Oxborough SAM 2 Report - 17/4/2023

History

The Oxborough SAM 2 (Speed Awareness Messaging version 2) sign was first put into operation at Hall Farm on 1 April 2017. Since that time, it has been operating continuously, with one or two minor hiccups along the way, but has only been out of action for a couple of days or so. A faulty component had to be replaced (free of charge) and the author also made a mistake when swapping the batteries around halfway through the monthly period of operation… It was paid for by public subscription: fundraising activities in the parish and donations from individuals, with a contribution from Oxborough Parish council funds and matched funding from Norfolk County Council.

The sign has 3 locations around the village: By the end of the Red House wall on Oxborough Road, on Swaffham Road and on Foulden Road. All of these face outwards from the centre of the village. These locations were agreed with Norfolk County Council Highways and nearby tenants were consulted in the planning process.

Norfolk County Council have determined that signs of this type are to remain in place for a period of 4 weeks and then must be moved to another permitted location, not returning to the first location for 8 weeks. This is because of the process known as ‘habituation’ - people get used to them and start to ignore them. So a minimum of 3 locations is required. (It has not always been possible to maintain an exact schedule, due to weather conditions and personal circumstances).

The sign display reads “SLOW DOWN” above 40 mph, shows the actual speed and “SLOW DOWN from 40 mph down to 30 mph and below 30 mph down to 20 mph - just the speed. Even if the display is blank, the sign is still recording the “true average” speed of every vehicle that approaches it, within the zone from the trigger point of the radar to the device. That does include cyclists and also the onboard computer can distinguish individual vehicles in a queue.

The data recorded is downloaded via cable to a laptop at the end of the month and may then be analysed using Houston Radar’s StatsAnalyzer software on a Windows PC. Examples of what is displayed will follow.

There was considerable doubt at the time of purchase as to whether the extra cost of the data recording was really justified. I will leave the reader to come to their own conclusions, based on the screenshots and perhaps upon the Speedwatch report, without further comment excepting that it may affect a replacement purchase - for which, please see figures given below.

The Data

I have been asked whether there are any obvious trends in the data. The simple answer is that the 85th percentile speeds derived from the data have not fluctuated very much since the sign was first used - in fact, only as much as by 1 to 1.5 mph for each month that the sign is placed at a particular location. More recent records indicate a very slight drop in the 85th percentile speeds recorded by about 1 mph, but this could very easily be a result of the increasing volume of traffic, which has gone from over 14,000 vehicle movements per month (in one direction) to well over 16,000 movements - in the space of 6 years. (That applies to the “main” road through Oxborough (the C44 from Stoke Ferry to Swaffham and not to Foulden Road, which seems to vary between 8,000 to 10,000). During the COVID-19 pandemic lockdowns it was obvious that drivers were travelling faster, but there were rather less of them on the roads…

A note about the term 85th percentile: This is the average speed at which a group of drivers are going, when you have eliminated the unrepresentative top and bottom ends of a given sample. The algorithm used is quite complicated and I don’t intend to go into it here. However, the 85th percentile speed does not tell the whole story, because the data has revealed that, in fact, a very large number of people are still speeding through the radar zone. This is indicated by the average speeds that drivers are doing before the algorithm is applied to the sample. (See the headlines from the following ‘text only’ reports).

Special events at Oxburgh Hall are very noticeable by the increase in traffic volume, although they do tend to bring down the average speeds slightly - because many of the visitors have not got a clue where the carpark is and may have been misled by their satnav, so they frequently affect general speeds - when they dawdle, dither and turn around. You don’t need the sign’s data analysis to become aware of this. Simple observation will do.

The sign is capable of being used in “silent mode.” This means that it can be reprogrammed to record the radar data without displaying anything on the screen LED array. However, as discussed with our Speedwatch Coordinator, I have been reluctant to make any adjustments to the device, in case I then had to take it back to Westcotec (the manufacturer at Dereham) to get a factory reset. This means that it has been impossible to say for certain whether the machine has actually made any difference to the awareness and speeds of drivers in Oxborough.

Having mentioned Speedwatch, it is clear that there is a very definite lift in speeds (but with much less traffic) recorded both before and after the general “rush hour” periods of the day, so from about 06:00 to 08:00 and again from 18:30 to about 21:00. Having said that, Speedwatch are restricted to daylight hours and good visibility, but these lifts do seem to occur throughout the year.

National data collected from other sites suggest that it may make a reduction in recorded 85th percentile speeds of between 8 and 9 percent of the local speed limit. So, for a 30 mph limit, that would be about a little under 3 mph, etc. (Interestingly, that figure also applies to “white gates” - but only when they have been installed recently, after which habituation may start to set in). The following is quoted from Westcotec’s website: “Transport for London Street Management’s Report on the Effectiveness of Speed Indicator Devices Reducing Vehicle Speeds concluded that SIDs are effective at reducing speeds, reducing speeds 200 metres downstream of the sign and a collision reduction of 5.6%.”

Maintenance

The age of the sign is now an issue. In the case of our device, spider/s have taken up residence in the radar window, however I have been assured by Westcotec that this does not materially affect the operation of the radar. In addition, I have found damp inside the casing recently, although this may have been condensation rather than the beginning of failure of the box seals. The pressure of the display and electronics unit has caused a gradual warping of the battery box section where it faces onto the mounting bracket. The battery box section (originally black) is going grey as a result of sunshine and weathering. Eventually, the plastic will fail, but I have no idea how long it may be before it does. One of the batteries has slight corrosion on one of its terminals. (My laptop is also getting old!)

In view of the above, Westcotec offer a service of the sign, currently priced at **£89.00 excluding VAT**. (This actually should have been carried out 3 years ago… according to their recommendations).

Replacement?

In view of the above - today, I took the liberty of requesting the price of a new unit, which I will forward to the Parish Council. The resulting quote is for the same type of sign:

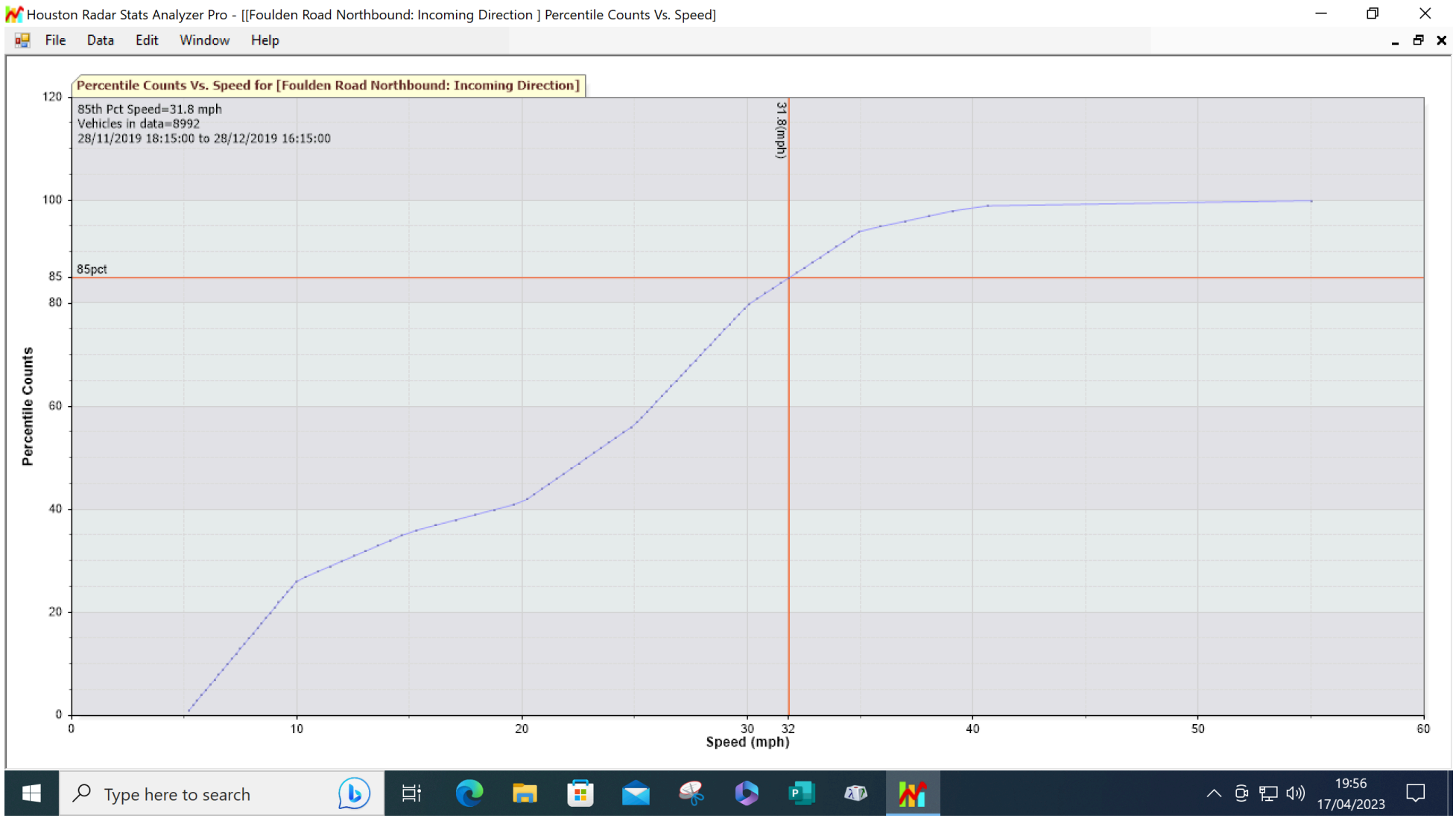
Portable SAM 2 with SLOW DOWN legend, including 2 batteries, charger, one bracket and pair of clamps for a cost of **£2,940.00 excluding VAT.**

Data Collection Unit (Bluetooth to your existing Android Device, App download required from Google Play Store) for a cost of **£379.00 per sign excluding VAT.** (The option to connect to the device by cable is no longer available).

Total: £3,319.00 excluding VAT.

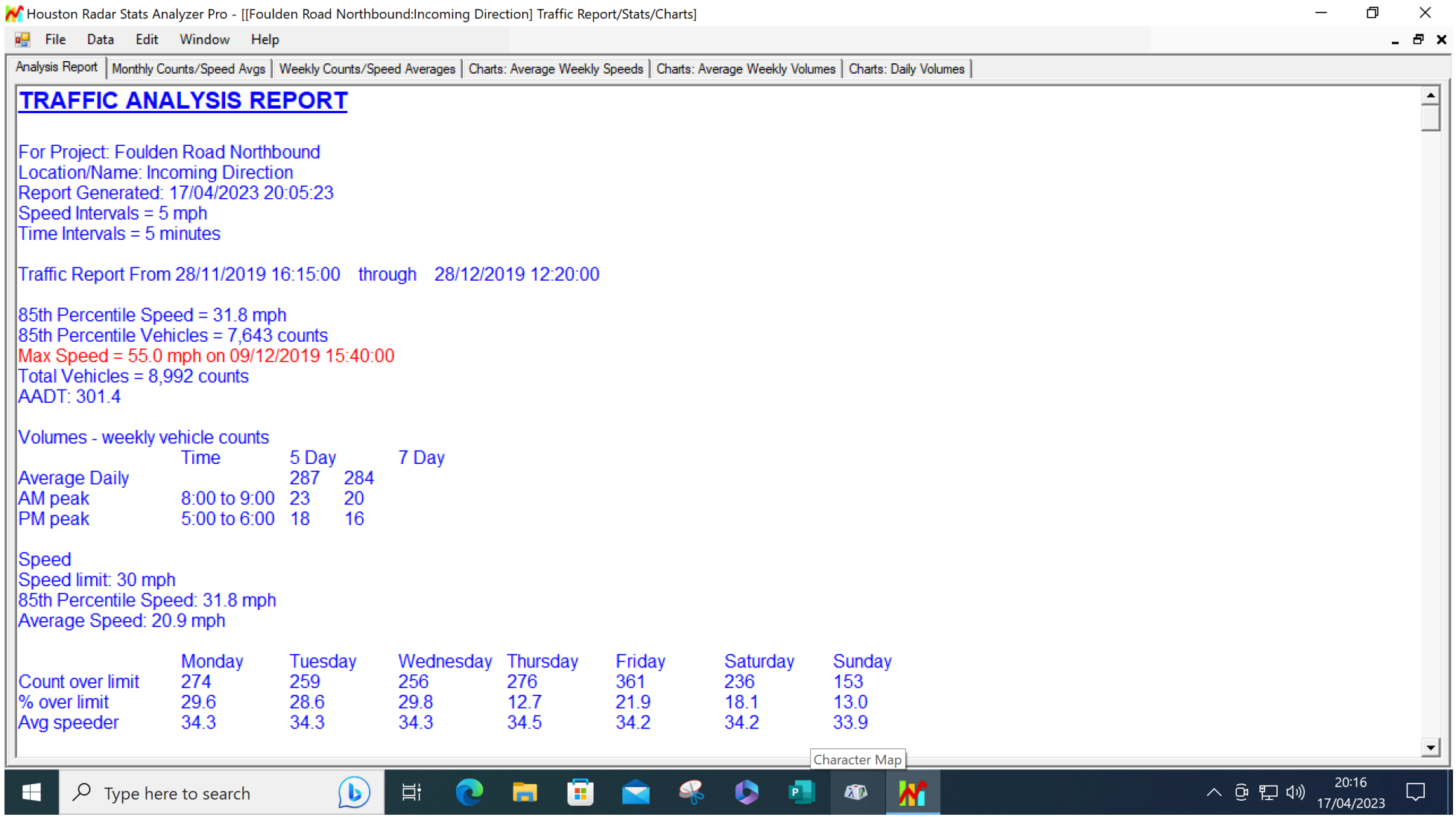
Data Analysis Samples

Foulden Road 85th Percentile Chart (31.8 mph) for 28/11/2019 to 28/12/2019

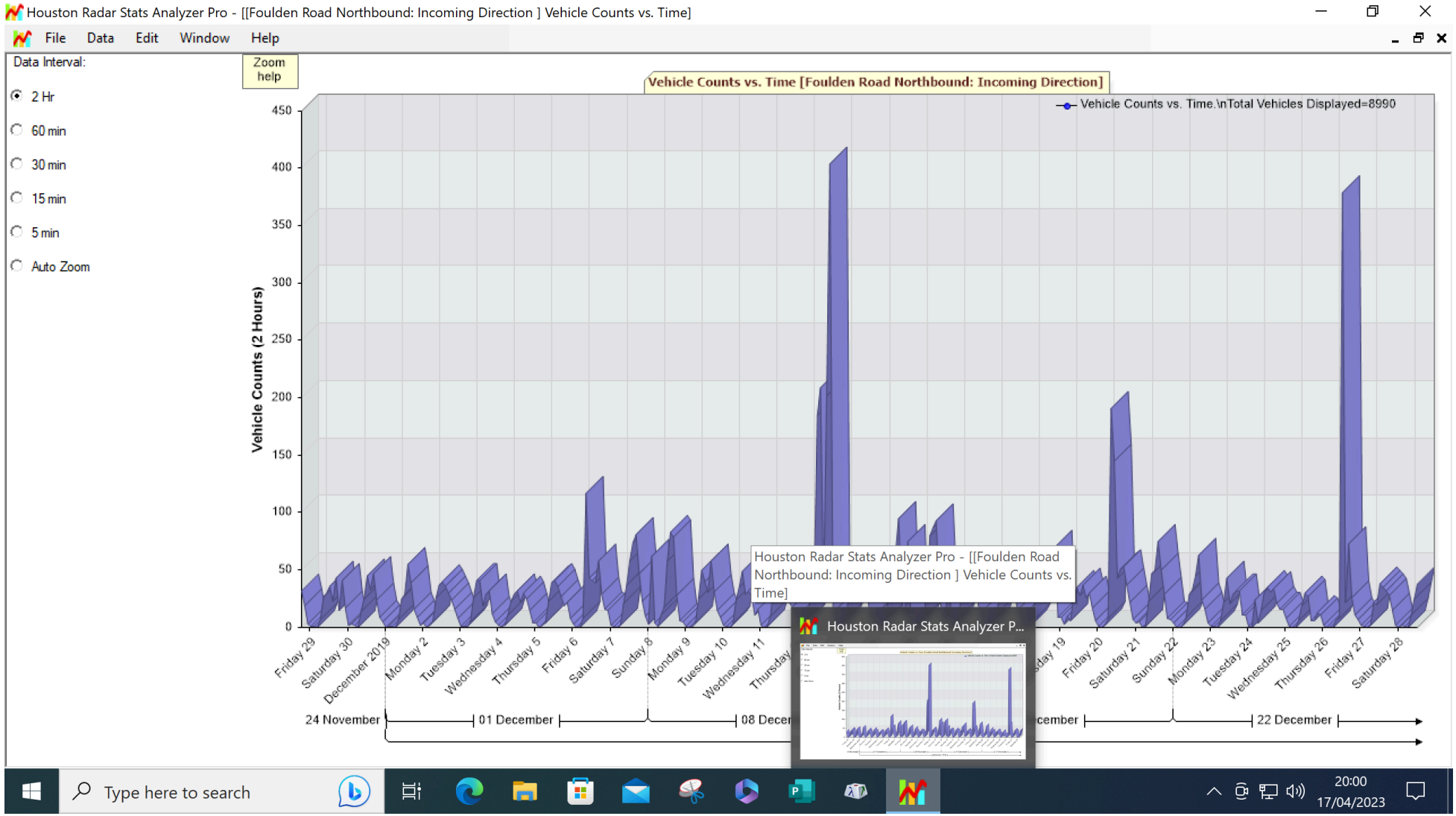


Traffic Analysis Report: Foulden Road 28/11/2019 - 28/12/2019

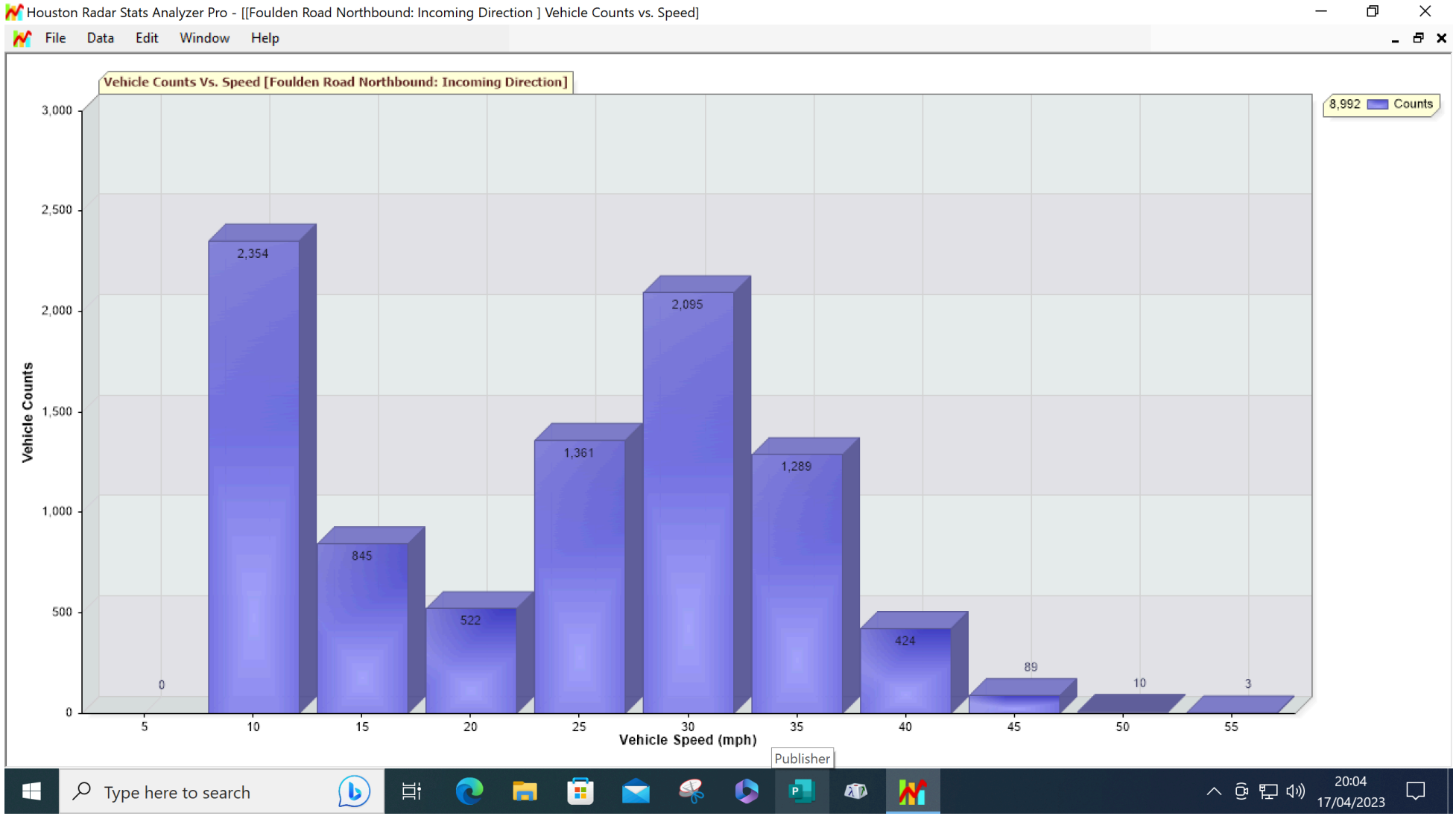
(Note the figures given at the very bottom of the screenshot.
Maximum speeds, in red, are frequently emergency vehicles).



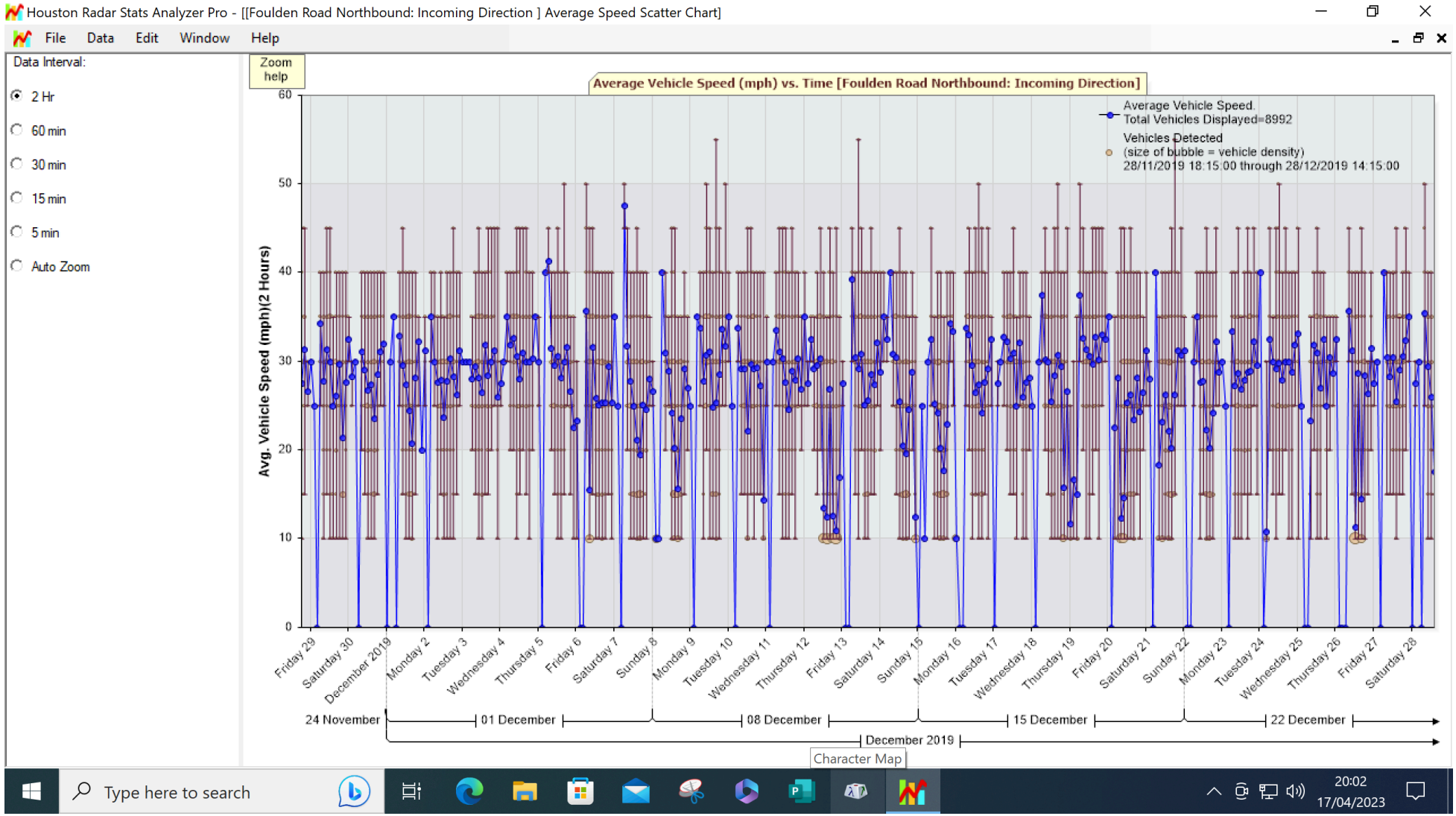
A pretty 3D presentation of traffic volumes, indicating Xmas & Oxburgh Hall activity!



Dates as per the last page, but note the number of vehicles over the limit… to the right of the central column.

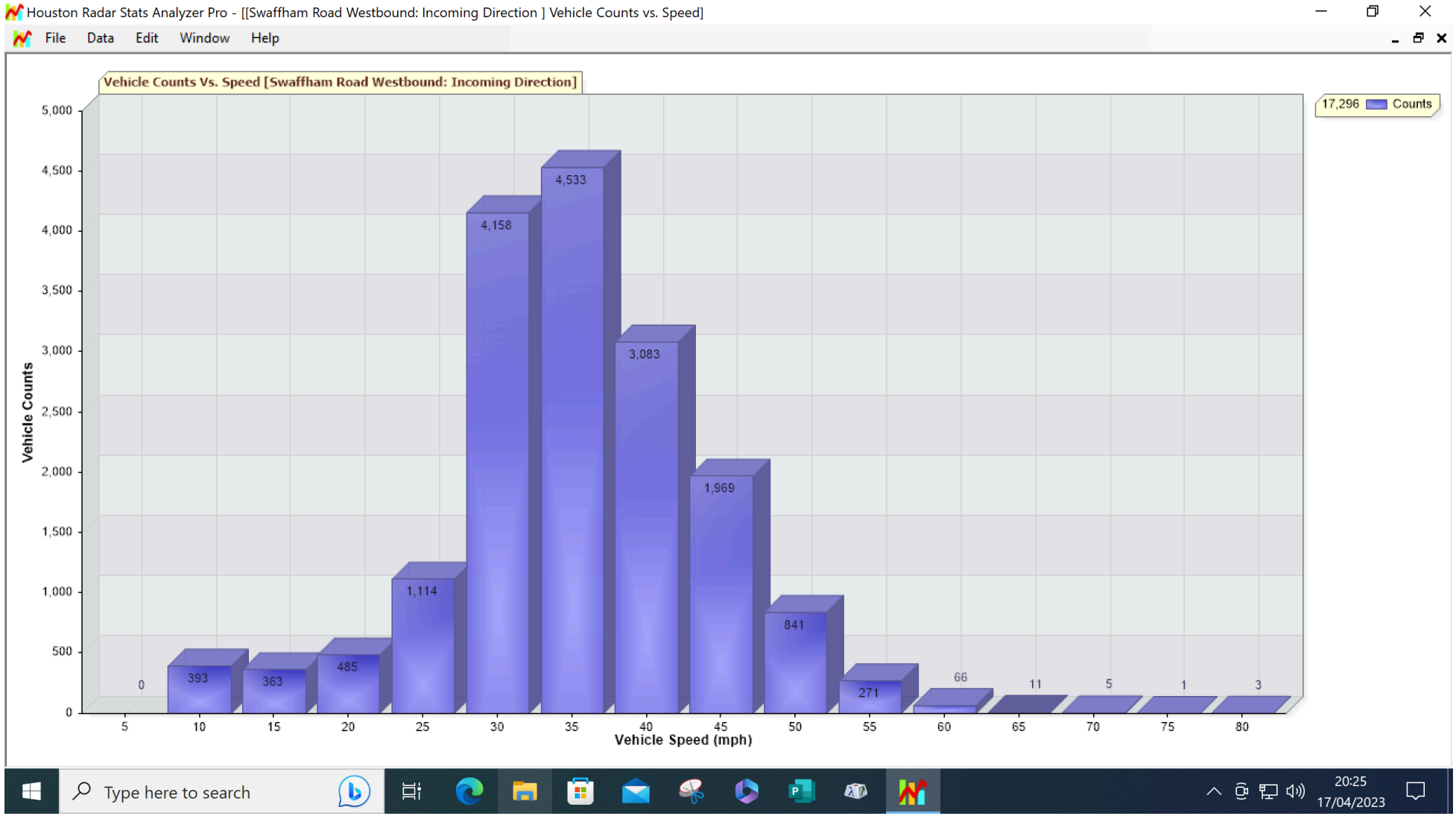


Dates as above. Blue line shows average speeds, brown shows numbers of vehicles in a cluster format. Timeline is zoomable to show individual days.

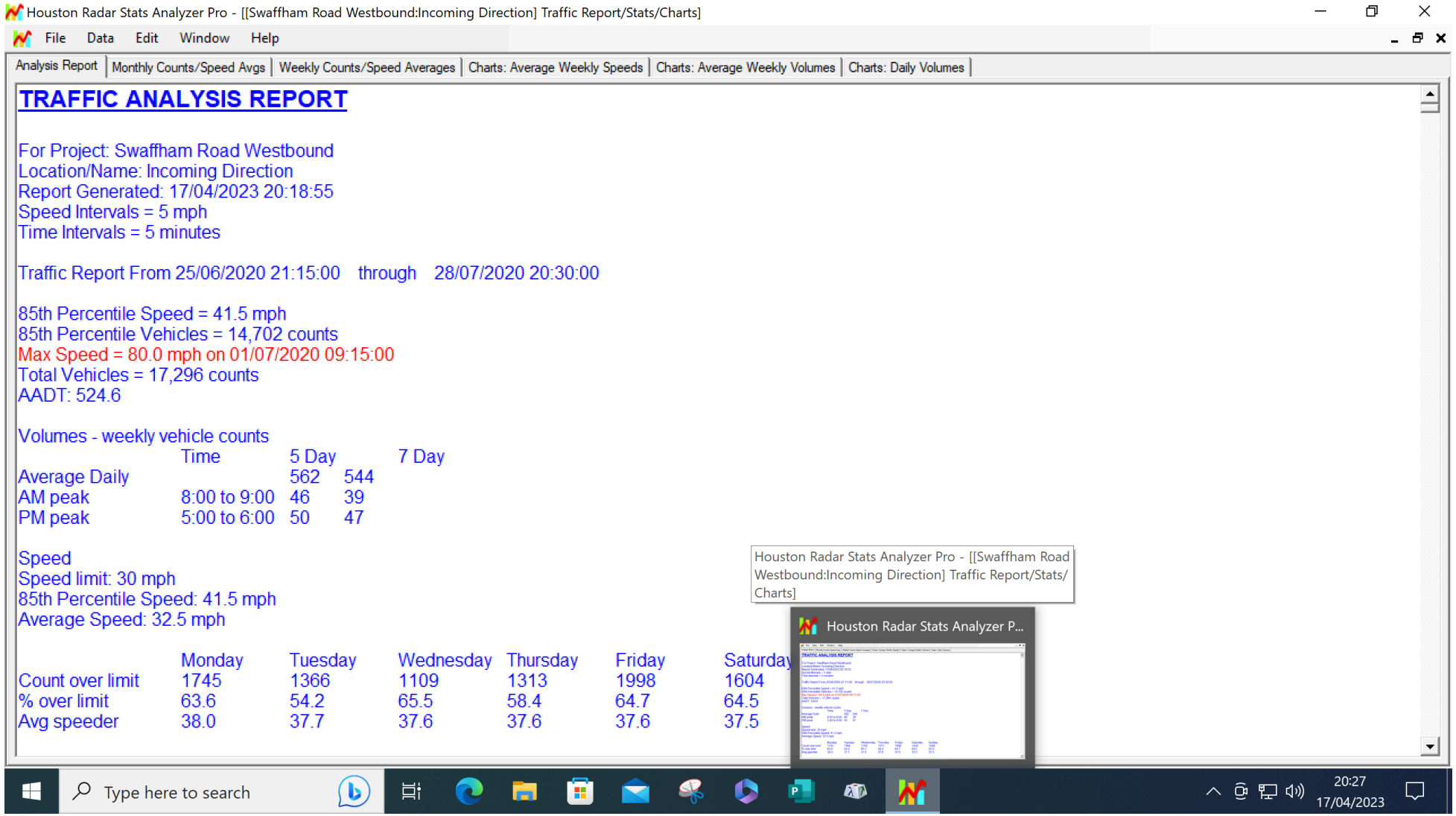


Typical 85th percentile curve for Swaffham Road 25/06/2020 - 28/07/2020: 41.5 mph.

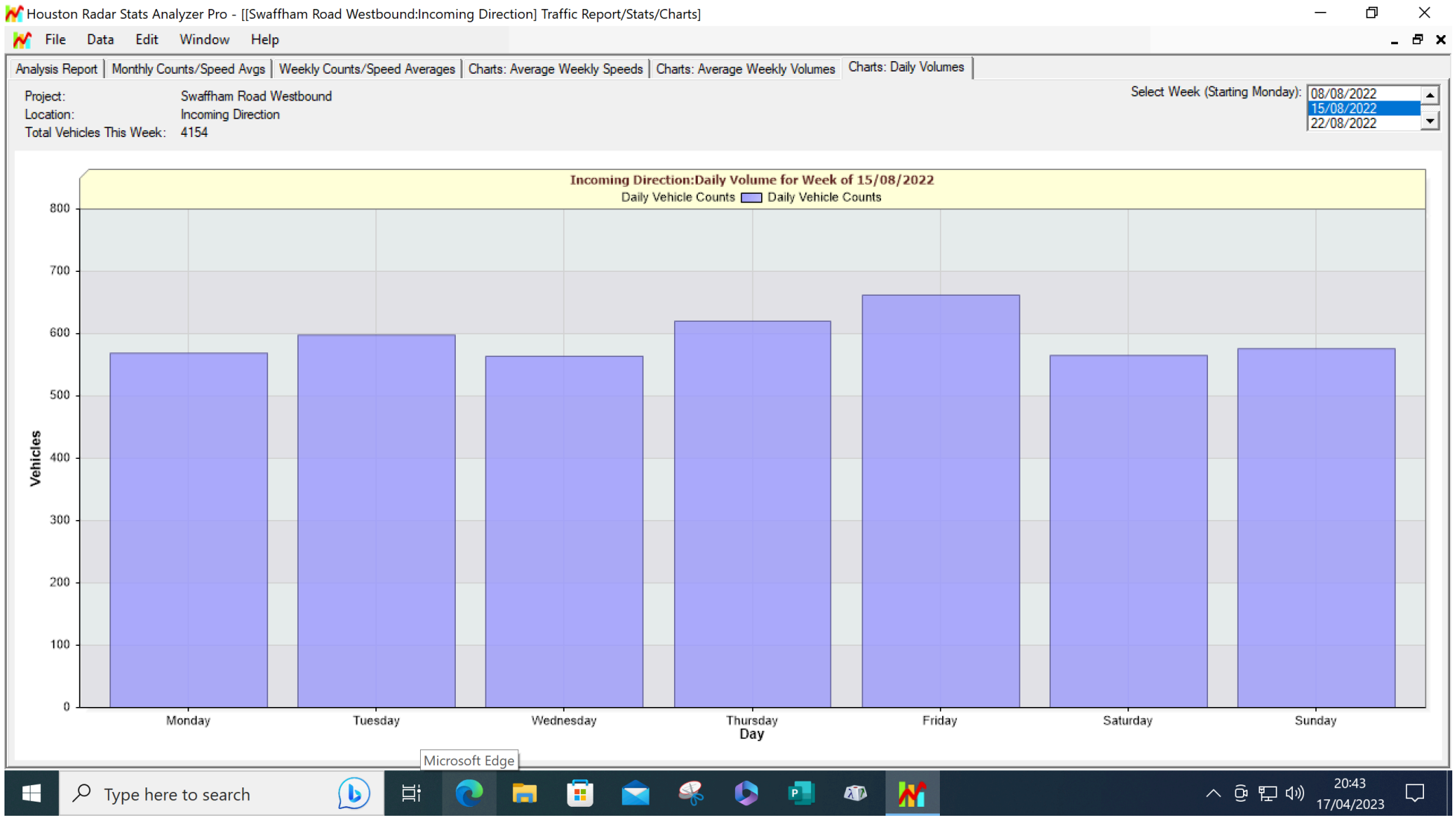
The same period as above, but note the numbers on the right of the slightly shorter 30 mph column.
(Nearly 2,000 vehicles are doing about 45 mph).



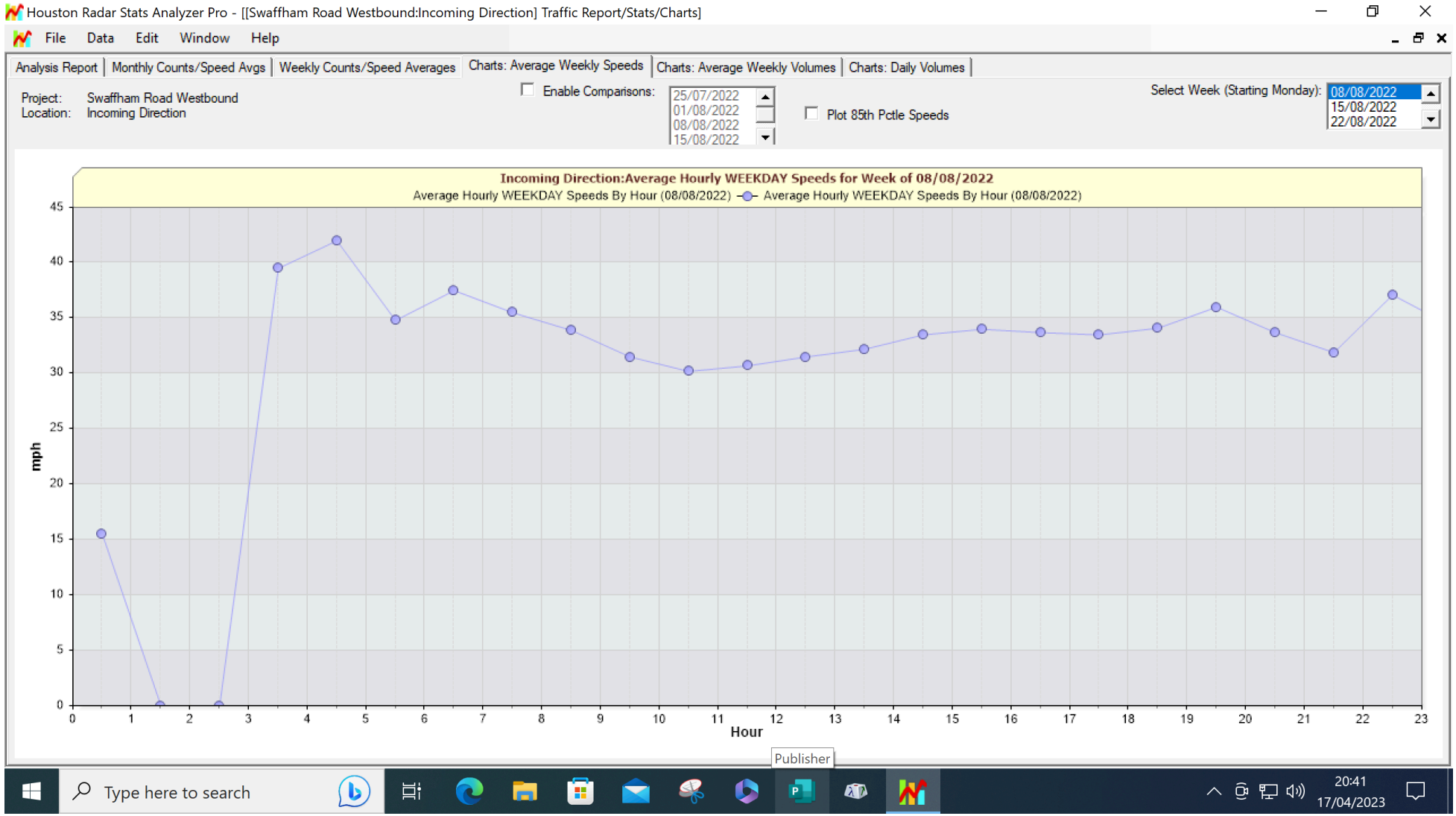
The Traffic Analysis Report for the same period as above.
(Incidentally, the very fastest speed yet recorded was 95 mph at the Red House location).



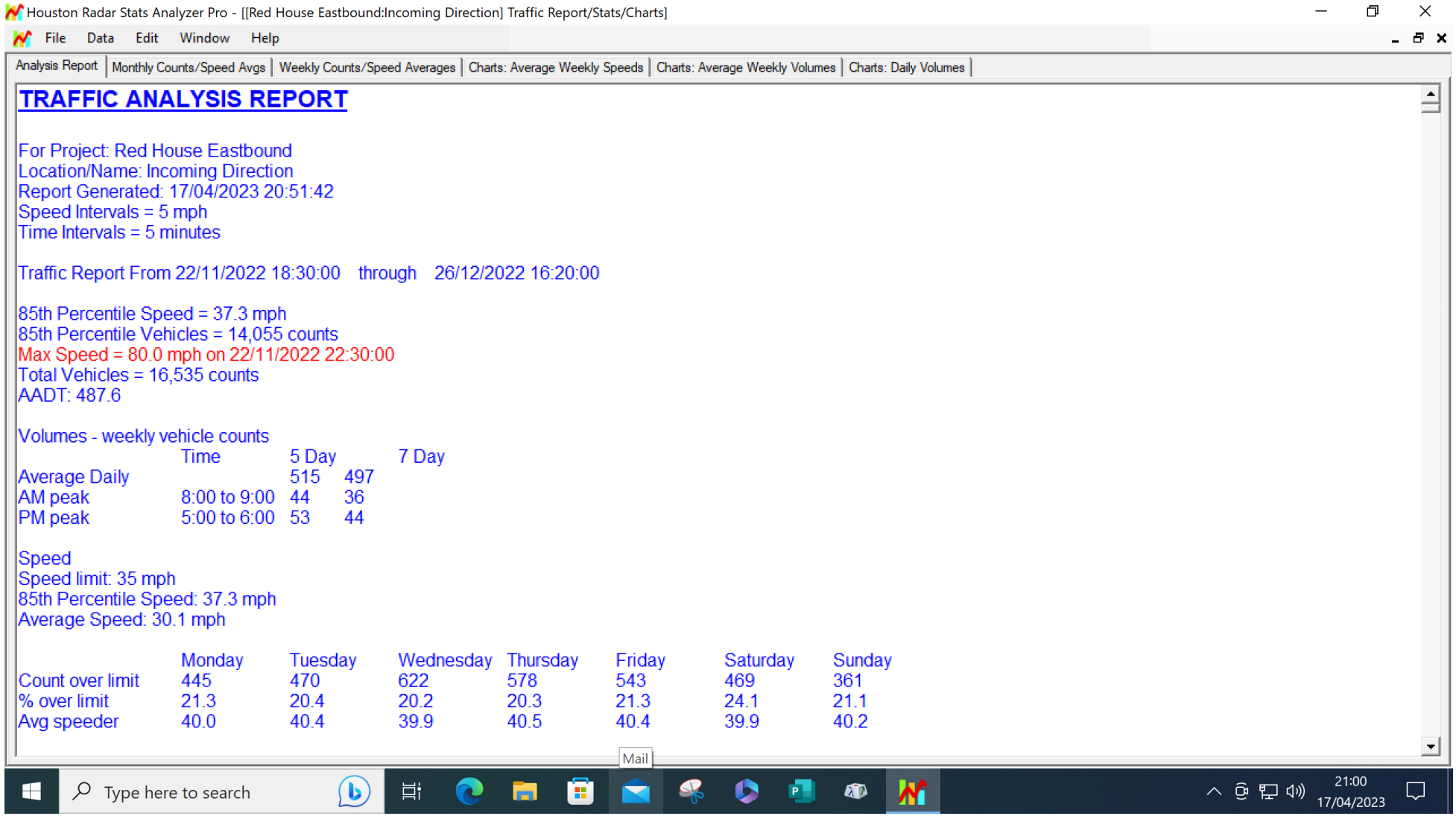
Volumes of traffic for Swaffham Road, week starting Monday 15/08/2022.
(No unusual activity that week).



