

Date:

Participating Members:

Assessment Context:

D-Analyze Data
2-Modeling

D.2.a – Asset Performance Prediction

Element Description Capabilities for development and application of asset performance models.

| Benchmark Level 0 | Benchmark Level 1 | Benchmark Level 2 | Benchmark Level 3 | Benchmark Level 4 |
|---|--|---|---|---|
| Asset performance models have not been developed. | Predictive models have been developed for key asset condition or performance measures. There is limited confidence in these models for applications outside of network-level performance prediction or needs analysis. | Predictive models have been developed for key condition or performance measures. These models are generally trusted and applied in project-level decision-making. However, these models are not routinely validated and/or evaluated for improvement. | Predictive models have been developed for key condition or performance measures. These models are trusted, integrated into project-level decision-making and are periodically validated and improved using project-level and/or asset specific information. | Prediction and model building leverage asset component and/or very specific location or asset information. Available information is used to tailor model input to the specific asset, with built in methodologies to revert to network level models when asset specific data is not available or trusted. Models and assumptions are regularly validated. |
| Current: <input type="checkbox"/> Desired: <input type="checkbox"/> | Current: <input type="checkbox"/> Desired: <input type="checkbox"/> | Current: <input type="checkbox"/> Desired: <input type="checkbox"/> | Current: <input type="checkbox"/> Desired: <input type="checkbox"/> | Current: <input type="checkbox"/> Desired: <input type="checkbox"/> |
| <input type="checkbox"/> Develop predictive models for key condition or performance data using historical data and/or expert opinion. | <input type="checkbox"/> Improve predictive modeling through evaluation of available condition or performance data, reducing reliance on expert opinion as a key input to the models. | <input type="checkbox"/> Improve predictive modeling through integration of data sources beyond condition or performance data (e.g. utilization/environmental data). | <input type="checkbox"/> Develop performance modeling based on data collected for a specific asset or location. | |
| <input type="checkbox"/> Develop methodology for use of predictive models in forecasting network-level needs. | <input type="checkbox"/> Develop methodology for use of predictive models in project-level investment decision-making. Document processes for use. | <input type="checkbox"/> Validate and improve methodology for use of models in project-level decision-making. Document processes for use. | <input type="checkbox"/> Develop analytical tools to identify discrepancies between actual and anticipated performance. | |
| <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | |

Assessment Notes:

Improvement Notes: