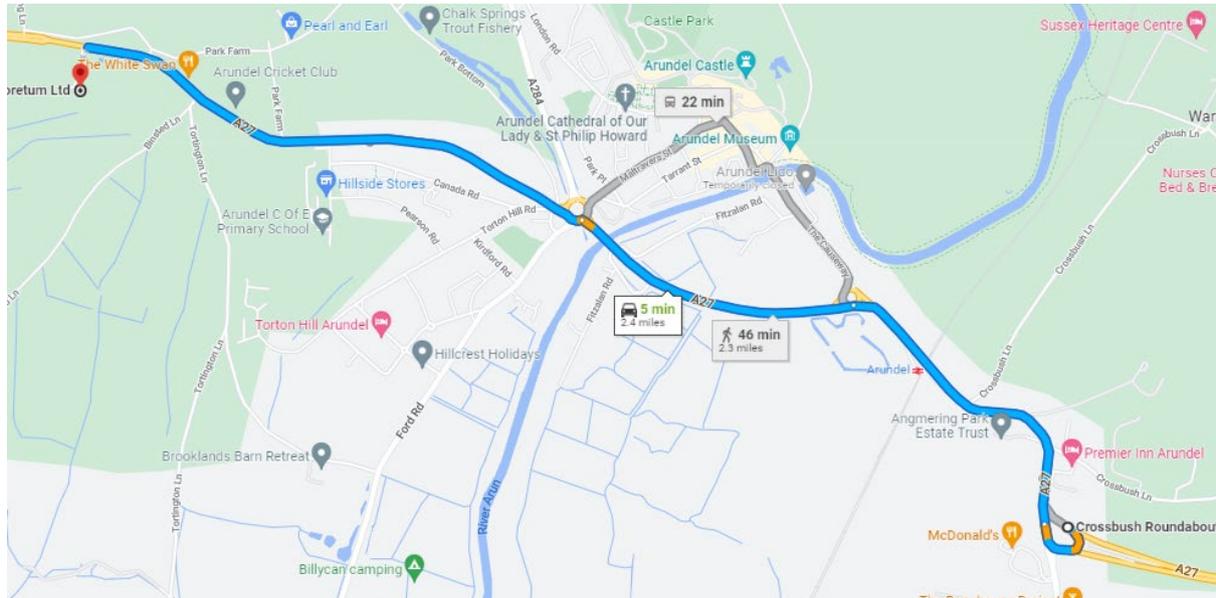


Arundel A27 Bypass Journey Times Savings: The Truth

- Congestion occurs leading up to and on the 2.5 miles of single carriageway between the dual-carriageways to the east and west of Arundel as shown in the image below.



- When this image was captured (Monday 2nd May at 8:45) the journey time was taking 5 minutes. This equates to an average speed of 30 mph.
- At an average speed of 50mph and 70 mph, the journey time would take c. 3 minutes and 2 minutes respectively.
- National Highways, however, measure journey times from the A27/29 Fontwell roundabout to the west of Arundel through to the A27 Crossbush roundabout to the east of the Town. A distance of c. 5 miles that consists of 2.5 miles of dual carriage way and 2.5 miles of single carriageway.

The Problem Statement

- National Highways stated baseline journey and congestion times that were made public are as follows:

- Total journey time over 5 miles without congestion takes on average 10 minutes (average speed of 30 mph).
- Traffic congestion in Arundel (because of the single carriageway) extends travel times mainly at peak hours
 - Eastward (am) – journey times extended by 35 seconds
 - Westbound (am) – journey times extended by 1 minute
 - Eastbound (pm) – journey times extended by 8 minutes
 - Westbound (pm) – journey times extended by 1 minute

Worse case journey times

- From the extended wait times above, the existing worse-case average journey time scenario can be calculated by using the Westbound (am) and Eastbound (pm) figures.
 - In the mornings, the journey takes 11 minutes (10+1).
 - In the evenings, the journey takes 18 minutes (10+8).
 - So, for today, National Highways have calculated the average journey times to be 14.5 minutes $((18+11)/2=14.5)$.
 - An average delay due to congestion of 4.5 minutes.
- By 2041, National Highways have calculated the average journey time will be 15.3 minutes. An average delay due to congestion of 5.3 mins.
- With a Bypass, and travelling at an average speed of 50mph it will take c. 6 minutes to travel the 5 miles from the east of Arundel (Crossbush) to the A27/29 Fontwell roundabout to the west of the Town.

In summary

Average Journey Times over 5 miles	Today (minutes)	2041 (minutes)
Without Bypass	14.5	15.3
With Bypass (at 50 mph)	6	6
Journey time savings	8.5	9.3

- The numbers of 8.5 minutes and 9.3 minutes are misleading for two reasons:
 1. Congestion occurs leading up to and on the single carriage way linking the dual-carriageways to the east and west of Arundel and this is just 2.5 miles in length.

Given a dual-carriage way already exists for 2.5 miles, and it takes 3 minutes at 50 mph to travel this distance, this time can be taken out of the equation.

In this case, the average journey time savings are 5.5 minutes and 6.3 minutes respectively.

2. The A27/A29 Fontwell roundabout is just 2.5 miles from Arundel and it is already at peak capacity during peak hours. National Highways have estimated an additional wait time of 3 minutes at the Fontwell roundabouts when the Bypass opens and this has yet to be validated. It could be higher.

Given very few journeys will avoid the Fontwell roundabout, this additional wait time should be included in the claimed journey savings times.

This would then result again in average journey time savings of 5.5 minutes and 6.3 minutes for travellers going west. This is without considering the impact on congestion to the east at Worthing when the Bypass opens.

- If the times calculated from point 1 and 2 were both factored in, the actual journey time savings could be closer to 2.5 minutes for today and 3.3 minutes in 2041 and not the 9.3 minutes as stated in the public brochure.
- It can only be assumed that National Highways have used the advertised journey time saving of 9.3 minutes (a 2041 prediction) as the number behind the Transport User benefits in the economic model. This will overstate the benefits.
- Given the actual journey time savings could be as low as 2.5 minutes (when opened) and 3.3 minutes by 2041, this will further reduce National Highways benefits claims associated with Transport User benefits. This will also have a knock-on effect with WEI benefits (i.e., lowering them) notwithstanding any better and more accurate future traffic volume predictions.