# Impact on traffic flows and journey times due to Farnham town centre proposal and A31 option

This information relates to the:

- proposal to change the traffic flow direction and widen pavements on The Borough, Castle Street and Downing Street
- A31 Firgrove Hill Improvements option

## Introduction to modelling

The Farnham Infrastructure Programme has used transport modelling to assess the impact of the town centre proposal to change the traffic flow direction, and widen pavements on The Borough, Castle Street and Downing Street, with the addition of the A31 Firgrove Hill Improvements option, which is the subject of this document. A separate document covers the impact of the town centre proposal on its own. The models helps the Farnham Infrastructure Programme team to observe, understand, and make predictions about travel and transport in the future.

## How the model works

The programme has used Surrey County Council's strategic transport model (called SINTRAM) to observe, understand, and make predictions about travel and transport in and around Farnham, including neighbouring areas in both Surrey and Hampshire. The model includes the following modes of transport and associated estimates in terms of number of trips: active (walking and cycling), vehicles (cars, light goods vehicles and heavy goods vehicles), public transport (bus and rail), and park and ride.

The base model is built using data that includes mobile phone data, traffic count data and national travel surveys. Growth forecasts from the Department for Transport for population, households and jobs are then used to create a model with predicted travel patterns and behaviour in a future year, which is 2043 in this case. This includes making predictions on whether:

- Drivers choose to use different routes in response to the changes brought about by the proposals (for example drivers using an alternative route to drive through the town centre).
- People choose to switch to a different mode of travel (for example from driving to using public transport, walking or cycling) as a result of the changes being proposed.
- People choose to change where they work, shop or visit.
- A combination of the above.

The model makes predictions based on the proposed changes to the town centre and one of the A31 options. For example, it includes if people have decided to change from driving to walking, cycling or public transport as a result of increased numbers of traffic lights in the town centre making a car journey take longer.

It doesn't take account of cultural or behavioural changes as that can't be quantified. Therefore, the model doesn't make any predictions based on people deciding to change how they travel into the town centre as a result of improved walking and cycling routes, or in response to the climate emergency.

So the modelling reflects a worst-case scenario, which could be mitigated by people choosing to leave their cars at home whenever they can and using alternative ways of getting around the town.

To observe the possible impact of the Farnham town centre proposals and the A31 options, we have compared the traffic flows and travel times predicted by the model for situations with and without the suggested changes, for the year 2043. We have done this for the morning peak or rush hour (8am-9am) on a typical weekday, and also for a daytime period between the morning and evening rush hours (based on an average hour between 10am-4pm). While the evening peak (5pm-6pm) has been modelled, the results are only shown for the morning peak as this is the busiest period on the road network.

As modelling is a complex process the programme has only modelled the A31 corridor based on one of the three Hickley's Corner options. Firgrove Hill Improvements was selected as the middle option of the three, and the information is supplied to help people make a balanced decision on both the town centre proposals and A31 options. No decision over Hickley's Corner has yet been made, and there will be a public consultation with appropriate modelling, before any final proposal is submitted to the Department for Transport for funding.

**Morning peak results**

In the morning peak hour the model estimates there will be about the same number of people visiting the town centre with both the town centre proposal and A31 scheme option.

A reduction in through traffic means flows are expected to reduce significantly in the town centre on key streets including Castle Street, West Street, The Borough, South Street, Union Road and East Street.

This is because:

- the town centre proposals will introduce more traffic lights (at the junctions of Downing Street and West Street, Long Bridge and Downing Street, and South Street and Union Road), with associated reduced road capacity and increased delays; and
- the A31 proposals increase capacity along the dual carriageway.

These both make the town centre less attractive as a through route, so traffic will find other routes. There are exceptions to this on Victoria Road, Bear Lane and Park Row, which are predicted to receive unwanted rat-running traffic. If the proposals are to go ahead, this will need to be investigated and addressed during the detailed design phase.

In general, the town centre proposals cause traffic that is not destined for or originating from the town centre to displace to alternative routes. This in turn causes further displacement, so the changes in traffic flow are seen across a wide area, although the change along most roads is small. With the addition of the A31 Firgrove Hill option, extra capacity on the dual carriageway means it can take more of the displaced traffic (or reduce the impact of the town centre proposals).

