

PTE/20/14

Exeter Highways and Traffic Orders Committee  
22 July 2020

## **Countess Wear Roundabout, New Pedestrian and Cycle Crossing on Rydon Lane Approach**

Report of the Head of Planning, Transportation and Environment

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

**Recommendation: It is recommended that:**

- (a) the proposed improvements shown in plan B23006DW/D/003 included in Appendix I, is approved for construction at an estimated cost of £195,000; and**
- (b) the Head of Planning, Transportation and Environment be given delegated powers, in consultation with the Chair of HATOC and the local member, to make minor amendments to the scheme details.**

### **1. Introduction**

The proposal is for a new Toucan crossing on the Rydon Lane approach to Countess Wear roundabout between the Shell garage and the footway on the eastern (Exeter Golf and Country Club) side of Rydon Lane.

Improvements to address pedestrian/cycle access at Countess Wear roundabout are identified in the April 2020 Devon County Council Transport Infrastructure Plan. Resurfacing of the roundabout is taking place this Autumn and alongside the Government's announcement of a potential fund to support walking and cycling, there is an opportunity to accelerate the delivery of a new crossing at this busy junction.

### **2. Background**

Recent surveys undertaken after the Bridge Road widening scheme (See Appendix II) showed the volume of pedestrians crossing the Rydon Lane arm of the roundabout each day (291) is similar to the numbers crossing at the Bridge Road Swing and Bascule bridges on the popular Exe Estuary Trail (286).

Rydon Lane is a busy section of road with four lanes (two in each direction). The traffic flow on Rydon Lane of 34,000 vehicles each day is one of the highest in the County for a road of this category. There is an historic calculation ( $PV^2$ ), which measures the relationship between the number of pedestrians and number of vehicles to determine whether a crossing is needed and, if so, what type of crossing. The  $PV^2$  value for this arm of the junction is 2.6, which is well above the typical threshold of 0.8-1.0 at which guidance suggests a crossing should be considered. This reflects the high numbers of pedestrians needing to cross a high-volume traffic road.

The citybound arm of Rydon Lane approach to Countess Wear is signal controlled at Countess Wear roundabout, enabling pedestrians and cyclists to cross the first section of carriageway when the lights are on red. The exit arm from Countess Wear roundabout

towards M5/Pynes Hill 2-lane carriageway currently has no dedicated pedestrian facility, and people have to find a gap in regular and often fast-moving traffic to cross the road.

During peak periods, the traffic flows through Countess Wear roundabout can reach as high as 4,300 vehicles in the morning and 4,700 vehicle an hour in the afternoon rush hour.

Essential resurfacing to address the flooding that currently occurs in periods of heavy rainfall are scheduled for Autumn 2020. The cost of installing a crossing would be significantly reduced by linking to these planned maintenance works. There is also a unique opportunity to part fund the works using the Government's COVID-19 Emergency Active Travel funding.

If approved, these changes would support the target in the emerging Exeter Transport Strategy for 50% of work trips to be made by active travel and help to lock in the increased walking and cycling levels seen during the current COVID-19 pandemic.

### **3. Capacity Implications**

A traffic model of the Countess Wear roundabout has been built to assess the impact of different crossing options. This analysis has also been supported by on site observations with input from the Devon County Council signals team.

Any amendment to the layout of the roundabout, such as installing a new signalised crossing, will have an impact on the timing and phasing of all of the traffic signals. Changes in vehicular capacity at the junction would occur from adding a new crossing facility on the exit arm (towards Pynes Hill) of Rydon Lane and any changes to the filter lane or refuge on the inbound lane. The impact of these is summarised below, with the crossing options explored in more detail in section 4.

#### Outbound (Northbound Exit to Roundabout)

Basing calculations on data collected for Bridge Road, it is estimated that the pedestrian phase will be called on 80% of cycles. Inclusion of a pedestrian stage is estimated to require 10 seconds, this equates to an average loss of 8 seconds per cycle and approximately 320 seconds per hour. Considering a standard throughput of traffic this relates to approximately 160 vehicles per lane per hour.

The impact on capacity would depend on the number and use of the lanes that lose this green time and would be most significant in the PM peak. The proposed signal staging suggests a loss of peak hour capacity at the junction of approximately 160-320 vehicles per hour.

#### Citybound (Southbound approach to Roundabout)

The short length of the right turn filter lane means it is often blocked if there are more than 2 vehicles waiting at one of the stop lines and therefore the additional capacity is only modest. Observations of the junction found that the right turn filter lane (towards city centre) enables an extra 50-75 vehicles onto the roundabout in peak periods.

Removing this lane to provide a shortened crossing distance and safer central refuge, will result in a marginal loss in capacity on this approach. However, removing the right turn filter would allow the stop line on the circulatory carriageway to be moved to increase stacking capacity for vehicles on the roundabout. This is likely to increase the ability of the junction to manage the more variable flows that that can occur outside commuter peak periods, especially at weekends,

## 4. Option Appraisal

In order to accommodate a new pedestrian crossing facility on the Rydon Lane approach to the roundabout, four options have been assessed. The below gives a summary of the relative merits of these for pedestrian and cycle convenience, road safety and traffic impact.

An indicative plan of the 4 options is given in Appendix III.

### Option 1: Toucan Crossing on Existing Road Layout:

The existing layout has insufficient width to support a shared use crossing required for pedestrians and cyclists. Retention of the existing splitter island also means users must cross three sections of road. This is not an attractive facility for pedestrians and cyclists and therefore not considered suitable.

### Option 2: Toucan Crossing with modified splitter island

Amending or removing the splitter island would provide a single crossing of the entry arm of the junction and retains 3 lanes at the stop line. This has minimal impact on the entry capacity of the Rydon Lane arm.

### Option 3: Toucan Crossing on enlarged central island.

Widening the pedestrian/cycle central reservation island by removing the splitter island and right turn inbound filter lane. The crossing distance of the southbound carriageway would be reduced to approximately 8m and provides the best facility for pedestrians and cyclists of the four options. Although reducing to two lanes would reduce capacity on the Rydon Lane approach, it does allow the stop lines on the circulatory carriageway to be moved further eastwards, increasing the stacking capacity for vehicles on the roundabout.

### Option 4: Staggered Toucan Crossing on Amended Central Island.

Provides a standalone toucan crossing of the exit arm, which to give adequate distance from the roundabout has to be a staggered crossing facility. A standalone crossing phase creates the potential for vehicles to queue back onto the circulatory carriageway and not considered suitable on road safety grounds.

Option 3 provides the best layout for pedestrians and cyclists and the least potential risks identified by the road safety team. A new crossing will have a noticeable impact on vehicle capacity at Countess Wear Roundabout and Option 3, shown in Plan B23006DW/D/003 included in the Appendix I, provides the best balance of improving crossing facilities.

## 5. Consultations/Representations

Consultation was carried out through a letter drop to 174 dwellings in the vicinity and local businesses including WESC Foundation, Exeter Golf and Country Club, Shell Garage, Countess Wear Premier Inn and Beefeater restaurant. Letters were sent on 25 June 2020, providing residents two weeks to respond.

The initial responses showed support for the proposals (24 For/3 Against/1 Neither) and highlighted an improved crossing facility here had been a desire of local residents for some time. Those not in support of the scheme expressed concerns around congestion at the roundabout and potential for further delays.

Within the responses there was an overwhelming recognition that the current layout makes it difficult to cross as a pedestrian or cyclist. Safety was cited as the most important factor, particularly for school trips. Several responses acknowledged the proposal would have a

marginal impact upon the capacity of the roundabout during peak periods, but this was necessary to increase the safety of pedestrians.

## **6. Financial Considerations**

There is a number of cost savings associated with including the Toucan Crossing with the planned Countess Wear re-surfacing scheme, making it cheaper to deliver as part of the planned resurfacing works. There is also S106 funding from new development at Newcourt towards walking and cycling facilities.

The scheme is estimated to cost £195,000 and would be funded through the following package:

- £74,555 from S106 Beech Cottage and Holland Park
- £30,060 from Local Transport Plan
- £90,385 from Emergency Active Travel Fund (tranche 2)

The County Council has an indicative allocation of £1.3m for tranche 2 of the Emergency Active Travel Fund and would seek £90,035 of this towards the scheme. In the event that Devon County Council does not secure any of the tranche 2 funds, it would be underwritten by Local Transport Plan funding; however, this is considered to be a low risk, having been successful in securing 100% of the tranche 1 funding.

## **7. Environmental Impact Considerations**

Construction of the Toucan Crossing will increase the safety and accessibility of local retail, work and leisure trips to be made on foot or by cycle, and therefore will promote use of low carbon travel modes.

The additional red time needed to accommodate the new crossing will have a negative impact on vehicle delays and emissions. Nevertheless, the proposal is felt to provide an appropriate balance which supports the County Council's commitment to increase active travel and reducing carbon emissions.

## **8. Equality Considerations**

The proposed crossing would provide a formal facility where pedestrians and cyclists have priority. This would assist pedestrians and cyclists of a wide range of abilities and confidence levels to cross the carriageway more safely and improve access to jobs and amenities. The scheme would advance equality of opportunity, by increasing safety to vulnerable road users, including young people, older people and people with disabilities.

## **9. Legal Considerations**

To introduce the Toucan Crossing, the Council will be required to issue a public notice in accordance with Section 23 of The Road Traffic Regulation Act 1984.

## 10. Risk Management Considerations

In a location of high pedestrian and vehicular demand, the provision of a formal pedestrian and cyclist facility, instead of users having to judge gaps in traffic, is expected to improve safety for vulnerable road users.

A Stage 2 Audit of the detailed design has been commissioned, but not yet undertaken. The design of the scheme has been progressed with input from the County Road Safety Officer. Therefore, it is anticipated that only minor changes, if any, are expected as a result of the safety audit and could therefore be agreed through delegated powers as per recommendation (b) of this report.

## 11. Public Health Impact

The scheme will have a positive public health impact by improving safety and encouraging more people to walk and cycle. By encouraging active and sustainable travel, whilst improving access to nearby facilities and routes to key employment destinations, this scheme will contribute to the general health and wellbeing of residents.

## 12. Summary/Conclusions/Reasons for Recommendations

The proposal addresses the requirement for a pedestrian and cycle crossing of Rydon Lane at Countess Wear Roundabout as evidenced by the high numbers of pedestrians crossing 4 lanes of traffic without any form of formal crossing on one of the busiest routes in the County.

Taking the opportunity to deliver the scheme this year alongside essential resurfacing work and taking advantage of Government funding, will also deliver significant financial efficiencies compared to delivering it as a standalone scheme at a future date.

The improvements are identified in the Transport Infrastructure Plan. Although the provision of a new crossing will reduce capacity at the junction, it will increase safety for pedestrians and cyclists and supports the County Council's encouragement of active travel in response to the COVID-19 pandemic.

Dave Black  
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## Electoral Division: Wearside & Topsham

