

Traffic Modelling Summary, Devizes Wiltshire.

Wiltshire's emerging Core Strategy will identify a specific amount and geographical location for growth in Wiltshire, including Devizes until 2026. The primary purpose for the Devizes traffic model is to assess the traffic impact of growth which has been outlined in the emerging Wiltshire Core Strategy for Devizes by 2026. The results of this assessment will contribute towards the Council's Core Strategy evidence base and assess whether there are any insurmountable transport barriers to delivery of the growth.

A 2011 base year traffic model for Devizes has been built, calibrated and validated, and has been shown to conform to industry standards. The traffic model for Devizes is a microsimulation model with a visual function which means that the performance of the model can be viewed and judged by local stakeholders. In addition to the technical validation, the traffic model for Devizes has also been subject to public scrutiny at a stakeholder meeting and an Area Board meeting during autumn 2011. Figures 1 and 2 summarise the existing traffic patterns in Devizes. In both instances, stakeholders agreed that the base year Devizes traffic model represented the existing traffic situation on a typical day in Devizes. Consequently, the traffic model provides a robust tool for assessing the traffic impacts of growth in Devizes during the plan period.

The council have provided the following six land use scenarios to be tested by the model:

1. 2011 Base Year (includes houses built up to April 2011)
2. 2026 Existing Commitment Only (includes sites with planning permission at April 2011)
3. 2026 Existing Commitments + Core Strategy Scenario (Reference Case)
4. 2026 Reference Case + Development Land off the A342 south of Marshall Road
5. 2026 Reference Case + Development Land at Coate Bridge
6. 2026 Reference Case + Development Land north-east of Roundway Park.

The Devizes Traffic Model 2026 Model Forecasting: Core Strategy Option Testing report explains the forecasting methodology applied and presents the results of the traffic model tests for each scenario. The aim of this modelling work is to ascertain if there are any insurmountable transport barriers to the delivery of growth outlined in the emerging Core Strategy.

The results demonstrate that the growth outlined in the emerging Wiltshire Core Strategy will result in an increase in vehicle trips. As a consequence, the traffic model forecasts an increase in the amount of delays, increases in journey times and reductions to average vehicle speeds. Figures 3 and 4 show the extent of the changes for each development scenario compared to the 2011 base year for various traffic related outputs reported via the model for the am and pm peak periods. As congestion increases, it is expected that peak spreading will occur as drivers re-time their journeys to avoid the worst congestion. In addition, analysis of the traffic model shows that re-routing also takes place as drivers try to avoid the most congested

junctions. The model predicts that average journey times from the junction between the A361 and Devizes Road (towards Poulshot) to the final roundabout by Hopton Industrial Estate during the am peak will increase by approximately 44% or about 7.5 minutes between 8.00 and 9.00 am if the core strategy proposal to allow approximately 400 more homes in Devizes over and above those already built or committed is accepted (April 2011 base).

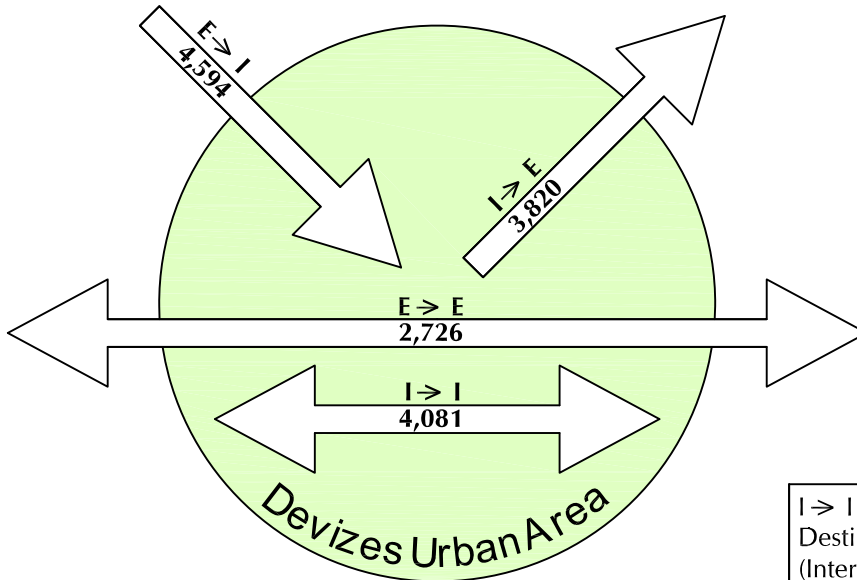
As vehicle engine technology improves nitrogen oxides and PM10s are expected to fall significantly. However, if improvements in vehicle engine technology do not materialise in line with the government's forecasts, then air quality improvements will be less pronounced. It will be important that the council continues to monitor air quality in Devizes.

