

APPENDIX B – OBJECTIVE RATING SYSTEM

BACKGROUND

The parameters evaluated in the Objective Rating System are the same as for the Comparative Visual System - dust, wash boarding, raveling, rutting and potholing that was developed for the Buenos Aires NWR project and used again in the Seedskadee NWR project. The 11-point system following was developed to mirror the Comparative Visual Rating System and its sensitivity to subtle differences in performance yet refer to objective criteria so that changes over time could be tracked.

Dust, wash boarding, raveling, rutting and potholing will be objectively evaluated at the Seedskadee National Wildlife Refuge based on the parameters identified and defined below. These parameters are loosely referenced from the December 2000 contract report entitled Pavement Management Systems: Standard Visual Assessment Manual for Unsealed Roads prepared by CSIR Transportek, Pretoria, South Africa. The parameters have been altered to fit within the conditions of the Seedskadee Stabilization Monitoring Study.

DUST

Assessment: The team will evaluate dust with driving safety being the major factor taken into account. Team members will follow behind a vehicle traveling at 25 mph to perform the analysis. They will rate visibility of the vehicle generating the dust based on the description parameters listed below. Four of the descriptions have 2 numbers associated with them. If, for example, several sections have “some loss of visibility,” sections given a 5 would be comparably a little worse than those given a 6.

<u>Rating</u>	<u>Description</u>
0	Vehicle generating dust cannot be seen - Must stop for dust to clear
1	Dangerous loss of visibility - Significant uneasiness at driving 25 mph
2	Dangerous loss of visibility - Significant uneasiness at driving 25 mph
3	Significant loss of visibility – Some uneasiness at driving 25 mph
4	Significant loss of visibility – Some uneasiness at driving 25 mph
5	Some loss of visibility – Little to no uneasiness at driving 25 mph
6	Some loss of visibility – Little to no uneasiness at driving 25 mph
7	Very little loss of visibility – No uneasiness at driving 25 mph
8	Very little loss of visibility – No uneasiness at driving 25 mph
9	A little low rising dust but no loss of visibility
10	No Dust

WASH BOARDING

Assessment: Wash boarding corrugations can be either “loose” or “fixed”. Loose corrugations consist of parallel alternating crests of loose, fine-sandy material and troughs of compacted material at right angles to the direction of travel. Fixed corrugations on the other hand consist of compacted crests and troughs of hard, fine sandy-gravel material. Wash boarding will be evaluated by measuring the number and depth of parallel troughs within a 25-foot length of roadway. Six trough measurements (divided equally between the 2 or 3 wheel paths) will be recorded and averaged. For Seedskadee Refuge monitoring, a measurement will occur at four locations within the approximate ½ mile test sections. These milepost locations will be determined prior to the monitoring event using random number selection. The four measurements will be averaged to assess their rating based on the description criteria listed below.

<u>Rating</u>	<u>Description</u>
0	Wash boarding troughs are > 60 mm deep
1	Wash boarding troughs are between 50 mm and 60 mm deep
2	Wash boarding troughs are between 40 mm and 50 mm deep
3	Wash boarding troughs are between 30 mm and 40 mm deep
4	Wash boarding troughs are between 25 mm and 30 mm deep
5	Wash boarding troughs are between 20 mm and 25 mm deep
6	Wash boarding troughs are between 15 mm and 20 mm deep
7	Wash boarding troughs are between 10 mm and 15 mm deep
8	Wash boarding troughs are between 5 mm and 10 mm deep
9	Wash boarding troughs are barely visible (< 5 mm deep)
10	Wash boarding is not visible

RAVELING

Assessment: Raveling will be evaluated by measuring the thickness of loose material. This is achieved by scraping a path through the material to the hard surface and measuring the thickness of the adjacent loose material with a straightedge and ruler. At each location, measure the maximum depths of material at the two outside wheel paths and at the center of the wheel paths, and average the numbers. Or where there are 3 wheel paths, measure the material depth only between the wheel paths. Do not measure uncompacted areas such as shoulders and ditches. For Seedskadee Refuge monitoring, a measurement will occur at four locations within the approximate ½ mile test sections. These milepost locations will be determined prior to the monitoring event using random number selection. The four measurements will be averaged to assess their rating based on the description criteria listed below.

<u>Rating</u>	<u>Description</u>
0	Loose material > 60 mm thick
1	Loose material between 50 mm and 60 mm thick
2	Loose material between 40 mm and 50 mm thick
3	Loose material between 30 mm and 40 mm thick
4	Loose material between 25 mm and 30 mm thick
5	Loose material between 20 mm and 25 mm thick
6	Loose material between 15 mm and 20 mm thick
7	Loose material between 10 mm and 15 mm thick
8	Loose material between 5 mm and 10 mm thick
9	Loose material is barely visible (< 5 mm thick)
10	Loose material is not visible

RUTTING

Assessment: Rutting will be evaluated by measuring the rut depth with a straightedge and ruler. For Seedskaadee Refuge monitoring, a measurement will occur at four locations within the approximate ½ mile test sections. These milepost locations will be determined prior to the monitoring event using random number selection. The four location measurements will be averaged to assess their rating based on the description criteria listed below. At each location, a measurement will be made in at least the right and left wheel paths and averaged. Due to their high variability, the average of a number of readings may be necessary at each location in different directions and wheel paths.

<u>Rating</u>	<u>Description</u>
0	Rutting is > 60 mm thick
1	Rutting is between 50 mm and 60 mm thick
2	Rutting is between 40 mm and 50 mm thick
3	Rutting is between 30 mm and 40 mm thick
4	Rutting is between 25 mm and 30 mm thick
5	Rutting is between 20 mm and 25 mm thick
6	Rutting is between 15 mm and 20 mm thick
7	Rutting is between 10 mm and 15 mm thick
8	Rutting is between 5 mm and 10 mm thick
9	Rutting is barely measurable (< 5 mm thick)
10	Rutting is not measurable

POTHOLING

Assessment: Potholes will be evaluated by measuring the pothole depth with a straightedge and ruler. The number of potholes within a 25-foot length of roadway and their average depth will be recorded at each monitoring location. For Seedskafee Refuge monitoring, a measurement will occur at four locations within the approximate ½ mile test sections. These milepost locations will be determined prior to the monitoring event using random number selection. The four measurements will be averaged to assess their rating based on the description criteria listed below. If only a few potholes occur over the entire project, their locations will be noted and they will be measured during each monitoring event. They will be discussed separately in the final project report.

<u>Rating</u>	<u>Description</u>
0	Road is not passable for most passenger cars
1	Many potholes are evident > 100 mm deep
2	Many potholes are evident ranging from 80 to 100 mm deep
3	Many potholes are evident ranging from 65 to 80 mm deep
4	Some potholes are evident ranging from 50 to 65 mm deep
5	Some potholes are evident ranging from 35 to 50 mm deep
6	Some potholes are evident ranging from 20 to 35 mm deep
7	A few potholes are evident ranging from 10 to 20 mm deep
8	A few potholes are evident ranging from 5 to 10 mm deep
9	A few potholes are evident < 5 mm deep
10	Potholes are not evident