

**Model Minimum Inventory of Roadway Elements (MMIRE):
Proposed Alignment / Segment Variables**

December 18, 2008

GENERIC VARIABLE DESCRIPTION	Definition	Ease of Data Collection (1)
I. Roadway Segment Descriptors		
I.a. Segment Location/Linkage Variables		
1. County	County location of segment	E
2. City/local jurisdiction	City/local jurisdiction location of segment if applicable	E
3. Route Number	Route number	E
4. Street Name	Street name	E
5. Section End-Points Descriptors	Location information defining the location on a route of each endpoint of the section	E
6. Section Identifier	Unique segment identifier, derived from other variables (e.g., combination of route number, county location and beginning and ending mileposts)	E
7. Section Length	Section length	E
8. Highway District	Highway district	E
9. Governmental Ownership	Governmental owner of segment (including FIPS code)	E
10. Type of Governmental Ownership	Type of governmental ownership	
11. Route Signing	Type of route signing on the segment	E
12. Route Signing Qualifier	Whether the route is "business" or other qualifier	E
13. Coinciding route indicator	Whether the route segment is a "primary" coinciding route (i.e., the route that crashes are referenced to) or a "minor" coinciding route	E
14. Coinciding-route primary route number	If a minor coinciding route segment, the route number for the major (primary) route	E
15. Direction of Inventory	Direction of inventory	E
I.b. Segment Roadway Classification		
16. Functional Class	Functional class	E
17. Rural/Urban Designation	Rural/urban designation	E
18. Federal Aid/ Route Type	Federal aid/route type	E
19. Access Control	Access control	E
20. Operational Class	Operational class of segment, if different from official functional class	D
I.c. Segment Cross Section		
I.c.1. Surface Descriptors		
21. Surface Type	Surface type (paved, unpaved or types of pavement)	E

MMIRE Proposed Segment and Alignment Variables

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22. Surface Friction	Surface friction indicator	D
23. Surface Friction Date	Date surface friction measured	
24. Total Surface Width	Total paved surface width (could be derived if all other lane widths are captured)	M
25. Pavement Roughness	Pavement roughness (roughness number)	D
26. Pavement Roughness Date	Date pavement roughness number assigned	
27. Pavement Condition	Pavement condition (descriptive scale)	D
28. Pavement Condition Date	Date pavement condition assigned	
I.c.2. Lane Descriptors		
29. No. of Thru Lanes	Number of thru lanes, including HOV and reversible lanes	E
30. Average Thru Lane Width	Average lane width used by traffic (i.e., not including wide curb lanes, parking area, bicycle lanes, etc.)	M
31. Exclusive Left Turn Lane Presence	Exclusive left turn lane type	E
32. Exclusive Left Turn Lane Length	Exclusive left turn lane length	E
33. Exclusive Right Turn Lane Presence	Exclusive right turn lane type	E
34. Exclusive Right Turn Lane Length	Exclusive right turn lane length	E
35. Auxiliary Lane Presence/Type	Presence or type of auxiliary lane	E
36. Auxiliary Lane Length	Length of auxiliary lane	E
37. HOV Lanes	Presence of HOV lanes in segment	M
38. HOV Lane Types	HOV lane types	E
39. Reversible Lanes	Number of reversible lanes present on segment	
40. Presence/Type of Bicycle Facility	Presence or type of bicycle facility on segment	D
41. Width of Marked Bicycle Lane or Bike Path	Width of marked bicycle lane or bike path	D
42. Width of Wide Curb Lane	Width of wide curb lane used by both vehicles and bicycles	M
43. Number of Peak Hour Lanes	Number of through lanes used in peak period in the peak direction	M
I.c.3. Shoulder Descriptors		
44. Right Shoulder Type	Shoulder type on right side of road in direction of inventory	E
45. Right Shoulder Total Width	Total width of right shoulder, including paved and unpaved parts	M
46. Right Paved Shoulder Width	Width of paved portion of right shoulder	E

MMIRE Proposed Segment and Alignment Variables

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47. Left Shoulder Type	Shoulder type on left side of roadway in direction of inventory. For undivided roads and divided roads with one direction of inventory, this will be the outside shoulder on the opposing side. NOTE that information on paved width of the inner (left) shoulder on divided roads is captured in the Median descriptors.	E
48. Left Shoulder Total Width	Width of left (outside) shoulder, including paved and unpaved parts	M
49. Left Paved Shoulder Width	Width of paved portion of left shoulder	E
50. Shoulder Rumble Strip Presence	Presence of shoulder rumble strip	M
51. Rumble Strip Type	Rumble strip type if present	M
52. Sidewalk Presence	Presence of sidewalk in direction of inventory	D*
53. Curb Presence	Presence of curb	M
54. Curb Type	Curb type	D
I.c.4. Median Descriptors		
55. Median Type	Median type (including two-way left turn lane)	E
56. Median Width	Median width, including inside shoulders	E
57. Median Barrier Type	Median barrier type	E
58. Median (Inner) Paved Shoulder Width	Median (inner) paved shoulder width	E
59. Median Shoulder Rumble Strip Presence	Presence of median shoulder rumble strip	M
60. Median Rumble Strip Type	Rumble strip type if present	M
61. Median Left Turn Lane Type	Type of left turn lane in median.	E
62. Median Left Turn Lane Width	Width of median left turn lane	E
I.d. Segment Roadside Descriptors		
63. Roadside Clearzone Width	Roadside clearzone width	D*
64. Sideslope	Sideslope	D*
65. Roadside Rating	A rating of the safety of the roadside from Appendix D, Publication No. FHWA-RD-99-207, Prediction of the Expected Safety Performance of Rural Two-Lane Highways. Only collect if clearzone width and sideslope are not collected.	D
66. Driveway Information	Driveway count by type	D*

