# Unpaved Roads Assessment
# Gilmanton, NH
# 2020-21

## Project description and Goal

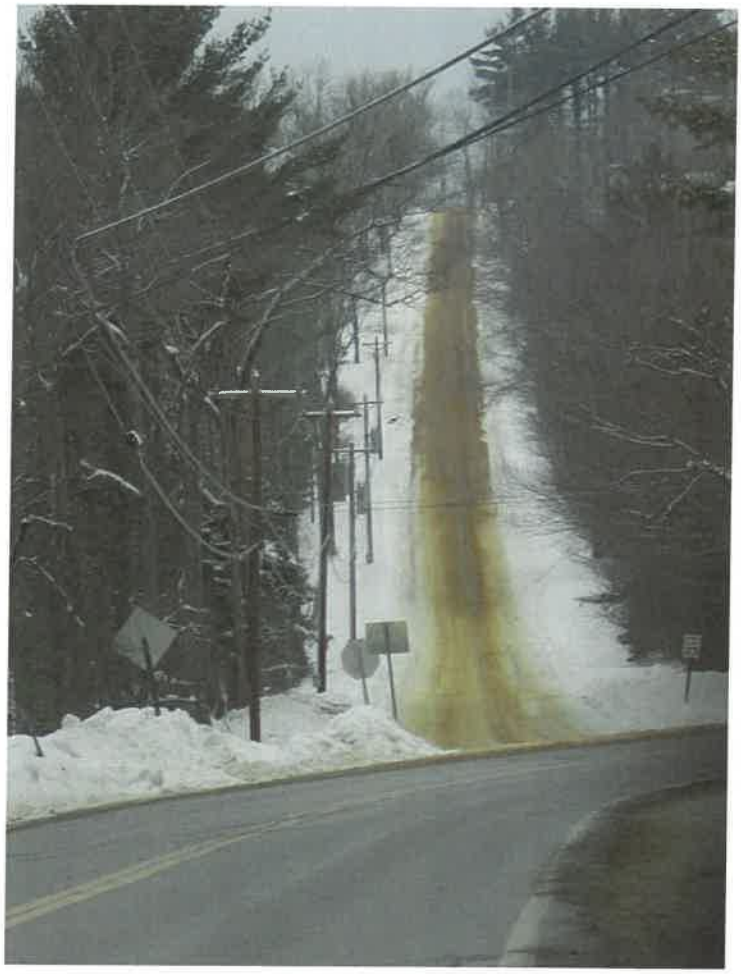
The town of Gilmanton contracted with the Lakes Region Planning Commission (LRPC) to conduct a Road Surface Management System (RSMS) project on the town's paved municipal roadways (Class V). RSMS is a long-standing project that enables a relatively quick assessment of road surface conditions. In the early 2000s a version of this was available to give a snapshot of road surface conditions for both paved and unpaved roadways.

In 2015 NH DOT, the state's Regional Planning Commissions, and UNH T2 worked together with several pilot communities to enhance the program by:

- ensuring that ratings were conducted uniformly state-wide,
- adding a GPS and mapping component, and
- developing a robust Forecasting element to help communities plan out ten years' worth of work and model the impact that this would have on road surfaces in the future.

While all three of these aspects of the new RSMS program have been well received by communities, they were only developed for paved roadways.

As several Lakes Region communities have many miles of unpaved roads, LRPC has worked to find a method to help communities assess and manage **all** their road surfaces. We have been able to implement a standardized assessment tool and map the condition of the unpaved roads. A Forecasting Tool for unpaved roads has yet to be developed as part of this program.



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## Project Methodology

LRPC staff collaborated with staff from several other rural planning commissions in New Hampshire to consider the pros and cons of several evaluation systems for unpaved roads that have been utilized over the years. After considering the various options available, the decision was made to adopt the RSMS assessment system that LRPC utilized through 2014.

This is a "windshield survey" that can be conducted relatively quickly, it relies on a set of road characteristics analogous to the RSMS for paved roads with a corresponding scoring scale, and a similar Pavement Condition Index (PCI) is generated from the assessment.

The characteristics surveyed include:

**Extent & Severity (0-9)**

Rutting

Loose aggregate

Corrugations

Potholes

**Extent (0/8/14)**

Cross section

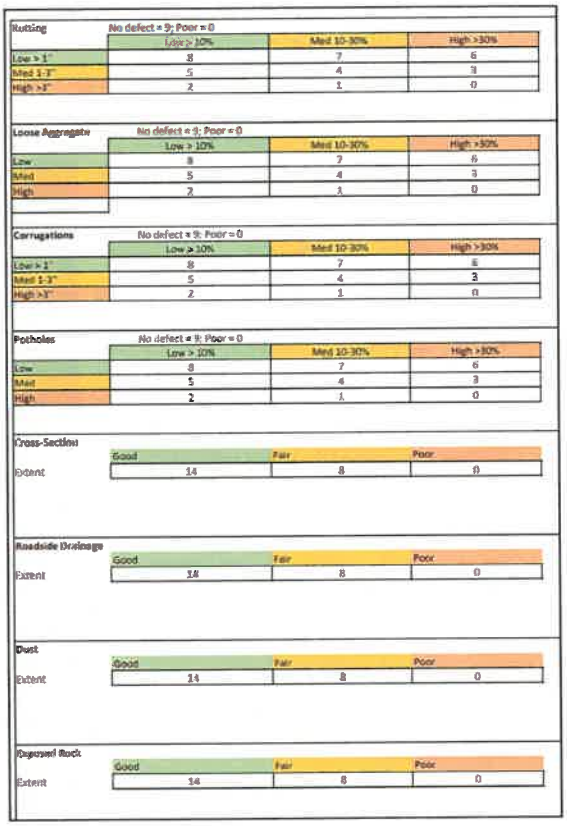
Roadside drainage

Dust

Exposed rock

This results in a spreadsheet detailing the various characteristics for each road segment.

We can now map the results for better visualization and communication.



| Rutting | No defect = 9; Poor = 0 | | |
|---|---|---|---|
| | Low > 10% | Med 10-30% | High >30% |
| Low > 1" | 8 | 7 | 6 |
| Med 1-3" | 5 | 4 | 3 |
| High >3" | 2 | 1 | 0 |

| Loose Aggregate | No defect = 9; Poor = 0 | | |
|---|---|---|---|
| | Low > 10% | Med 10-30% | High >30% |
| Low | 8 | 7 | 6 |
| Med | 5 | 4 | 3 |
| High | 2 | 1 | 0 |

| Corrugations | No defect = 9; Poor = 0 | | |
|---|---|---|---|
| | Low > 10% | Med 10-30% | High >30% |
| Low > 1" | 8 | 7 | 6 |
| Med 1-3" | 5 | 4 | 3 |
| High >3" | 2 | 1 | 0 |

| Potholes | No defect = 9; Poor = 0 | | |
|---|---|---|---|
| | Low > 10% | Med 10-30% | High >30% |
| Low | 8 | 7 | 6 |
| Med | 5 | 4 | 3 |
| High | 2 | 1 | 0 |

| Cross-Section | Good | Fair | Poor |
|---|---|---|---|
| Extent | 14 | 8 | 0 |

| Roadside Drainage | Good | Fair | Poor |
|---|---|---|---|
| Extent | 14 | 8 | 0 |

| Dust | Good | Fair | Poor |
|---|---|---|---|
| Extent | 14 | 8 | 0 |

| Exposed Rock | Good | Fair | Poor |
|---|---|---|---|
| Extent | 14 | 8 | 0 |

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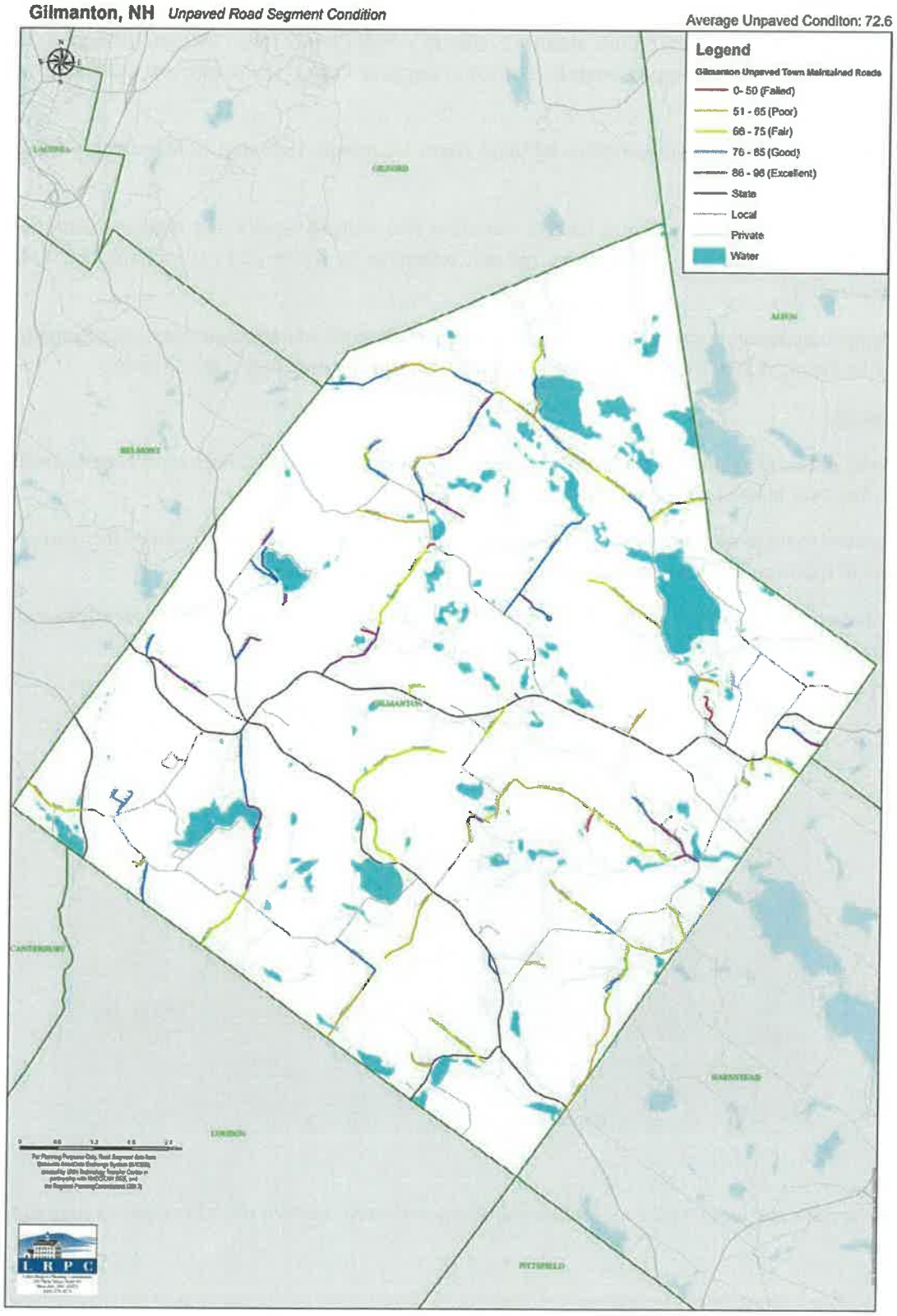

