



AI-Assisted Pavement Condition Assessments Support Better Infrastructure Planning

GCI has recently enhanced our pavement assessment capabilities with the help of AI.

For municipalities, industrial parks, distribution centers, retail centers, and other properties with significant paved areas, this technology provides asset managers with a more detailed and objective understanding of surface pavement conditions in their communities and properties.

The AI-supported process includes:

- Vehicle-mounted cameras that photograph the road every 13 feet. The system logs each image with GPS data and timestamps.
- Fifteen different distress conditions are identified including alligator cracking, block cracking, and longitudinal and transverse cracking, patches, potholes, raveling, and surface wear.
- The technology also recognizes key assets such as intersections, aisles, signs, manholes, drains, and street markings to create a complete digital view of the road or parking lot network.

The assessment produces a Pavement Condition Index (PCI) rating in accordance with ASTM D6433, which provides a consistent condition grade that can help infrastructure managers identify deterioration and prioritize pavement maintenance and rehabilitation needs.



Pavement Condition Index (PCI)

	Failed – 0 to 10 • Reconstruction treatments suggested.
	Serious – 11 to 25 • Major rehabilitation treatments and/or reconstruction suggested.
	Very Poor – 26 to 40 • Major rehabilitation treatments suggested.
	Poor – 41 to 55 • Minor to major rehabilitation treatments suggested.
	Fair – 56 to 70 • Minor rehabilitation and/or preventative treatments suggested.
	Satisfactory – 71 to 85 • Preventative treatments are suggested.
	Good – 86 to 100 • Preventative treatments are suggested.

A pavement condition assessment can help:

- Prioritize maintenance and repairs by identifying which pavement areas need attention first and suggesting preventative treatments.
- Budget more accurately by providing documented condition data for capital planning for preventative, rehabilitation, and reconstruction treatments.

- Extend pavement service life by identifying opportunities for treatments before more costly replacement becomes necessary.
- Avoid premature replacement by identifying pavement sections that may benefit from treatments designed to extend their useful life.
- Plan projects more efficiently by understanding conditions across your community or property.
- Manage additional assets by identifying and evaluating traffic signs and locating other property assets such as manholes and storm drains.
- Track deterioration over time through periodic assessments that show how pavement conditions evolve before and after a freeze thaw cycle, pre and post construction damages, and yearly deterioration.

With the insights from the pavement condition assessment, property managers and city, village, and county administrators can better determine where to invest now, where pavement life can be extended, and how to plan ahead for larger capital expenditures.



Contact Jimmy Fisher to schedule an interactive demo of GCI's AI-assisted pavement condition assessment.

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