SAVE OUR ISLAND'S REVIEW OF THE HAYLING ISLAND TRANSPORT ASSESSMENT ADDENDUM NOVEMBER 2019

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We are particularly grateful to Professor Nick Hounsell of Southampton University for his technical advice on this submission

This review document has been prepared for the Inspector of the Havant Borough Council Local Plan 2036

SAVE OUR ISLAND

1 INTRODUCTION

1.1 Hayling Island is a small community of some 8500 residential homes plus 2300 mobile homes (soon to be 2500) used as second (holiday) residences.--

1.2 We agree overall with HBC's assessment of the road infrastructure, specifically:

> *Para 2.6 "Hayling Island currently has approximately 17,500 residents and a number of small businesses, with a major influx of visitors who are attracted to the Island's beaches and holiday camps. The geography is unusual (**but in no way unique**) in that the A3023 is the only road linking the island with the mainland via a bridge, and all major statutory services are situated on or adjacent to this route. Beyond the Island, the A3023 passes through Langstone, immediately north of the bridge, before reaching the grade separated Langstone roundabout with the A27 trunk road and the B2149 for access to Havant town centre."*
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> *Para 2.8 "Traffic flows on the A3023 can be particularly heavy, not only during peak hours, but in the hours in interpeak and at weekends. During school holiday periods, and particularly in the summer, traffic flows are at their highest and there is often a continuous procession of vehicles during daylight hours making joining or crossing the traffic stream difficult. Access for emergency vehicles can be inhibited by the constrained network at these times. The speed limit on the A3023 varies between 30mph and 40mph."*
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> *Para 2.9 "Due to the lack of employment and facilities on the Island, there is a higher than average proportion of off-Island travel to destinations beyond the immediate area. This has the potential to limit the possible gains from modal shift (i.e. to walking and cycling) because typical journey length is longer than would be experienced elsewhere."*
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> *Para 2.10 "Any disruption to traffic flow on the A3023 within Langstone, on the bridge, or on Hayling Island, impacts very quickly on other roads in the area due to the traffic sensitive nature of these routes. Should traffic congestion tail back onto the mainline of the A27 trunk road, this leads to the hazard of stationary or slow-moving traffic on a high-speed dual-carriageway, and into Havant town centre, therefore further reducing the resilience of the network, impacting journey reliability and reducing the attractiveness of the area for business investment and regeneration."*

1.3 It must be noted that this accurate view of the current situation has no references in the Addendum proposal.

1.4 The A3023 has a limited capacity at Langstone Bridge and there are no economic options to increase this capacity. As a consequence, the free capacity becomes a precious resource which must be planned with great care.

The 2036 Local Plan calls for building 1100 new homes on the Island out to 2036.

This will make the already stressed road infrastructure worse, and the "do minimum" option is considered a "severe impact." The mitigation projects are felt by HBC to reduce the impact below the "severe" threshold, but it must be noted that most of the mitigation changes add to journey times as they effectively reduce the A3023 trunk flow capacity further.

1.5 We believe that because of the capacity constraints, more work is required to understand the consequences of increased loading as the A3023 network comes under stress, and to understand the additional changes required before any determination can be made as to the severity of the impact.

1.6 There is also a Flood Risk Strategy Plan by the Eastern Solent Coastal Partnership for Hayling Island in its very early fund-raising stage. This is the first such plan and recognises the vulnerability of this low-lying Island with no strategy in place. Any development should recognise this situation including the risk to the road network. We are told that the Strategic Plan document (if funded) will be available towards the end of 2020 as confirmed to Alan Mak MP.

1.7 The comment in our introduction 1.2 (referring to HBC para 2.6): the phrase ***"but in no way unique"*** should be revised.
Following research on all of the islands connected by bridges around the coast of England, Wales and Scotland, only one could be considered similar to Hayling Island. Walney Island is a barrier island off the nose of Barrow-in-Furness. It has a population of 12,000 and 650 mobile homes (both numbers significantly lower than Hayling.)

2 DETAILED COMMENTS AND FINDINGS

2.1 Statement from Councillor Pike in his Foreword Presentation

The statement by Councillor Pike that "*mitigation is possible which removes the severe impact – therefore development cannot be prevented by highway issues".* We cannot see evidence of this in the Consultants' report.

