

## **Crediton Link Road impacts on traffic and air quality**

Report of the Head of Planning, Transportation and Environment

***Please note that the following recommendation is subject to consideration and determination by the Committee before taking effect.***

**Recommendation: It is recommended that the impacts on of the Crediton Link Road on traffic flows and air quality are noted.**

### **1. Introduction**

At the Mid Devon Highways and Traffic Order Committee on 15 March, in the item regarding safety concerns at Barnstaple Cross on Higher Road near Crediton, it was noted that there has been a lack of data provided on the impact of the new Crediton link road on traffic and air quality on the surrounding roads and that a report addressing this should be submitted to the next meeting.

This report is to update the Committee on the changes to traffic flow and air quality on the roads in the surrounding area.

### **2. Background**

The Crediton Link Road was opened in October 2014. The construction of the 760-metre single carriageway between the A377 and Lords Meadow Industrial Estate started in July 2013 and it cost approximately £8.5m. The road provides a direct route to the Lords Meadow industrial estate from the Wellparks roundabout on the A377, and also includes a shared cycleway and footway.

A377 Exeter Road was a pinch point and affected traffic flows between Exeter and Crediton. The bendy and narrow street topography created a pinch point on Exeter Road, affecting traffic flows between Exeter and Crediton. The insufficient width and alignment of the road prevented heavy goods vehicles (HGVs), in particular, from passing and impacted not only on business trips but also commuters and people travelling by bus. The congestion and impacts of slow moving, larger vehicles contributed to exceedances of the statutory UK Nitrogen Dioxide (NO<sub>2</sub>) objective and particulate matter (PM<sub>10</sub>).

Crediton is a designated Air Quality Management Area. The link road forms a key part of Mid Devon District Council's air quality action plan, aiming to help alleviate congestion and improve air quality along the narrow stretch of Exeter Road, with benefits also to traffic movements on Charlotte Street, East Street and Mill Street.

The link road will also support the economy of the town by improving access to Lords Meadow and enabling further residential growth in the area.

### **3. Traffic Impacts**

There was a Manual Classified Count (MCC) undertaken at the Tesco Junction on Tuesday 25 May 2010 prior to the link road being constructed to record the baseline daily traffic flows. This survey was then repeated on Thursday 21 May 2015, following the delivery of the new

road. Table 1 shows a comparison of MCC data collected at the Tesco junction on the A377, which provides an early indication of the impact of the scheme post completion. This is shown diagrammatically in Appendix I.

*Table 1: 12hr 2-way traffic flow comparisons*

<b>Arm of roundabout</b>	<b>2010</b>	<b>2015</b>	<b>Difference</b>
A377 (West of Jct)	11,220	9,790	-1,430
A377 (East of Jct)	10,010	11,180	+1,170
Tesco Access	3,680	6,160	+2,480
Ind Est Link Road	N/A	4,660	+4,660

There were nearly 4,700 vehicles using the new link road over a 12 hour period in May 2015. Most recent automatic traffic counts show that this 12 hour figure has since risen to approximately 5,000 vehicles a day which is comparable to the County Council's modelling predictions used to justify the link road scheme.

The construction of the link road has resulted in a reduction in the level of traffic using the narrow section of Exeter Road with consequent benefits in air quality and noise reduction to residents of the area (see section 4 for more details). The figures show the development of the link road has removed traffic from the A377 Exeter Road west of the Tesco roundabout; however, there has been a significant increase in the total traffic travelling to/from Crediton as a whole (demonstrated by the 1,170 vehicle increase east of the junction).

There has been a significant increase of 2,500 daily two traffic movements from the Tesco development over the 5 year monitoring period. Excluding the Tesco arm approach to the roundabout, there has been an increase in total traffic approaching from the town direction, increasing by 30% from 5,790 in 2010 to 7,460 in 2015. The link road has therefore facilitated an increase in the number of vehicles travelling towards Exeter whilst decreasing the traffic flows along the constrained section of the A377.

Elsewhere on the Crediton highway network (see Appendix II), there has been a reduction of approximately 1,100 (-30%) two-way daily vehicle movements on East Street and more than 2,300 vehicles (-29%) reduction on Mill Street. This includes a 44% and 67% reduction in goods vehicles respectively on East Street and Mill Street.

