

Firethorn Application Ref. 21/01630/OUT – Update, 30 March 2022

Executive Summary

The Elmsbrook Traffic and Parking Group has assessed the latest updates for this application, and we address them in this report, in 3 sections, summarised below. Sadly, nothing has changed, and we are forced to again Object on grounds that critical NPPF requirements (paragraphs 110 & 111) are still not being met. We propose ideas to help.

Section A: New Points from Firethorn Response TN007 April 2022

In this, we find that there is no further simulation/modelling work, nor explicable evidence from the assessments, nor comparison with the September 2021 Elmsbrook transport/traffic survey undertaken by Mode Transport. A new table (2-1) has changed the predicted 8-9AM Peak Hour Vehicle Trips for the “bottlenecks” on Charlotte Avenue from 636 (previous document) down to 140 – with no explanation of where this has come from, other than that it is a particular percentage of the total given in the table – it is not clear how this is justified.

By simple comparison with the September 2021 Elmsbrook transport/traffic survey – i.e. scaling from *real measured data*, we show that a more accurate estimate for this figure would be 552 trips; we also show that the *wrong section* of Charlotte Avenue is analysed on the accompanying maps (i.e. it does not cover the 2x narrowest bottlenecks that we have previously referred to and shown on maps in documents shared); and that now taking 60% of the outdated TA 79/99 reference’s 2-way trips limit is too high – because the bottlenecks are *definitely one way flow only*, meaning it would have to be *50% at most*, and we would suggest using 40% - because extra time would be needed in order for cars to slow down/stop/speed up every time flow direction is changed.

This gives a limit of 321 trips, and thus 552 trips would be 72% in excess of this. NB: this is based on Firethorn’s 140 figure, and excludes all the other factors we’ve previously raised, e.g. the underestimates in overall traffic, School and Business Centre trips, etc. We can therefore only conclude that the traffic situation will only be made severe, dangerous around the School, and likely causing tailbacks to the B4100 junction. This will only increase the RFC predicted at 0.87, making the entire local network and nearby Ring Road junction worse also: and traffic signalling here will not be enough. Such vehicle traffic levels *disincentivise* people to cycle or walk.

It also states that, by paying towards this signalling, that is all the developer needs to do – that this “counts” as the mitigation; yet the wording of the recent OCC objecting response is clear that it is the money *and* proven mitigation which is required. It also states that the Section 38 which A2Dominion signed with OCC in 2014 absolves any requirement to change the existing Charlotte Avenue to compensate for higher traffic levels; yet this is clearly absurd, because the new application contains well over 100 homes on a field which was not part of the Masterplan back in 2014; and in any case, knowledge of the evolution of the traffic levels can be taken as “perfect” from an 8-year old document – this is why, as plans and monitored levels change, new assessments are required.

Section B: Suggestions for possible components to Solutions

We still want to be able to positively support this application, but can only do so when it meets the standards and legislation to confirm that the impacts it has on Traffic for the road network on and around Elmsbrook will be viable. We have, in previous discussions with both the developer’s consultants and OCC/CDC, and in our previous responses, suggested a range of additional possibilities which might contribute to solving the problem – after further brainstorming within our group, we present 4 of these in more detail here; and we would like to invite all relevant officers at CDC and OCC (e.g. from Planning and Transport teams), and also from Firethorn and its Consultants – to visit us on Elmsbrook, to meet with residents here – to act as an “awareness building” tour, where we can show the issues first-hand, and work together constructively towards effective solutions.

Section C: Points from the New Appendix modelling the Proposed new Mini-Roundabout

Table 3-1 of TN006 shows that, even with the proposed short-term solution, over the AM and PM peak hours, 6 of the 12 junction flows analysed (i.e. half) are significantly in excess of RFC of 0.85, with 4 of these greater than 1.25; there are also 3 between 0.82-0.84. However, the impact of the 530 Firethorn homes has been studied *in isolation from* all concurrent developments, especially Hawkwell Village – so none of the *interaction effects* are contained; and these are likely also be very significant. The *combination* must be modelled together, to get accurate results.

