IDS
Infrastructure
Decision Support

IDS Unsealed Roads Model Data Requirements Guide

Understand the data inputs needed to effectively implement the IDS Unsealed Roads Network Maintenance and Renewal Modelling Tool.

DATA ITEM	MODEL USE	IMPORTANCE	RECOMMENDED APPROACH
INVENTORY			
Location Referencing	All Processes	**High.** Locational referencing is critical to accuracy of all model processes. Topography is also key input field for calculating the Gravel Need Index (GNI).	Undertake data validation of the network to confirm extent, length, ownership, pavement type and geospatial centreline data. **Approach:** Undertake a minimum 5% audit of the network to confirm accuracy and completeness. **Review:** CoreLogic data to validate centreline. **Improvement:** Develop a data improvement plan that addresses the outcomes.
Dimensional Characteristics (Width, length)	Cost Calculations Model	**High.** A key input field for calculation of area and subsequent costing is the width field. This width is usually calculated using the average carriageway widths for the treatment length. Target LOSs and expected lives are often sensitive to carriageway width.	Assess accuracy of carriageway characteristic data eg. width. Approach: Undertake a minimum 5% audit of the network to confirm the accuracy and completeness. **Improvement:** Develop a data improvement plan that addresses the key audit deficiencies.
Treatment Length Segmentation	Cost Calculations Model	**High.** Treatment length segmentation is an important element to ensure robust model outcomes. The accuracy of these in representing homogeneous characteristics in pavement performance is paramount. Length is an important factor and should represent typical renewal lengths.	**Approach:** Review treatment lengths annually checking treatment lengths have been updated from annual physical works from safety-related and capital projects. **Note:** Model includes a process to split very long treatment length into shorter/manageable sections.
Pavement and Wearing Course Records	Cost Calculations Model	**High.** Pavement and wearing course material quality/source along with current ages are important factors in model setup.	**Approach:** Collect and validate annually. Missing pavement and wearing course material sources can be identified if quarries are historically utilised based on geographical locations of the roads. Ensure all completed work (regardless of funding source) is added to the database
Pit Network	Cost Calculations Model	**High.** The location and Paige-Green classification of the aggregate from quarries/ stockpiles are key inputs into the model. These are needed to establish the life expectancies, costs relevant to the material quality and the cartage costs.	**Approach:** Prepare a list of all operating gravel pits, blending sites and stockpiles. Conduct lab testing on aggregate from pits to identify Paige-Green Classification.
PERFORMANCE INDICATOR			
Gravel Loss/Condition Status	Reporting Model	**Moderate.** The condition status is a key indicator in assessing the need for additional gravel and one of the main contributors to Gravel Need Index (GNI).	**Approach:** Conduct annual inspection. Record notes from day-to-day inspections**.** **Improvement:** Develop a comprehensive condition index considering the aspects impacting gravel loss (e.g. basecourse and wearing course material quality, drainage quality, geometry data)
Complaint	Cost Calculations Reporting Model	**High.** Used in assessing the need for additional grading. Is one of the contributors to Gravel Need Index (GNI).	**Approach:** Ensure all complaints are recorded, particularly those related to road condition.
Grading Frequency	Reporting Model	**High.** Used in calculating the grading costs.	**Approach:** Ensure the timing and cost of gradings activities are properly recorded.
Roughness	Reporting Model	**Low.** Used in assessing the appropriateness of grading frequency.	**Approach:** Measure pavement roughness in pre-determined intervals to establish the rate of change in roughness.
Drainage	Not currently used as a separate measure	**Moderate.** Currently incorporated in collecting and recording the condition (first item above).	**Approach:** Rate the drainage adequacy as part of annual inspection or day-to-day inspection.
Expected Life	Reporting Model	**Moderate.** Expected life is usually estimated based on typical lives according to road hierarchies.	**Approach:** Records typical achieved lives, also reasons/scenarios for deviation from these typical lives.
STRENGTH	Not currently used as a separate measure	**Moderate.** MSD data provides a measure of pavement strength. It is useful to assess the strength of the pavement in withstanding the traffic loads.	**Improvement:** Collect 10-20% representative sample across all pavement classes. Prioritise and higher frequency on higher class roads.
CRASH	Model	**Moderate.** Is one of the contributors to Gravel Need Index (GNI).	**Approach:** Ensure the location and date of crashes are properly recorded.
TRAFFIC, LOADING & GROWTH	Cost Calculations Model	**High.** Used in calculating the re-gravelling cost and expected live.	**Approach:** Robust traffic classification count programme. Every carriageway section should have an estimated traffic count, based on available counts. • A traffic count strategy and annual programme should be established to represent the network. A small percentage of the sites can be control sites, with the balance providing network coverage.
MAINTENANCE HISTORY	Model	**High.** Accurate records of "what and where" maintenance work has occurred is required. Is one of the contributors to Gravel Need Index (GNI).	**Approach:** Ensure the location and cost of maintenance activities are properly recorded.

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