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**For the Attention of:** Ben Elvin

**Dear Ben**

### **Cumulative Development in Thurston**

This letter updates Suffolk County Council's position as the Highways Authority on the five planning applications that were presented to the Mid Suffolk District Council Planning Committee on the 12<sup>th</sup> July 2017.

Of the five applications four were granted minded to approve and one minded to not approve decisions by the Planning Committee. The main reason for the minded to decisions was the committee's requirement for further transport studies to be undertaken to demonstrate that the cumulative development did not create a severe impact on the highway network.

Suffolk County Council, as Highways Authority commissioned AECOM to undertake further studies. The additional study formed two parts

- Investigation of the proposed mitigation at the A143 Bury Road / Thurston Road 'Bundbury Arms' junction to determine if the proposed scheme is deliverable and can deliver the necessary additional capacity
- To add further detail to the study of individual junctions and roads within the village of Thurston.

The collaborative partnership between the Applicants, Mid Suffolk District Council and Suffolk County Council that was developed during the planning process was continued with all parties contributing to the cost of this independent study.

#### A143 Bury Road / C691 Thurston Road/ C649 Brand Road

The main issue at this junction indicated by early studies was the lack of capacity. Queueing occurs on Thurston Road approaching the A143 in the morning and on the A143 in the evening due to vehicles from Bury St Edmunds turning into Thurston Road. The proposed mitigation is to introduce right hand turn lanes with traffic signals to control the junction.

Drawing ref 60445024-SKCC\_004-A (Fig 1 below) shows the indicative layout. A reduction in vehicle speeds is required due to the narrow lanes which in turn are restricted by the available highway land. During the detailed design, every effort will be made to increase the width of the lanes although the requirement for the reduced speed limit will remain

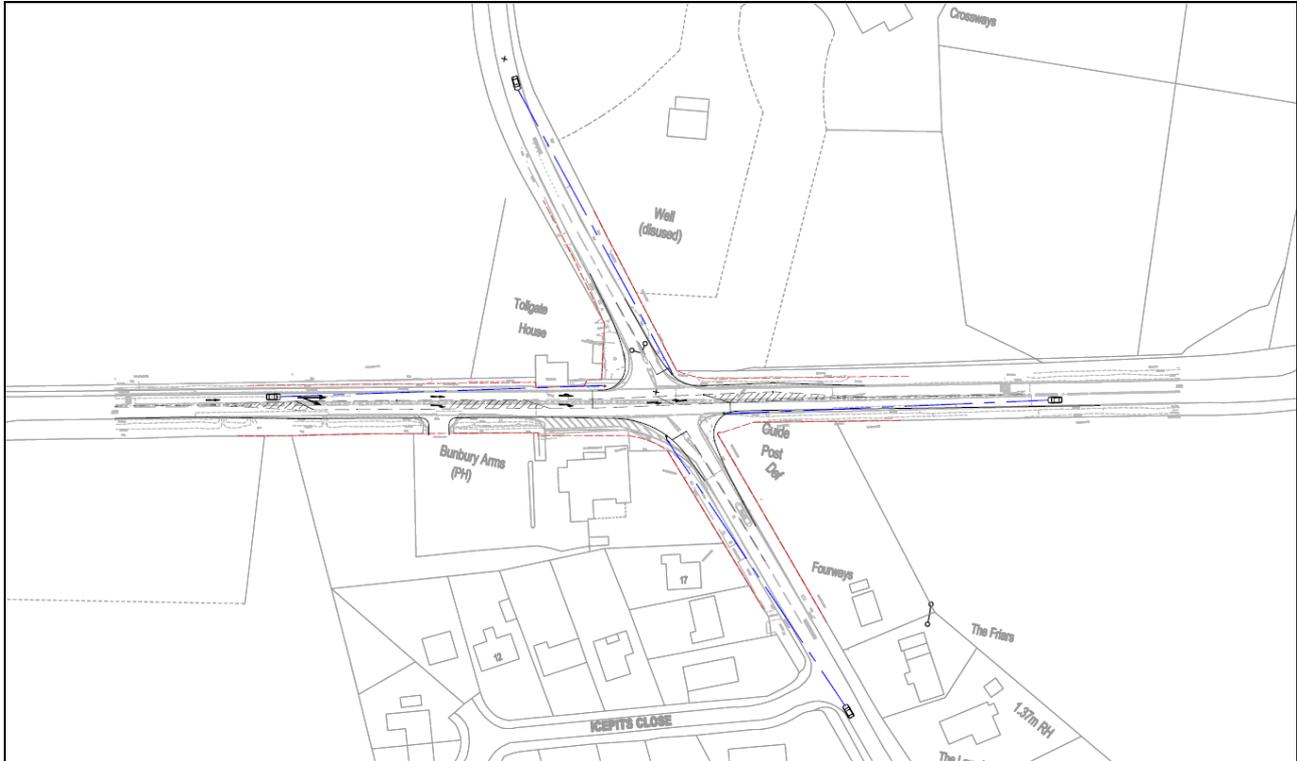


Fig 1: AECOM Drawing ref: 60445024-SKCC\_004-A

			Base + growth (2021)		Base + growth + 629 dev (2021)		Base + growth + 827 dev (2021)	
Dwellings considered (year)			0		689		827	
Ref	Junction		AM	PM	AM	PM	AM	PM
1	A143 Bury Road / C691 Thurston Road/ C649 Brand Road	4 way priority					1.38	1.20
1a	A143 Bury Road / C691 Thurston Road/ C649 Brand Road	4 way signalised junction (DoS)	92	80	97	86	98	87

