



West Berkshire

Winter Road Services

Period 01/10/2024 to 30/04/2025

RoadMaster Report

Prepared by DTN

Summary - West Berkshire

The Autumn of 2024 was overall average for mean and maximum temperatures, whereas minimum temperatures were just a little above average. It was generally wetter than average, especially in the west. The winter of 2024/25 continued rather unremarkable, with around average temperatures and, overall, near normal precipitation.

October was slightly milder than average by 0.5-1.5C, and rainfall was generally typical for the season. As an area of low pressure moved off to the east to start the month it turned drier and cooler as high pressure associated with a northeast flow moved in. Low pressure moved back in on the 6th, bringing heavy showers. On the 10th this cleared, leaving a briefly northerly flow under which temperatures fell below average, and RSTs fell away but remained above zero. On the 14th a westerly flow returned bringing low pressure, with some ridges in between. At the very end of the month, high pressure developed again over the southern UK. RSTs held above zero throughout.

November saw a month of two halves, with dry and settled conditions to start, followed by a colder and more unsettled weather later. This resulted in temperatures close to average overall; minimum temperatures were a little above average due to a large amount of cloud cover. Rainfall ended up near the 30-year normal. The first half of the month was dominated by high pressure bringing widely dry, cloudy and settled weather. It became clearer towards the end of the period and as a result there were a few cooler nights. However, RSTs stayed above zero. On the 16th, a front passed through, bringing in colder air from the north. Initially a passing low prevented RSTs from falling below zero, but once this low cleared on the 19th, the first cold snap of the season began with cold arctic air. RSTs fell widely marginal to below zero from November 20th until the 23rd with a few spells of sleet and snow towards the south early on the 21st. Storm Bert swept in later on the 23rd with recovering RSTs along with cloud, rain and strong winds. It remained broadly unsettled for the end of the month including Storm Conall. On the 28th high pressure briefly built bringing RSTs back below zero in places.

December then saw a rather dry and mild month with mean temperatures around 1.5-2.5C above average and only 33-75% of expected rainfall for most. After a mild and unsettled few days, it turned clear and settled on the 3rd with RSTs marginal to just below zero in spots on the morning of the 4th. It then turned unsettled for a week, before high pressure sunk in from the north bringing plenty of cloud. RSTs stayed above zero. The high continued southwards, clearing the cloud briefly for a chillier start to the night on the 14th, before a westerly flow brought milder air, cloud, and temperatures above average. On the 19th, a series of steep ridges and interspersed fronts developed. As each ridge moved across it brought a brief but cold northerly wind, with RSTs marginal to below zero at times on the mornings between December 20th and 23rd. In the last week of high pressure gradually moved up from the south, bringing cloud and milder air. RSTs remained above zero for the rest of the month.

In contrast, January was a rather cold and wet month, with temperatures broadly 0.5-1.5C below average, and slightly lower in spots for minimum temperatures. Rainfall was around 125-150% of the average. The first day of the year saw a front clear to the south, allowing a cold airmass move in from the north. RSTs soon fell below zero as a result. A low swept in on the 4th, bringing spells of sleet and snow at first, before transitioning back to rain. This low cleared on the 6-7th, seeing a return to a drier but cold northerly flow. Another low skimmed the southern coast on the 8th, bringing a few spells of brief sleet and snow. This was followed by high pressure from the 9-12th and very low RSTs that fell well below zero in places. A warming trend began by the 13th and for the mid-month, a south-westerly flow brought milder air, cloud, and RSTs rising above zero. The pressure gradient slackened going into the final third of the month, followed by a regime of lows and ridges, resulting in some nights with RSTs dipping below zero at times. On the final few days, high pressure built in, and RSTs continue to dip at times.

February saw a return to unremarkable conditions, as temperatures and rainfall broadly remained within the expected ranges. High pressure clung close to the south-eastern UK at the start, leading to clear calm nights and RSTs falling below zero at times. On the 7th, a low pushed in from the south-east, bringing a few sleet and wet snow showers on the hills for a time, but otherwise the RSTs held above under the cloud. The pressure slackened

on the night of the 8th with RSTs falling in the clear spells, but after this a weak low moved in bringing cloud for a while, with RSTs holding above for most areas towards mid-month. By the 15th, high pressure to the east brought about some clear nights, and RSTs dipped below zero at times. There was a milder period from the 20-25th, with low pressure systems returning, bringing cloud and rain. A ridge on the night of the 25th brought RSTs back to around zero in spots, and after a small low, high pressure built again bringing clear, calm and cold conditions to end February.

High pressure dominated the weather in March, and as such it was very dry, with less than 20% of the expected rainfall for most. There was a wide diurnal range in temperatures too; maximum temperatures were 1.5-2.5C above average, and minimum temperatures remained below the average by 0.5-1.5C. High pressure sat overhead till the 7th, and RSTs were marginal to below zero by night, with clear skies and just a few patches of fog at times. The next week, 8-15th, saw a trough of low pressure become stationary across the UK, associated with a cool northerly flow and a few showers at times. There were some relatively clear nights and the mornings from the 11th until the 16th saw RSTs fall to marginal to below zero. High pressure moved back in until the 21st, bringing mainly dry and settled conditions. There were a few colder nights during this period where RSTs fell marginal to below zero. Low pressure brought rain and milder conditions for the 22nd and 23rd. The month ended as it started with high pressure moving back in either overhead or just to the south, and just a few weak fronts managing to get in. RSTs generally held above zero, although a few sites fell marginal a couple of nights.

High pressure continued to be the dominant weather feature in April, and RSTs held above zero throughout the month. High pressure shifted to the east bringing a south-easterly flow, and it was clear but breezy and mild. High pressure then remained nearby, drifting at times to the north and east of the UK, before becoming centred across the south of the UK by the 10th. This changed on the 12th, as a more typical unsettled pattern returned with lows sweeping spells of rain in at times. The pressure turned slack past mid-month, although a few weak lows managed to pass through on the 21-23rd. For the rest of the month, high pressure made a return, slowly building in from the east to become central overhead by the end of the month bringing a sunny and very warm finish to the season.