The traffic model shows that the additional growth outlined in the emerging core strategy results in an increase in carbon emissions.

In addition to the emerging core strategy growth option, the impact of three possible development sites has also been tested. Results from the traffic model demonstrate that whilst the additional number of trips associated with these developments is small, the impact in terms of average journey speeds, journey times etc are disproportional to the additional growth. In these scenarios the model predicts that average journey times from the junction between the A361 to the final roundabout by Hopton Industrial Estate during the am peak will increase by approximately 67% or just over 14 minutes between 8.00 and 9.00 am. Clearly, the degree of intervention required to mitigate the traffic problems arising from the additional development sites would be more challenging than those associated with growth confined to the emerging core strategy proposal.

In summary, the modelling work to date demonstrates that whilst increases in delay and congestion are forecast by 2026, there are no insurmountable highway network barriers that would preclude the delivery of the growth proposed in the emerging Wiltshire Core Strategy. To help mitigate the negative traffic related impacts of growth, a transport strategy will be developed to ensure core strategy growth takes place in the most sustainable manner. The development of a transport strategy for Devizes will examine the best way to mitigate the impacts of growth whilst delivering local transport objectives. This work is due to start in early 2012.

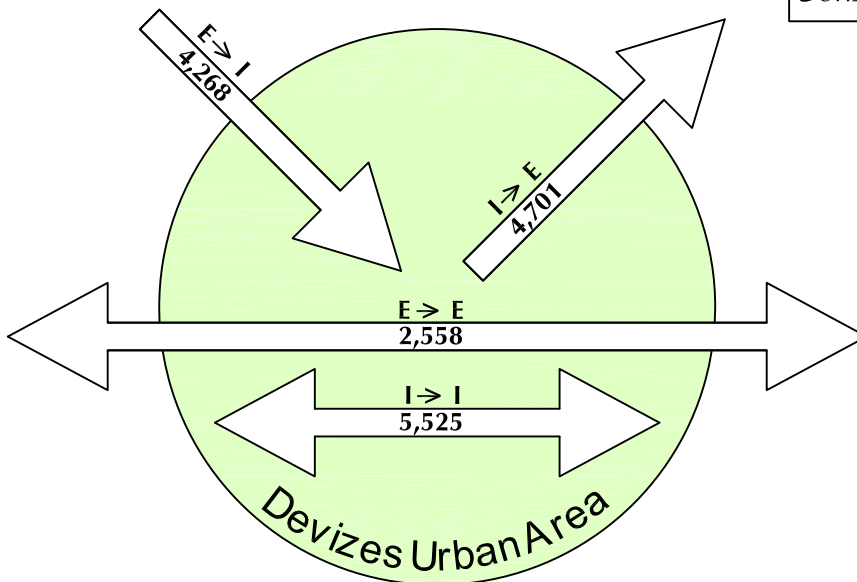
2011 AM Peak Period (07:00-10:00)



Total Trips in Matrix = 15,221
Through Traffic = 2,726 (18%)

I -> I : Origin and Destination in Devizes (Internal Trips)
I -> E : Origin in Devizes, Destination outside of Devizes
E -> I : Origin outside of Devizes, Destination in Devizes
E -> E : Origin and Destination outside of Devizes (Through Traffic)

2011 PM Peak Period (16:00-19:00)



Total Trips in Matrix = 17,052
Through Traffic = 2,558 (15%)

