



City of Duluth Pothole Process

The City of Duluth has over 530 center line miles of city streets all varying in age and condition. The following lays out our operational process to repair potholes using a set of metrics, some of those being public safety, operational budgets, staffing levels, weather conditions, environmental impacts and access to materials. Overall, we attempt to inspect all streets once (or more) per year, depending on the availability of resources and other factors such as weather conditions, construction projects and other scheduled or proposed Street Maintenance activities.

Summer patching utilizes the same priority system that is currently in place for winter maintenance. The streets are classified based on street function, traffic volume, and importance to the welfare of the community. P1 streets (mains) will be inspected and patched to completions prior to starting operations in P2's (residential). This operational process repeats itself for P2's and P3's (alley). Below are some key points to make note of.

Priorities and Scheduling

All pothole repairs will be assessed in the following order:

- Priority 1 Mains (P1)
- Priority 2 Residential (P2)
- Priority 3 Alley (P3)

Delays in Patching Operations

The following may result in delays in patching operations:

- Weather conditions such as snow, rain, ice and extreme temperatures
- Equipment breakdowns and staffing levels
- Vendor availability and plant shutdowns
- Over 60 Special Events

Documentation

The City of Duluth keeps records of patching operational progress across all City streets. These records will not necessarily identify each individual pothole but may show streets sections where repairs were made.

Maintenance Types

The City of Duluth has different operational processes to address the many different road problems in the City streets. Below are descriptions of our summer and winter maintenance practices.

Summer Season HMA Product (May to October)

In the summer we are able to utilize a Hot Mix Asphalt (HMA) product for pothole repair. This material is the “standard” type of asphalt and is heated to between 280-325 degrees Fahrenheit and laid down while still extremely hot. This type of product allows us to repair a wider range of holes and provides a more permanent repair than a CMA product.

This product, however, does rely on the availability of outside vendors and thus can lead to more delays that are out of our control.

Road problems that can be addressed using an HMA product:

- Potholes
- Utility Patches
- Alligator Cracking*
- Culvert/Road-way Dips*
- Cracks/Joint Separation*

*Depending on the severity of the road problems, these may not be repairable using an HMA product.

Winter Season CMA Product (November to April)

In the winter our maintenance levels change due to the material that we use to repair potholes. When HMA plants close for the winter, we use a Cold Mix Asphalt (CMA) product. This asphalt uses a blend of oils and additives that makes it possible for the asphalt mix to be stored and applied during cold temperatures. The end result of this product is that it does not have the longevity or strength of HMA. Because of this, we concentrate on filling the larger more aggressive potholes.

Road problems that can be addressed using a CMA product:

- Potholes*
- Utility Patches*

*Depending on the severity of the road problems, these may not be repairable using a CMA product.

Road Problems Definitions

Pothole

Some of the defining characteristics of potholes are as follows:

- Hole has some defined edges
- Hole depth is approximately over 2" deep
- Hole width is approximately over 12"
- Hole is not abutting a larger area of fatigued asphalt



Utility Dig Patch

These are not potholes, but they may deteriorate over time forming potholes. These patches are maintained differently than a pothole. Some defining characteristics are:

- Patches are square or rectangular
- They are often in very close proximity to a manhole or other utility valves



Fatigue Cracking

This is also known as alligator cracking. Maintenance of these areas is much different than other road problems. These problems are not often solved by patching and require resurfacing/reconstruction. Some defining characteristics are:

- Areas are very rough and uneven with no defined edges
- Encompass large portions of the roadway
- Heaves or large dips in the wheel paths



Cracking/Joint Separation

This type of problem has limited maintenance types depending on the severity of the problem. These problems are not often solved by patching and require crack sealing or mastic application. Some defining characteristics are:

- Longitudinal cracks over 20' in length
- Width of crack is over 2"
- Common to see in center of road or wheel paths



Culvert/Roadway Heaves or Dips

This problem is common around road crossings and driveway culverts. In some cases, these will recede when the frost exits the ground. Some defining characteristics are:

- Location is in proximity of culverts
- Overall dip in 15' or less
- Dip encompasses the entire width of the road

