



## LONG LINE PAVEMENT MARKINGS

### STATE OF GOOD REPAIR

Pavement markings that are reflective and visible to drivers in nighttime or stormy conditions are considered to be in good repair. Inspectors drive state roads every winter doing a visual inspection of reflectivity at nighttime in order to develop the maintenance plan for the coming year. Pavement markings that are still in their useful life are considered to be in a state of good repair.

### TARGETS AND MEASURES

Epoxy markings have a useful life of 3 years  
Age = 1 – Good  
Age = 2 – Fair  
Age >=3 – Poor

Latex markings have a useful life of 1 year  
Age <= 1 – Good  
Age > 1 – Poor

**Total Target % Good > 65%**  
**Total Target % Poor < 20%**

Description:  
DelDOT is responsible for managing approximately 6,414 directional centerline miles of state-maintained roadway. The Pavement Markings program manages all of the striping and pavement marking symbols on these roads. They include long lines (i.e. lane/shoulder lines), short lines (i.e. dashes), symbols, and raised pavement markers.

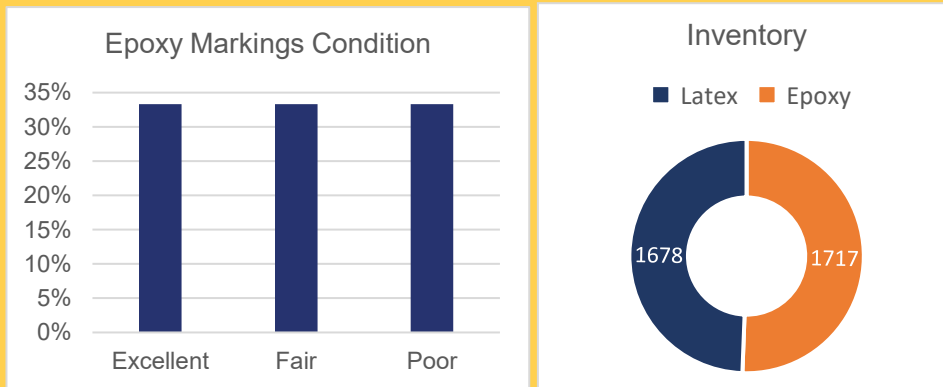
Epoxy Markings: Maintained by re-applying markings once every three years. Cover 1/3 of state per year.

Latex Paint Markings: Maintained by re-applying once per year.

Annual Budget:  
For long line pavement markings, the annual maintenance budget is \$5 million/year.

Coordination:  
The Pavement Markings section coordinates with Pave & Rehab projects each year in order to avoid striping roads that are scheduled to be re-paved—this avoids wasteful spending.

### INVENTORY & CONDITION



Epoxy Markings are on a 3-year life cycle. 1/3 of the state inventory is re-applied each year on the current maintenance plan. The state inventory is maintained using an ARCGIS mapping system.

### AGE DISTRIBUTION

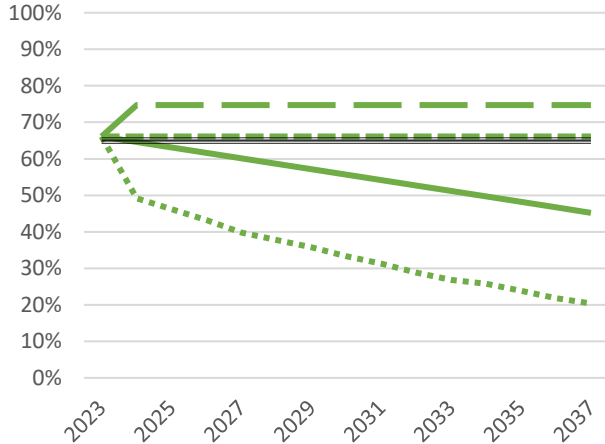
Similar to the chart above, epoxy markings range in age from 1-3 years (approximately 33.33% in each category). Latex markings are refreshed on a yearly basis.

We work to coordinate pavement markings operations with various paving projects throughout the year so that we are not duplicating work or having our brand new markings immediately removed by construction projects.



# PERFORMANCE PROJECTIONS

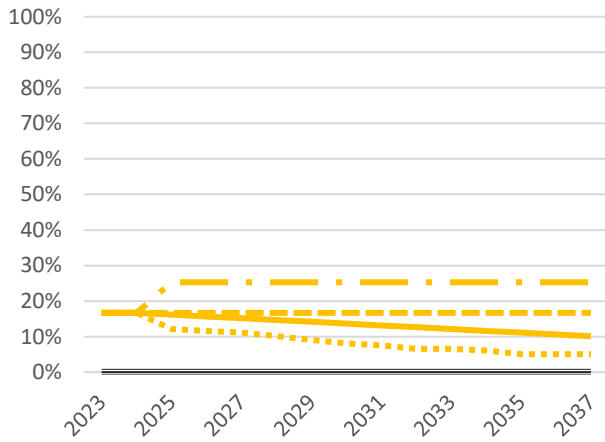
Markings in Good Condition



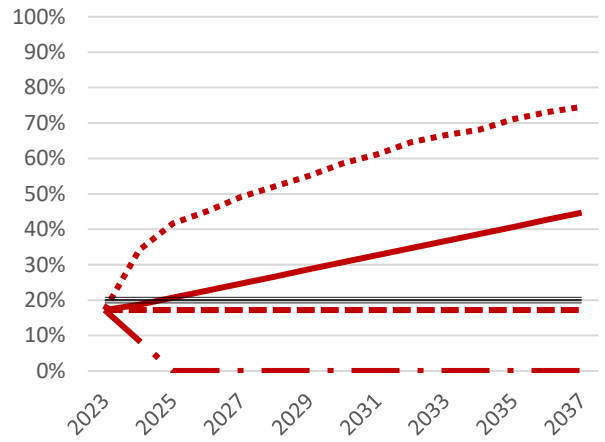
Legend

- Scenario I Funding Increase: **\$11.2M** Annual Funding (**\$168M** over 15 Years) – accounts for inflation and inventory growth – 50% of Epoxy and 100% of Latex replaced annually
- Scenario II Funding Increase: **\$6.9M** Annual Funding (**\$103.5M** over 15 Years) – accounts for minimal inflation and inventory growth – 33% of Epoxy and 100% of Latex replaced annually
- Scenario III Current Funding: **\$5.6M** Annual Funding (**\$84M** over 15 Years) – does not account for inflation or inventory growth – <33% of Epoxy and <100% of Latex replaced annually
- Scenario IV Funding Decrease: **\$4.4M** Annual Funding (**\$66M** over 15 Years) – worst case loss of funding – <25% of Epoxy and <80% of Latex replaced annually
- Target: > 65% Good  
< 20% Poor

Markings in Fair Condition



Markings in Poor Condition



It is anticipated that pavement markings will become more important to maintain in the future as technology is developed for autonomous (“driver-less”) vehicles. These vehicles depend on electronic “eyes” to see the lane markings which help guide the vehicle down the highway. Specifications for lane marking width and reflectivity will be strengthened in order to keep up with these technological developments. Therefore, we anticipate a future need for an increase in pavement markings budgets in order to meet new specifications.

## POTENTIAL RISKS

**Financial Risks:** Funding can be cut at any time, causing us to have to prioritize corridors rather than complete all maintenance.

**Technological Risks:** Future connected vehicles will depend heavily on being able to read and decipher pavement markings. This could cause widespread changes in specifications and even SOGR metrics, and could increase the cost of future maintenance.