Fig 2: A143/ Thurston Road Junction capacity

Without any highway improvements and with the proposed development the junction will be operating at considerable over capacity. Junction modelling indicates that the proposed traffic signal option will increase capacity although with the proposed development the junction will be close to the theoretical capacity in 2021.

As part of the study a Road Safety Audit was undertaken. Although this has raised a number of design issues it is considered that these can be addressed during the design process.

## Transport study of roads in Thurston

The AECOM technical note 60445024 'Thurston Cumulative Impact Assessment Part 2' summarises the traffic impact of the development in terms of

- 2017 base
- 2021 baseline traffic (ie growth but no development)
- 2021 baseline traffic (including growth) plus 689 dwellings (four minded to developments)
- 2021 baseline traffic (including growth) plus 827 dwellings (all five developments)

Table 10 in the report summarised the junction data and this is replicated as Fig 3.

- **Red:** Over capacity (above 1 RFC)
- **Orange:** Operating close to capacity (above 0.85 RFC)
- **Green:** Operating under capacity (below 0.85 RFC)

**Table 10: Summary of Junction Capacity Assessments 2021 scenarios**

Junction	AM Peak Max RFC				PM Peak Max RFC			
	2017 Base	2021 Base	2021 with Dev (689)	2021 with Dev (827)	2017 Base	2021 Base	2021 with Dev (689)	2021 with Dev (827)
C691 Barton Road / C562 Station Hill Three Arm Mini Roundabout	0.46	0.47	0.65	0.69	0.58	0.60	0.72	0.78
C560 Beyton Road / C692 Thurston Road / U4920 Thedwastre Road Crossroads (Pokeridge Corner)	0.52	0.54	0.84	0.86	0.45	0.46	0.56	0.58
C693 Thurston Road / C692 Thurston Road Crossroads Fishwick Corner	0.88	0.91	1.15	1.21	0.45	0.46	0.57	0.60
C559 Norton Road / C562 Ixworth Road / C562 Station Hill staggered Crossroads	0.32	0.33	0.55	0.55	0.21	0.21	0.35	0.35
C691 Barton Road / C559 Norton Road 'T' Junction	0.35	0.36	0.48	0.50	0.16	0.17	0.22	0.22

*Fig 3: Summary of Junction Capacities*

The C560 Beyton Road / C692 Thurston Road / U4920 Thedwastre Road (Pokeridge Corner) junction with full development is close to capacity in 2021. This results in a maximum queue length of 5 vehicles in the am peak. This is not considered to be severe impact.

The C692 / C693 Thurston Road (Fishwick Corner) junction is operating close to capacity in 2017 and 2021 without any development. With either studied scale of development the junction will be operating significantly over capacity in the morning peak with queues of 40 (689 dwellings) and 54 (829 dwellings) vehicles. This degree of congestion caused concern to the Highways Authority and further work was undertaken to identify any potential mitigation to reduce this (see below).

The C691 Barton Road under the railway bridge is operating above capacity in the am peak. No mitigation has been identified that may alleviate this. There is a degree of uncertainty in the calculation of theoretical capacity as future growth may vary from current assumptions. For example, robust travel plans may encourage modal shift away from car use thus reducing demand. The link is very short (@50m) and the duration of any congestion is likely to be short lived being restricted to the morning peak. Under these circumstances it is considered that the localised congestion is not considered to represent a severe impact by the Highways Authority.

## C692 / C693 Fishwick Corner: Mitigation Measures

As this junction was shown by the initial study to be operating over-capacity the Applicants were challenged to suggest possible mitigation measures. Following these discussions, a proposed scheme to change the priorities at the junction was selected for further study. This change provides two benefits

- An increase in capacity by prioritising those arms of the junction with the heaviest traffic
- By reducing speeds and providing stop lines rather than give way road safety can be improved.

