

TOWNSEND HIGHWAY DEPARTMENT CRITERIA FOR ROAD PAVING

There are three categories of roads; Arterial (Rte 13), Collectors/Main (Lunenburg Rd, Warren Rd., New Fitchburg Rd., Ash St., etc.) and local roads or side streets (Smith St., Scott Rd., School St., etc). The Highway Department is formulating a Pavement Condition Survey Program to evaluate the towns' roads. Under this program, our goal is to inspect Arterial and Collector Roads every two years and Local Roads every four years.

The streets will be rated using a Pavement Condition Survey Form and will be evaluated according to severity and extent of cracking, distortion, patch and utility cuts, rutting and depressions, spalling, raveling, potholes, drainage and traffic volume and classifications. Each of these categories is assigned a point value. This rating system is used as the primary tool in prioritizing roads for resurfacing and reconstruction. These conditions are described below:

Alligator Cracking:

- A series of interconnection cracks caused by fatigue failure of asphalt concrete surface under repeated traffic loading causing it to look like an alligator's skin.

Longitudinal & Transverse Cracking:

- Longitudinal cracks are parallel to the pavement's centerline or lay-down direction. They may be adjacent to the pavement edge.
- Transverse cracks extend across the pavement at approximately right angles to the pavement centerline.

Distortion:

- Distortions are usually caused by corrugations, bumps, sags, and shoving.
- They are localized abrupt upward or downward displacements in the pavement surface

Patch & Utility Cuts:

- A patch is an area of pavement that has been replaced with new material to repair the existing pavement.
- A patch is considered a defect no matter how well it is performing.

Rutting & Depressions

Rutting

- A rut is a surface depression in the *wheel paths*.
- Rutting stems from a permanent deformation in any of the pavement layers or sub-grade.

Depressions

- Depressions are localized areas where the pavement surface is lower than the surrounding area but the transition is not abrupt enough to be considered a distortion.
- They are often referred to as bird baths.

Spalling:

Occurs when the top layer of pavement is separated from the base course usually leaving a one (1) to one and one-half (1 ½) inch bump in the road

Raveling:

- Weathering and raveling are the wearing away of the pavement surface caused by the loss of asphalt or tar binder and dislodging aggregate particles.

Potholes:

- A type of disruption in the surface of a [roadway](#) where a portion of the road material has broken away, leaving a hole. Most potholes are formed due to [fatigue](#) of the [pavement](#) surface. As fatigue [fractures](#) develop they typically interlock in a pattern known as "alligator cracking". The chunks of pavement between fatigue cracks are worked loose and may eventually be picked out of the surface by continued wheel loads, thus forming a pothole.

Drainage:

- Some causes of poor drainage include:
 - 1) Shoulders are not cut back which keeps the water on the pavement.
 - 2) No crown in the road
 - 3) Rutting
 - 4) Standing water in ditches
 - 5) Cross culverts blocked

Traffic Volume and Classifications:

- The number of vehicles that use a roadway in during the day. As stated previously the classifications of roads are describes below:
 - 1) A **Local Road (side street)** is a road that intersects a main street and ends there. It is generally of little importance to through traffic. Being the last mile of the road system, it generally carries little traffic. Common characteristics of a side street include low speed limits (usually not more than 30 mph and few or no painted line markings to display lanes. Intersections in urban or suburban areas are usually marked by stop signs, or occasionally yield signs in some suburban areas when intersecting other side streets. In rural areas, some intersections are uncontrolled.
 - 2) A **collector road** is a low or moderate-capacity road which is below a highway or arterial road functional class. Collector roads tend to lead traffic from local roads or sections of neighborhoods to activity areas within communities, arterial roads or (occasionally) directly to expressways or freeways.
 - 3) An **arterial road** is a moderate or high-capacity road which is immediately below a highway level of service. Arterial roads carry large volumes of traffic between areas in urban centers. They are designed to carry traffic between neighborhoods, and have intersections with collector and local streets. Often, commercial areas such as shopping centers, gas stations and other businesses are located on them. Arterial roads also link up to expressways and freeways with interchanges.

PAVEMENT CONDITION SURVEY FORM – PAGE 1

Street Name: _____

Inspector's Name: _____

Date: _____

Pavement Condition: (circle one)

1. **Excellent:** Little distress. New or nearly new pavement.
2. **Good:** Moderate distress. Treatable with sealing and patching.
3. **Fair:** Considerable distress. Deteriorating rapidly. Thin overlay and crack sealing should be done.
4. **Poor:** Extensive distress. Thin overlay may be ineffective.
5. **Very Poor:** Near failure.
6. **Failure:** Dangerous. Requires constant repair.

Pavement Surface Rating (circle one, 1 being none and 10 being extensive)

- | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|----|
| 1) Cracking | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2) Distortion | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3) Patch and Utility Cuts | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 4) Rutting and Depressions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5) Spalling | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 6) Raveling | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 7) Potholes | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Drainage Conditions:

1. **Good:** Ditches, culverts, inlets clean. Road shoulders slope down away from roadway in most places.
2. **Fair:** Ditches, culverts, inlets fairly clean. Road shoulders slope down away from roadway in most places.
3. **Poor:** Ditches not clean, culverts and inlets clogged. Road shoulders are often higher than the roadway.

PAVEMENT CONDITION SURVEY FORM – PAGE 2

Numeric Codes for Survey Information (circle one numeric value from circled criteria above):

	Survey Description	Numeric Value
Pavement Condition	Excellent	1
	Good	2
	Fair	3
	Poor	4
	Very Poor	5
	Failure	6

	Survey Description	Numeric Value
Traffic Volume	Low	1
	Medium	2
	High	3
Truck Traffic	Low	1
	Medium	2
	High	3

Numerical Value of Road _____ (add circled numbers above)

Comments:
