

Southend-on-Sea Borough Council

Report of Executive Director
(Neighbourhoods & Environment)
**Traffic Regulations Working Party
and Cabinet Committee**
on

22nd February 2021

Report prepared by: Neil Hoskins,
Head of Civil Engineering

Agenda
Item No.

Notice of Motion (Kent Elms Junction)

Place Scrutiny Committee - Cabinet Member: Councillor Woodley
Part 1 Public Agenda Item

1. Purpose of Report

- 1.1 For the Traffic Regulations Working Party and the Cabinet Committee to consider the Notice of Motion (appendix 1) submitted to Council on the 27 February 2020 by Cllr David McGlone and Cllr Steven Ayles.

2. Recommendation

- 2.1 **An independent Road Safety Audit of the junction is to be carried out in spring 2021, which will take into consideration the re-marking of carriageway merge white lining works undertaken in November 2020.**
- 2.2 **There is currently a national issue regarding obtaining approval from the Secretary of State to switch on red-light speed cameras. As a result, the eastbound red-light speed camera on the approach to Kent Elms is still waiting for approval to be switched on. It is recommended that the eastbound speed camera is made active as soon as the Secretary of State has given approval.**

3. Background

- 2.3 The A127 Kent Elms highway works were completed September 2018, with subsequent footbridge installation works completed in July 2019. In response to recommendations from the independent Road Safety Audit Stage 3, alterations were made to the merge lanes road markings in November 2020 to support lane discipline.
- 2.4 The scheme was undertaken in accordance with Southend-on-Sea Borough Council's strategic policy, to address capacity issues, accessibility and journey time reliability along the A127 corridor; and the targets set for growth in jobs and housing as part of the Joint Area Action Plan (JAAP).
- 2.5 The scheme proposals included widening both the A127 Southend bound and London bound approach carriageways from two lanes to three lanes and improving pedestrian crossing facilities on all approach arms of the junction, including provision of a new footbridge over the widened A127 carriageway.
- 2.6 On Thursday, 27th February 2020 a council meeting was held at the Civic Centre. During this meeting a Notice of Motion was proposed by Cllr David McGlone,

seconded by Cllr Steven Aylen, to alter the configuration of the current junction layout.

- 2.7 Cllr McGlone stated the current three lane into two lane setup is causing drivers considerable concern and frustration. Cllr McGlone states “there have been a number of near misses and anyone who has driven through this junction will know of the unnecessary trepidation that this experience brings though the short distance of travel before the outside and middle lanes converge.”
- 2.8 Cllr McGlone proposed “a much better usage of this junction can be achieved by dedicating the near side lane into a left turn only lane and leaving the other two lanes to go straight ahead. A new configuration will allow an easier traffic flow thus removing any unnecessary congestion and improving the air quality in the immediate vicinity. It was proposed to remove the third lane for eastbound traffic after the junction with the painting of a hatched area in the lane and repainting of the two straight ahead lanes. No engineering costs will be required.”

3. Considerations

3.1. Advice on Traffic Congestion

A traffic modelling exercise was undertaken by consultants Mott MacDonald to compare the impact on traffic traveling through the junction, in the existing (pre Covid-19) situation and with the Cllr proposal.

This modelling exercise was undertaken using the VISSIM Microsimulation Program, and the Southend-on-Sea Multi Modal Model, to assess the effects on the junction, as well as the surrounding local road network. This took into consideration local committed development traffic, as-built changes to the local road network and proposed network changes as part of The Bell Junction upgrade.

The model was developed and validated on existing driver behaviour, for the original Kent Elms Junction improvement scheme and updated with forecast traffic growth to current year.

The traffic modelling exercise reported the results as shown in Table 1 below:

	Average Southend-bound Travel Time (seconds)		Average Queue Length for Southend-bound ahead-only traffic (m)	
	Existing	Cllr Proposal	Existing	Cllr Proposal
AM Peak (08:00 to 09:00)	93	393	73	150
PM Peak (17:00 to 18:00)	88	687	45	168

Table 1 – Travel times and Queue lengths comparison for A127 Eastbound traffic

The results show, when comparing the proposed arrangement against the current three ahead lane arrangement, there would be a significant increase in both average travel time and average queue lengths through the junction. In the AM peak the average travel time through the junction would increase by 300 seconds and queue length increase by 77 meters. In the PM peak the average travel time through the junction would increase by 599 seconds and queue length increase by 123 meters.

3.2. Road Safety Advice

An independent Feasibility Stage Road Safety Audit was undertaken to consider the Notice of Motion proposal.

The Audit comprised of an examination of collision data obtained from accident investigation reports and the results of the modelling for the junction.

