

Create and Update Master Files in Pavement Analyst

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Pavement Management Sections

After all the data needed are loaded into the system, we can prepare the system to run analysis. Pavement analysis is performed over various types of sections. Most of the time, users are interested in aggregating data from various sources into one particular set of sections, named "Pavement Management Sections."

Pavement Management Sections are the set of sections used for all analysis within the pavement management system. For example, when running network analysis each Management Section is treated as a whole when programming pavement treatment actions. Therefore, it is important to summarize all the critical pavement data over each management section for analysis, and this is "data aggregation" process.

During the [configuration process](#), a process to create and update the pavement management sections will be defined to fit the client agency's needs. A system job routine will be created to execute the routine. Follow the process defined in the configuration to create the management sections.

Out of the box, pavement management sections can be created by navigating to the **System Job Schedule** window (**System > Tools > System Job > Schedules**) and executing "**Pavement Analyst: Create Pavement Management Sections**" system job. This job simply uses the Roadway Inventory segments as the management sections.

Update Network Master

With Management Sections developed, we are ready to perform network analysis. In Pavement Analyst, the Network Master file is the starting point for all network analyses. These analyses depend on the columns included in the table. The columns to be included can be decided based on decision-making and reporting requirements for each customer.

Network Master table is a key table in Pavement Analyst, which combines data from the various sources (asset data, pavement condition, traffic data, pavement structure). It is the starting point for all network analyses and should contain the latest information for all pavement sections. It represents the current structure, traffic, classification, and condition for the network as a whole. Out of the box, Network Master Data window is located in **Pavement Analyst > Analysis > Network Analysis > Network Master > Network Master Data** menu.

Because Network Master is the input data stream for network analysis, it must be re-calculated at least once per year for the current data set to be used in network analysis, and it should also be re-calculated each time any of the condition indicator settings have changed.

Network Master typically uses the current pavement management sections as the master for pavement section definitions. Other data (such as pavement management inventory, traffic, condition in the form of performance index, and construction history) are then assigned to the Network Master when it is filled. Data for the Network Master is aggregated according to rules developed for each client, using the Update Target Table function.

The Network Master Data window shows all road sections in the Network Master and provides descriptive information about each road section. All the columns in Network Master that are calculated using the formulas can be configured by right click and select "Update Target Table" command (pic below).

The [configuration process](#) will configure the Network Master to include all the fields needed for analysis and reporting. As part of the process, a system job routine will be setup to update the Network Master based on the rules defined by the agency. When it is time to update Network every year, navigate to the **System Job Schedule** window (**System > Tools > System Job > Schedules**), and execute system job named "**Pavement Analyst: Create and Update Network Master using Management Sections**".

Once the Management Sections are created, another similar system job "**Pavement Analyst: Create and Update Network Master using 0.1-Mile Sections**" can be used to create 0.1-mile uniform-length sections into Network Master. This can be used to achieve the reporting needs from MAP-21 Act.

Update Performance Master

Performance analysis uses pavement management history information to provide a feedback mechanism to improve the predictive capabilities of pavement performance models. The primary repository for data used in performance analysis is the Performance Master.

The main difference between Performance Master and Network Master is that Performance Master has an EFF_YEAR column, and can be considered an archive or "history" of Network Master's data from each year.

Performance Master usually contains the exact same column as Network Master, and typically follow the same data aggregation rules. Normally, each year after the Network Master is finalized, the user runs the process to update Performance Master, which will append Network Master's data to Performance Master.

Out of the box, Network Master Data window is located in **Pavement Analyst > Analysis > Performance Analysis > Performance Master** menu.

The [configuration process](#) will configure the Performance Master to include all the fields needed for analysis and reporting. As part of the process, a system job routine will also be setup to update the Network Master using the rules defined by the agency. When it is time to update the dataset every year, navigate to the **System Job Schedule** window (**System > Tools > System Job > Schedules**), and execute system job named "**Pavement Analyst: Create and Update Performance Master**". Before running the job, make sure to specify which effective year (EFF_YEAR) the data is, by updating the argument in the first executable "Finest Partition By Column".