

Comments on EXAM104- PRIISM Local Model Validation Report

These comments are on the document “PRIISM Local Model Validation Report” September 2014, identified as EXAM104 for the purposes of the Birmingham Development Plan Public Examination.

As noted in previous evidence submitted to the BDP Public Examination the level of Validation achieved for the Highway Model does not achieve the target level set by WebTAG and DMRB. The council has defended its position in document EXAM66, from which it is clear that the council has taken the approach that the Prism model can be used without question. However, having decided to move forward with the model after having failed to reach the required level of Validation the council should have taken a more circumspect approach in the use of the model, making use of the information reported in the Calibration and Validation process.

Table 2.24 shows only about 80% of flows achieve a good enough fit for the Calibration (in both AM and PM periods) and Table 2.28 shows that only about 80% of flows are a good enough fit for Validation. This means that overall one in five counts is not matched by the model. In comparison it might normally be expected that the Calibration counts would match in the 95% to 100% range and that there would be a greater proportion of Calibration counts to Validation counts (something like five to one, not two to one), so that overall only about one in twenty counts are not matched. The Prism model therefore is significantly off the expected result, by a factor of four.

Therefore there should have always been two questions in the minds of any modellers when using Prism – where in the area of interest are the poor matches to counts, and what impact would it have on the results? No evidence of this is given in the report. Details of where the model has failed to match the counts are very poor. Reference is made to further details being provided in Appendix B but Appendix B contains no data, only the title page. Similarly Appendix C comprises only the title page and not the details of the Validation data it should contain.

In the context of the work carried out for the Birmingham Development Plan though at least only limited use has been made of the actual forecasts. Within the BDP detailed forecast flows have only been used in a limited number of junction assessments, namely:

- Minworth Roundabout;
- Tyburn Roundabout;
- Peddimore Access; and
- M42 Junction 9.

Yet as the council’s own document, EXAM111 (Section 3), states the assessment of Minworth Roundabout and Peddimore Access were undertaken “before PRISM output was available”. (NB this council document is the subject of separate note by the author) Therefore only two junctions, Tyburn Roundabout and M42 Jn9 have actually made use of Prism data (and as set out in EXAM111 this is in terms of growth factors to be applied to observed counts rather than as a direct input).

Given such a limited use, it would have been feasible to review the goodness of fit of links in the immediate vicinity of these two junctions to confirm (or otherwise) that the model was adequate for purpose. If Prism was found to be producing flows that were too low in the base year then this might indicate that future growth could be overestimated (starting off too low, this allows for a greater degree of unrestrained growth in the future) and conversely flows that were too high in the base year might indicate that future growth would be underestimated (at a worst case, a road might incorrectly be shown to be overcapacity in the base year which would prevent further growth in the future). In such cases some professional judgement would need to be made as to the approach used. Given the lack of documentation over how Prism flows were actually used to derive growth factors in these two cases it is not possible to identify that such a process was actually gone through (and hence by default it must be assumed that it was not done). As a consequence there is still significant uncertainty over the validity of the traffic assessments.