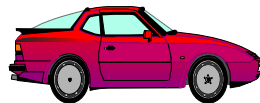


Particulate Emission Factors

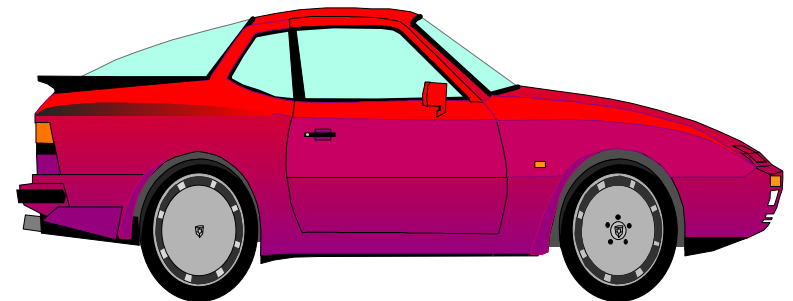
Paved Roads

Unpaved Roads



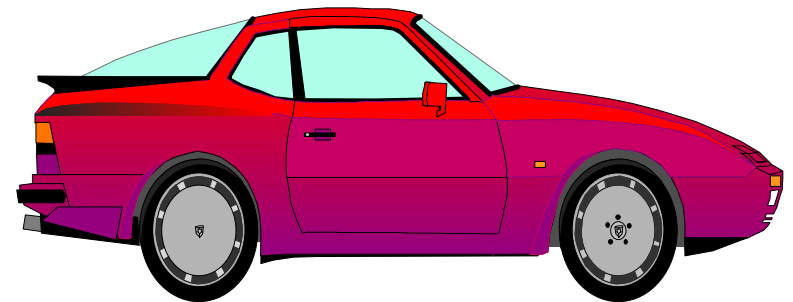
Paved Road Emission Factors

- Testing Methodologies
- Existing Emissions Data Base
- Existing Silt Loading Data Base
- Future Efforts



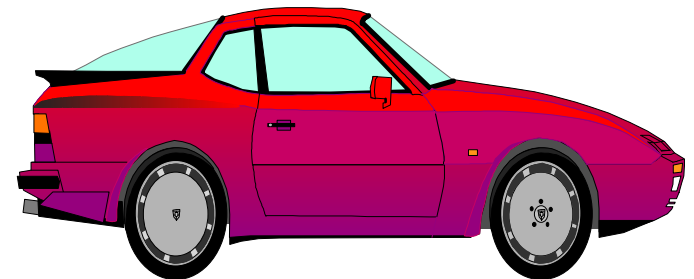
Emission Testing Methodologies

- Air Sampling Equipment
- Site Requirements
- Silt Analysis



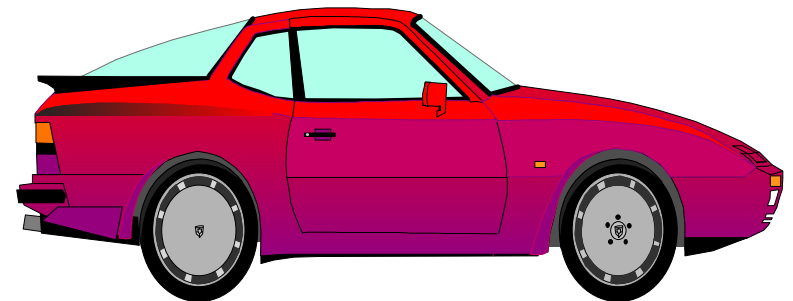
Site Requirements

- Open terrain
 - upwind
 - downwind
- No significant obstructions
- Wind Speed & direction
 - 2 to 20 mph
 - $\pm 45^\circ$
- Traffic Requirements
- Silt Content of Roadway



