EVALUATION OF SPRINKLE TREATMENT

Preliminary Investigation

The Iowa Surface Restoration Program is developed from road inventory data including sufficiency rating, present serviceability index and surface friction values. Roadways are selected for resurfacing on a priority system that considers present condition and traffic requirements. The traffic volumes for the 1977 sprinkle projects are given in Table I. At the time the sprinkle treatment projects were selected, FHWA participation was uncertain and the evaluation format had not been established.

The frictional values from the inventory program, prior to resurfacing determined at 40 m.p.h. in accordance with ASTM E 274 were:

1.	Ia. 1	Jefferson County	44
2.	US 20	Buchanan County	46
3.	US 69	Polk County	31
4.	US 18	Cerro Gordo County	28
5.	US 59	Pottawattamie County	41
6.	Ia. 38	Cedar County	40

Surface texture measurements are not a standard practice and therefore, not available for these projects.

Construction techniques are constantly improving and consequently better sprinkle treatments can be applied today than those built in 1977. Specifications have been modified to include the most recent findings.

Supplemental Specification 824 covering the 1978 Sprinkle Treatment projects is included as Appendix F. The current specification (April 22, 1980) is included as Appendix G.

CONCLUSIONS

1. Sprinkle treatments are an effective means of providing pavements with high quality frictional properties.

2. Fine material in the sprinkle aggregate is detrimental. A coarser one size aggregate yields the best sprinkle applications.

3. Sprinkle aggregates should be produced from hard, durable materials with a history of good frictional properties.

4. Good coating of the sprinkle aggregate is achieved more consistently in batch plants than in drum plants.

5. Sprinkle treatments result in a substantial increase of macrotexture.

6. Sprinkle treatments may result in a monetary savings in construction of pavements where special aggregates are required to assure durable friction characteristics.

7. Sprinkle treatments conserve high quality aggregate.