**Using LTPP Data to Develop Spring Load Restrictions**

The thawing index (TI) is used by State/Provincial Agencies to set their spring load restriction (SLR). It indicates the progression of thaw in the pavement and the beginning of weakening and the eventual damage.  
  
The thaw index is a simple, straight forward method of predicting the onset of spring thaw using air temperature, and can be adopted for use in *State/Province* by determining the reference temperature and the critical cumulative degree-days.

Obtain air temperature data and asphalt temperature data from the Long Term Pavement Performance (LTPP) program using LTPP InfoPave, by the following steps:

1. Determine which LTPP Sections are in the vicinity of the Highway Network:
   1. MAP 🡪 View LTPP Sections by Location
   2. Using the filters on the left, narrow down the search parameters
2. Retrieve air temperature data relevant to the sections identified above:
   1. DATA 🡪 Data Selection and Download
   2. Expand the “Climate” Tab
   3. Select relevant temperature data and click “Add to Selection”
3. Retrieve asphalt temperature data relevant to the sections identified above:
   1. Expand the “Performance” Tab
   2. Select the Deflection Temperature data and click “Add to Selection”
4. Download selected data
   1. Click “Add to Data Bucket”
   2. Select which Export File Format you prefer
   3. Click “Submit Data Bucket for Extraction”
   4. MY LTPP 🡪 My Data Extractions 🡪 click “Download”

To determine a thaw index equation suitable for *State/Province*, the first step would be to determine the reference temperature using the asphalt and air temperature data obtained from LTPP InfoPave. When the reference temperature has been established, the thaw index can be calculated throughout the year, and the threshold thaw index can be determined.

*TI = Σ (Average Daily Temperature – Reference Temperature)*

**REFERENCES**

1. Patrick Leong, Susan Tighe, Guy Doré. *Using LTPP Data to Develop Spring Load Restrictions: A Pilot Study*. Paper Submitted to AISIM, Waterloo, Ont., August 2005
2. Long Term Pavement Performance. *LTPP InfoPave*. [www.infopave.com](http://www.infopave.com).