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## Assets and Value

While the town of Gilmanton has about 41 miles of paved Class V roads with an estimated value of $13,782,560, it also has approximately 23 miles of unpaved Class V roads with and estimated value of $2,198,064.

Understanding the current condition of these roads is an important step to maintaining these road surfaces.

Just as the prudent homeowner invests resources into making repairs and regular maintenance in their house, so to most communities commit resources to repair and maintenance of their road infrastructure.

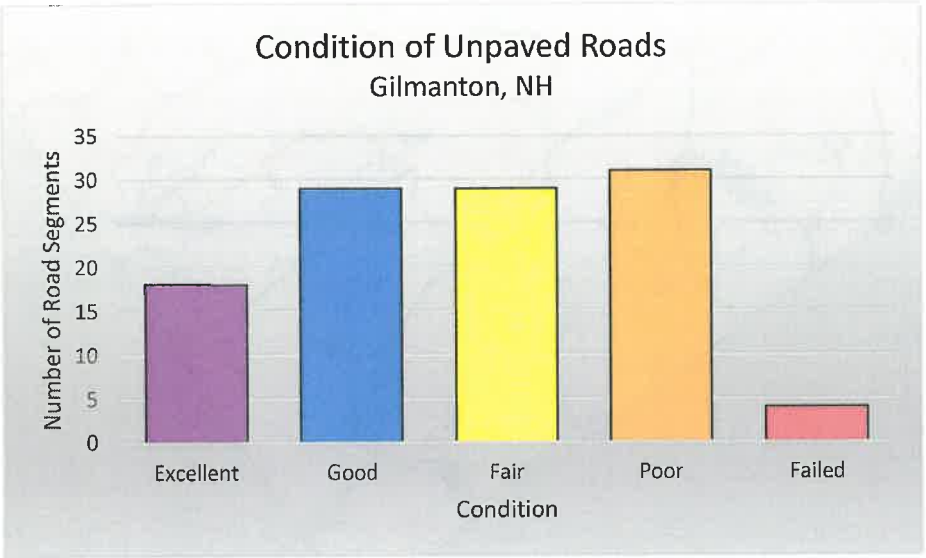
Regular maintenance is usually much less expensive than repair of neglected roads. Occasionally there will be events that will severely damage unpaved roads, even well-maintained roads.

## Assessment

During data collection, 111 unpaved road segments were assessed with PCI values ranging from 42 to 96. The overall network PCI for unpaved roads was 72.6.

Unpaved roads of all conditions (Excellent, Good, Fair, Poor) were found throughout the town. No one type of road condition seemed to be focused on any one part of town.

Forty-two percent of the roads were found to be in Good or Excellent condition. Nearly one-third of the roads were assessed as in Poor or Failed condition.




See accompanying spreadsheet for detailed assessments for each of the 111 unpaved segments.

## Maintenance & Repair

The "Keep the good roads good" approach adopted for paved surfaces also applies to unpaved roadways. Regular maintenance and periodic repairs can reduce some of the need for major repairs due to deterioration.

This document and the accompanying spreadsheet and map are an assessment. They are not a prioritization tool.

## Resources

There are several resources that communities around the Lakes Region have found useful as they consider where to begin with maintenance.

*A Ditch in Time (2014)*, R. Leonie. https://ruralhometech.com/wp-content/uploads/2019/03/Road-Book-by-RL-8-17.pdf

*Gravel Roads - Construction and Maintenance Guide,* Federal Highway Administration available at https://www.epa.gov/sites/production/files/2015-10/documents/2003_07_03_nps_gravelroads_intro_0.pdf

UNH T2 offers several classes on Maintenance of Unpaved Roads https://t2.unh.edu/training-calendar