

7 July 2023

Brandon James

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Kia ora Brandon,

The information you requested - CAS-740666-J4T2P1

Thank you for your request for information date 13 June 2023 relating to traffic light timings.

What criteria are used to establish the green signal duration at these intersections, particularly during the early morning hours?

The traffic lights across Auckland are managed with the SCATS traffic light management system. An insight into this system can be found here:

https://www.transport.nsw.gov.au/system/files/media/documents/2022/SCATS-Core-brochure-Final-web-spreads_0.pdf

Our traffic lights work in phases. Each phase at an intersection contains traffic movements that can run together without conflict. The number of phases at each intersection depends on the layout of the intersection. In terms of time, each phase has a duration called the phase time, and the sum of the durations for every phase is called the cycle time.

There are sensors in the road surface on each approach to an intersection. These sensors measure the real time density of traffic using the intersection and the phase time is then proportioned across the intersection based on this density of traffic. On top of this, if the density of traffic using the intersection increases, then the cycle time also increases.

So, in simple terms, the length of a green light for a certain movement through an intersection is dependent on how busy the intersection is as a whole, and also how busy that approach is compared to other approaches at the intersection.

Have there been any recent traffic studies or surveys carried out to validate the current timing of these signals? If so, could you provide an overview of their findings?

We are currently in the process of optimising the Lincoln Rd corridor. This process is a review of the operation of each signalised intersection on the route in terms of their individual performance, and the coordination of traffic lights along the transport corridor. We will be changing the operation of the motorway interchanges at the end of July, so the optimisation is focusing on Lincoln Rd south of

the interchanges. Once the operation of the interchanges has been changed, we will be reviewing the timings of the interchange and how they coordinate with the local intersections on Lincoln Rd.

Attached is a power point presentation of the Lincoln Rd optimisation process, please see attachment 1. We hope that the presentation allows an understanding of the level of detail that goes into each optimisation. An external consultant is currently optimising the Lincoln Rd corridor. This process is a review of the operation of each signalised intersection on the route in terms of their individual performance, and the coordination of traffic lights along the transport corridor.

Has Auckland Transport received any feedback or complaints regarding these specific traffic lights' timings? If yes, could you summarise the nature of the feedback and Auckland Transport's response?

There have been five complaints in January 2023 about the phasing of the traffic lights heading north on Lincoln Rd towards the motorway. One of these complaints related to excess time being allocated to cars exiting the Concourse. The other four complaints were the result of a single communications fault between the intersection and our operations centre which was solved when the fault was resolved.



There have been three complaints in 2023 about the phasing of the traffic lights heading north on Lincoln Rd towards the motorway. Where no faults were found with the traffic signal hardware, the complaints were passed on to our optimisation team for further investigation and consideration during the corridor optimisation process.



What actions, if any, has Auckland Transport undertaken to mitigate the traffic congestion caused by the shorter green light duration at the State Highway 16 interchange?

We do not agree with the assertion that the green light at the motorway interchange is less than that at Central Park Drive. Attached is a table of the average green light durations at different times on Wednesday 28 June. Please see data in attachment 2.

How does Auckland Transport ensure fairness and efficiency across different areas of the city when setting traffic light timings, especially in early hours when the volume of traffic might be less but the impact on individuals could be significant?

Overnight when traffic volumes are less, the majority of signalised intersections default to an isolated mode of operation. In this default mode, the intersection will rest in the main traffic phase so that the main road has a green light when no cars are using the intersection. When a vehicle approaches from a side road, that side road will be given a green light as long as there is a gap in traffic on the main road. This results in minimal delays to vehicles entering the intersection from a side road. It should be noted that when there are faults with vehicle sensors, then these sensors can have a dramatic effect on the nighttime operation of a signalised intersection. With the roadworks at the Lincoln Rd interchanges, we have a number of sensor faults that do not allow us to operate the intersection in a default mode. We expect these sensor faults to be fixed as the roadworks complete.

Does Auckland Transport have any plans to adjust these traffic light timings to improve traffic flow during these hours? If so, what are these plans?

Auckland transport does not have any plans to change the way we operate traffic lights during the night.

Could you share any data demonstrating the impact of current light timings on traffic flow and average commute times at these particular intersections?

The optimisation power point provided earlier gives a sample of the travel times on Lincoln Rd both prior to and during optimisation in the morning peak, the interpeak, and the evening peak. These travel times should also be read in the context of traffic volumes.

Should you believe that we have not responded appropriately to your request, you are able to make a complaint to the Office of the Ombudsman in accordance with section 27(3) of the LGOIMA and seek an investigation and review in regard to this matter.

Yours sincerely



Sarah Bryant
Group Manager ATOC