

Air Quality and Dust Monitoring Monthly Report – January 2023 **Buckinghamshire** Council



Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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A report prepared by EWCs and MWCCs on behalf of HS2 Ltd.

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Monthly Summary

- 1.1.1 This Summary Report is published in fulfilment of commitments detailed in the High-Speed Rail (London-West Midlands) Environmental Minimum Requirements, Annex 1: Code of Construction Practice, for the nominated undertaker to present the results of dust monitoring undertaken in the Buckinghamshire Council (BC) during January 2023.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for January 2023.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report available from www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2, which highlights the applicable standards and guidance, as well as the air quality and dust monitoring methodologies to be implemented by nominated undertakers throughout construction.
- 1.1.4 The current worksites as presented in Appendix A, Figures 1-7, include:

CVV LTP1 worksite

- Jetty Piling: piling platform relocation works;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, grout curtain around viaduct pile groups maintenance plant and clean up around piles;
- North Embankment Compound: compound operation;
- DWSC Compound: compound operation;
- Haul Road and Jetty Maintenance – River Colne to GUC: operation and maintenance;
- Ground Investigation Works: GI works and Overwater GI Works;
- Pier Construction: standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- Pumping water management ;
- Satellite welfare;
- Generator farms;
- North Abutment Works: yard supporting activities and FRC works;
- Core Drilling of Concrete;
- Pile Trimming;
- A412 Gas Crossing Emergency Dismantling;
- SCS Material Storage;
- Fencing;
- Utility Diversion;
- Environmental Maintenance;
- Cofferdam Excavation;
- Bentonite Farms: Base Slab Construction;
- River Colne Crossing: Emergency removal of obstruction to RC Crossing;

- Launching Girder and Deck Works: Span segmental erection with launching gantry, shoring steel structure erection and dismantling, internal post-tensioning (PT) and grouting; and
- Deck Finishes: delivery of parapets, noise barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, construction of robust kerbs, installation of parapets, construction of concrete stitch filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within the deck.

Chalfont St Peter Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Connection to Tunnels: concrete floors; and
- Basement Construction: excavate to formation and headhouse concrete works.

Amersham Vent Shaft

- General Site Activities;
- Internal Structure: concrete walls and floors; and
- Basement Construction: excavation to B1 formation levels.

Chalfont St Giles Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connections to Tunnels: demolition and reinforced concrete works; and
- Basement Construction: excavation of basement and basement internals.

Little Missenden Vent Shaft

- General site activity;
- Collar Construction;
- Shaft Base Slab: concrete pour;
- Secondary Lining; and
- Small basement construction; capping beam and prop beams and excavation to B1 formation level.

Chesham Road Vent Shaft

- General site activity: general compound;
- Internal Structure: reinforced concrete works; and
- Superstructure: reinforced concrete works.

North Portal work site

- Site Establishment Works: site fencing;
- Access Road: drainage and services, scrape formation, hardstanding and kerbing, asphalt and signage;
- North Portal Barrettes and Headwall: demobilisation of D-wall piling equipment
- North Portal Compound: general plant;
- North Portal Road: general plant;
- North-Portal Building Platform: scraping / hardstanding / surfacing / services/ drainage;
- North-Portal Tracks Platform: scraping / hardstanding / surfacing / services / drainage;
- Piling Platform Reinstatement and Maintenance: scraping / hardstanding;
- Piling Platform Removal: dismantling related to areas D.1,D.2 piling platforms;
- Headwall Capping-Beam and Excavation: excavation / RC works/ temporary propping; and
- Portal Drainage: excavation / drainage installation / backfilling.

Calvert Area

- Charndon Lodge Underbridge* – rebar fixing, formwork lifting and concrete pouring.
- Charndon Lodge Pumping station – formwork reinforced concrete works.
- East West Rail Overbridge* – technical backfill.
- Perry Hill Overbridge* – rebar fixing, formwork lifting, concrete pouring and delivery of steel components.
- Addison Road Overbridge – approach earth embankments and assembly of steel deck.
- SCL/08 Overbridge – piling.
- OXD Culverts (EWR Culvert, IMD West Culvert and IMD East Culvert) – rebar fixing, formwork lifting and concrete pouring (no works at EWR Culvert or IMD East Culvert).
- Portway Culvert* – technical backfill.
- OXD Line Earthworks* – no works.
- Calvert Cutting* – no works.
- IMD* (Infrastructure maintenance depot) – no works.
- Hills Farm Earthworks – stockpile fill and maintenance.
- MCJ Line Earthworks – no works.
- Bat Mitigation Structure – sheet piling.
- GUN28 Overbridge – no works.
- River Ray Culvert and Adams Accommodation Underbridge – excavation and stone backfill, and installation of temporary flume pipe.
- Edgcott Road Overbridge – piling.
- Diddershall No.6 and No.7 Culvert – concreting of headwall and access chambers, and waterproofing.
- Quanton Temporary Utility Diversions* – utility connections, cable pulling and backfilling of UTX shafts.
- West Street Temporary Utility Diversions* – field trenching for duct laying, installation of connection chambers and utility connections.