2.2 A3023 Speed (para 4.45)

In the context of reducing speed limits on the A3023 to 30mph, the assertion that a 30mph limit could enable traffic volume to increase as high as 400 vehicles per hour compared to a 40mph limit is not justified. Speed-flow curves, such as in Fig 13 (page 32) were developed to show the impact that increasing traffic flow has on average speeds, not the effect that speeds have on flow. It is known that reducing speeds on motorways from 70mph to, say, 50mph can result in increased capacity due to the smoother flow that results, but we are unaware of any evidence that this applies at lower speeds on non-motorway roads.

2.3 Traffic Density (para 4.80)

We concur with the report statements which summarise the problems very well:

> "*The A3023 on Hayling Island is subject to increasing traffic levels due to car ownership and usage by residents, the necessity to access services off the island, together with cumulative development pressures which all add to daily traffic demand. Hayling Island has only one road route on and off the island with 24 hour daily average traffic flows at Langstone bridge of 26,508 vehicles. As opposed to a 'network' situation the 'one road only' situation for Hayling Island means that any incident and disruption on the A3023 is felt very quickly and can cause a problem that rapidly escalates with no immediate remedy available such as a diversion route. These incidents whilst often minor in themselves (e.g. a broken-down car or a parked delivery*

vehicle) have a disproportionately large impact on the efficient functioning of the A3023 corridor resulting in long delays, tailbacks into Havant town centre and beyond, and unreliable journey times. Hayling Island is therefore more vulnerable especially in the case of accidents and emergency roadworks which then have a big impact on the corridor and adjoining highway network. Clearly unmitigated additional development has the potential to worsen the situation significantly."

2.4 Addendum Measures (para 4.81)

"Assuming that the mitigation measures described in the HITA and in this Addendum are implemented, the impact of the proposed Local Plan development on the current level of resilience on the A3023 corridor will be balanced by additional capacity, additional opportunities for access (especially for emergency vehicles along the Hayling Billy Trail) and an overall improvement in highway safety by removing or improving those locations which give rise to the greatest numbers of road traffic incidents."

We do not believe the mitigation measures proposed do anything to tackle the A3023 situation, even for current traffic, let alone for 2036 traffic, and even worse, 2036 traffic including new development.

2.5 Mitigation

The mitigation measures proposed include:

(i) 4 new junction designs/layouts at Church Road/A3023, West Lane/A3023, Northney Road/A3023 and Langstone Technology Park/A3023;
(ii) New segregated lanes for right turning traffic at some locations on the A3023;
(iii) New bus lay-bys.

Everything here is focused on the A3023, a clear admission that this is the crucial corridor. Whilst some of these measures should increase capacity on the A3023 locally, others could reduce capacity, particularly some of the junction conversions to traffic signals. Crucially, none of the measures can or do address a key bottleneck on the route – Langstone Bridge.

Another feature of micromodels is that they do not easily provide what is a very useful output to aid interpretation – the ratio of flow to capacity (RFC), sometimes referred to as the V/C ratio. On a road link basis, this indicates how busy the road is; so, for example, a V/C of 0.9 would indicate that traffic is approaching capacity, with a 'spare' capacity of 10%. It is then relatively easy to see how much additional traffic a road could take, perhaps from a proposed development, before being overloaded. Note here that a practical maximum V/C ratio is often set at 0.85 to account for traffic variability, with the knowledge that delays increase exponentially when V/C ratios exceed 1.0.

Two factors are also relevant here to suggest that the model does not tell the full story:

(i) Peak-period modelling aggregates traffic over a 3-hour period. This is a much wider period for a peak than exists in reality for Hayling traffic, which in reality would be more like 1 hour. This aggregation does not allow for the mid-peak congestion;

(ii) The A3023 is a busy single-carriageway two-way road, and any reduction in capacity (e.g. due to parked vehicles, roadworks, loading/unloading, accidents, etc) can cause a rapid and significant build-up of queues. Similarly, being a holiday island, increases in traffic demand in the summer and when special events occur can also cause significant traffic congestion. None of this is reflected in the modelling, which only looks at 'neutral' traffic conditions.

It might be expected that a number of intermediate years between now and 2036 would be modelled, perhaps coinciding with years when the more major proposed developments are completed. This is anyways likely to be required in areas adjacent to such developments when more detailed planning is undertaken. However, the approach taken in this study – modelling only in 2036 – should at least provide a 'highest case' scenario for traffic, as it demonstrates the impacts of a combination of the highest 'natural' traffic growth and the highest development-related traffic. As forecast traffic growth between now and 2036 is continually upward, there should be no combination of traffic growth and development-related traffic which gives a worse case than that of 2036. However, congested situations on the A3023 will be much more frequent than in other networks where 'neutral' situations are modelled, due to the very different road and traffic situations pertaining to Hayling Island.

The modelling indicates that journey time increases will be small or (at most) modest in the 2036 'Do-Minimum' situation, implying that the network operating in the Base Case had significant spare capacity. This largely reflects the use of 'neutral', non-holiday periods in the modelling, the use of 3-hour peak periods and other scenarios not represented in model Appendix B/5.

Other key factors here are that forecast 'natural' traffic growth to 2036 assumed in the modelling is relatively low and (crucially) the fixed capacity implied for Langstone Bridge is not transparent.

2.6 Safety

It is important to note that the mitigation modelling results say nothing about safety. An evidence-based safety evaluation should be undertaken and reported before any statements are made on safety.

2.7 Tables A1 to A8

The use of a 30-second difference to highlight larger differences in journey times between the 'Do Minimum' and the 'Do Something' situations irrespective of overall journey time/distance is strange and could be misleading. Why not use a percentage difference? More importantly, with the exception of Table A4 (page 80), there are as many, if not more, sections with **longer journey times with the mitigation measures than without.** So the modelling evidence seems to contradict the report conclusions that the mitigation measures will allow the new developments to be accommodated.
In addition, it is important to clarify the content. If the audience is intended to be the stakeholders of the community, the tables should be headed 'NEUTRAL DAY ANALYSIS' and a comparison of mitigation to the base should be included as the current tables are focused on what in reality is only comparing two iterations of the same model forecast.

2.8 Societal Benefits

This section appears to be highly subjective and very biased towards benefits. Of over 200 entries in the Societal Benefit Matrix, all measures either have neutral or positive/highly-positive benefit. **None are negative.** This analysis should have results in a **Societal Impacts Matrix**, as some impacts will be negative. For example:

(i) On public transport, when buses are blocked in bus stop lay-bys;
(ii) On local pollution, noise, etc at new traffic signals where deceleration, stopping and acceleration will be required; and
(iii) New developments on the Island which will attract additional traffic cause more congestion and add delays to emergency services and increase greenhouse gas emissions.

2.9 Langstone Bridge

Langstone Bridge probably has a capacity slightly greater than the various 'bottleneck' locations either side of it, so it is not usually the critical point on the A3023 corridor at the moment. By improving these bottlenecks either side, as proposed in the mitigation measures, the bridge will soon become a bottleneck … but nothing can be easily/affordably done to increase its capacity noticeably. At this point attention will have to turn to demand management and/or traffic management (compare with the Bitterne Scheme in Southampton.) If this is going to happen before 2036 (highly likely), then this scenario should be included in the analysis, together with the V/C analysis recommendations below.

3 RECOMMENDATIONS

We recommend that:

3.1 Additional analyses are provided to evaluate the mitigation modules. It should be possible to see the performance of the modules under variable load conditions including stress scenarios, but currently the performance of the mitigation modules under variable circumstances is unknown. This would normally be undertaken with additional iterations of the microsim model or a V/C ratio analysis.
Without these reports it is not possible to calculate their impact today or the options going forward in the real environment.
We would also recommend the peak measurement should be against the more representative one-hour time slot, not the three-hour smoothing used in this report.

3.2 As the bridge will soon become the A3023 bottleneck, a focus study is undertaken showing:

(1) Its capacity (C)
(2) Peak flows at present (V), giving current V/C ratios
(3) Peak traffic demand in 2036 with no development (V_{2036}) – to clearly show the traffic growth forecast used – to give V_{2036}/C ratios
(4) Peak traffic demand in 2036 with new development (V_{2036ND}), giving V_{2036ND}/C ratios

This would clearly show the extent to which Langstone Bridge can cope with future traffic growth and inform what further analysis is needed.

