

SHEET 1  
LTPP TRAFFIC DATA  
SUMMARY TRANSMITTAL FORM

\*STATE ASSIGNED ID [5701]  
\*STATE CODE [46]  
\*SHRP SECTION ID [5040]

STATE OR PROVINCE South Dakota COUNTY Minnehaha  
HIGHWAY ROUTE NO. I-90 MILEPOST# 394.25  
NEAREST CITY/TOWN Sioux Falls NEAREST INTERSECTION I-29  
FUNCTIONAL CLASS 1 NO. LANES EACH DIRECTION 2 TOTAL NO. LANES 4  
DIRECTION OF TRAVEL GPS LANE EB DATE OPENED TO TRAF. - - - 64  
FIPS COUNTY CODE 099 FHWA STATION IDENTIFICATION NO. \_\_\_\_\_  
HPMS SAMPLE NO. 500090390210 HPMS SUBDIVISION NO. 1  
TYPE OF PAVEMENT: AC \_\_\_\_\_ PCC ✓ OTHER \_\_\_\_\_  
CONTROL OF ACCESS: YES ✓ NO \_\_\_\_\_ MEDIAN: YES ✓ NO \_\_\_\_\_  
CURRENT SURROUNDING DEVELOPMENT:  
URBAN \_\_\_\_\_ SUBURBAN X RURAL + \_\_\_\_\_  
HAS INTENSITY OF ROADSIDE DEVELOPMENT INCREASED OVER PAST 10 YEARS?  
YES \_\_\_\_\_ NO ✓  
IF YES, DESCRIBE CHANGES \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTE: ATTACH ALL RELATED FORMS AND COUNT DATA AND SUBMIT TO THE  
SHRP REGIONAL OFFICE. ATTACH MAP INDICATING THE LOCATION OF  
EACH TRAFFIC COUNT, VEHICLE CLASSIFICATION COUNT, OR WEIGHT  
STATION RELATIVE TO THIS GPS TEST SECTION.

NAME OF PREPARER \_\_\_\_\_ PHONE # \_\_\_\_\_  
DATE PREPARED \_\_\_\_\_

<p align="center"><b>SHEET 2</b></p> <p align="center"><b>LTPP TRAFFIC DATA</b></p> <p align="center"><b>TRAFFIC VOLUMES AND LOAD ESTIMATES</b></p>	<p>*STATE ASSIGNED ID [5201]</p>
	<p>*STATE CODE [46]</p>
	<p>*SHRP SECTION ID [5040]</p>

YEAR	1. ESTIMATED TOTAL VEHICLES AADT (TWO-WAY)	2. ESTIMATED TOTAL TRUCK AADT (TWO-WAY)	3. ESTIMATED TOTAL VEHICLES AADT GPS LANE	4. ESTIMATED TOTAL TRUCKS AADT GPS LANE	5. ESTIMATED ESAL'S / YR GPS LANE (1000's)
1989	8400	1352	3780	609	68.3
1988	7100	1000	41253	563	70.9
1987	9750	1475	4489	664	67.9 *
1986	10500	1700	4725	765	64.9
1985	10593	1608	4747	724	73.85 *
1984	10625	1515	4808	682	82.8
1983	10443	1440	4699	648	77.85 *
1982	10200	1365	4590	614	72.9
1981	8620	1245	3879	560	60.4 *
1980	7040	1100	3168	505	47.9
1979	6668	1135	3001	511	45.05 *
1978	6200	1115	2833	515	43.0
1977	6175	1123	2779	505	41.4 *
1976	6050	1100	2725	495	40.6
1975	5395	1065	2428	614	36.2
1974	5630	1035	2534	466	37.7
1973	5752	1058	2589	476	38.55 *
1972	5274	1021	2643	486	39.4
1971	5330	862	2399	391	28.4
1970	5731	908	2588	422	30.6
1969	4932	804	2219	362	26.2
1968	4441	718	1985	323	22.5
1967	4077	664	1835	299	21.7
1966	3521	427	1584	192	18.7
1965	3473	421	1563	189	18.5

NAME OF PREPARER _____	PHONE # _____
DATE PREPARED _____	_____

\* line has been averaged

# LTPP TRAFFIC DATA PROCEDURES FOR ESTIMATING ANNUAL AVERAGE VOLUMES AND TOTAL ANNUAL ESALS

\*STATE ASSIGNED ID [5201]

