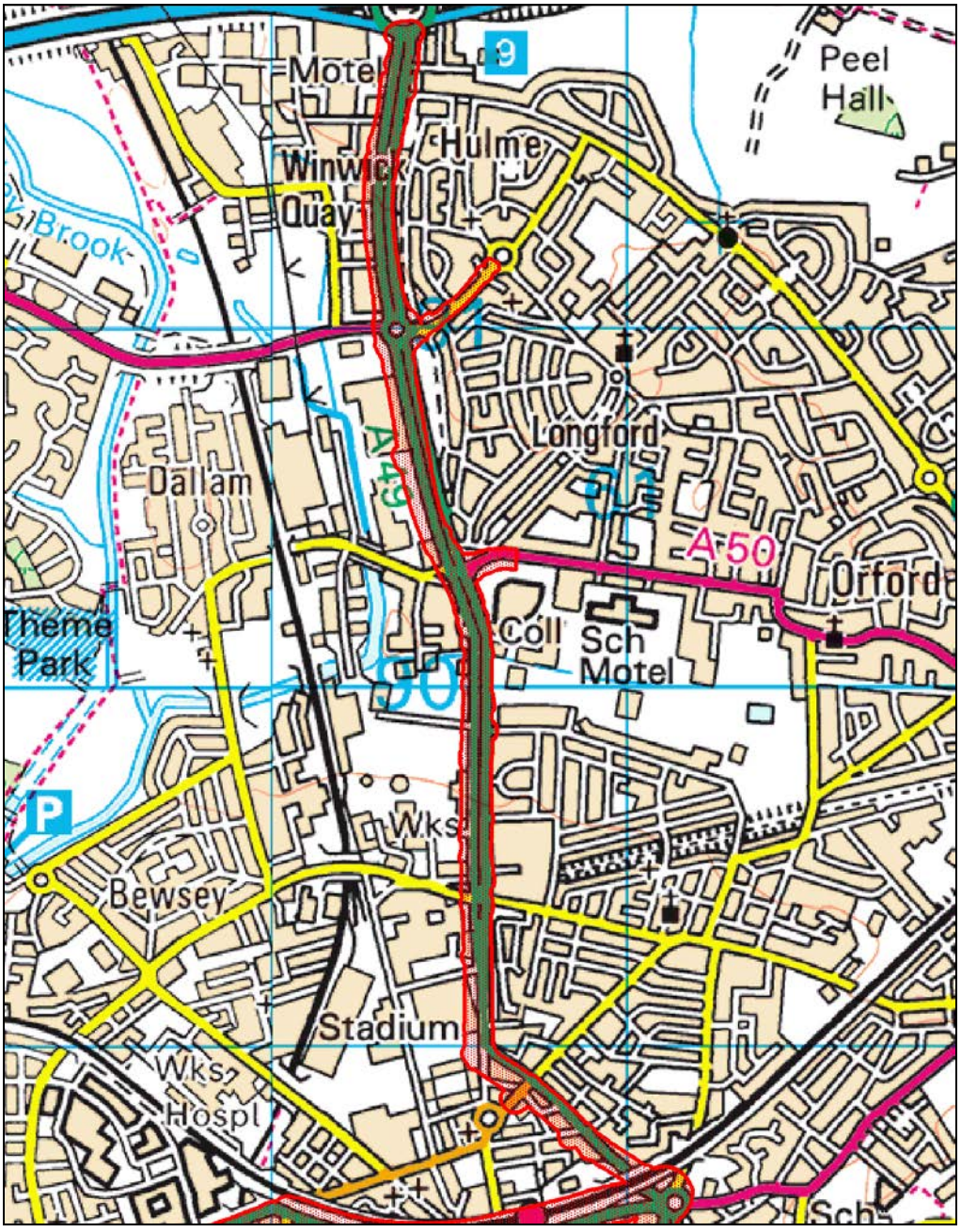


Figure 18.1: Winwick Road northern end from M62

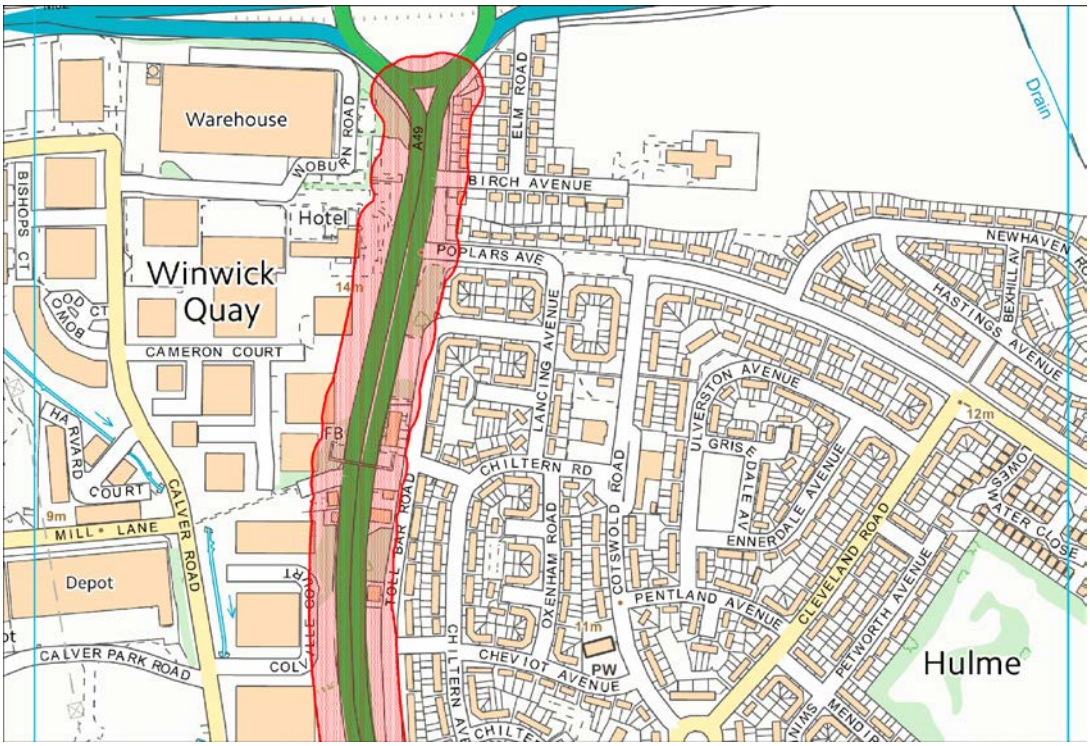


