

Resource Guide for State DOT's Maintenance Equipment Fleet Management Decisions Dataset

Dataset available at: https://digitalcommons.lsu.edu/transet_data/117

(This dataset supports report **Resource Guide for State DOT's Maintenance Equipment Fleet Management Decisions**)

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The related final report **Resource Guide for State DOT's Maintenance Equipment Fleet Management Decisions**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/61753>.

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Abstract: This research created a guide for state Departments of Transportation fleet management on utilizing equipment fleet management system data to make informed fleet management decisions. The research team took the historical equipment fleet data from the Oklahoma Department of Transportation and developed workflows, algorithms, and examples to demonstrate the use of historical equipment data for equipment decisions. Specifically, the research team demonstrated 1) the use of life cycle analysis and dynamic programming models for equipment replacement decisions; 2) developed algorithms to calculate equipment rental rates that can be used by the Department to forecast and allocate equipment operational budget among field districts and central office, 3) developed a procedure to make own-rent/lease decisions based on historical equipment management data. Using the two class codes of equipment (Class Code 5355 – 2 Yd. front-end loaders and Class Code 5385 – 1/2-ton fleetside pickup trucks) as examples, the research team presented the result of the equipment replacement models using both life cycle analysis and dynamic programming approaches and discussed the difference of those two methods. In addition, the impact of model input parameters (specifically depreciation cost estimation using both straight line and double declining balance depreciation calculation methods) on equipment replacement outcomes is discussed. The framework for deciding between on renting or owning for the two class codes of equipment was developed. Also, the equipment rental rates for the most frequently used equipment by ODOT were updated per class code.

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Dataset description:

This dataset contains 1 file described below.

Data_Collection_Shan_OSU_0122.xlsx:

The .xlsx and .xls file types are Microsoft Excel files, which can be opened with Excel, and other free available software, such as OpenRefine.

National Transportation Library (NTL) Curation Note:

As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (<https://ntl.bts.gov/public-access>) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset. NTL staff last accessed this dataset at https://digitalcommons.lsu.edu/transet_data/117 on 2022-05-23. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.