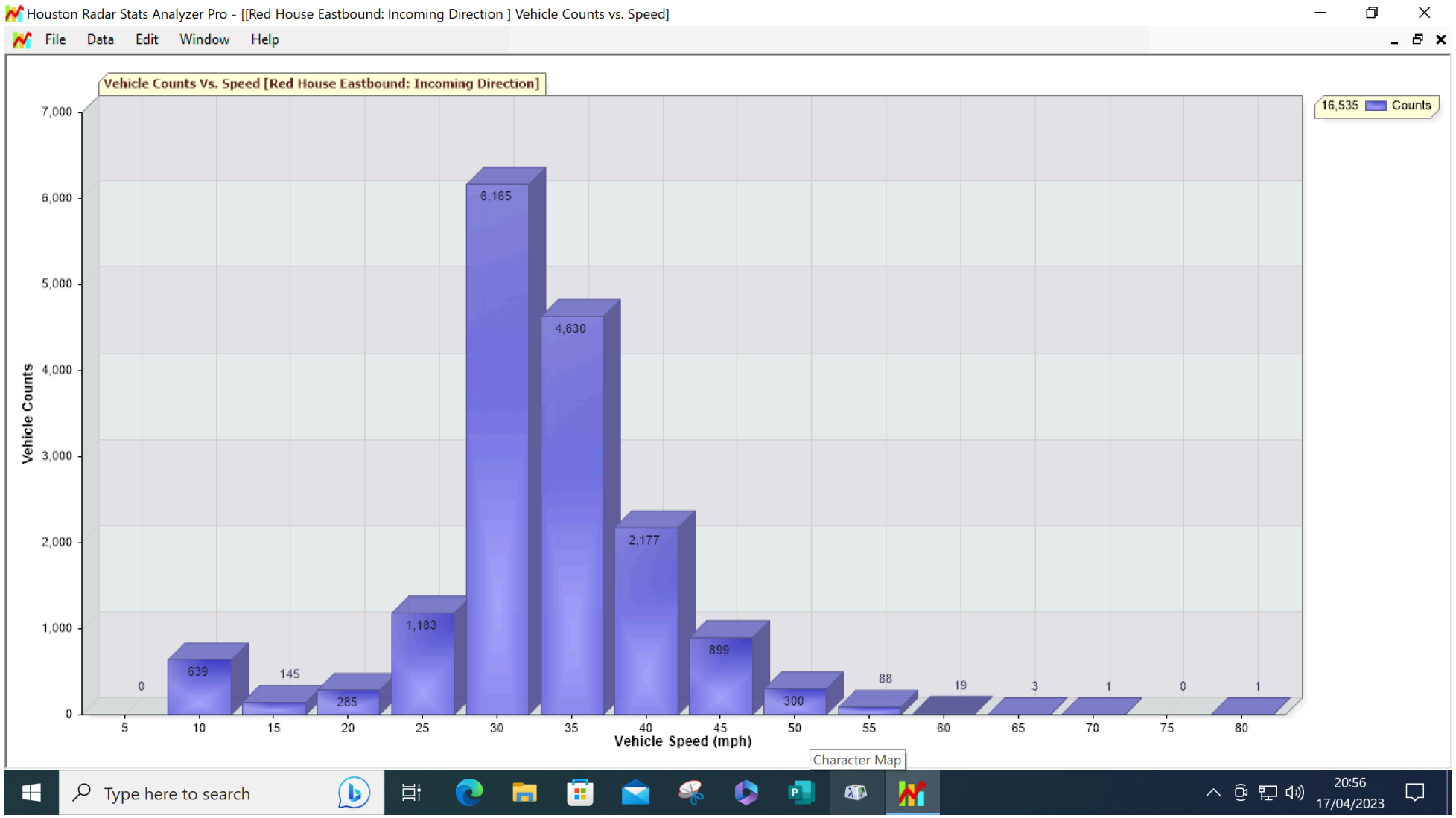
Typical average hourly speeds for the week starting 08/08/2022 on Swaffham Road.
(Note the descent from 06:30 to 10:30 and the rise from 18:00 to 19:30 - also fairly typical at all 3 locations).



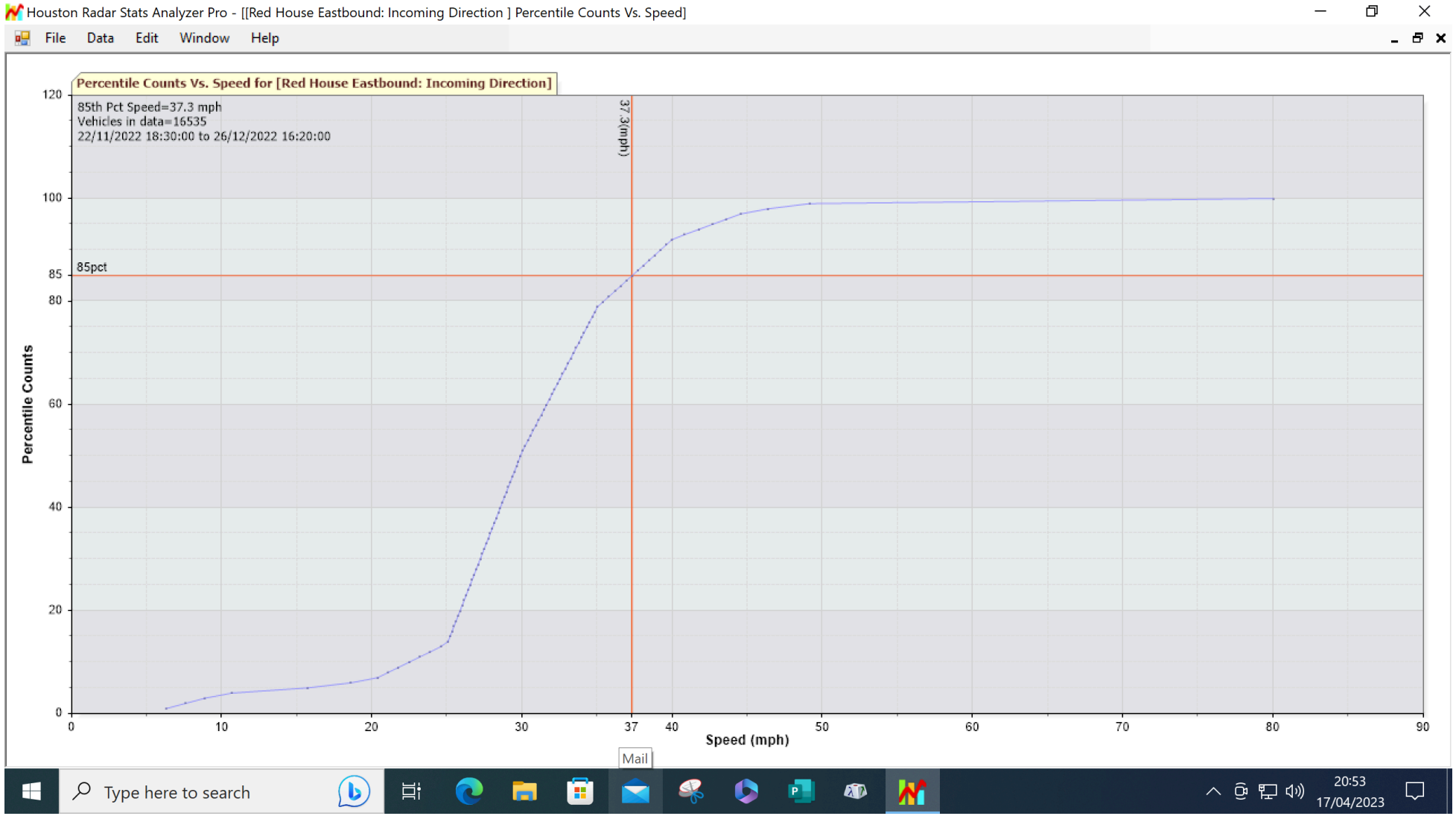
Traffic Analysis Report for the Red House location up to Boxing Day 2022.
(The 85th percentile speed has only changed by about 1 mph since 2017 - slightly downwards in this case).



The Vehicle Counts Vs Speed Bar Chart for the Red House - Xmas period as above.
(Note that over 2,000 drivers were still over the limit at 35 mph).



The 85th Percentile Curve for the Red House - same period as previous page. Curve flattens above 45 mph.



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