Local Government Act 1972: List of Background Papers

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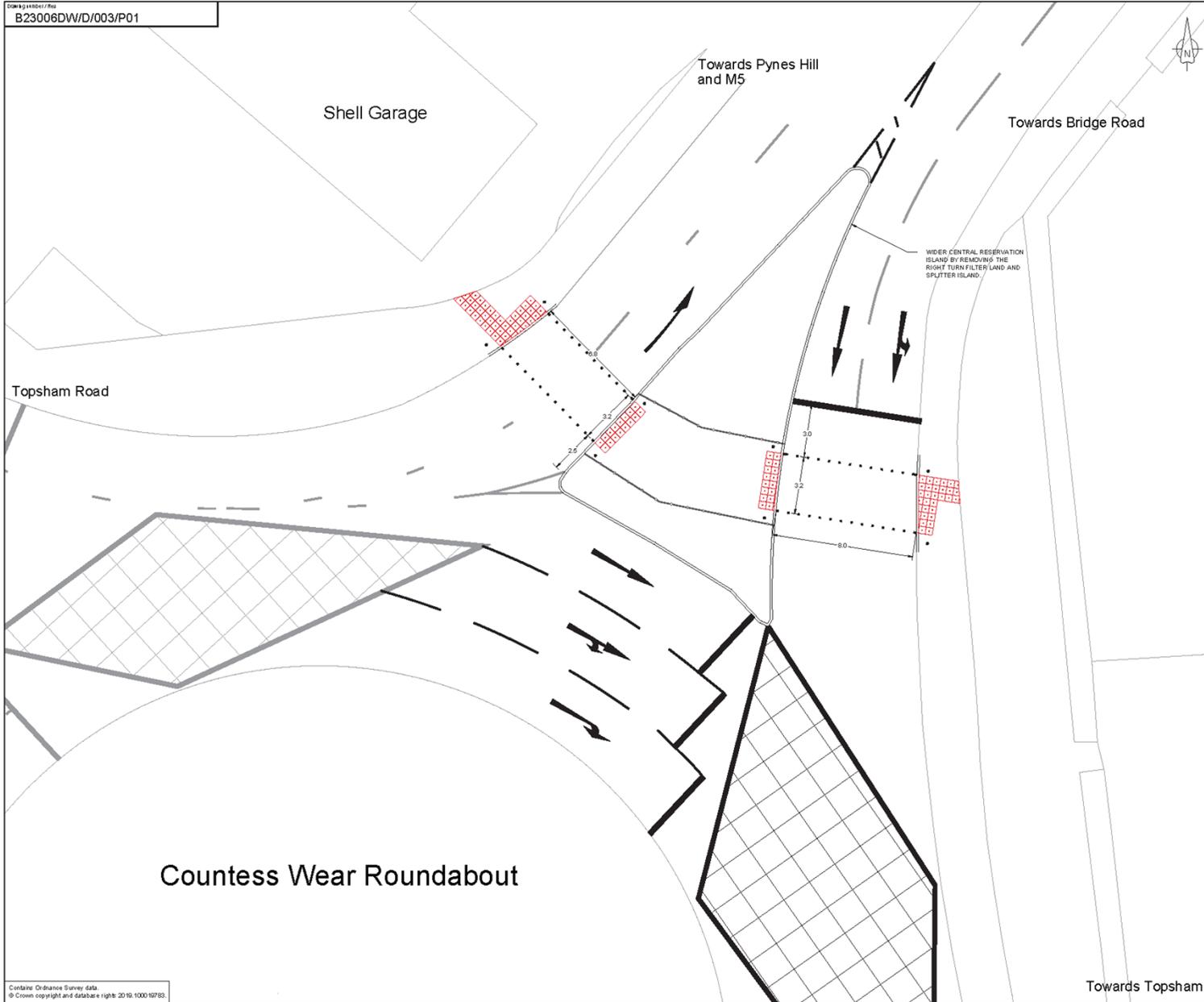
Background Paper	Date	File Reference
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None		
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sc/cr/Countess Wear Roundabout New Pedestrian and Cycle Crossing on Rydon Lane Approach  
02 130720

# Appendix I To PTE/20/14

CDM/11/0041/R01  
B23006DW/D/003/P01



- KEY PLAN**
- KEY:**
- ROAD RESTRAINT SYSTEMS (VEHICLE AND PEDESTRIAN):**
- TYPE P01 PEDESTRIAN GUARDRAIL 1000mm HIGH WITH CAST-IN BASE TO STANDARD DETAIL S401
- KERBS, FOOTWAYS AND PAVED AREAS:**
- PROPOSED RED COLOUR BLISTER TACTILE PAVING FLAGS, 400mm x 400mm TYPE TAC\_4A
  - PROPOSED KERBS
- ROAD MARKINGS:**
- EXISTING ROAD MARKINGS TO REMAIN
  - PROPOSED ROAD MARKINGS
  - PROPOSED ROAD STUDS
- TRAFFIC SIGNAL:**
- PROPOSED TRAFFIC SIGNAL POLE WITH PUSH BUTTON UNIT

- NOTES**
- PROPOSED TOUCAN CROSSINGS ON AMENDED ROAD LAYOUT WITH A WIDER CENTRAL RESERVATION ISLAND.