Figure 18.2: Winwick Road, Sandy Lane West

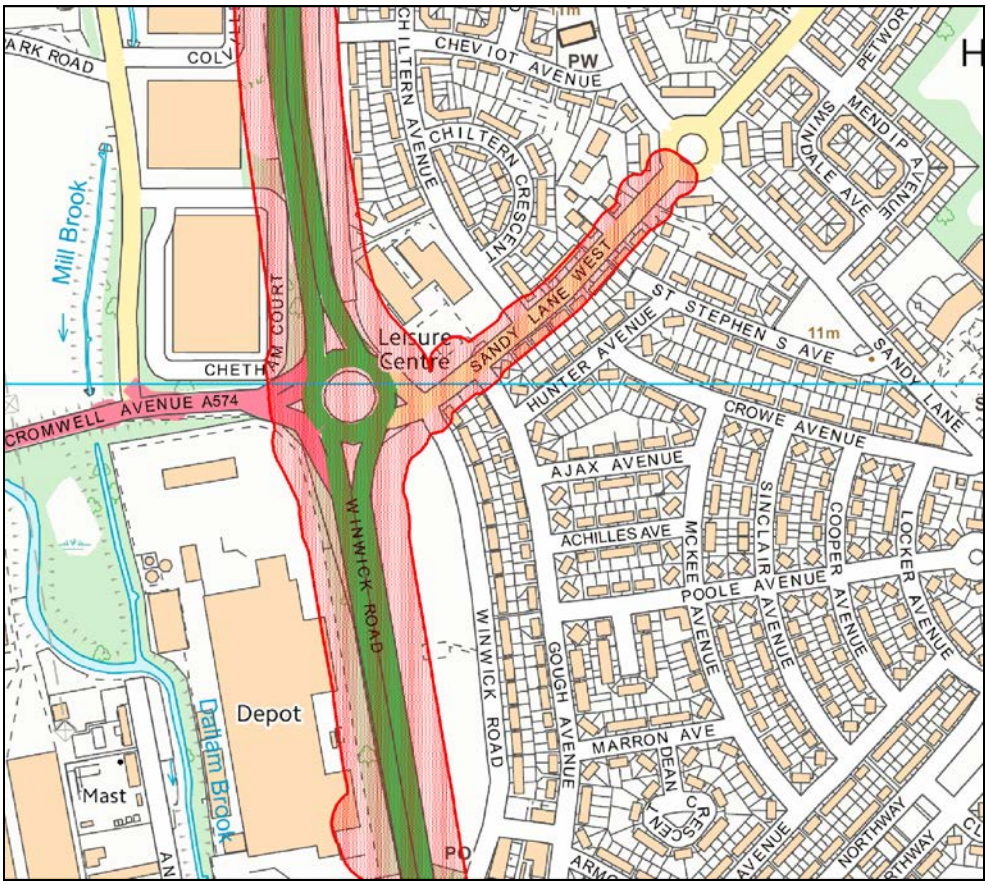
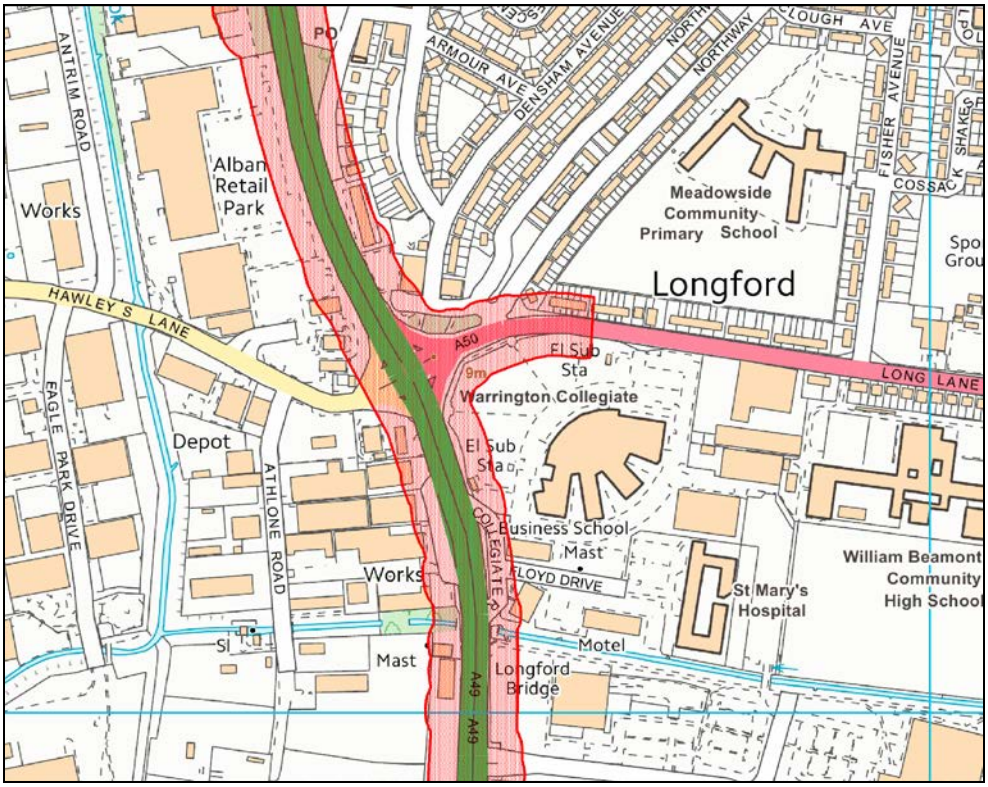


