IDS Bridge Model Data Requirements Guide

Your guide to understanding the data inputs required to implement the IDS Bridge Modelling Tool.

Accurate projection of bridge maintenance and renewal is fundamental in creating effective forward work programmes and gaining insights into the long-term investment requirements of your bridge network.

This guide provides information on the data inputs needed to implement the IDS Bridge Network Maintenance and Renewal Modelling Tool. Please note that even if some of the data requirements listed are not available on your network, you will still be able to use the tool. Please talk to our IDS team about your specific network and requirements.

The IDS Bridge model forecasts both short and long-term bridge maintenance and renewal needs. Maintenance specific to individual structures is forecast in the first 10-20 years of analysis, followed by network-level forecasts for up to 50 years. **The maintenance mechanisms included in the model are:**

- Guardrail Repairs
- Timber Repairs
- Timber Deck Repairs
- Structural Steel Repairs
- Steel Corrosion Repairs
- Scour Repairs
- Joint Repairs
- Concrete Repairs

DATA ITEM	DESCRIPTION	IMPORTANCE		DATA SOURCE
BridgeID	Bridge ID		**High.** Not required for modelling but important for linking back to asset data	RAMM
RoadID	Road ID	Optional	Useful for linking back to other programmes	RAMM
RoadName	Road Name	Optional	Useful for linking back to other programmes	RAMM
At	Bridge Start RP	Optional	Useful for linking back to other programmes	RAMM
Dimensions	Span length and bridge width		**High.** Cost calculations are based on $ per square metre	RAMM
Construction Date	Date the bridge was constructed		**High.** Key input into the maintenance mechanism forecasting models	RAMM
Deck Material	The material of the bridge deck		**High.** Determines which maintenance mechanisms are applicable to the bridge	RAMM
Superstructure Material	The material of the bridge superstructure		**High.** Determines which maintenance mechanisms are applicable to the bridge	RAMM
Culvert Flag	An indicator of whether the bridge is a large culvert		**High.** Determines which maintenance mechanisms are applicable to the bridge	RAMM
AADT	Average Annual Daily Traffic		**High.** Key input into the maintenance mechanism forecasting models	RAMM
HCVs	Percentage of heavy commercial vehicles		**High.** Key input into the maintenance mechanism forecasting models	RAMM
ONRC	One Network Road Classification		**High.** Key input into the maintenance mechanism forecasting models	RAMM *
Location priority	Priority weighting for optimisation. Can be based on ONRC if criticality information is unavailable.		**High.** Key input into the maintenance mechanism forecasting models	Local Knowledge
Environmental Zone/ Atmospheric corrosivity category	Zone B, C or D, depending on the severity of exposure to wind-driven sea salt.		**High.** Key input into the maintenance mechanism forecasting models	GIS (Figure 4.2 of NZS 3604:2011)
Rainfall Intensity	1 hour rainfall intensity with an annual probability of exceedance		**High.** Key input into the maintenance mechanism forecasting models	GIS (https://hirds.niwa.co.nz/)
Condition	1-5 condition ratings for each maintenance mechanism	Optional	If available, this information is used to prioritise maintenance activities	RAMM or Local Knowledge
Guardrail compliance	An indication of whether the current guardrail is compliant	Optional	If available, the model can be set up to replace guardrails for compliance reasons	RAMM or Local Knowledge
OTHER				
	Historic spend	Any historical data relating to maintenance expenditure. Used for model calibration. Ideally this will be at a bridge level and categorised by maintenance mechanism. Models can also be calibrated at a network level. If no history is available, calibration from previous IDS analysis on other networks can be used.		

*To be updated to ONF in future model improvements