Kenneth L. Sweeney, P.E., MaineDOT Chief Engineer

MaineDOT View

Prioritizing: Customer Service Levels

In the last issue of *Maine Trails*, Deputy Commissioner Bruce Van Note described new tools for prioritizing project candidates for MaineDOT's Capital Work Plan. This approach uses highway corridor priorities (HCP) and customer service levels (CSL) to allocate scarce resources. It uses customer-focused engineering measures to track highway safety, condition and serviceability, and communicates them in a simple grading scale similar to high school report cards (A – F).

This approach improves transportation decision-making, with:

- emphasis on safety and customer satisfaction instead of compliance with national design standards;
- replacement of old terminology for unbuilt roads (i.e., "backlog") with objective measures of roadway strength and reliability;
- outcome-based measures as opposed to output (results vs. number and types of projects);
- enhanced transparency and accountability;
- a unified methodology to benchmark current conditions, predict future conditions, examine differing CSL goals, and estimate costs.

The previous column discussed Highway Corridor Priorities in some detail, but only touched on CSLs. Now, let's examine CSLs in greater detail. CSLs are engineering-based measurements used to determine A – F grades.

CUSTOMER SERVICE LEVELS

We've adopted the following grading scale: A is "excellent"; B is "good"; C is "fair"; D is "poor"; and F is "unacceptable."

CSLs and their component measures are structured as:

SAFETY	CONDITION	SERVICE
Crash History	Ride Quality	Posted Road
Pavement Rutting	Pavement Condition	Posted Bridge
Paved Roadway Width	Roadway Strength	Congestion
Bridge Reliability	Bridge Condition	

Each measure has its own score, and each category can be "rolled up" into three overall CSLs. Everything is GIS-based and mapable, allowing our staff to visualize corridor and/or segment CSLs as they develop programs and projects. A description of each measure follows.

SAFETY

- **Crash history:** This measure includes the two types of motor vehicle crashes most likely related to the highway – head-on and run-off-road crashes. The A – F scale compares these crash rates with the statewide average.
- **Pavement rutting:** This measure looks at wheelpath rutting, since excessive rutting holds water and contributes to hydroplaning and icing in winter. The A – F scale "set points" vary by HCP, and are based on hydroplane tests.
- **Paved roadway width:** This measure compares total paved width (lane plus shoulder) with minimum acceptable widths by HCP (not new design standards). If a highway segment fails this minimum, the Safety CSL for that segment is decreased one letter grade.
- **Bridge reliability:** This measure is also pass/fail. If a highway segment contains a bridge with a Condition Rating of "3" or less (excluding non-overpass decks), the Safety CSL is decreased one letter grade. These bridges are safe, but may require increased inspection or remedial work that could affect traffic flow.

CONDITION

- **Ride quality:** This measure uses the International Roughness Index (IRI), which is expressed in inches per mile of deviation. IRI is the nationally accepted standard for passenger comfort, and the A – F scale varies by HCP.
- **Pavement condition:** This measure uses the Pavement Condition Rating (PCR), a 0-5 scale that is composed of IRI, rutting, and two basic types of cracking. The A – F scale varies by HCP.
- **Roadway strength:** This measure uses the results of the falling weight deflectometer, a device that estimates roadway strength. The A – F scale is uniform across HCP, since even low-priority roads must support heavy loads in Maine's natural resource-based economy.
- **Bridge condition:** This measure converts the 0 – 9 national bridge inventory (NBI) condition ratings to an A –F scale; it is uniform across HCP.

SERVICE

- **Posted road:** Each year, MaineDOT posts more than 2,000 miles of road during spring thaw to protect their longevity, but some posted roads directly affect Maine's economy. Any segment that is typically posted gets a D for Service.
- **Posted bridge:** Similar to posted road definition, any segment that contains a bridge with a specific weight restriction gets a D for Service.
- **Congestion:** This measure uses the ratio of peak-traffic-flows-to-highway-capacity to arrive at an A –F score for travel delay. Peak summer months are specifically considered to capture impacts to Maine's tourism industry. This scale is uniform across HCP, since tourist travel is system-wide and sitting in traffic affects customer service similarly on all roads.

WHAT'S UP NEXT

In the next issue of *Maine Trails*, Commissioner Bernhardt will discuss how highway corridor priorities and customer service levels already are being used to stretch transportation resources, and how this approach may be extended to all transportation assets.

BE THERE OR BE SQUARE

MBTA Annual Meeting, Thursday, May 19, Augusta Civic Center. www.mbtaonline.org