The volume of traffic on Commercial Road on the Industrial Estate (section up to Exhibition Road) has increased by just over 2,300 vehicles per day (+49%) as increased traffic from the town is using the link road to access the A377. However, goods vehicle movements on this stretch of road have more than halved, demonstrating the preference of HGV movements between the industrial estate and Exeter/A377 being via the link road.

#### **4. Air Quality Impacts**

The Crediton Air Quality Management Area (AQMA) was designated in 2004 for exceedances of the statutory UK Nitrogen Dioxide (NO<sub>2</sub>) objective in the High Street and Exeter Road (A377). It was also designated for exceedances of the statutory objective for Particulate Matter (PM<sub>10</sub>) in Exeter Road only. Road transport, including cars, light commercial and HGVs are a major source of this air pollution. Therefore one of the objectives of the Crediton Link Road scheme was to improve air quality along these stretches of road by redistributing traffic away from these areas.

The relevant UK air quality objectives are:

Pollutant	UK air quality objective
Nitrogen dioxide (NO <sub>2</sub> )	40 ug.m <sup>3</sup> measured as an annual mean
Particulate Matter (PM <sub>10</sub> )	40 ug.m <sup>3</sup> measured as an annual mean; <i>and</i> Less than 35 days per year greater than 50 ug.m <sup>3</sup>

As the local air quality authority, Mid Devon District Council currently undertakes monitoring at a number of points across Crediton. This includes a real-time continuous air quality monitoring station measuring NO<sub>2</sub> and PM<sub>10</sub> (MS2) and three NO<sub>x</sub> tubes (14-16) providing monthly NO<sub>2</sub> averages all of which have been in place for a number of years. The location of these monitoring points is shown in Appendix III.

A brief analysis to show the early air quality impact of the link road has been completed for the following time periods:

- **2009-2013** (five years average before the Link Road was open)
- **2014** (one year average including the Link Road being open for three-months October – December)
- **2015** (first full one year average with the Link Road being open)

#### Nitrogen Dioxide (NO<sub>2</sub>)

Monitoring Location	Road not open <b>Average 2009-2013</b> Annual mean ug.m <sup>3</sup>	Road open for 3-months <b>2014</b> Annual mean ug.m <sup>3</sup>	Road open wholly <b>2015</b> Annual mean ug.m <sup>3</sup>
NO <sub>x</sub> tube 14	44	36	33
NO <sub>x</sub> tube 15	40	38	32
NO <sub>x</sub> tube 16	44	38	29
Monitoring station MS2	60	67	55

In respect of NO<sub>2</sub>, the data above indicates that concentrations have fallen significantly at all Exeter Road monitoring locations since the Link Road has opened. For the first full year in 2015, this is a reduction of between 8-34% against the preceding five-year average.

All monitoring locations where there is actual exposure by residents are now currently below the NO<sub>2</sub> air objective set out above. Levels at the continuous monitoring station (MS2) continue to remain above the objective but without any relevant long-term exposure by the public.

#### Particulate Matter (PM<sub>10</sub>)

Monitoring Location	Road not open <b>Average 2009-2013</b> Annual mean ug.m <sup>3</sup>	Road open for 3-months <b>2014</b> Annual mean ug.m <sup>3</sup>	Road open wholly <b>2015</b> Annual mean ug.m <sup>3</sup>
Monitoring station MS2	35	29	26

Monitoring Location	Road not open <b>Average 2009-2013</b> No. of days >50 ug.m <sup>3</sup>	Road open for 3--months <b>2014</b> No. of days >50 ug.m <sup>3</sup>	Road open wholly <b>2015</b> No. of days >50 ug.m <sup>3</sup>
Monitoring station MS2	54	18	11

In respect of PM<sub>10</sub>, the data above indicates that concentrations have also continued to fall at the Exeter Road monitoring station location since the Link Road has opened. This now equates to a reduction of 26% for the annual mean and a much larger reduction of around 80% for the number of days greater than 50 ug.m<sup>3</sup> in respect of the 2015 results against the preceding five-year average.

## **5. Financial Considerations**

There are no significant financial considerations attributed to this proposal.

## **6. Environmental/Public Health Impact Considerations**

Air pollution can have negative impacts on human health and the environment; however, there is evidence to suggest that the link road has improved air quality and is therefore likely to have helped reduce the likelihood of respiratory-related admissions to hospital.