\*STATE CODE [16]

\*SHRP SECTION ID [5040]

1. Year Applicable 65-185

## 2. METHOD FOR ESTIMATING AADT

- ☐ Factored a single count taken this year at the GPS site.  
☐ Averaged multiple counts taken this year at the GPS site.  
☐ Averaged and factored multiple counts taken this year at the GPS site.  
☐ Growth factored last year's estimate.  
☐ Estimated based on volume counts at nearby locations.  
☒ Used flow maps.  
☐ Used computerized network analyses.  
☐ Other: \_\_\_\_\_

## 3. METHOD FOR ESTIMATING TRUCK VOLUMES OR PERCENTAGES

- ☐ Used a single count taken this year at the GPS site.  
☐ Factored a single count taken this year at the GPS site.  
☐ Averaged multiple counts taken this year at the GPS site.  
☐ Used system averages from counts taken this year.  
☐ Used count data from nearby sites.  
☐ Used count data taken in earlier years at the GPS site.  
☐ Used system averages taken in earlier years at the GPS site.  
☐ Used computerized network analyses.  
☒ Other: Flow maps

## 4. METHOD FOR ESTIMATING AADT BY GPS LANE

- ☐ Based on actual lane count data.  
☐ System distribution factors.  
☒ Other: EST 90/10

## 5. METHOD FOR ESTIMATING TRUCK AADT IN GPS LANES

- ☐ Based on actual lane count data.  
☐ System distribution factors.  
☒ Other: Flow map

## 6. METHOD FOR ESTIMATING ESAL/VEHICLE

- ☐ ESAL/Truck.  
☐ ESAL/Vehicle class. (no. of classes) \_\_\_\_\_  
☒ Other: Summation

## 7. ESAL ESTIMATES

## (A) Source of Data

- ☐ Weight data collected at GPS site this year.  
☐ Weight data collected at GPS site prior years.  
☐ Weight data from system averages this year.  
☒ Weight data from system averages prior years.  
☐ Weight data from historic W-4 Tables used.  
☐ Other: \_\_\_\_\_

## (B) Weight Scale Type

- ☐ WIM scale.  
☐ Static scale used for enforcement.  
☒ Static scale not used for enforcement.  
☐ Other: \_\_\_\_\_

NAME OF PREPARER \_\_\_\_\_ PHONE # \_\_\_\_\_  
DATE PREPARED \_\_\_\_\_

## SHEET 3

# LTPP TRAFFIC DATA PROCEDURES FOR ESTIMATING ANNUAL AVERAGE VOLUMES AND TOTAL ANNUAL ESALS

\*STATE ASSIGNED ID [5201]

\*STATE CODE [46]

\*SHRP SECTION ID [2040]

1. Year Applicable 86-89

## 2. METHOD FOR ESTIMATING AADT

- ☐ Factored a single count taken this year at the GPS site.  
☐ Averaged multiple counts taken this year at the GPS site.  
☐ Averaged and factored multiple counts taken this year at the GPS site.  
☐ Growth factored last year's estimate.  
☐ Estimated based on volume counts at nearby locations.  
☒ Used flow maps.  
☐ Used computerized network analyses.  
☐ Other: \_\_\_\_\_

## 3. METHOD FOR ESTIMATING TRUCK VOLUMES OR PERCENTAGES

- ☐ Used a single count taken this year at the GPS site.  
☐ Factored a single count taken this year at the GPS site.  
☐ Averaged multiple counts taken this year at the GPS site.  
☐ Used system averages from counts taken this year.  
☐ Used count data from nearby sites.  
☐ Used count data taken in earlier years at the GPS site.  
☐ Used system averages taken in earlier years at the GPS site.  
☐ Used computerized network analyses.  
☒ Other: Flow maps

## 4. METHOD FOR ESTIMATING AADT BY GPS LANE

- ☐ Based on actual lane count data.  
☐ System distribution factors.  
☒ Other: EST 90/10

## 5. METHOD FOR ESTIMATING TRUCK AADT IN GPS LANES

- ☐ Based on actual lane count data.  
☐ System distribution factors.  
☒ Other: Flow map