- SGN Pipe Temporary Diversions* – field trenching for duct laying and connections
- Secant Retaining Wall* – no works.
- School Hill Batching Plant * – production of concrete.
- MHR Utilisation* – haulage of material across worksites.

Twyford to Greatworth

Twyford:

- Aggregate deliveries
- Processing Limestone (crushing and screening)
- Dewatering and drainage maintenance
- Haul Road Maintenance
- Ditch Installation
- Water Pipe Installation

Aylesbury

Moat Farm:

- Stoke Mandeville Bypass piling
- PRA Overbridge piling
- Stockpiling
- Siltbuster setup
- Earthworks – Aylesbury South Cutting

Westfield:

- PRA Overbridge Piling
- Earthworks – Aylesbury South Cutting
- Stockpiling
- Overhead utility diversion
- Haul road construction

Oat Close:

- Earthworks – Aylesbury Embankment
- Stockpiling
- Haul road construction

Glebe House:

- Earthworks – Aylesbury North Cutting
- Earthworks – A418 Overbridge
- A418 Overbridge Piling

- Stockpiling
- Piling platform works
- Haul road construction

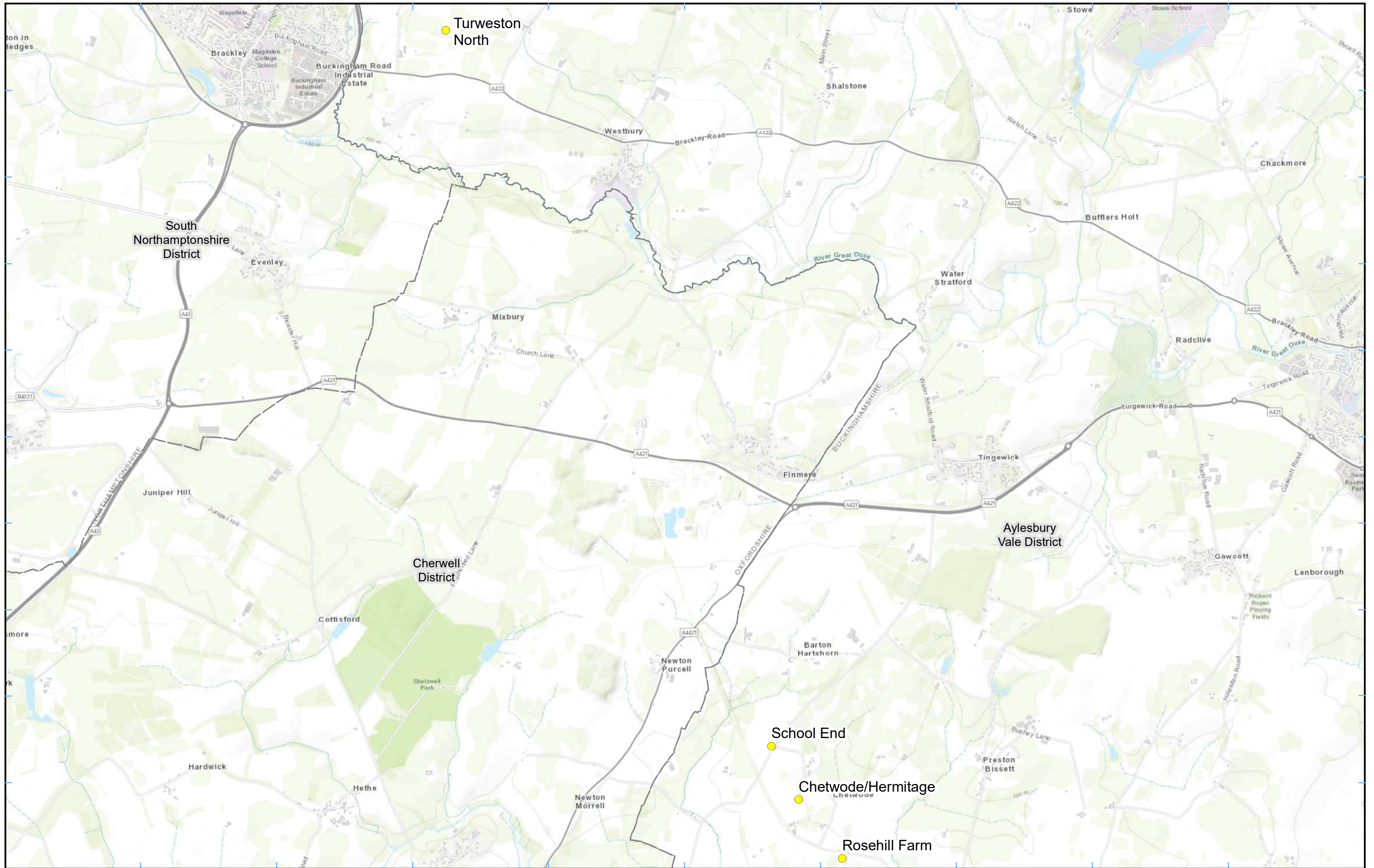
Meadoway:

- Earthworks – Aylesbury North Cutting
- A418 Overbridge piling
- Stockpiling
- Piling platform works
- Haul road construction

- 1.1.5 Thirty-eight (38) dust monitors are installed around the worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor presented in Figures 8. All continuous dust monitoring is undertaken using indicative monitors. Despite being Environment Agency (MCERTS) certified, indicative monitors carry a higher level of uncertainty than reference monitors, and therefore cannot be strictly compared with Air Quality Standards for human health and the environment. The purpose of the monitoring undertaken is to ensure the effectiveness of the on-site mitigation.
- 1.1.7 The trigger level for PM₁₀ concentrations of 190 µg/m³, measured as a 1-hour mean, in accordance with the updated guidance document '*Guidance on Monitoring in the Vicinity of Demolition and Construction Sites – (December 2018)*' has been applied.
- 1.1.8 Data capture was below 90% at multiple monitors due to technical issues and/or loss of power. Missing data at CVV-AQMP1 is due to an issue with the monitor controller. The monitor has been removed for repair.
- 1.1.9 South Heath monitor was retrieved from site, so no data was recorded for the month of January.
- 1.1.10 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2.
- 1.1.11 No (0) complaints were received during the monitoring period (January 2023).

Appendix A – Worksite and Dust Monitoring Locations

Figures 1-7: Worksite and Monitoring locations within the BC



Legend
 Dust Monitor
 District Borough Unitary Boundaries

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Map Number
 Map Name
**Monitoring Locations
 In BC (Sheet 1)**
 Buckinghamshire County

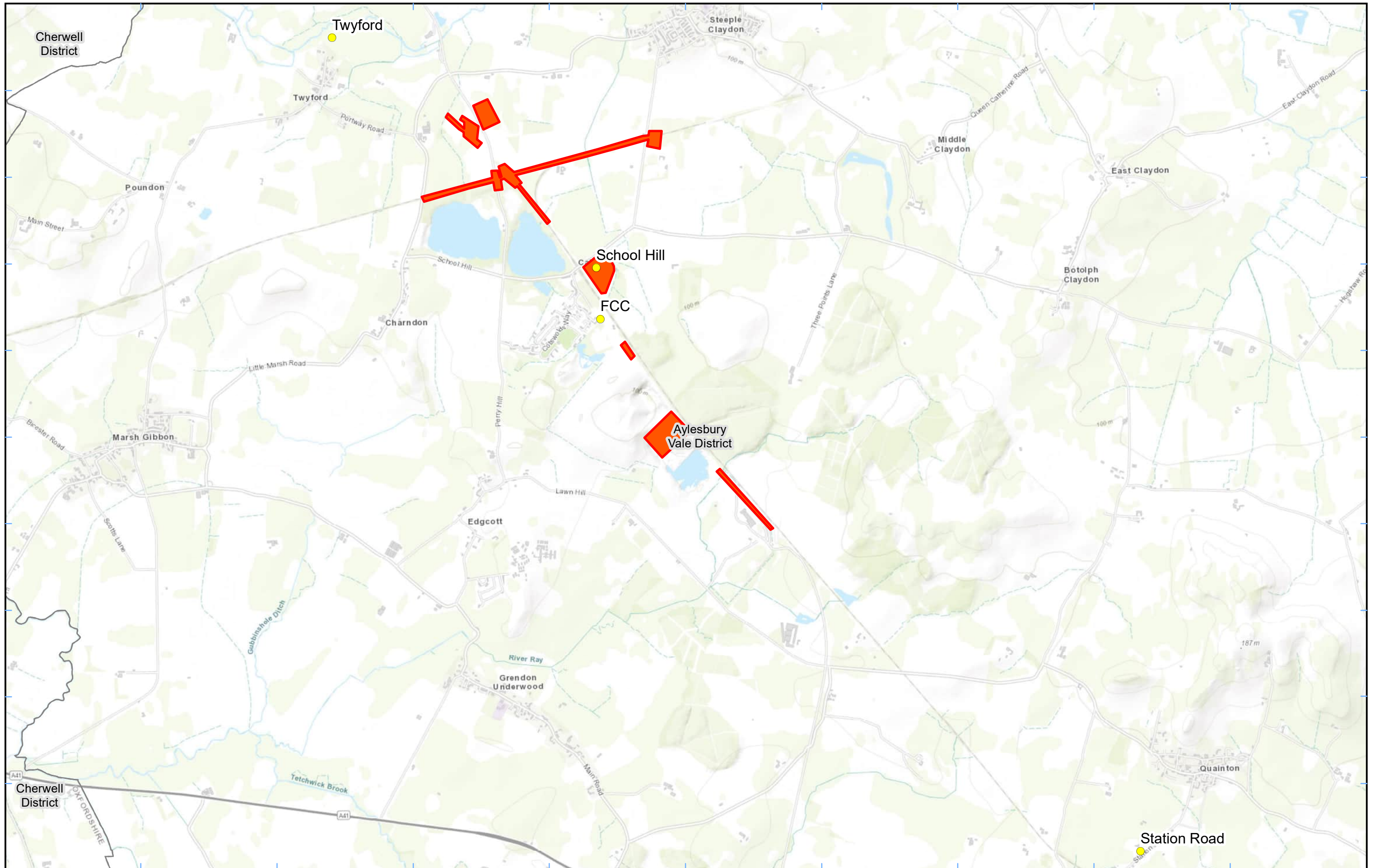
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Legend

- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number


Map Name
**Worksite and Monitoring Locations
 In BC (Sheet 2)**

Buckinghamshire County

Map Number

Map Name
**Worksite and Monitoring Locations
 In BC (Sheet 2)**


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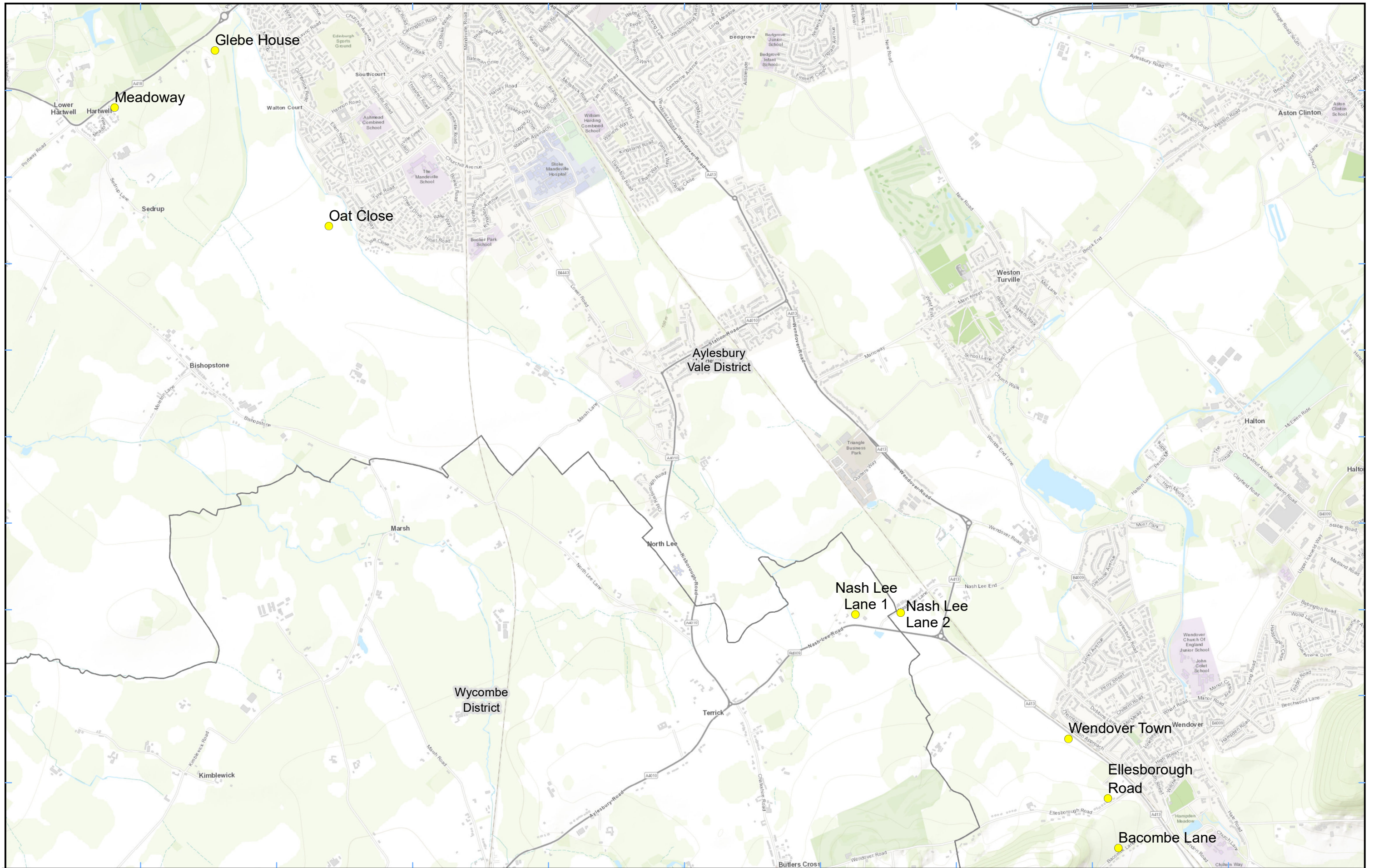