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67. Roadside Hardware Descriptors	Roadside hardware descriptors (including type, location, size, distance from lane edge). Examples include barrier (type and terminal type), signs (size, breakaway?), culverts, etc.	D*
1.e. Other Segment Descriptors		
68. Terrain Type (E.G. Mountainous, Level)	Basic terrain type around segment. This is a (poor) surrogate for detailed data on curvature and grade, and would be collected only in the absence of those variables. See "Alignment" variables below.	M
69. Bridge Descriptors For Bridges In Segment	Bridge descriptors for bridges in segment	E
70. RR Grade Crossing Descriptors For Crossings In Segment	RR grade crossing descriptors for crossings in segment	E
71. Number of Signalized Intersections in Section	Number of signalized intersections in section	M*
72. Number of Stop-Controlled Intersections in Section	Number of stop-controlled intersections in section	M*
73. Number of Uncontrolled/Other Intersections	Number of uncontrolled/other intersections	M*
1.f. Segment Traffic Flow Data		
74. Average Daily Traffic Volume	Average Annual Daily Traffic	E
75. AADT Year	Year of AADT	E
76. AADT Annual Escalation Percentage	AADT annual escalation percentage	M
77. Percentage Truck or Truck AADT	Percentage truck or truck AADT (includes tractor-semis and trucks with 6+ wheels)	M
78. Total Daily Two-Way Pedestrian Count/Exposure	Total daily pedestrian flow in both directions (unless directional segment). This is a (poor) surrogate for crossing pedestrian counts.	D
79. Bicycle Count/Exposure	Total daily bicycle flow in both directions (unless directional segment)	D
80. Motorcycle Count Or Percentage	Motorcycle daily count or percentage of AADT	D
81. Hourly Traffic Volumes (or Peak and Off-peak AADT)	Hourly traffic volumes (or peak and off-peak AADT)	D
82. K-Factor	The K-factor is the 30th highest hourly volume (i.e., the design hour volume) for a year, as a percentage of the annual average daily traffic.	D
83. Future AADT	Forecasted AADT	D

MMIRE Proposed Segment and Alignment Variables

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84. Future AADT Year	Year of forecasted AADT	D
85. Directional Factor	Proportion of peak hour traffic in the predominate direction of flow	D
86. Percent Combination Trucks - Daily Average	Percent combination trucks – daily average	M
87. Percent Single Unit Trucks - Daily Average	Percent single unit trucks – daily average	M
I.g. Segment Traffic Operations/Control Data		
88. One/Two-Way Operations	Whether the segment operates as a one- or two-way roadway	E
89. Speed Limit	Speed limit	E
90. School Zone Indicator	Whether segment contains a school zone	M
91. On-Street Parking Presence	Time-based parking restrictions	D
92. On-Street Parking Type	On-street parking type	D
93. Roadway Lighting	Type of roadway lighting	M
94. Truck Route Designation	Truck route designation	E
95. Toll Facility?	Toll facility indicator	E
96. Edgeline Presence/Type	Edgeline presence/type	D*
97. Centerline Presence/Type	Centerline presence/type	D*
98. No Passing Zone Code / Passing Permissibility	No passing zone code/passing permissibility	D*
99. 85th % speed	Traffic speed exceeded by 15% of the vehicles in the flow	D
II. Roadway Alignment Descriptors		
II.a. Horizontal Curve Data		
(NOTE: Each data record will define an angle point or a single curve, even if the curve is a component of a		
100. Curve Identifiers and linkage variables	All variables needed to define location of each curve record and all variables necessary to link with other safety files.	D*
101. Curve Feature Type	Type of horizontal alignment feature being described in the data record	D*
102. Horizontal Curve Degree or Radius	Degree or radius of curve	D*
103. Horizontal Curve Length (including spiral)	Length of curve	D*
104. Curve Superelevation or Superelevation Adequacy	Either measured superelevation rate or percent or adequacy of superelevation when compared to AASHTO design standards	D*
105. Horizontal Transition/Spiral Curve Presence	Presence/type of transition from tangent to curve	D

MMIRE Proposed Segment and Alignment Variables

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106. Horizontal Curve Intersection/Deflection Angle	The angle between the two intersecting tangents in the direction of inventory (sometimes called the "deflection angle").	D
107. Horizontal Curve Direction	Direction of curve in direction of inventory	M*
II.b. Vertical Grade Data		
(NOTE: Each data record will define an individual grade or the angle point or vertical curve linking two		
108. Grade Identifiers And Linkage Variables	All variables needed to define location of each vertical feature and all variables necessary to link with other safety files.	E
109. Vertical Alignment Feature Type	Type of vertical alignment feature being described in the data record	E
110. Percent Of Gradient	Percent of gradient	D*
111. Grade Length	Grade length	D*
112. Vertical Curve Length	Vertical curve length	D

(1) E = Easy, M = Moderate, D = Difficult. Note that an asterisk (*) indicates an element for which data collection technology is being developed