

PAVEMENT MANAGEMENT SYSTEM:

The City uses a Pavement Management System (PMS) to manage and prioritize streets treatments. As defined by the American Public Works Association, a PMS is “a systematic method for routinely collecting, storing and retrieving the kind of decision-making information needed (about pavements) to make maximum use of limited maintenance (and construction) dollars”.

City of Federal Way’s PMS contains a database that consists of: 1) Street Segment, 2) Maintenance History, and 3) Visual Inspection Data.

1. **Street Segment Data** – This includes physical information about each street within the city. Examples include road width, length, pavement type, etc.
2. **Maintenance History** – Whenever a significant maintenance activity is performed on a street segment, the maintenance activity is entered into the database. Examples include overlays, pavement patches, crack sealing etc.
3. **Visual Inspection Data** – Every one to two years, the City has every mile of street visually inspected (walking survey). The inspection documents distresses (like cracking, rutting, patching, etc) observed in the street section. Data is collected according to WSDOT/NWPMA¹ criteria. These inspections are vital in knowing the current condition of the City’s street network. The most recent inspection was performed in Spring 2010.

Using this database, the PMS software can perform a variety of tasks including:

- **Pavement Condition Index (PCI)** – Based on information gathered during visual inspections and maintenance data input into the database, the PMS software computes a Pavement Condition Index (PCI). The PCI is a numerical rating of the pavement which ranges from 0 to 100. A PCI of 100 represents a newly constructed road with no distresses; a PCI below 10 corresponds to a failed road requiring complete reconstruction. The table below shows condition categories and corresponding PCI ranges Federal Way commonly refers to.

CONDITION CATEGORY	PAVEMENT CONDITION INDEX (PCI)
Excellent	85 to 100
Very Good	70 to 85
Good	55 to 70
Fair	40 to 55
Poor	25 to 40
Very Poor	10 to 25
Failed	0 to 10

- **Budget Scenarios** – Using the PMS software, different budget scenarios can be evaluated. Scenarios can be run to calculate how much budget is needed to maintain a certain PCI. They can also be run to calculate what will happen to the network PCI if a certain budget is used over a period of time. This is very helpful in Overlay Program planning cycles and budget reports.
- **Recommend Streets for Upcoming Maintenance Activities** – Based on a selected budget scenario, the PMS software can identify streets recommended for receiving treatment (crack seal, structural patching, overlay, etc.). These recommendations are then used to create projects for the Annual Street Overlay Project.
- **Generate Reports** – Reports that summarize information can be created by the PMS software.

The City of Federal Way Pavement Management System predicts the performance of each road in a street network and recommends maintenance, repair, and reconstruction strategies. The PMS assists the Public Works Department staff and the City Council in making funding decisions by modeling the long-term results of various funding levels.

¹ *Pavement Surface Condition Field Rating Manual for Asphalt Pavements*, Washington State Department of Transportation/Northwest Pavement Management Association