The Road Safety Audit requires consideration of road accident collision data over a three-year period. To assess the impact the improvement scheme had on accidents through the junction, accident data was collated for the following periods: before construction, during construction and after construction.

Works began on Phase 1 of the improvements on 14th Sept 2015 and therefore the 'before construction period' accident data was collated for the period from the 14th Sept 2012 to the 13th Sept 2015. The works were completed on the 8th September 2018, and therefore the 'during construction' accident data was collated for the period of the 14th Sept 2015 to the 8th Sept 2018. Finally, the 'after construction' accident data was collated for the period from the 9th Sept 2018 to the 31st Dec 2019 (which at the time was the extent of the available data when the audit report was commissioned in May 2020).

These above time periods vary, and for fair comparison of the each of these periods, the audit reported the collision data as 'collision rates per year', as shown in Table 2 below:

Collision Type/Collision Rate	A127 eastbound NTT	A127 eastbound lane change	A127 westbound NTT	A127 westbound lane change	FTC ATS	Right-turn	Other	Total
Before	1.00	0.00	1.00	0.00	0.67	0.00	0.33	3.33
Construction	1.67	0.33	0.33	0.00	0.33	0.67	0.67	4.02
After	0.76	0.00	0.76	0.76	0.76	0.76	2.29	6.11
Change in collision rate	-0.24	0.00	-0.24	+0.76	+0.10	+0.76	+1.96	+2.77

Table 2 – Collision Type Rates per Year and by Time Period (source: Atkins Feasibility RSA May 2020)

Key:

NTT Nose-to-tail collision

FTC ATS Failed to conform with traffic signal

A further breakdown of the accident summaries for each of the time periods are included in Appendix 1 below.

The Audit commented on the above table stating the following,

“There have been small decreases in nose-to-tail collisions on both A127 approaches. There has been an increase in other types of collisions after the scheme was introduced and some of these collisions were not related to the works introduced. The only reported injury collision associated with the merge occurred in the period when the A127 eastbound carriageway works were completed and the A127 westbound works were on-going.”

3.3. The Audit concluded with the following Road Safety Problems identified in consideration of the Notice of Motion proposal:

“With the low usage of the dedicated left turn lane and increased queues on the A127 eastbound carriageway, frustrated road users heading towards Southend-on-Sea in lane two will be tempted to use lane one in an attempt to beat the queues. This could lead to an increase in late lane

changing collisions and nose to tail collisions as road users in the dedicated left turn lane attempt to re-join lane two of the A127 to continue to Southend-on-Sea. The collisions are most likely to occur from near the stop line to the end of the hatched area on the A127 eastbound carriageway.

By providing a dedicated left-turn lane, there will be a loss in capacity on the A127 eastbound carriageway, leading to longer queues. The effects of these longer queues could result in, an increase in a diversion of traffic to less suitable routes with the potential of collisions elsewhere.

As result of the longer traffic queues timings of the traffic signals may have to be altered to account for the change. The longer queues could result in road users on all approaches being frustrated by the longer wait and failing to stop at a red signal and colliding with other vehicles or pedestrians. As there is already a safety camera on the A127 eastbound carriageway, red light running is less likely on this approach. Faced with a longer wait, some pedestrians may be tempted to cross on a 'red man signal' with the risk of being hit by a vehicle travelling through the junction."

- 3.4. DfT's Transport Appraisal and Strategic Modelling division calculate predicted accident rates for junctions from national historical data. This is expressed as a single rate in each key year of the number of personal injury accidents per million vehicle kilometres. This data indicates, for a junction such as that at Kent Elms, you would expect 5.6 accidents per year.

In the 'after construction' period (the 16-month period from 9th Sept 2018 to the 31st Dec 2019), there were 7 accidents at the Kent Elms junction. resulting in a rate of 5.3 per year. This value is below that expected for this junction.

4. Financial Implications

- 4.1. Altering the junction as suggested by the Notion of Motion will reduce the overall benefits of the scheme and may result in returning some of the Local Growth Fund grant, as the benefits would be reduced.

5. Legal Implications

- 5.1. Any alteration to the junction would require Temporary Traffic Regulations Orders to undertake the work.

6. People Implications

- 6.1. The Feasibility Road Safety Audit stated that should the junction be altered as suggested by the Notion of Motion then, "faced with a longer wait, some pedestrians may be tempted to cross on a 'red man signal' with the risk of being hit by a vehicle travelling through the junction".

7. Property Implications

- 7.1. There are no implications as a result of this recommendation.

