

Technical Note 24 – Section and Feature Hierarchies

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Introduction

The purpose of Maintenance Hierarchies in UKPMS is two-fold. Firstly, they allow policy weightings to be applied by users to on the basis of the "importance" of the footway or road. In this respect hierarchy is consistent with the role defined in the LAA Code¹. Secondly, UKPMS makes use of Hierarchy as a coarse proxy for traffic or pedestrian volume data. The use of Hierarchy in the Treatment Selection intervention levels is an example of the former, whereas the role of Road Hierarchy in condition projection is the latter.

The current approach defines Maintenance Hierarchies at two levels. Road Hierarchy is an attribute of the Section. Footway Hierarchy is an attribute of the Inventory Item, somewhat anomalously modelled for all features, but only populated for occurrences of the Footway feature. For other Features (Kerbs, Verges and Cycletracks), the rules for using hierarchies are somewhat ambiguous, and indeed, given that there is some overlap between the road and footway hierarchy values, there may be some instances where it is not clear which hierarchy applies.

This note sets out a revised approach to Hierarchies, which addresses these problems and is, we believe, both more flexible and of more value to users.

The Revised Approach

1. The two Levels of Hierarchy will be retained.
2. The Section attribute, ROAD HIERARCHY is unchanged.
3. The Item Inventory attribute, previously known as FOOTWAY HIERARCHY will become FEATURE HIERARCHY.
4. The ROAD HIERARCHY must be populated if hierarchy-based processing is to be used.
5. The FEATURE HIERARCHY must be populated for Footway inventory items, and is optional for occurrences of all other paved inventory features, including Carriageways.

¹ *Highway Maintenance - A Code of Good Practice* (Local Authority Associations, 1989)

6. In automatic pass processing, the defect and rating lengths for Kerbs and Carriageway features will use their respective feature hierarchies, if this has been populated in the Item Inventory, unless this has not been populated, in which case, they will default to the Road Hierarchy of the section.
7. For all other features, the feature hierarchy only is used. For comparability testing, FEATURE HIERARCHY, for Verges and Cycle Tracks will not be populated, to imply no variation by Hierarchy. Rule data that references hierarchies will be updated to reflect this advice.
8. For comparability testing, developers may either carry out a one-off update to populate FEATURE HIERARCHY for features other than footways from ROAD HIERARCHY, possible incorporated in their inventory loading routines, or can incorporate the rules in 6. and 7. (above) into their processing.

The advantages of this approach are:

1. It provides for future definition and use of hierarchies for other features (e.g. cycle tracks).
2. It allows the hierarchy of the carriageway to change along the section, and would allow the definition of different hierarchies for different lanes, where users are interested in applying different standards and treatments to different lanes, to account for differences in traffic levels.
3. It corrects some confusion and inconsistency, particularly the modelling of footway hierarchy against all features.