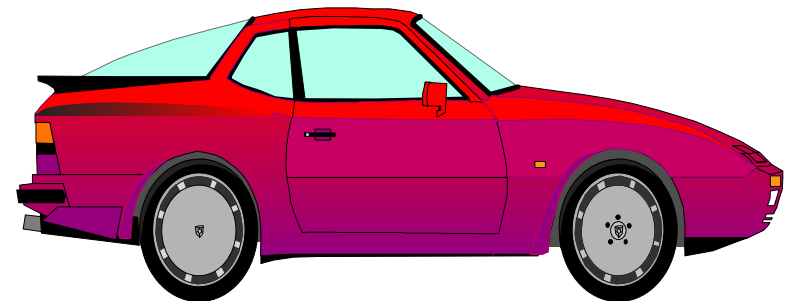
Existing Emissions Data Base

- Six Studies Considered
- Some Data Excluded
 - Poor Sampling Conditions
 - Poor Documentation
 - Poor Silt Analysis Procedures
- Analysis By Stepwise Regression



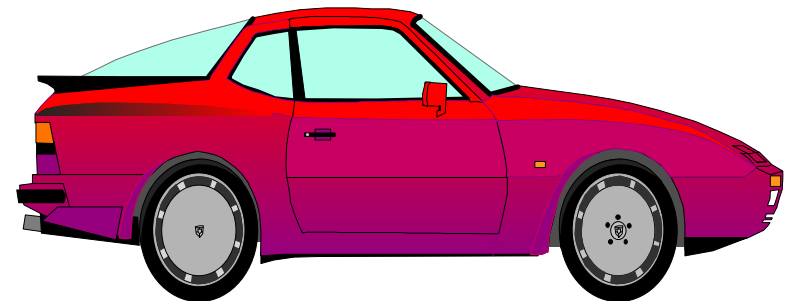
Silt Loading Data Base

- 2/3 from Montana
 - Only Location with full years data
 - Only Data Set with Multiple Samples
- No Relationships Identifiable
 - Road Class
 - Average Daily Traffic
- Sesonal Variabilities
- Poor Uniformity
 - Sampling Methodology
 - Analysis Methodology
 - Roadway Classification



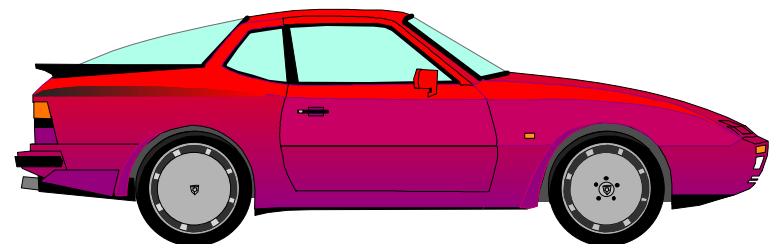
Future Work

- Near Term (Active)
- Long Term (Dream Land)



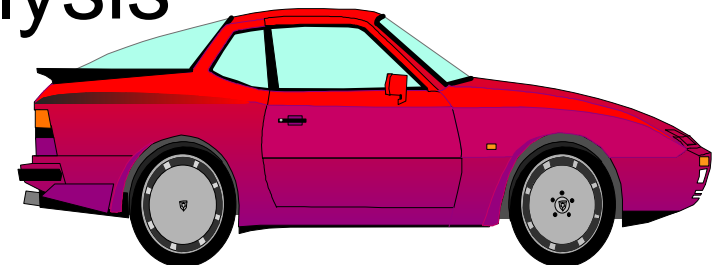
Near Term Work

- **Primary Focus is PM-2.5**
 - Secondary Focus is PM-10
 - Also Evaluate PM-1
- **Test Program in Three Locations**
 - Paved Roads
 - Unpaved Roads
- **Expectations**
 - Significant Revision in PM-2.5 & PM-1 Factors
 - Revision of PM-10 Factors Unlikely



Long Term Ideas

- Focus on Silt Loading Relationships
 - Traffic Speed
 - Average Daily Traffic Count
 - Temporal Variations
 - Spatial Variations
 - Meteorology
- Need Large Database
 - Statistically Designed
 - Consistent Documentation, Collection & Analysis
- Non Linear Statistical Analysis



Particulate Emission Factors

Open Discussion