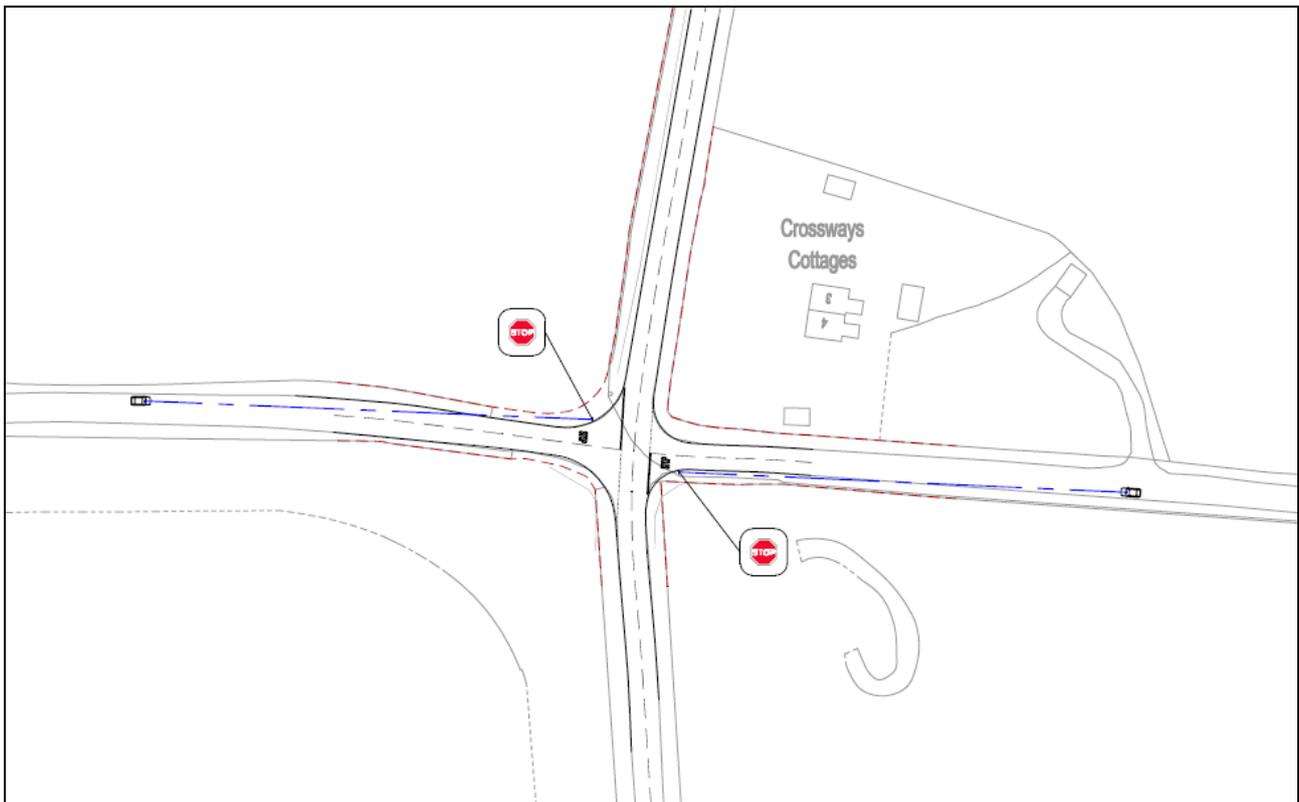


Fig 4: Proposed modified junction layout AECOM drawing 60445024-SKE-C-008-A

To confirm that these assumptions are correct indicative drawings have been prepared to make sure large vehicles can use the revised junction. In addition, modelling has been undertaken to confirm that the capacity can be improved and a road safety audit to identify any safety concerns. The modelling shown in Fig 5 shows that the capacity can be increased

			Base (2017)		Base + growth (2021)		Base + growth + 629 dev (2021)		Base + growth + 827 dev (2021)	
			0		0		689		827	
Dwellings considered (year)			AM	PM	AM	PM	AM	PM	AM	PM
5	C693 Thurston Road / C692 Thurston Road	4 way priority. (Fishwick Corner)	0.88	0.45	0.91	0.46	1.15	0.57	1.21	0.60
5a	C693 Thurston Road / C692 Thurston Road	Revised 4 way priority. (Fishwick Corner)	0.67	0.83	0.69	0.85	0.80	0.92	0.82	0.93

Fig 5: Modelling data for Fishwick Corner

The road safety audit identified vegetation and vehicle speeds as two potential issues. The designers' response considers that both can be addressed during the detailed design process.

### Future Development

The studies show that the proposed five developments can be accommodated by the existing highway network with appropriate mitigation. While capacity is one factor considered when assessing if the impacts of development are severe as required in the National Planning Policy Framework it is not the only factor. Road safety and sustainability are also considered.

Any future development in Thurston must, in the Highway Authorities opinion, address the following constraints;

- No further capacity can be provided at the A143 Bury Road / Thurston junction within the existing highway boundary for traffic traveling to / from the Thurston area.
- The C692 / C693 Thurston Road (Fishwick Corner) cannot be improved further in terms of either road safety or capacity due to the highway boundary constraints.
- Any significant future development is likely result in the C560 Beyton Road / C692 Thurston Road / U4920 Thedwastre Road (Pokeridge Corner) junction reaching its theoretical capacity. This work has not investigated the potential for mitigation but the site has similar highway boundary constraints as the other junctions.
- The C291 Barton Road under the rail bridge is at capacity and without mitigation this may restrict future development in the area. Monitoring of traffic generated by the proposed developments will be important in assessing the actual compared to theoretical impact of the additional traffic.

As Highways Authority Suffolk County Council recommends that future Local Plans recognise these constraints and that the planning process is used to seek opportunities to remove these.

Yours sincerely

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