

## **Ratio of local to through traffic**

To characterise levels of congestion in the transport network and determine the ratio of 'local to through traffic' within that network, the transport sub group designed a methodology based upon (a) synchronously measuring volumes of bi-directional vehicle flows at 10 critical locations around the primary T&C road infrastructure and (b) using 3 complementary methods to estimate and attribute a value to that ratio.

Focus of attention for (a) was on morning and afternoon peaks in flow during June and July 2015. 10 parishioners collectively covered all 5 vehicle entry and exit points to the Parish and also another 5 locations at main road junctions. By taking a simultaneous flow measurement approach the team could achieve a number of aims:

- (1) Bi-directional traffic flow rates at 26 road locations could be deduced by aggregating results from all ten score sheets - thereby extending the measurement coverage of traffic behaviours possible from a team of limited size
- (2) Any significant measurement errors were detected before analysis by comparing measured flow rates at related/interconnected road junctions
- (3) Subsequent analysis of these multiple traffic flows allowed primary flow patterns to be deduced
- (4) Also subsequent analysis of these multiple traffic flows allowed a differentiation to be drawn between 'through traffic' (with a journey that neither originated or terminated in the Parish during the measurement hour) and 'local traffic' belonging to the two villages
- (5) Three complementary means of analysis of these multiple traffic flows allowed the volume and flow rates of traffic entering and leaving the parish to be estimated with a high level of accuracy.
- (6) An estimate of an overall measure of the traffic density in the Parish during the measurement hour could be evaluated and potentially used to compare with similar road systems elsewhere as a 'congestion indicator'; having knowledge of the available surface area of the main road system in the Parish.

Regarding (b) one general approach to measurement of the ration of 'local to through traffic' compared bi-directional flow rates at different locations on the same road sections. This allowed numbers of local traffic joining and leaving vehicle flows to be estimated at two levels of granularity; namely holistically for the complete parish network and in greater detail on primary road sections. The estimates made at the two granularity levels were compared to check their validity. A further check was made by estimating and comparing with the maximum number of 'local vehicles' that could possibly be in the network in any measurement hour; by multiplying the number of cars owned by parishioners by the percentage of persons using vehicles for work purposes and then by adjusting that maximum number in the light of expected vehicle usage for work, service and school access.