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Metres


Date: 28/04/22




Legend
 ● Dust Monitor
 □ District Borough Unitary Boundaries

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Map Number
 Map Name
**Monitoring Locations
 In BC (Sheet 3)**
 Buckinghamshire County


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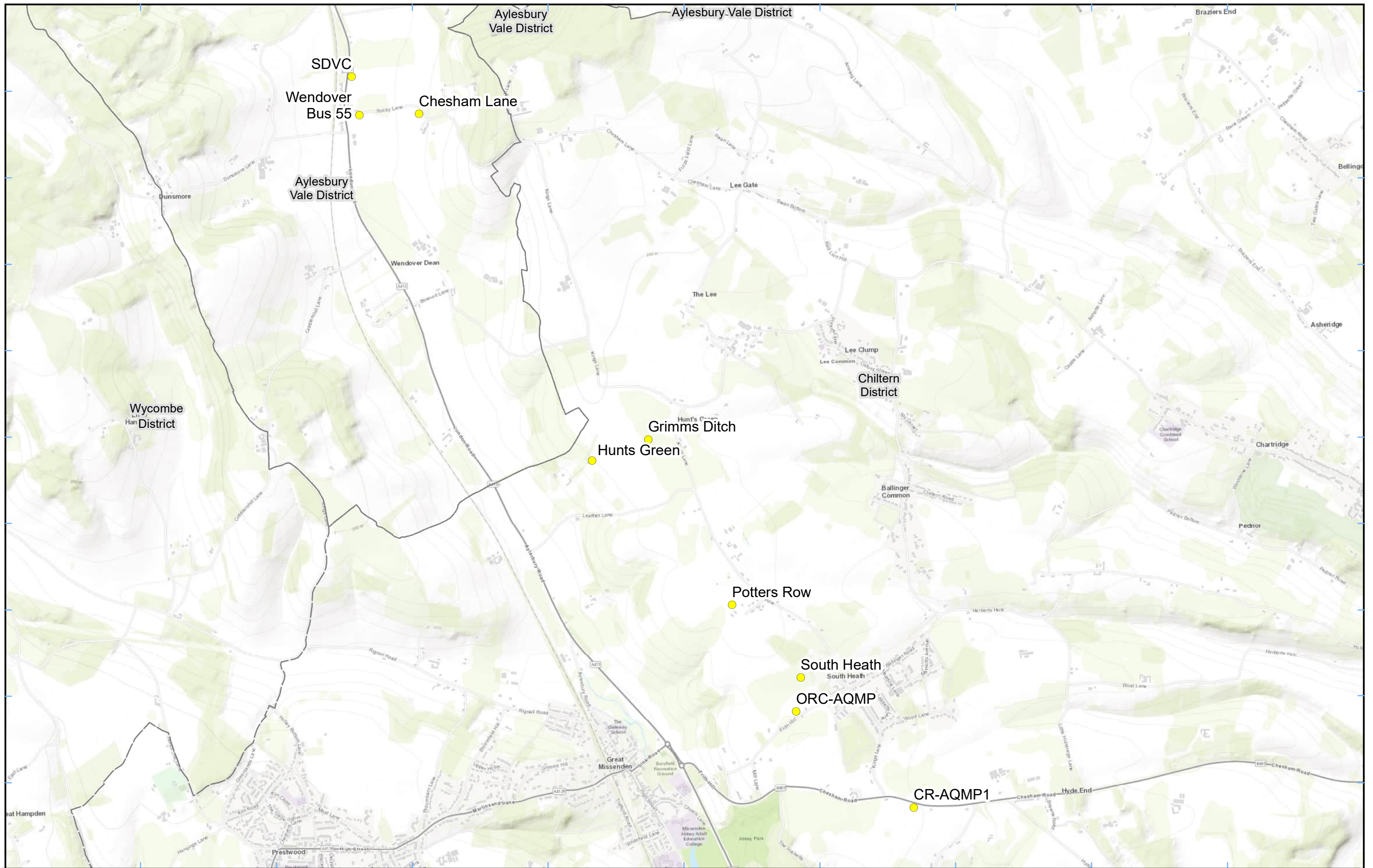
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- Dust Monitor
- District Borough Unitary Boundaries