## **7. Equality Considerations**

Certain groups of society are at increased risk of health problems and may therefore be more adversely affected by poor air quality. This includes children, older adults, and people with chronic health problems. As described in section 6, the link road is likely to have improved conditions for these vulnerable groups.

## **8. Legal Considerations**

There are no specific legal considerations at this time.

## **9. Risk Management Considerations**

No risks have been identified.

## **10. Summary**

Early traffic data shows traffic flows using the road are close to modelled predictions of approximately 5,000 vehicles a day. A significant proportion of HGVs and other traffic previously using Exeter Road to access the Lords Meadow Industrial Estate are now using the Link Road.

Since the link road opened, the reduction in traffic volumes and proportion of HGVs using the narrow section of A377 Exeter Road has resulted in significant reductions in concentrations of both Nitrogen Dioxide (NO<sub>2</sub>) and Particular Matter (PM<sub>10</sub>). All concentrations at areas of relevant exposure were below the air quality objective values in 2015 for the first time since monitoring began.

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**Electoral Divisions: Crediton Rural; Newton St Cyres & Sandford**

Local Government Act 1972: List of Background Papers

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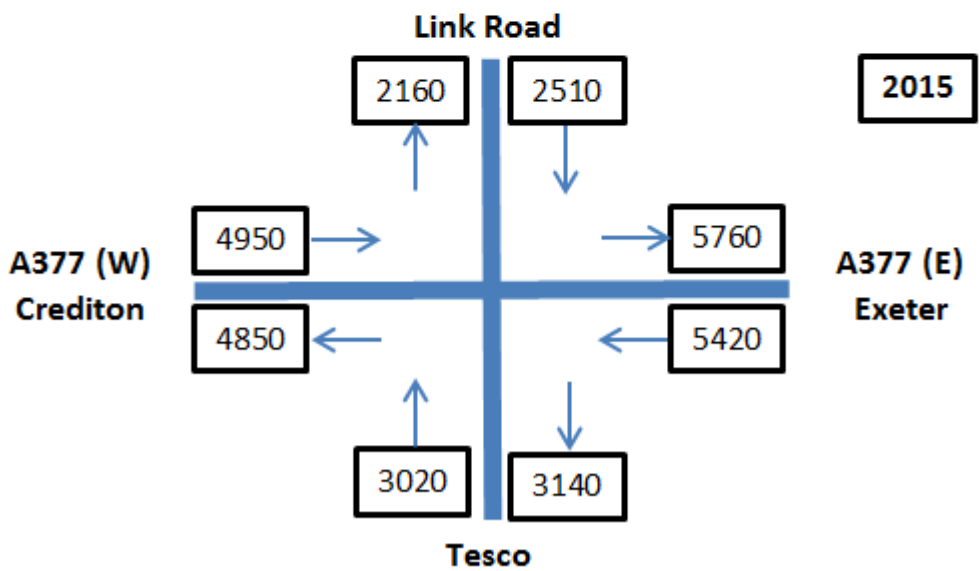
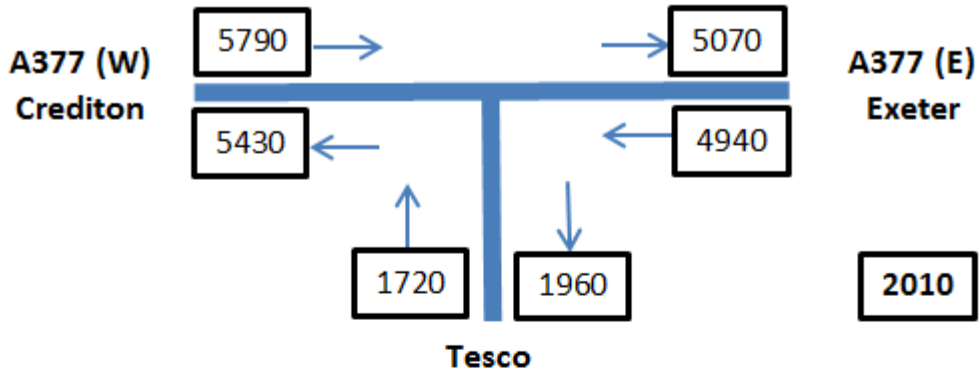
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Tel No: 01392 382681