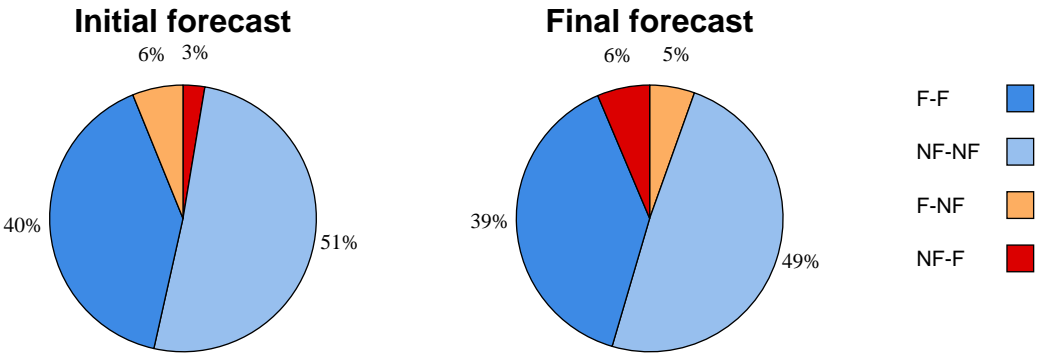
West Berkshire

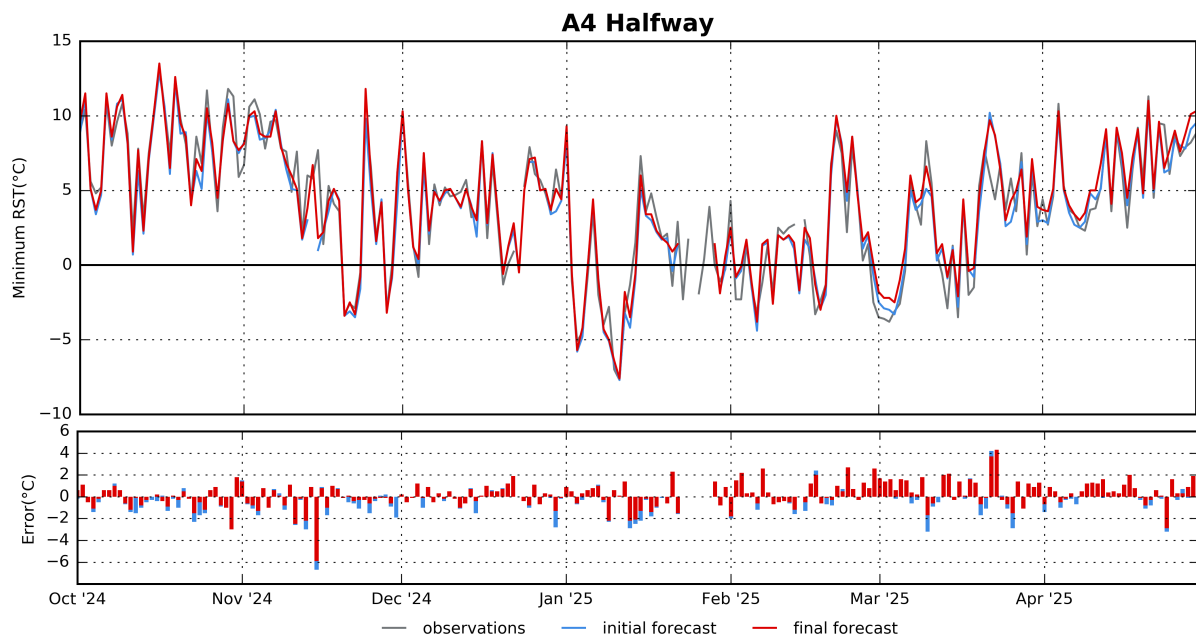
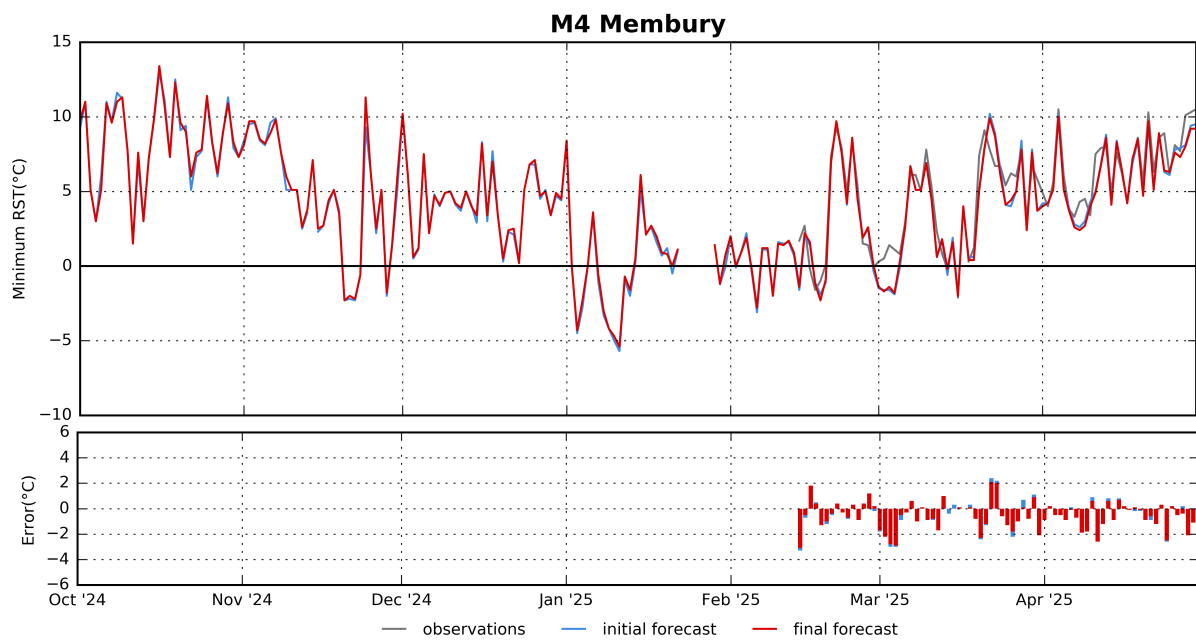
Analysis of Site Forecasts and Performance
Critical nights at or below 3°C