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Map Number

Map Name
**Monitoring Locations
In BC (Sheet 4)**

Buckinghamshire County

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Metres

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Legend
 Dust Monitor
 Worksite
 District Borough Unitary Boundaries

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Map Number
 Map Name
**Worksite and Monitoring Locations
 In BC (Sheet5)**
 Buckinghamshire County

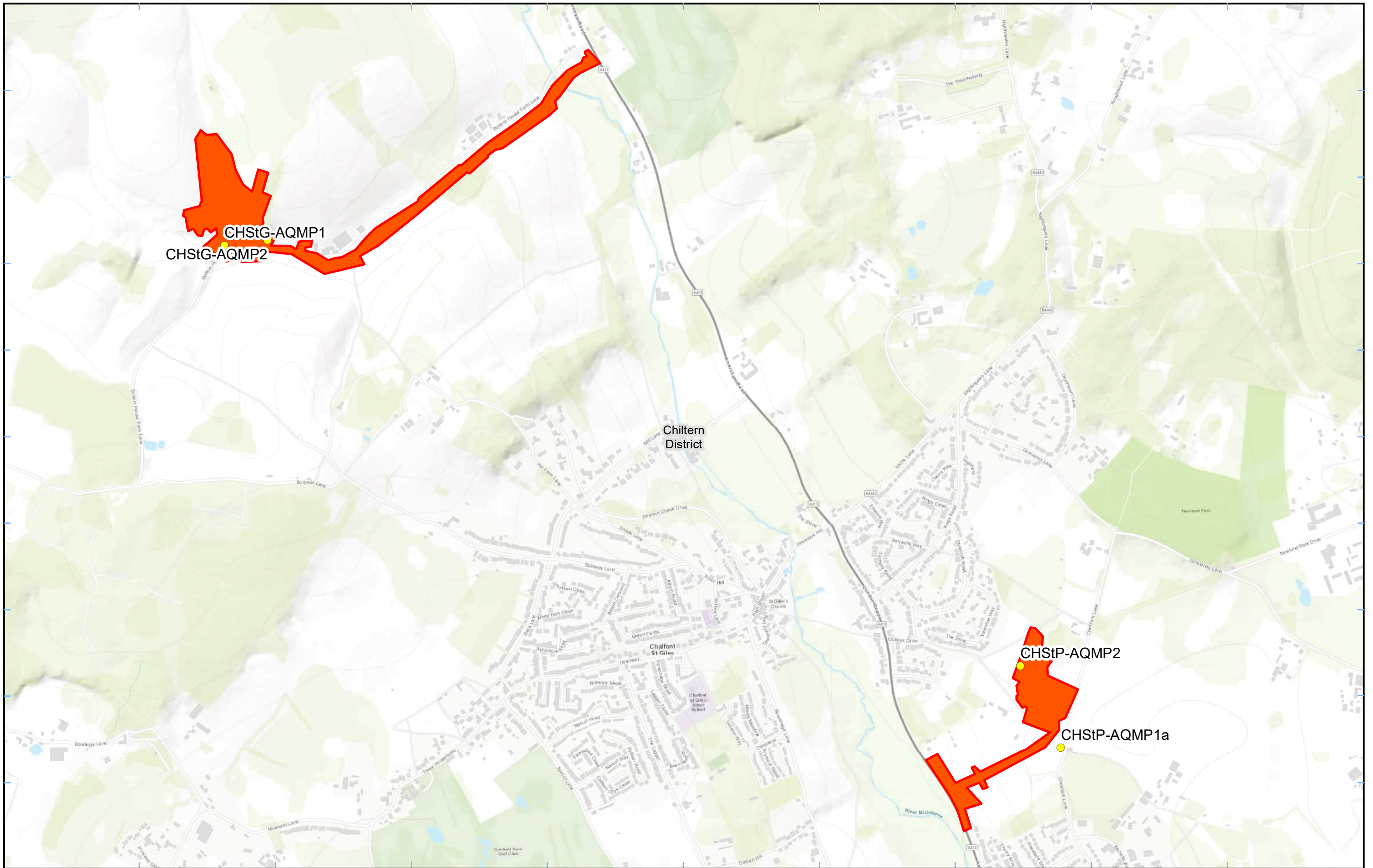
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Legend