## 6. METHOD FOR ESTIMATING ESAL/VEHICLE

- ☐ ESAL/Truck.  
☐ ESAL/Vehicle class. (no. of classes) \_\_\_\_\_  
☒ Other: Summation

## 7. ESAL ESTIMATES

## (A) Source of Data

- ☐ Weight data collected at GPS site this year.  
☐ Weight data collected at GPS site prior years.  
☐ Weight data from system averages this year.  
☒ Weight data from system averages prior years.  
☐ Weight data from historic W-4 Tables used.  
☐ Other: \_\_\_\_\_

## (B) Weight Scale Type

- ☒ WIM scale.  
☐ Static scale used for enforcement.  
☐ Static scale not used for enforcement.  
☐ Other: \_\_\_\_\_

NAME OF PREPARER \_\_\_\_\_ PHONE # \_\_\_\_\_

DATE PREPARED \_\_\_\_\_

SHEET 4 LTPP TRAFFIC DATA TRAFFIC VOLUME COUNTS	*STATE ASSIGNED ID [2201] *STATE CODE [45] *SHRP SECTION ID [5045]
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HIGHWAY ROUTE NO. (THIS COUNT) \_\_\_\_\_

MILEPOST# OR LOCATION (THIS COUNT) \_\_\_\_\_

BEGINNING DATE \_\_\_\_\_ ENDING DATE \_\_\_\_\_

BEGINNING TIME \_\_\_\_\_ ENDING TIME \_\_\_\_\_

COUNT DURATION \_\_\_\_\_ [ ] HOURS [ ] DAYS [ ] MONTHS

TYPE OF COUNTER \_\_\_\_\_ NAME/MODEL # \_\_\_\_\_

TYPE OF COUNT: TWO-WAY \_\_\_\_\_ ONE DIRECTION ONLY \_\_\_\_\_ GPS TEST LANE ONLY \_\_\_\_\_

ITEM	ACTUAL COUNTS	UNITS
1. TOTAL NO. OF VEHICLES (RAW COUNT)	-----	5 hours 4-7
2. ADJUSTMENT FACTORS (FILL IN AS APPLICABLE):		N/A
A. ADJUSTMENT TO 24-HOUR COUNT	-----	
B. AXLE CORRECTION FACTOR	-----	used
C. DAY OF WEEK FACTOR	-----	flow maps
D. MONTH FACTOR	-----	
E. OTHER FACTOR (_____)	-----	
3. ANNUAL AVERAGE DAILY TRAFFIC (AADT) (TWO-WAY)	-----	
4. DIRECTIONAL DISTRIBUTION FACTOR	-----	
5. GPS LANE DISTRIBUTION FACTOR	-----	
6. AADT GPS LANE	-----	

NOTE: COMPLETE ONE SHEET FOR EACH COUNTING SESSION.

NAME OF PREPARER _____	PHONE # _____
DATE PREPARED _____	

## LTPP TRAFFIC DATA

VEHICLE CLASSIFICATION DATA  
FHWA 13-CLASS SYSTEM

\*STATE ASSIGNED ID [5901]

\*STATE CODE [46]

\*SHRP SECTION ID [5040]