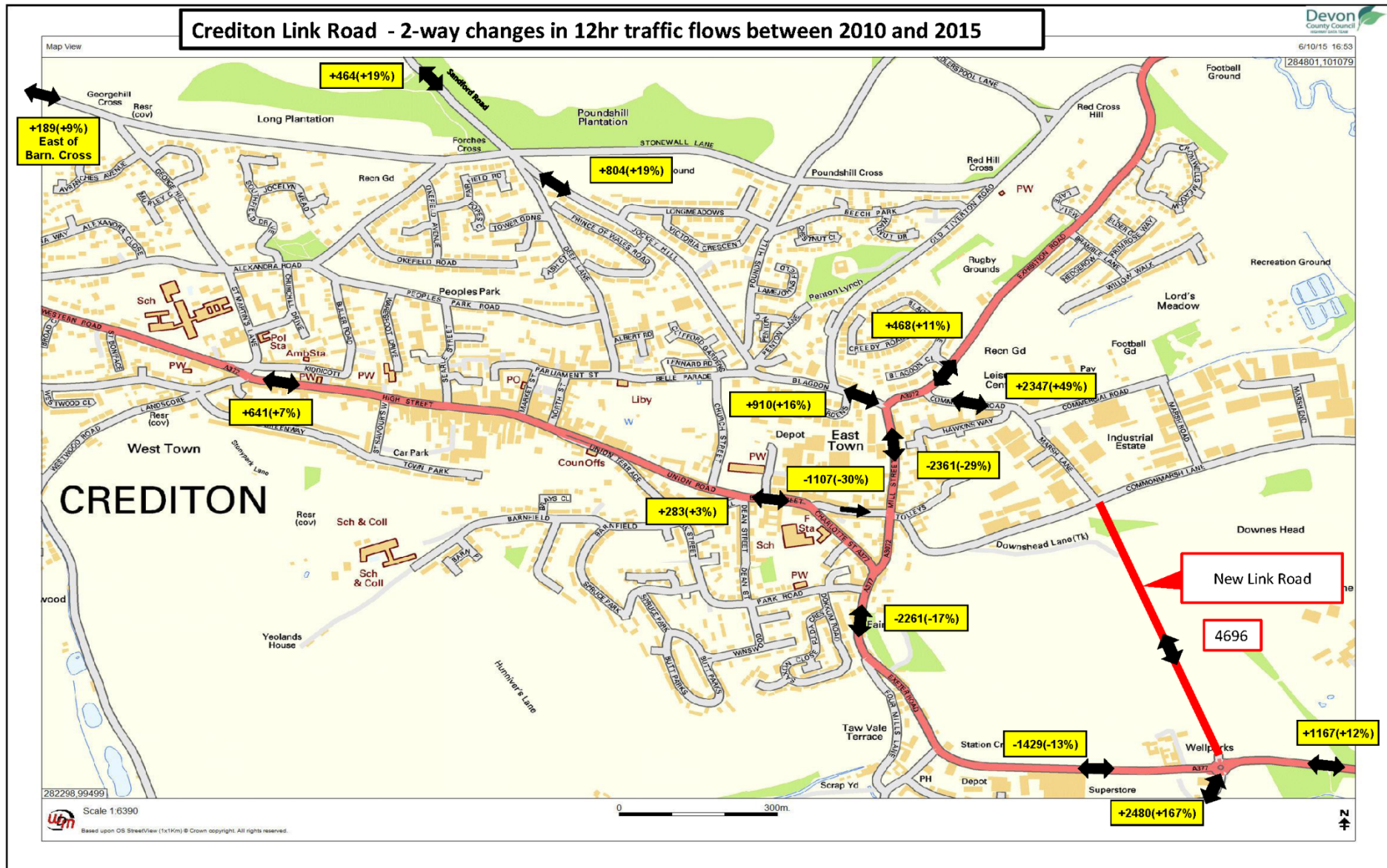
Background Paper	Date	File Ref.
Nil		

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A377/Crediton Link Road Roundabout Daily Traffic Flows



Wider Network Change in Two-Way Traffic Flows between 2010 and 2015



Location of Air Quality Monitoring Sites