Section A: New Points from Firethorn Response TN007 April 2022

1 – Impact of S38 on the potential acceptability of Traffic Levels:

In 2.4.2, it is stated that “it is evident that there is still concern regarding the narrow section of the Elmsbrook Spine Road to the north of Gagle Brook Primary School...” As an initial response to this, in 2.4.4, it is concluded that, because the S38 agreement was signed between A2 and OCC on 9/7/14, “it is considered that the provision of this road in its current form is acceptable to OCC to accommodate the level and mix of traffic expected along this route.”

Question [1]: is this latter assertion correct? - i.e. irrespective of any predictions or measurements of traffic levels, and also ignoring that the Hawkwell Village junction at end of Cranberry Avenue should also be factored in – that *just because* the S38 was signed, the road must be “acceptable” – almost ‘by definition’...?

The S38 is regarding the future adoption, based on a set of assumptions made at the time, but it could not have been agreed based on knowledge of how the site plans would *change* – e.g. the significant increase in numbers of homes (via inclusion of the extra field), and the impact this will have on the traffic impact assessment for this section of the road? This does not seem logical, under any circumstances, and particularly in the scenario where there has not been sufficient evidence provided that the actual traffic levels *will not be ‘severely impactful’* for the ‘spine road.’

2 – Validity of Two-way Traffic Flow upper limit:

In 2.4.7, it is the same (no longer used) source document referenced (TA 79/99), from which VTP scaled down the flow data to model that of a road width of 4.1 metres – but this is **not** present in the original source – despite the way it has been worded in 2.4.7 to imply so. Therefore, again, it seems erroneous to use this as an argument to justify a traffic flow limit – especially since, as noted previously, the original source specifies two-way flow without fixed source of bottlenecks – yet as described previously, the 2 “narrowing points” by the park provide exactly this kind of fixed one-way flow bottlenecks. Even changing to use the single flow (482 trips max. per hour) figure is not correct – it’s not going to be accurate for this type of traffic flow: the true upper limit would logically need to be less.

Question [2]: is this correct? i.e. surely TA 79/99 cannot justifiably be extended and compared in this way, for the precise points made above? (If there is no other source which could be used, a lower limit could perhaps be estimated based on some quick experiments to calculate the time taken for direction of flow change to take place, and the flow get back up to speed? But without addressing such, the limit stated is an unfair high overestimate of the level which the “bottlenecks” regions of Charlotte and Braeburn Avenues could actually sustain.)

Please note also: that the reference ‘Elmsbrook Spine Road Assessment’ drawing, ref. # 4600 / 1100 – T – 070, included in ‘Appendix B – VTP Drawings’ – actually shows that **the wrong section of Charlotte Avenue has been assessed** – the drawing only shows Charlotte Avenue from North of the junction with Cranberry Avenue, outside Gagle Brook School – whereas the ‘Phase 1/2 Park 2x bottlenecks’ we have previously referred to and described in detail are on Charlotte Avenue to the East-South-East of that junction, i.e. off the map, and not assessed.

3 – Accuracy of Predicted Traffic Levels, Charlotte Avenue narrowings, AM Peak Hour:

The original VTP assessment predicted 636 vehicle trips. This has now been reduced to 140 trips – with no explanation or justification, as to how/why, nor any detail of what Year or Baseline this has been calculated for.

Please recall: the Spine Road assessment was summarised in the November 2021 updated Transport Assessment, in section 4.4.9, stating the 2031 ‘Do Something’ two-way AM peak hour vehicle trips on Charlotte Avenue is 636.

However, in the March 2022 update, in TN007, section 2.4.8, the figure predicted now for comparison with the above upper limit is described thus: “Table 2-1 identifies that a maximum of 140 two-way cars + 4 two-way HGV movements (assumed) would be expected when the full Firethorn Development is occupied and shares the use of this stretch of the Elmsbrook Spine Road with the existing Elmsbrook development.”

Question [3]: shouldn’t this reduction from 636 to 140 (+4) be explained and justified somewhere?! Or have we missed something?! – but Table 2-1 is not referenced, derived or supported anywhere else in the TN007 document.

4 – Accuracy assessment by comparison with Mode’s Traffic Survey data

Irrespective of the above strange reduction of predicted trips, however, **this new update again omits comparison with any recent existing official traffic level surveys and/or monitoring data**, as suggested previously – and Please Note: the data for e.g. the September 2021 Elmsbrook assessment are available from Mode Transport. Surely a key question, therefore, is: **how do the TN007 predicted figures stand up when compared with the actual traffic survey data, i.e. evidence from recent measurements of true traffic flows?**

Since TN007 doesn’t attempt this, here is a very brief example of how the comparison can be done:

Table 2-1 in TN007 shows 140 out of 1050 AADT trips as being “Driver” trips, which means $140/1050 = 13\%$ of trips are predicted to occur during the AM Peak Hour.

*(NB: $40 / (100 - 13.1) * 100 = 46\%$ of Total Trips are road vehicles i.e. Cars/Vans/HGVs, because the remainder is made up of rail, bus, cycle, walk – though this figure may actually be a little higher, because it is unclear whether the “(walk)” and “(other)” should be deducted from the “Walk” and overall percentage contributions...the road vehicle trips could be as high as ~52%. However, this percentage is actually not needed in the following calculations).*

These predictions do not concur with the September 2021 Transport Survey conducted by Mode Transport, on behalf of A2Dominion, as part of the NW Bicester Exemplar planning conditions for Traffic Monitoring. The 2021 Survey identifies 86.1% of Total Trips being Cars/Vans/HGVs – i.e. a significantly higher figure, in reality.

If this figure is used alone, then from Table 2-1, we take $0.861 \times 0.13 \times 2625 = 301$ Vehicle Trips. However, if we use data from 2019 Traffic Monitoring to compare the true ratio of AM Peak Hour to the AADT, we find this is around 19% in reality, i.e. more than the simulated 13%.

So, incorporating that difference also, we get $0.861 \times 0.19 \times 2625 = 429$ Vehicle Trips.

Let’s now address the accuracy of the Simulated total of 2625 Total Trips – noting that this has been simulated for the total of 259 homes, but it does not explain if it also includes traffic for the School, the Business Centre and/or the Community Hub (nor what year it is for, i.e. 2016 vs 2031, and the latter with or without junction signalisation).

The September 2021 survey measured 2319 Total Trips: this needs to be scaled down (by the ratio of trips for Phase 2 plus the School to those also including All Phases), which is a reduction of 71% - based on the number of homes, and assuming Phase 4 is completed and fully occupied (thus reducing the relative % coming via Phase 2), and using June 2021 survey data for GBS and EBC (– the Community Hub traffic can’t be measured, as it isn’t open yet – still under construction; it will be a relatively small component, in any case). This downscaled figure is then upscaled by the ratio of affected homes – i.e. $259/52$, because there are currently only 52 beyond this point receiving the traffic. The total figure calculated thus comes out at 3372 Total Trips.

So, our final ‘best estimate’ would be $0.861 \times 0.19 \times 3372 = 552$ Vehicle Trips, applying scaling calculations based on the actual measured September 2021 data. This will still be an underestimate of the true traffic levels (due to the other omitted factors), however, even this is more than 3 times the 140 trips result given in TN007, Table 2-1.

(NB: these other “omitted factors” include, most significantly: (1) Increased traffic to the School and Eco Business Centre, both of which have been proven to be underestimated in the existing model, even now, when they are only 40% and 60% occupied, respectively! (2) Hawkwell Village’s (now) 3,100 homes proposed, with connection onto Cranberry Avenue next to Gagle Brook School. The density per hectare of homes has increased (according to the Hallam presentation on 14/3/22 which I attended). Therefore, the accuracy of any simulation based on the original “illustrative” masterplan concept, prior to Hallam developments’ application, is likely to be very poor. However, this can now be modelled, using data from the Hawkwell Village application.

