

SHEET 1
LTPP TRAFFIC DATA
SUMMARY TRANSMITTAL FORM

*STATE ASSIGNED ID [3202]
*STATE CODE [46]
*SHRP SECTION ID [3013]

STATE OR PROVINCE South Dakota COUNTY LAWRENCE
HIGHWAY ROUTE NO. I-90 MILEPOST# 8.21
NEAREST CITY/TOWN SPEARFISH (WEST) NEAREST INTERSECTION US-85
FUNCTIONAL CLASS 1 NO. LANES EACH DIRECTION 2 TOTAL NO. LANES 4
DIRECTION OF TRAVEL GPS LANE NB DATE OPENED TO TRAF. - - 76
FIPS COUNTY CODE 081 FHWA STATION IDENTIFICATION NO. 1
HPMS SAMPLE NO. 410090000000 HPMS SUBDIVISION NO. _____
TYPE OF PAVEMENT: AC _____ PCC ☒ OTHER _____
CONTROL OF ACCESS: YES ☒ NO _____ MEDIAN: YES ☒ NO _____
CURRENT SURROUNDING DEVELOPMENT:
URBAN _____ SUBURBAN _____ 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 EVERETT PATZOLD PHONE # _____
DATE PREPARED _____

SHEET 2

LTPP TRAFFIC DATA

TRAFFIC VOLUMES
AND LOAD ESTIMATES

*STATE ASSIGNED ID [3903]

*STATE CODE [46]

*SHRP SECTION ID [3013]

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	3430	787	1553	354 ²³	36.1
1988	3570	625	1607	281 ¹⁷	26.8
1987	3535	713	1591	321	26.95 *
1986	3500	800	1575	360 ²³	27.1
1985	3400	790	1530	350	29.1 *
1984	3300	720	1485	351 ²⁴	31.1
1983	3210	760	1445	342	28.4 *
1982	3120	740	1404	333 ²⁴	25.7
1981	2900	655	1305	295	12.85 *
1980	2620	570	1206	257 ²¹	18.0
1979	2690	605	1211	273	18.05 *
1978	2700	545	1215	288 ²⁴	18.1
1977	2913	495	1131	223	16.85 *
1976	2325	350	1046	158 ¹⁵	15.6
1975					
1974					
1973		* line has been averaged			
1972					
1971					
1970					
1969					
1968					
1967					
1966					
1965					

NAME OF PREPARER _____ PHONE # _____

DATE PREPARED _____

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

*STATE ASSIGNED ID [3203]

*STATE CODE [46]

*SHRP SECTION ID [2013]

1. Year Applicable 76-85

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 maps

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 _____

DATE PREPARED _____

PHONE # _____

SHEET 3

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

*STATE ASSIGNED ID [2203]

*STATE CODE [45]

*SHRP SECTION ID [2013]

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 maps

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 [2202] *STATE CODE [46] *SHRP SECTION ID [2012]
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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)	_____	-----
2. ADJUSTMENT FACTORS (FILL IN AS APPLICABLE):		
A. ADJUSTMENT TO 24-HOUR COUNT	_____	-----
B. AXLE CORRECTION FACTOR	_____	-----
C. DAY OF WEEK FACTOR	_____	-----
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	_____	-----

Sheet 4-7
NA
Flow
W-25

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 [3902]

*STATE CODE [46]

*SHRP SECTION ID [3013]

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 _____

SHEET 6
LTPP TRAFFIC DATA

VEHICLE CLASSIFICATION DATA
AGENCY DEFINED CLASSES

*STATE ASSIGNED ID [3902]

*STATE CODE [46]

*SHRP SECTION ID [3012]

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>SHEET 7</p> <p>LTPP TRAFFIC DATA</p> <p>VEHICLE CLASSIFICATION</p> <p>CONVERSION CHART</p>	<p>*STATE ASSIGNED ID [<u>3902</u>]</p> <p>*STATE CODE [<u>46</u>]</p> <p>*SHRP SECTION ID [<u>3013</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 _____

FHWA CLASSES													
SHA CLASS	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	---	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---	---

NAME OF PREPARER _____	PHONE # _____
DATE PREPARED _____	

TRUCK WEIGHT SESSION INFORMATION

*SHRP SECTION ID [3013]

10. METHOD OF CALIBRATION AND FREQUENCY: _____

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 _____

SHEET 9 LTPP TRAFFIC DATA TRUCK AXLE LOAD MEASUREMENTS BY VEHICLE CLASSIFICATION	*STATE ASSIGNED ID [3902] *STATE CODE [46] *SHRP SECTION ID [3013]
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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.

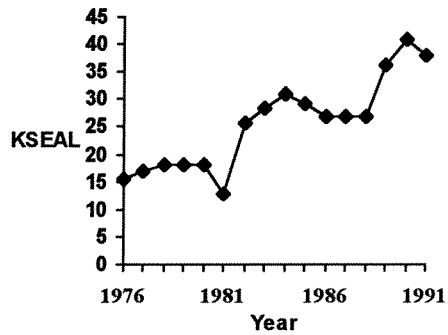
NAME OF PREPARER _____	PHONE # _____
DATE PREPARED _____	

Agency ID:

Agency Name:

SHRP ID:

Historical Traffic Data



Year:	KESAL:	SRO:
1990	41	
1991	38	

Permanent System

Installation Date

Manufacturer

Model

Type

Site Location

MP or Station

Design KESAL

Level

Number of Lanes

Lanes Monitored

Equipment Location

Construction Event

Layer Number	Layer Type	Thickness0	Thickness5
1	SS		
2	GB	3.5	3.5
3	PC	9.3	9.3