HIGHWAY RT. NO. (THIS COUNT) \_\_\_\_\_ MILEPOST# (THIS COUNT) \_\_\_\_\_

LOCATION (THIS COUNT) \_\_\_\_\_ FUNCTIONAL CLASS \_\_\_\_\_

BEGINNING DATE \_\_\_\_\_ ENDING DATE \_\_\_\_\_

BEGINNING TIME \_\_\_\_\_ ENDING TIME \_\_\_\_\_ DURATION (HRS) \_\_\_\_\_

TYPE OF COUNT: MANUAL \_\_\_\_\_ AUTOMATED \_\_\_\_\_ NO. OF LANES COUNTED \_\_\_\_\_

TYPE OF EQUIP.: AVC PERM. \_\_\_\_\_ AVC PORT. \_\_\_\_\_ WIM PERM. \_\_\_\_\_ WIM PORT. \_\_\_\_\_

EQUIPMENT NAME / MODEL # \_\_\_\_\_

TOTAL NO. OF VEHICLES CLASSIFIED \_\_\_\_\_ # TRUCKS \_\_\_\_\_ % TRUCKS \_\_\_\_\_

NO. OF TRUCKS IN GPS LANE \_\_\_\_\_ % OF TRUCKS IN GPS LANE \_\_\_\_\_

VEHICLE CLASSIFICATION METHOD: FHWA \_\_\_\_\_ OTHER \_\_\_\_\_ # BINS \_\_\_\_\_

NOTE: IF THIS COUNT DOES NOT USE THE FHWA 13-BIN CLASSIFICATION SYSTEM USE SHEET 6. PLEASE DESCRIBE ON AN ATTACHED PAGE THE VEHICLE CLASSIFICATION SYSTEM USED BY THE AGENCY AND COMPLETE SHEET 7 DESCRIBING HOW THE SHA WOULD EXPAND OR COLLAPSE THE USER CLASSIFICATION SYSTEM TO CORRESPOND WITH THE FHWA 13 CLASSES.

VEHICLE CLASSES	TOTAL NUMBER OF VEHICLES TWO-WAY	TOTAL NUMBER OF VEHICLES GPS DIRECTION	TOTAL NUMBER OF VEHICLES GPS LANE
1. FHWA CLASSES 1-3 (Cars, Motorcycles, Vans)	_____	_____	_____
2. FHWA CLASS 4 (Buses)	_____	_____	_____
3. FHWA CLASS 5 (Two Axle, 6-Tire, SU Truck)	_____	_____	_____
4. FHWA CLASS 6 (3 AXLE SU TRUCK)	_____	_____	_____
5. FHWA CLASS 7 (4 or more Axle SU Truck)	_____	_____	_____
6. FHWA CLASS 8 (4 or less axle 1-Trlr.Truck)	_____	_____	_____
7. FHWA CLASS 9 (5 Axle, 1-Trlr.Truck)	_____	_____	_____
8. FHWA CLASS 10 (6 or more Axle, 1-Trlr.Truck)	_____	_____	_____
9. FHWA CLASS 11 (5 or less Axle, Multi-Trlr.Truck)	_____	_____	_____
10. FHWA CLASS 12 (6 Axle, Multi-Trlr.Truck)	_____	_____	_____
11. FHWA CLASS 13 (7 or more Axle, Multi-Trlr.Truck)	_____	_____	_____
12. OTHER VEHICLES	_____	_____	_____
GRAND TOTAL	_____	_____	_____

NAME OF PREPARER \_\_\_\_\_ PHONE # \_\_\_\_\_

DATE PREPARED \_\_\_\_\_

## LTPP TRAFFIC DATA

VEHICLE CLASSIFICATION DATA  
AGENCY DEFINED CLASSES

\*STATE ASSIGNED ID [ 5901 ]

\*STATE CODE [ 46 ]

\*SHRP SECTION ID [ 5040 ]

FOR 4-BIN OR OTHER CLASSIFICATION SYSTEMS

HIGHWAY ROUTE NO. (THIS COUNT) \_\_\_\_\_ MILEPOST # (THIS COUNT) \_\_\_\_\_

BEGINNING DATE \_\_\_\_\_ ENDING DATE \_\_\_\_\_

BEGINNING TIME \_\_\_\_\_ ENDING TIME \_\_\_\_\_ DURATION (HRS) \_\_\_\_\_

VEHICLE CLASSES (DESCRIBE VEHICLE TYPES IN EACH CLASS OR AXLE SPACING CATEGORY)	TOTAL NUMBER OF VEHICLES TWO-WAY	TOTAL NUMBER OF VEHICLES GPS DIRECTION	TOTAL NUMBER OF VEHICLES GPS LANE
A. _____	_____	_____	_____
B. _____	_____	_____	_____
C. _____	_____	_____	_____
D. _____	_____	_____	_____
E. _____	_____	_____	_____
F. _____	_____	_____	_____
G. _____	_____	_____	_____
H. _____	_____	_____	_____
I. _____	_____	_____	_____
J. _____	_____	_____	_____
K. _____	_____	_____	_____
L. _____	_____	_____	_____
M. _____	_____	_____	_____
N. _____	_____	_____	_____
O. _____	_____	_____	_____
P. _____	_____	_____	_____
Q. _____	_____	_____	_____
R. _____	_____	_____	_____
S. _____	_____	_____	_____
T. _____	_____	_____	_____