3.3 The *"**no way unique**"* statement is corrected (1.2)

3.4 Councillor Pike's Foreword Statement is corrected or validated (2.1)

3.5 The A3023 40-30mph statement is corrected or validated (2.2)

3.6 An evidence-based evaluation is undertaken covering safety (2.6)

3.7 Travel Time Tables should be revised as recommended (2.7)

3.8 The Societal Benefits section is expanded to become a fair and accurate Societal Impacts section (2.8)

3.9 <u>The Reality</u>

The introduction from HBC is a fair representation of the A3023 road complex and confirms that the main trunk is heavily loaded, vulnerable to any blockages, and is constrained by its flow capacity. The neutral period evaluation indicates a 97% fit; however, that is not the case with Hayling. The vulnerability of the environment together with capacity constraints are the reasons why we strongly recommend stress tests and V/C ratio analyses before any decision is taken, because a significant housebuilding programme would add to that pressure.

Havant Borough Council should also be prepared to re-evaluate the quantity and type of housing which would be appropriate in the best interest of the community. Windfall is and has always been a significant category of development on the Island (up to 100 p.a.) This may represent a process closer to the natural evolution of the Island rather than the large developments proposed.

In any event, this process should be informed by the new road capacity studies recommended in this report.

3.10 Dave Parham and Professor Nick Hounsell would welcome the opportunity to present themselves to the Inspector for opinion or clarification.

4 CONCLUSIONS

4.1 The "neutral days only" analysis, which is the basis of this report, is not representative of the A3023 road network supporting Hayling Island. The population growth in the summer (20-25%) together with the HBC initiative to increase leisure activities are not included in the modelling. This may lead to incorrect decisions being taken on both the road infrastructure and the development opportunities. We recommend that all development applications are kept "on hold" until the recommendations in this report are satisfactorily resolved.

4.2 The mitigation projects identified in the Addendum may well have beneficial effects on the side roads, but the major trunk capacity – the key element – is degraded as the flow capacity is reduced. We believe that the recommended additional analyses should be undertaken to avoid unwarranted development and associated costs.

4.3 It is important for us all to work for a sustainable conclusion.

What are the next steps planned by HBC and how may we assist the process?

We (Save Our Island Group) are of course under pressure to publish our findings, but would wish to represent the most positive outlook.

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BIOGRAPHIES:

Professor Nick Hounsell *is a Visiting Professor within Engineering and Physical Sciences at the University of Southampton. He was Professor of Highways and Traffic within the Transportation Research Group until October 2017. He has over 30 years' experience of research into traffic engineering, urban traffic management and control, road network modelling and public transport operations using Intelligent Transport Systems (ITS) applications. He has managed a Rolling Programme of research for Transport for London into UTC and bus priority operations for some 15 years, and led a number of projects in this area funded by the European Commission. He was the Coordinator of the MSc Programme in Transportation Planning and Engineering, which has also been offered in Beijing, China and is involved in a number of educational networks in Europe funded under EC programmes including TEMPUS and Leonardo da Vinci. He is a Chartered Civil Engineer and past Chairman of the Transport Group of ICE South.*

Nick is a member of Langstone Sailing Club and has a residence on Hayling Island.

Dave Parham *is a retired Vice President of the Unisys Corporation. Through his 40 years with the Corporation he managed many large-scale developments including: the first Europe-US satellite computing; the first international email system 3 years before the development of the Personal Computer; the first worldwide Data Centre consolidation – over 60 Data Centres into one. This was a precursor to what is now known as cloud computing. He also ran a joint technology venture with Microsoft and ended with the responsibility for worldwide IT infrastructure & telecoms and strategic corporate project management. He also claims to be one of the few people who have programmed every generation of computer (very badly!). Attended and presented to the US Conference Board.*

Dave is a member of Mengeham Rythe Sailing Club and Hayling Golf Club. He was born on Hayling Island, and lives there now.