(Please note: speaking to our Member of Parliament, Victoria Prentis, at a recent meeting, she raised the subject of multiple closely-located planning applications being simulated individually, but for the same near-future time horizon, and the *cumulative impact* which would be caused by *modelling all the proposed schemes simultaneously* being significantly underestimated. She mentioned that she has a meeting with the relevant government minister, soon, to discuss this exact topic – i.e. that the modelling *needs to be done considering all applications’ effects simultaneously* – because she feels strongly about it. If the outcome of this meeting reaches us, we will pass it on!)

In summary for this analysis/calculation of peak trips per hour (for the 8-9AM peak hour), however:

552 Vehicle Trips is calculated as a better estimation: significantly more than the stated 140 trips (+4 HGV).

Comparing it with the one-way limit of 482 trips (which has been derived by the assessor – it's not from the original source reference, as TN007 states, is 60% of the two-way threshold of 804 trips), it would in theory be more than this could handle. However, we would also suggest that, as noted in '2' above – taking 60% is too high: the bottlenecks would definitely reduce the flow to below 50% (see note in '3' above, re the wrong section of road being shown!) – because of the need to reduce speed/stop in order to change flow direction at peak times. This would imply that perhaps 40% would be a reasonable number – suggesting a practical limit of 321 trips per hour.

In this case, 552 trips would be 72% in excess of the suggested practical limit. Therefore, on this evidence, the addition of 259 homes' access on to the end of Charlotte Avenue (Elmsbrook Phase 2) would cause a Severe Impact on traffic within Elmsbrook. The knock-on effect here would be queues extending back to the B4100 junction. NB: similar methods can be applied to Braeburn Avenue's bottlenecks, re significant impact there also.

Question [4]: is assessment via comparison with available recent measured traffic data something that Firethorn should be required to undertake, as part of this application? This is the recommended method to assess in these circumstances, and the data is available – i.e. therefore the calculations and comparison can be done?

The impacts of the points made in 1-4 above, which are connected with this, as they strongly suggest that the traffic levels at the B4100 - Charlotte Avenue junction are actually **inadequately estimated, - and thus the congestion will also be significantly underestimated.** Unless accurate estimation, to the best of current knowledge, is performed – how can it be determined if any particular solution is enough to mitigate the problems?

5 – Mitigation of Congestion Impact at the Charlotte Ave/B4100 Junction:

In TN007, it is stated that the second reason “for objection raised by OCC” is: “2. The development as proposed would have an unacceptable congestion impact on the junction of Charlotte Ave/B4100 in its current form.”

In the response to this, in section 2.3, it is stated:

“2.3.2 OCC has requested that a financial contribution of £47,289 be included within a Section 106 Agreement, which would be associated with the signalisation of this junction. This is considered to be an appropriate means of mitigating the traffic impact at this junction as a result of the implementation of the Proposed Development and that associated with the Hallam Land proposals.

“2.3.3 The Applicant has not disputed this contribution. As such, it is considered that the mitigation to address the impact of the proposed development at this junction has been identified and agreed upon.”

Question [5]: is this correct? i.e. does the act of agreeing to pay towards the proposed signalisation solution, which is based on the *existing simulation predictions'* traffic congestion levels (i.e. as submitted previously by Firethorn), **really** “mitigate” the congestion problems? Surely it does not, until there is robust and reliable evidence that the traffic simulations are accurate enough, i.e. concurring with traffic monitoring data extrapolations.

This question should be considered *in combination with* the points from '1' through '4' above, regarding significant traffic level underestimation, leading to additional queues, and all creating a *much* higher RFC value than the 0.87 predicted. If the traffic is backed up both on the B4100 and inside Elmsbrook (or even just one of these two occur), it is suggested that the proposed signalling will not solve the problem: alternatives are needed – see Section B.