GRAND TOTAL \_\_\_\_\_

NAME OF PREPARER \_\_\_\_\_

PHONE # \_\_\_\_\_

DATE PREPARED \_\_\_\_\_

<p><b>SHEET 7</b></p> <p><b>LTPP TRAFFIC DATA</b></p> <p><b>VEHICLE CLASSIFICATION CONVERSION CHART</b></p>	<p>*STATE ASSIGNED ID [ <u>5901</u> ]</p> <p>*STATE CODE [ <u>46</u> ]</p> <p>*SHRP SECTION ID [ <u>5040</u> ]</p>
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FOR 4-BIN, 6-BIN, OR OTHER NON FHWA CLASSIFICATION SYSTEMS

USE THIS SHEET TO DESCRIBE HOW THE AGENCY'S CLASSIFICATION SYSTEM CAN BE CONVERTED TO THE FHWA 13-CLASSES. ENTER PERCENTAGE OF TOTAL SHA CLASS DISTRIBUTED TO EACH FHWA CLASS. APPLICABLE PERIOD FROM \_\_\_\_\_ TO \_\_\_\_\_

SHA CLASS	FHWA CLASSES												
	1-3	4	5	6	7	8	9	10	11	12	13	OTHER	TOTAL
A	---	---	---	---	---	---	---	---	---	---	---	---	---
B	---	---	---	---	---	---	---	---	---	---	---	---	---
C	---	---	---	---	---	---	---	---	---	---	---	---	---
D	---	---	---	---	---	---	---	---	---	---	---	---	---
E	---	---	---	---	---	---	---	---	---	---	---	---	---
F	---	---	---	---	---	---	---	---	---	---	---	---	---
G	---	---	---	---	---	---	---	---	---	---	---	---	---
H	---	---	---	---	---	---	---	---	---	---	---	---	---
I	---	---	---	---	---	---	---	---	---	---	---	---	---
J	---	---	---	---	---	---	---	---	---	---	---	---	---
K	---	---	---	---	---	---	---	---	---	---	---	---	---
L	---	---	---	---	---	---	---	---	---	---	---	---	---
M	---	---	---	---	---	---	---	---	---	---	---	---	---
N	---	---	---	---	---	---	---	---	---	---	---	---	---
O	---	---	---	---	---	---	---	---	---	---	---	---	---
P	---	---	---	---	---	---	---	---	---	---	---	---	---
Q	---	---	---	---	---	---	---	---	---	---	---	---	---
R	---	---	---	---	---	---	---	---	---	---	---	---	---
S	---	---	---	---	---	---	---	---	---	---	---	---	---
T	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>TOTAL</b>	---	---	---	---	---	---	---	---	---	---	---	---	---

NAME OF PREPARER _____	PHONE # _____
DATE PREPARED _____	



## TRUCK WEIGHT SESSION INFORMATION

\*SHRP SECTION ID [2040]

NOTE: IF THIS WEIGHT SESSION IS NOT BASED UPON THE FHWA 13-BIN CLASSIFICATION SYSTEM, USE SHEET 7 TO DESCRIBE HOW THE SHA WOULD EXPAND OR COLLAPSE THE AGENCY CLASSIFICATION SYSTEM TO CORRESPOND WITH THE FHWA 13 CLASSES. ALSO PROVIDE A DESCRIPTION OF THE CLASSIFICATION SCHEME THAT WAS USED.

NAME OF PREPARER \_\_\_\_\_ PHONE # \_\_\_\_\_  
DATE PREPARED \_\_\_\_\_

<p><b>SHEET 9</b></p> <p><b>LTPP TRAFFIC DATA</b></p> <p><b>TRUCK AXLE LOAD MEASUREMENTS BY VEHICLE CLASSIFICATION</b></p>	<p>*STATE ASSIGNED ID [2901]</p> <p>*STATE CODE [46]</p> <p>*SHRP SECTION ID [2040]</p>
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FHWA CLASSIFICATION SCHEME: FHWA \_\_\_\_\_ OTHER \_\_\_\_\_ #BINS \_\_\_\_\_

NOTE: FOR CLASSIFICATION SCHEMES OTHER THAN FHWA, ATTACH SHEET 7  
DESCRIBING CONVERSION FROM AGENCY CLASSIFICATION SCHEME TO  
FHWA 13 CLASSES.