Overall there are predicted increases in traffic flow in parts of Upper Hale Road, Alma Lane, Upper Weybourne Lane, Weybourne Road, Lower Farnham Road and Badshot Lea Road. More vehicles are also routeing via part of the A287 Folly Hill and Guildford Road. There is also much less impact for east/west movements through Lower Bourne along Lodge Hill Road and Monk's Hill although flows on Shortheath Road/Ridgway Road increase. This pattern of flow increases is because the model predicts that fewer drivers will drive through the town centre and will find alternative routes, and there are changes in the way people approach both the town centre and the A31.

It's important to remember that the model is a 'worst case scenario' which doesn't make any predictions based on people deciding to change how they travel for behavioural or cultural reasons such as improved walking and cycling routes, or driving less due to the climate emergency. But if the scheme receives support, the reasons for drivers choosing these roads will be further investigated to reduce or mitigate any impacts.

Travel times have been estimated by the model for a selection of 11 routes in both directions representing journeys to, from, and through Farnham town centre, as well as along the A31. These are listed below:

1. **North Farnham** (A287/Beacon Hill Road junction) **to Lower Bourne** (Burnt Hill Road/Lodge Hill Road junction)
2. **North Farnham** (A287/Beacon Hill Road junction) **to Compton** (B3001/Monk's Walk junction)
3. **Heath End** (A325/Cranmore Lane junction) **to Wrecclesham** (A325/School Hill junction)
4. **A31 at Bentley** (A31/Station Road bridge) **to A31/A331**
5. **North Farnham** (A287/Beacon Hill Road junction) **to A31/A331**
6. **North Farnham** (A287/Beacon Hill Road junction) **to town centre** (Upper Hart car park)
7. **Lower Bourne** (Burnt Hill Road/Lodge Hill Road junction) **to town centre** (Central car park)
8. **Compton (**B3001/Monks Walk junction) **to town centre** (Central car park)
9. **Heath End** (A325/Cranmore Lane junction) **to town centre** (Riverside car park)
10. **Wrecclesham** (A325/School Hill junction) **to town centre** (Upper Hart car park)
11. **A31/A331 to town centre** (Central car park)

The time taken to drive along eight out of 11 of these routes in the morning is expected to increase with the exceptions being below, which are predicted to decrease:

- North Farnham to A31 / A331
- North Farnham to the town centre
- Lower Bourne to the town centre
- A31/A331 to the town centre

The increases associated with the town centre routes are a result of the proposal introducing more traffic lights in the town centre. These are on streets that would be changed from one-way to two-way and/or to provide safer crossings for pedestrians and cyclists controlled by traffic lights. The increase on the A31 route between Bentley and the A331 is mostly associated with the increase of vehicle flow along the corridor from the impact of displaced traffic away from the town centre and its increase in capacity from the A31 scheme option.

The decrease between North Farnham and the Upper Hart car park is due to the proposal to turn right at the bottom of Castle Street. This is reducing distance and time travelled by avoiding having to travel all around the town centre.

**Daytime (between morning and evening peaks)**

In the middle of the day the model estimates there will be about the same number of people visiting the town centre per hour with the proposed changes.

Traffic flows are also expected to reduce significantly in the town centre on the same key streets in the middle of the day. Similar to the morning peak, the model is predicting that traffic flows will increase on Victoria Road, Park Row and Bear Lane. This will need to be addressed by changes in the design if the proposal is supported.

Away from the town centre, traffic flows are expected to reduce on some roads but increase on others. There are predicted increases in parts of Upper Hart Road, the A325 Farnborough Road, A325 Hale Road, Upper Weybourne Lane, Water Lane/Badshot Lea Road, A31 Farnham Bypass, Firgrove Hill (south of the A31), Ridgway/Shortheath Road, West Street, Wrecclesham Road and Guildford Road. If the scheme receives support, the reasons for drivers choosing these roads will be further investigated to reduce or mitigate any impacts.

The time taken to drive along the majority of routes is expected to increase. Compared to the morning peak, the A31/A331 to the town centre and North Farnham to the A31/A331 routes are predicted to experience an increase in journey time. The former is due to increased flow circulating the Shepherd and Flock roundabout in the eastbound direction, and increased flow along the A31 Farnham Bypass in the westbound direction. Whereas the increase in travel time between North Farnham and the A31/A331 is due to the increase in flow between A325 Farnborough Road and the A31, in the eastbound direction only. As per the morning peak, journey times are expected to decrease between North Farnham and the town centre due to the proposal to turn right at the bottom of Castle Street, which reduces distance and time travelled by avoiding having to travel all around the town centre.