Job No: W410

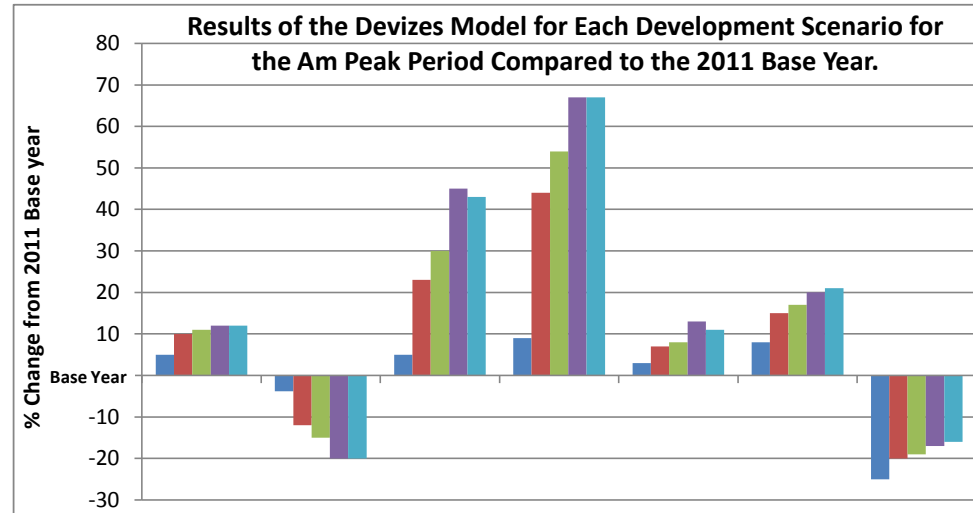


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Devizes Traffic Model -
Trips in 2011 Base Year Matrices

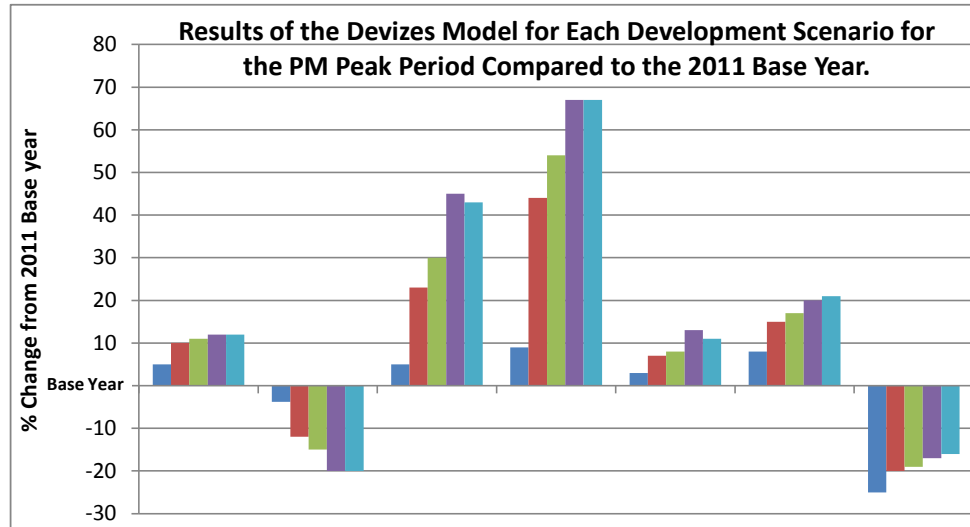
Figure 3



	TRIPS	Average Journey Speeds (kph)	Average Journey times (min:sec)	Through Traffic Average Time (E-W)	BUS Times (min:sec)	CARBON (kg)	Oxides of Nitrogen (kg)
2011 Base Year	15221	36.8	05:46	15:46	18:46	4537	38.6
2026 Existing Commitment Only	5%	-3.80%	5%	9%	3%	8%	-25%
2026 Existing Commitments + Core Strategy Scenario (Reference Case)	10%	-12%	23%	44%	7%	15%	-20%
2026 Reference Case + Development Land off the A342 south of Marshall Road	11%	-15%	30%	54%	8%	17%	-19%
2026 Reference Case + Development Land at Coate Bridge	12%	-20%	45%	67%	13%	20%	-17%
2026 Reference Case + Development Land north-east of Roundway Park.	12%	-20%	43%	67%	11%	21%	-16%

% Change from 2011 Base year

Figure 4



	TRIPS	Average Journey Speeds (kph)	Average Journey times (min:sec)	Through Traffic Average A361 Time (E-W)	BUS Times (min:sec)	CARBON (kg)	Oxides of Nitrogen (kg)
2011 Base Year	17,052	34.7	06:16	17:43	20:17	4,780	36.5
2026 Existing Commitment Only	5%	-8%	11%	16%	3%	9%	-21%
2026 Existing Commitments + Core Strategy Scenario (Reference Case)	10%	-27%	41%	50%	8%	19%	-15%
2026 Reference Case + Development Land off the A342 south of Marshall Road	12%	-31%	49%	62%	9%	24%	-12%
2026 Reference Case + Development Land at Coate Bridge	13%	-42%	63%	92%	16%	28%	-9%
2026 Reference Case + Development Land north-east of Roundway Park.	13%	-42%	75%	104%	17%	28%	-10%

% Change from 2011 Base year