- Dust Monitor
- Worksite
- District Borough Unitary Boundaries

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Map Number

Map Name
**Monitoring Locations
In BC (Sheet 6)**

Buckinghamshire County

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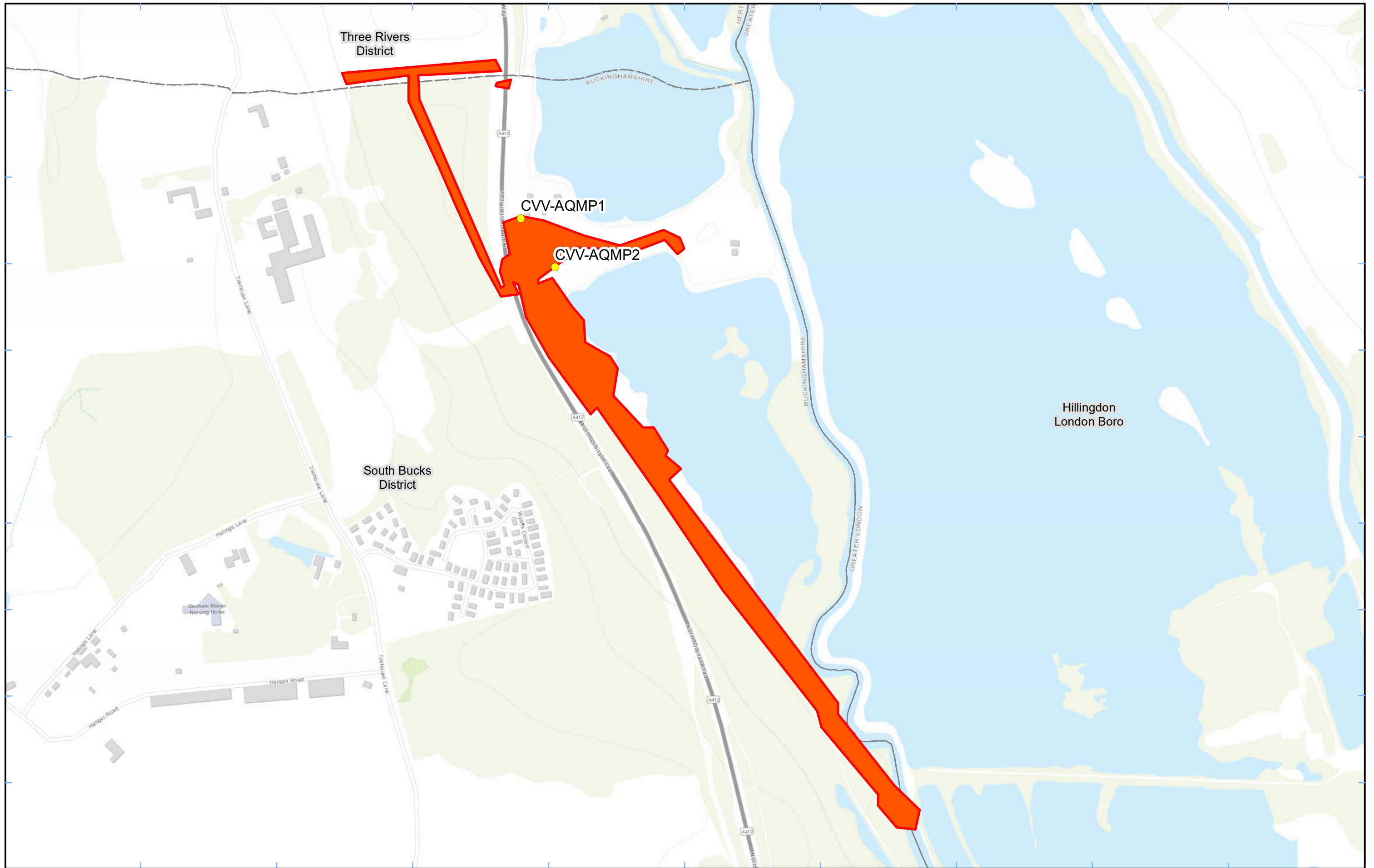
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Legend

- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number


Map Name
**Worksite and Monitoring Locations
 In BC (Sheet7)**

Buckinghamshire County

Map Number

Map Name
**Worksite and Monitoring Locations
 In BC (Sheet7)**


Buckinghamshire County



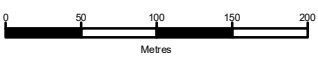
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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and January 2023 Results

Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
CVW-AQMP1	503612, 189846	On the north boundary of LTP1	M	Yes	Yes	-	-	-	-	-
CVW-AQMP2	503662, 189775	On the south boundary of LTP1	M	Yes	Yes	9.2	1.0	53.0	0	98.7
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	M	Yes	Yes	8.7	1.0	84.0	0	99.9
CHStP-AQMP2	499951, 193282	On the western boundary of the site	M	Yes	Yes	9.8	3.0	13.0	0	3.2
AMER-AQMP1	495367, 196722	On the north-eastern boundary of Amersham	M	Yes	Yes	9.9	1.0	75.0	0	98.7
AMER-AQMP2	495263, 196590	On the south-western boundary of Amersham	M	Yes	Yes	9.3	1.0	83.0	0	98.7
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	M	Yes	Yes	7.9	1.0	45.0	0	51.9
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	M	Yes	Yes	8.2	1.0	50.0	0	100.0
LMS-AQMP1	493190, 198848	On the south-west of the site	M	Yes	Yes	11.2	1.0	64.0	0	58.6
LMS-AQMP2	493407, 198731	On the south-east of the site	M	Yes	Yes	9.0	1.0	59.0	0	100.0

Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	M	Yes	Yes	8.4	1.0	289.0	1	100.0
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	M	Yes	Yes	7.5	1.0	78.0	0	100.0
NP-AQMP1	490069, 202008	North Portal Site Entrance	M	Yes	Yes	7.3	1.0	36.0	0	99.6
School Hill (CAL-AQMP2) - Dust	469003, 224740	School Hill Compound	M	Yes	Yes	8.0	1.0	40.0	0	57.4
School End - Dust	463666, 230049	School End, Chetwode	M	Yes	Yes	9.0	1.0	108.0	0	84.3
Rosehill Farm - Dust	464368, 228939	Rosehill Farm, Chetwode	M	Yes	Yes	8.6	0.7	127.3	0	37.2
South Heath - Dust	490534, 202014	Bury Farm, South Heath	M	Yes	Yes	-	-	-	-	-
Potter Row - Dust	490075, 202502	Potter Row, South Heath	M	Yes	Yes	13.6	1.0	408.0	2	56.6
Grimms Ditch - Dust	489135, 203468	Leather Lane, The Lee, South Heath	M	Yes	Yes	8.4	1.0	49.0	0	77.3
Hunts Green - Dust	489511, 203611	The Lee, South Heath	M	Yes	Yes	7.4	1.0	58.0	0	83.6
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	M	Yes	Yes	12.4	1.0	670.0	2	39.0
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	M	Yes	Yes	9.4	1.0	45.0	0	63.8
Meadoway - Dust	479803, 212178	Aylesbury, Buckinghamshire	M	Yes	Yes	12.1	1.0	42.0	0	50.9
Oat Close - Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	M	Yes	Yes	9.1	1.0	69.0	0	80.8
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	M	Yes	Yes	9.5	1.0	81.0	0	60.9

Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	M	Yes	Yes	14.0	14.0	14.0	0	0.1
Glebe House - Dust	480475, 212560	A418 Aylesbury	M	Yes	Yes	7.6	1.0	36.0	0	60.1
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	M	Yes	Yes	9.1	1.0	37.0	0	51.6
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	M	Yes	Yes	9.1	1.0	42.0	0	42.1
Ellesborough Road - Dust	486458, 207550	Ellesborough Road, Wendover	M	Yes	Yes	7.6	1.0	26.0	0	28.4
Nash Lee Road - Dust	484766, 208782	Nash Lee Lane (west)	M	Yes	Yes	10.6	1.0	39.0	0	56.6
Nash Lee Lane - Dust	485069, 208793	Nash Lee Lane (east)	M	Yes	Yes	9.4	1.0	56.0	0	55.6
Bacombe Lane - Dust	486528, 207217	Bacombe Lane, Wendover	M	Yes	Yes	6.5	1.0	42.0	0	41.3
SDVC - Dust	487522, 206043	Small Dean Viaduct, London Road	M	Yes	Yes	133.6	1.0	365.0	89	31.7
Station Road - Dust	474068, 219307	Station Road, Quainton	M	Yes	Yes	9.7	1.0	61.0	0	74.3
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	M	Yes	Yes	8.1	1.0	35.0	0	89.5
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	M	Yes	Yes	8.3	1.0	51.0	0	53.9
Grove Farm	TBC	Grove Farm, London Road, Wendover	M	Yes	Yes	5.6	1.0	11.0	0	0.7

Table 2: Summary of exceedances during period (January 2023)

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
CR-AQMP1	25/01/2023 00:00 - 00:59; 289 µg/m ³	Exceedance likely due to wind whipping of nearby (within 3m) loose earth mounds and monitor being located immediately beside site-vehicle haul route.	Concentrations at this monitor are to be closely monitored. No further measures at present.
Potter Row	27/01/2023 15:00 - 15:59; 408 µg/m ³ 16:00 - 16:59; 399 µg/m ³	Data was marked as potentially erroneous and removed from calculations.	N/A
Chesham Lane	22/01/2023 15:00 - 15:59; 670 µg/m ³ 16:00 - 16:59; 243 µg/m ³		
SDVC	02/01/2023 07:00 - 20:59 04/01/2023 11:00 - 23:59 06/01/2023 - 07/01/2023 07:00 - 05:59 08/01/2023 08:00 - 15:59 09/01/2023 08:00 - 14:59		

Figure 8: Continuous dust 1-hour mean indicative PM₁₀ concentration for all monitors