Figure 18.3: Winwick Road, Long Lane



3 Conclusion and recommendations

For all the major roads that lead into the town centre area which have relevant receptors close to the road side there is a likelihood of exceedance therefore the council needs to progress to designating those areas AQMAs.

Chester Road, Wilderspool Causeway and Knutsford Road all feed into the Bridgefoot area and are bisected by swing bridges across the Ship Canal. Traffic from these areas then either visits the town centre or travels around on the ring road either affecting Wilson Patten Street and Parker Street AQMA or Mersey Street depending upon destination.

Traffic from Winwick road travels into the town centre joining the ring road at Cockhedge roundabout. Traffic destination is then either for business in the centre or travels on to Midland Way or Mersey Street and Bridgefoot depending upon final destination route.

Similarly traffic on Sankey Way and Loverly Lane, that current affects the Sankey Way Island AQMA, is either through traffic from Midland Way or from Parker Street.

The town centre is a major source of significant traffic volume either for through traffic or for traffic planning to stop in the centre either for retail or for commercial reasons.

As in previous reviews and assessments the predominant source of pollution at a local level is from transport.

The road links between the town centre and the major roads are clear. To implement effective action planning to improve air quality all these areas need to be considered together and not in isolation.

Therefore a single large AQMA is proposed that will cover all areas within this Detailed Assessment where there is a risk of exceedance in the nitrogen dioxide annual mean objective. The extent of the AQMA boundary will include receptors not relevant for the annual mean objective but are included as a protective layer to enable effective action planning and planning policy. The proposed AQMA will include the current Parker Street and Sankey Green AQMAs, which will be revoked. The extent of the AQMA is shown in figure 19.

Box 6: Action for new AQMA

Progress to designating a single town AQMA. Boundaries to be:

- Winwick Road proposed AQMA
- Town Centre proposed AQMA
- Chester Road proposed AQMA
- Wilderspool Causeway proposed AQMA
- Knutsford Road and Latchford Village AQMA
- To include current Parker Street and Sankey Green Island AQMAs

Figure 19: New proposed single Warrington AQMA