Rev	Rev. Des	Date	Checked	Drawn	Issued



Project: **COUNTESS WEAR RYDON LANE CROSSING**

Drawing title: **FEASIBILITY STUDY OPTION 3**

Drawing code: **S0 - PRELIMINARY**

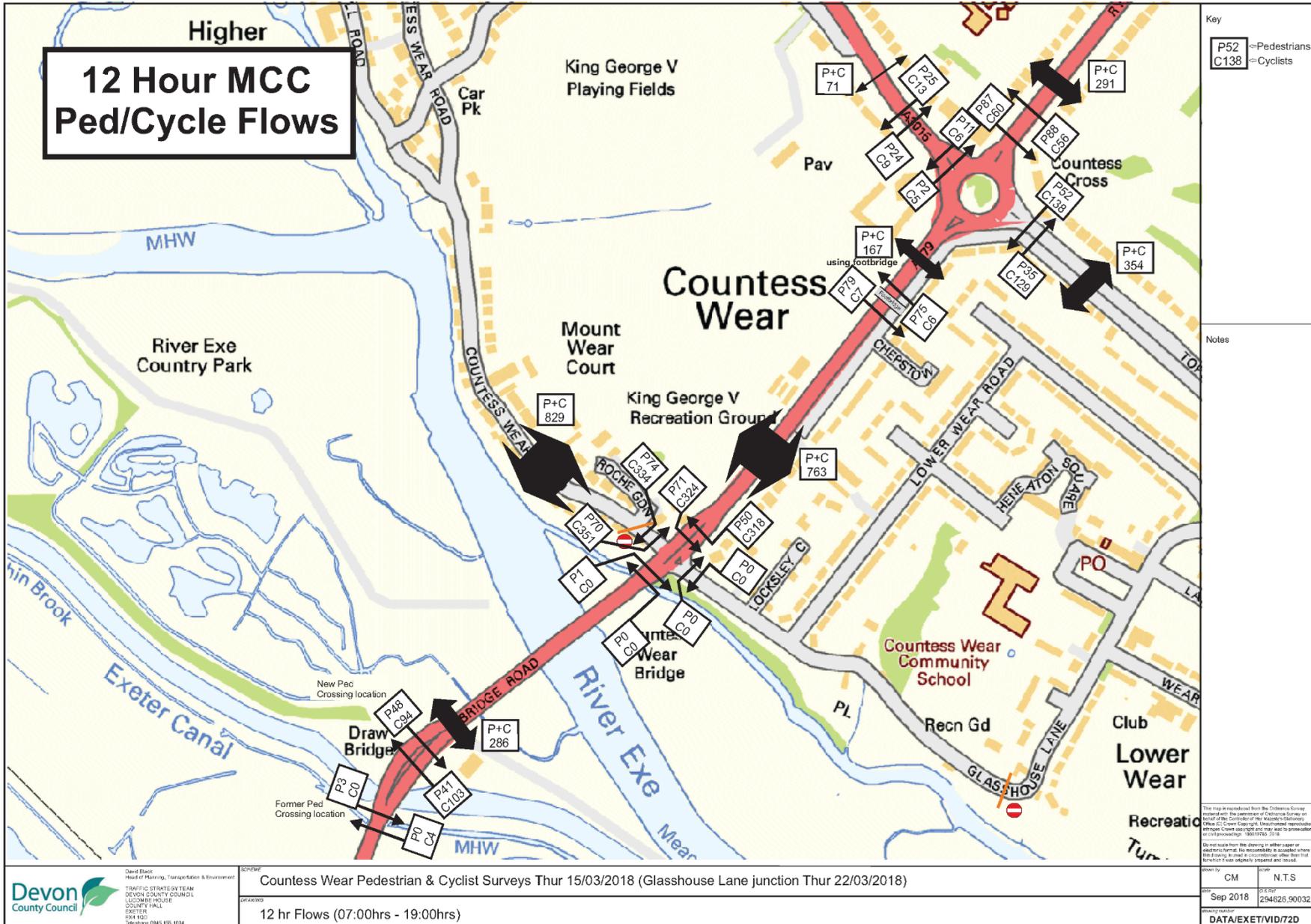
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Drawing No: B23006DW

Revision: **B23006DW/D/003** P01

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Towards Topsham



Appendix III  
To PTE/20/14