6 – Construction and Future Traffic crossing/entering/exiting between Elmsbrook Phases 2-3

The Bus-only “link road” between Phases 2-3 is a section walked/scooted/cycled by many children/parents going to and from Gagle Brook School. Construction traffic crossing here would be a significant safety concern; now there are 2 separate accesses, could a condition be added to prevent this? Also, however, the volume of traffic using the 3 proposed access points (A/B/C) especially 8-9AM would also create significant additional risks here.

Section B: Suggestions for possible components to Solutions

This is the third response we have prepared to this application in the past 12 months, and we have yet to see some of the most significant points properly acknowledged and addressed. We engaged positively (via 2 long phone calls) with the consultancy involved, and shared with them a lot of our own surveys, analysis and documentation. We have continually tried to present (to consultants, and also to OCC and CDC) ideas for alternative options that would help to understand and solve the issues, within the law, policies and regulations, and with the use of robust evidence from both modelling and traffic monitoring/surveys.

We strongly desire a positive resolution here – as previously stated, we want the application to succeed – and we have never waived from this: but it must do so in a way which is not creating a severe impact on future residents. We would like to restate several such alternative ideas, all of which are simply based around the assumption that the number of new homes on the Firethorn fields will remain approximately the same, and that no alteration to the spine road is required, but that only a realistically small addition to vehicles on Elmsbrook's spine road can be viable.

It seems that potential solutions or contributing elements could include:

- Revising the Western and Eastern Parcel access points: VTP originally told us that they were restricted to only having accesses from the Elmsbrook spine road, and that any temporary access junctions created for construction could not be made permanent; however, OCC have stated that this is not true, and confirmed they could see no reason that the "temporary" Eastern Parcel access junction (the only separate one under discussion, at that time) could not become a permanent access junction. This, in itself, would significantly reduce the burden on the Elmsbrook spine road – by perhaps 130 of the proposed 530 total homes.

Another possibility would be that the Western end of the Western Parcel accesses the B4100 from its northern tip through a road along the Phase 4 West boundary; or from its southern edge into the future Hawkwell Village development – e.g. to the end of one of the roads going down to that area's shops/commercial centre. (Depending on the timings of the build-out of the two developments, in parallel, this may or may not be feasible; but is entirely possible.)

- A more concerted effort to improve the Bus service, perhaps supported by Firethorn as part of their application: We have tried to engage with A2Dominion, OCC, Mode Transport (via A2) and Grayline, on behalf of Gagle Brook School, to help reduce the impact of vehicle traffic during the 8-9AM peak hour, by proposing minor modifications to the route and timings of just 4 of the E1 Bus journeys – which the school's previous travel survey demographic (and Facebook discussions) suggest would significantly help with both parking and traffic (and thus safety around the school gates). However, we've received no further response from OCC; A2 said they had to delay while they were negotiating the future of the bus service; and we await response from Mode via A2 (*at time of writing*).

We also note that the original S106 section regarding the Bus service requires regular surveys to be undertaken of Elmsbrook residents, specifically regarding the development of the timings and routes for the Bus service, in order to optimise it. As far as we are aware, apart from occasional general questions ("Do you use the E1 bus?") in a wider occasional survey, there has been no attempt to do this – certainly nothing as specific as the S106 asks for, to a level that would be useful to optimise and increase E1 usage (which has yet to recover to the levels it saw prior to Covid in March 2020, as far as we can gauge – despite there now being more than double the number of Elmsbrook residents to use it!). Perhaps Firethorn could simply co-operate with A2, Mode Transport and Residents (we've done these kind of surveys ourselves!), with support from OCC as needed, to do a very small amount of work which could significantly optimise the Bus service to grow its usage in the coming years, and provide evidence that the Firethorn application's Transport Assessment/Traffic Impact analysis could use to robustly predict beneficial future traffic impact in this way, and thus accurately reduce the predicted traffic levels.