1. VEHICLE CLASS \_\_\_\_\_

2. TOTAL NUMBER VEHICLES COUNTED \_\_\_\_\_

3. SINGLE AXLES LOAD RANGE	NUMBER OF SINGLE AXLES WEIGHED	4. TANDEM AXLES LOAD RANGE	NUMBER OF TANDEM AXLES WEIGHED	5. TRIPLE AXLES LOAD RANGE	NUMBER OF TRIPLE AXLES WEIGHED
< 3000	-----	< 6000	-----	< 12000	-----
3000 - 3999	-----	6000 - 7999	-----	12000 - 14999	-----
4000 - 4999	-----	8000 - 9999	-----	15000 - 17999	-----
5000 - 5999	-----	10000 - 11999	-----	18000 - 20999	-----
6000 - 6999	-----	12000 - 13999	-----	21000 - 23999	-----
7000 - 7999	-----	14000 - 15999	-----	24000 - 26999	-----
8000 - 8999	-----	16000 - 17999	-----	27000 - 29999	-----
9000 - 9999	-----	18000 - 19999	-----	30000 - 32999	-----
10000 - 10999	-----	20000 - 21999	-----	33000 - 35999	-----
11000 - 11999	-----	22000 - 23999	-----	36000 - 38999	-----
12000 - 12999	-----	24000 - 25999	-----	39000 - 41999	-----
13000 - 13999	-----	26000 - 27999	-----	42000 - 44999	-----
14000 - 14999	-----	28000 - 29999	-----	45000 - 47999	-----
15000 - 15999	-----	30000 - 31999	-----	48000 - 50999	-----
16000 - 16999	-----	32000 - 33999	-----	51000 - 53999	-----
17000 - 17999	-----	34000 - 35999	-----	54000 - 56999	-----
18000 - 18999	-----	36000 - 37999	-----	57000 - 59999	-----
19000 - 19999	-----	38000 - 39999	-----	60000 - 62999	-----
20000 - 20999	-----	40000 - 41999	-----	63000 - 65999	-----
21000 - 21999	-----	42000 - 43999	-----	66000 - 68999	-----
22000 - 22999	-----	44000 - 45999	-----	69000 - 71999	-----
23000 - 23999	-----	46000 - 47999	-----	72000 - 74999	-----
24000 - 24999	-----	48000 - 49999	-----	75000 - 77999	-----
25000 - 25999	-----	50000 - 51999	-----	78000 - 79999	-----
26000 - 26999	-----	52000 - 53999	-----	> 80000	-----
27000 - 27999	-----	54000 - 55999	-----		
28000 - 28999	-----	56000 - 57999	-----		
29000 - 29999	-----	58000 - 59999	-----		
> 30000	-----	> 60000	-----		

6. USE SECOND PAGE FOR FOUR AXLE GROUPS.

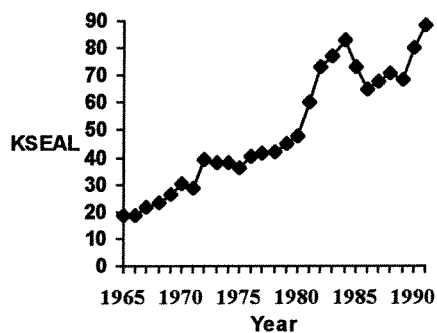
NAME OF PREPARER _____	PHONE # _____
DATE PREPARED _____	

Agency ID: 46

SHRP ID: 5040

Agency Name: South Dakota

### Historical Traffic Data



Year:	KESAL:	SRO:
1990	80	
1991	88	

Site Location I-90 EB

MP or Station MP 394.25

Design KESAL 225

Level P

Number of Lanes 4

Lanes Monitored 2E/2W

Equipment Location 3.2 MLW

Construction Event 1

Layer Number	Layer Type	Thickness0	Thickness5
1	SS		
2	GS	5	4
3	GB	3	4
4	PC	8	7.5