8. Equalities and Diversity Implications

8.1. There are no implications as a result of this recommendation.

9. Risk Assessment

9.1. The Road Safety stated that to alter the junction as suggested by the Notion of Motion, “could lead to an increase in late lane changing collisions and nose to tail collisions as road users in the dedicated left turn lane attempt to re-join lane two of the A127 to continue to Southend-on-Sea. The longer queues could result in road users on all approaches being frustrated by the longer wait and failing to stop at a red signal and colliding with other vehicles or pedestrians.”

10. Value for Money

10.1. The modelling assessment indicates that to alter the junction as suggested by the Notion of Motion, this will reduce the overall benefits of the scheme, causing increased congestion and reduce the value for money.

11. Community Safety Implications

11.1. There are no implications as a result of this recommendation.

12. Environmental Impact

12.1. The modelling assessment indicates that to alter the junction as suggested by the Notion of Motion would increase motor vehicle congestion and increase the delay to vehicles through the junction. The increase in congestion would negatively impact air quality through the junction.

13. Other Options

13.1. There are no other options proposed. A further Independent Road Safety Audit is proposed to be undertaken in Spring 2021; which will make any necessary recommendations following the alterations to the merge lanes road markings, to support lane discipline in November 2020.

13.2. However, should the Notice of Motion be agreed, a feasibility study of altering the junction arrangement would require to be undertaken.

14. Background papers

The published notice for motion referenced in this report is included in Appendix 2.

- 15. Appendices**
 - Appendix 1: Accident Collision Data by Period**
 - Appendix 2: Notice of Motion**

Appendix 1: Accident Collision Data by Period

Before Period (14th September 2012 – 13th September 2015)

10 personal injury collisions were recorded within the scheme extents in the 3- year before period. A summary of the collisions is given below:

- 3 nose-to-tail collisions were recorded on the A127 eastbound approach to the junction.
- 1 lane-change collision was recorded on the A127 eastbound exit.
- 3 nose-to-tail collisions were recorded on the A127 westbound approach to the junction.
- 1 nose-to-tail collision was recorded on the Bridgwater Drive approach to the junction.
- 2 collisions involved vehicles failing to stop at the traffic signals. In one collision the offending vehicle was travelling westbound and in the other collision the offending vehicle was travelling southbound.

Construction Period (14th September 2015 – 8th September 2018)

12 personal injury collisions were recorded within the scheme extents in the near 3-year construction period. A summary of the collisions is given below:

- 5 nose-to-tail collisions were recorded on the A127 eastbound approach to the junction.
- 1 lane-change collision was recorded on the A127 eastbound exit.
- 1 nose-to-tail collision was recorded on the A127 westbound approach to the junction.
- 2 collisions were recorded on the westbound carriageway near Mendip Crescent. One involved a collision following a vehicle turning left out of the junction; the other vehicle involved a vehicle losing control.
- 1 collision involved a southbound vehicle failing to stop at the traffic signals.
- 2 collisions involved right-turns across the path of oncoming traffic. One involved a right-turn into Bridgwater Drive and the other involved a right-turn from A1015 Rayleigh Road.

After Period (9th September 2018– 31st December 2019)

7 personal injury collisions were recorded within the scheme extents in almost 16 months after works were completed. A summary of the collisions is given below:

- 1 nose-to-tail collision was recorded on the A127 westbound approach to the junction.
- 1 collision involved a westbound vehicle failing to stop at the traffic signals.
- 1 collision involved a right-turn from Bridgwater Drive across the path of oncoming traffic.
- 1 lane-change collision was recorded on the A127 westbound exit.
- 1 collision involved a pedestrian, who was using his mobile phone, hit by a car turning right from Rayleigh Road.
- 1 collision involved a westbound car which crossed the central reservation and hit another car head-on. The driver of the westbound vehicle was suspected to be impaired by drink or drugs.

- 1 collision involved a refuse vehicle turning out of a bus stop and colliding with a car.

Council – 27th February 2020

Notice of Motion: The Kent Elms Junction

The current eastbound lane configuration at Kent Elms Corner deploys a three lane into two lane setup and is causing drivers considerable concern and frustration.

There have been a number of near misses and anyone who has driven through this junction will know of the unnecessary trepidation that this experience brings through the short distance of travel before the outside and middle lanes converge.

A much better usage of this junction can be achieved by dedicating the near side lane into a left turn only and leaving the other two lanes to go straight ahead. A new configuration will allow an easier traffic flow thus removing any unnecessary congestion and improving the air quality in the immediate vicinity.

It is therefore proposed that this Council removes the third lane for eastbound traffic after the junction with the painting of a hatched area in that lane and repainting of the two straight ahead lanes (currently the middle and outside lane). No engineering costs will be required.

Proposer : Cllr David McGlone

Seconded : Cllr Steve Aylen