Finally: We would like to take this opportunity to invite all relevant officers at CDC and OCC (e.g. from Planning and Transport teams), and also from Firethorn and its Consultants – to visit us on Elmsbrook, to meet with residents here – to act as an "awareness building" tour – to discuss both the wonderful aspects of Elmsbrook, and the issues and future detrimental impacts. We can highlight some of the issues in situ, regarding parking and traffic, and discuss the significance that should be taken into account regarding how they will compound in future as/if the spine road is leveraged by future developments.

Section C: Points from the New Appendix modelling the Proposed new Mini-Roundabout

In TN007, “ATTACHMENT A TN006 – A4095 INTERIM IMPROVEMENT MITIGATION” states in 1.2.9-10:

“VTP and the Applicant have engaged in a series of discussions with CDC and OCC with a view to agreeing on how best to accommodate the 530 dwellings associated with the Firethorn Scheme prior to the implementation of the A4095 Strategic Highway Improvements on the surrounding local highway network.

“To this extent, a temporary or interim mitigation scheme has been developed at the A4095 Howes Lane / Bucknell Road junction, which seeks to provide an interim improvement to a critical part of the local highway network that would be permanently alleviated by the implementation of the A4095 Strategic Highway Improvements, whilst the mechanisms for funding the A4095 Strategic Highway Improvements are ongoing and agreed with all relevant stakeholders.”

We note that (in 2.3.1), VTP refer to traffic surveys being undertaken on 31 January 2022 - to improve robustness of the assessment, using up-to-date accurate measured data (this is great – but it would thus be even better if the same approach were taken to the Charlotte Avenue analysis, discussed here to in Section A, simply by looking at the Mode Transport data from September 2021).

Table 3-1 of TN006 shows that, over the AM and PM peak hours, 6 of the 12 junction flows analysed (i.e. half) are significantly in excess of an RFC of 0.85 (the recommended max. limit), at 1.12, 1.13, 1.25, 1.27, 1.27 and 1.34 respectively – thus causing significant tailbacks and delays. Furthermore, three of the other flows are very close to 0.85, at 0.82, 0.83 and 0.84 respectively (!) – and the final 3 are not much lower, at 0.63, 0.64 and 0.77, respectively.

The conclusion made is that “the proposed interim improvement scheme in the form of a mini-roundabout associated with the Proposed Development provides a material improvement on the A4095 Howes Lane using the severity thresholds previously identified by OCC.”

While it does indeed offer an improvement, the result is firstly nowhere near meeting the recommended RFC limits nor anywhere near; and perhaps also critically, any justifications offered for why the true levels might be lower in future, or not as bad (due to “sliver queues”, and number of car lengths before other junctions are reached by queues, for example) – would likely be more than offset by other factors which this modelling does not appear to consider – namely, that the Hawkwell Village application – for 3,100 homes, which is currently at the same planning point as Firethorn’s – is *not considered at all* (nor are the Aldershot and Himley Village applications, which also impact).

Since Hawkwell in particular produces a significant number of extra vehicles onto this area of the road network, and its traffic flow modelling to date doesn’t even include separating its junctions, and noting that *all of these estates – by the locations of their access points the estate-internal generated flow rates for each will all interact with each other*. This will have a profound impact on all of the individual results: it seems evident that, by only analysing the impact of Firethorn’s proposed 530 homes *in isolation*, that the true impact they have *due to their contribution to these interaction levels*, will be substantially and significantly greater than as has been modelled here.

We would therefore recommend that all developers involved in these inter-related developments come together, and create a single overall model, based on *the latest updates to their estate internal designs* (i.e. by house number and types, and access point locations), and thus the true overall picture can be assessed; suitable mitigation can then be designed; and valid contributions to it by each can then be calculated based on contributions (both individually and in “interaction terms”).