01/10/2024 to 30/04/2025

Site		Initial forecast					Final forecast				
	No Data	Critical Nights	NF-NF	F-F	NF-F	F-NF	Critical Nights	NF-NF	F-F	NF-F	F-NF
M4 Membury	137	26	14	5	1	6	26	15	5	1	5
A4 Halfway	11	88	44	41	2	1	84	39	38	6	1
TOTAL	148	114	58	46	3	7	110	54	43	7	6

Site	Initial forecast					Final forecast				
	Perc. Correct	Miss Rate	FA Ratio	Bias	RMSE	Perc. Correct	Miss Rate	FA Ratio	Bias	RMSE
M4 Membury	73%	17%	55%	-0.75	1.45	77%	17%	50%	-0.72	1.45
A4 Halfway	97%	5%	2%	-0.09	1.39	92%	14%	3%	0.38	1.39
TOTAL	91%	6%	13%	-0.24	1.4	88%	14%	12%	0.12	1.4





Performance Indicators

At DTN we have set out targets that we think are not only achievable, but also surpass-able. Below we set out performance targets that we will monitor against over the course of a customer's contract, including them in monthly and annual performance reports.

Following the recommendations of UK's Institution of Civil Engineers, we judge the value of our forecasts by looking at the road frost status. Using a 2 x 2 contingency table we compare the forecast against the actual:

	Frost Forecast (F)	No Frost Forecast (NF)
Frost occurred (F)	Correct forecast - frost (F/F)	Missed event (NF/F)
No frost occurred (NF)	False alarm (F/NF)	Correct forecast - no frost (NF/NF)

Only critical nights with a minimum road surface temperature below 3.0 °C are considered in the quality monitoring. The table allows the computation of the performance indicators below.

Percentage Correct (PC): Suggested target is 92% or higher

The percentage correct is the number of correct forecasts, divided by the total number of forecasts issued for critical nights:

$$PC = [(F/F + NF/NF) / \text{Total number of critical nights}] \times 100 \%$$

Miss rate (MR): Suggested target is < 8%

This indicates how many of the observed frosts were not forecasted, divided by the total number of nights with observed road frost:

$$MR = (NF/F) / (F/F + NF/F) \times 100 \%$$

False Alarm Ratio (FAR): Suggested target is < 9%

This looks at the frequency of nights with road frost forecasted while the road surface temperature stayed above 0 °C. We divide this number of nights with a false alarm by the total number of nights with frost forecasted:

$$FAR = (F/NF) / (F/F + F/NF) \times 100 \%$$

Bias: Suggested target is -0.25 °C

The bias is the mean over all differences between forecast and observation, in our case applied to the minimum road surface temperature. A negative bias indicates too pessimistic forecasts. Conversely, a positive bias suggests too warm forecasts.

Root Mean Squared Error (RMSE): Suggested target is < 1.40 °C

By squaring the differences between forecasted and observed temperature minima we remove the direction of the forecast error. The RMSE penalizes higher errors, it must not be compared with the mean absolute error.