

LTPP TRAFFIC DATA  
SUMMARY TRANSMITTAL FORM

\*STATE ASSIGNED ID [2161]

\*STATE CODE [46]

\*SHRP SECTION ID [3023]

STATE OR PROVINCE South Dakota COUNTY PENNINGTONHIGHWAY ROUTE NO. US-16 MILEPOST# 46.22NEAREST CITY/TOWN Hill City NEAREST INTERSECTION US 385FUNCTIONAL CLASS 6 NO. LANES EACH DIRECTION 1 TOTAL NO. LANES 2DIRECTION OF TRAVEL GPS LANE EB DATE OPENED TO TRAF. .. 85FIPS COUNTY CODE 103 FHWA STATION IDENTIFICATION NO. \_\_\_\_\_HPMS SAMPLE NO. 520016045000 HPMS SUBDIVISION NO. 0TYPE 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 \_\_\_\_\_ PHONE # \_\_\_\_\_

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

## LTPP TRAFFIC DATA

TRAFFIC VOLUMES  
AND LOAD ESTIMATES

\*STATE ASSIGNED ID [3161]

\*STATE CODE [46]

\*SHRP SECTION ID [3053]

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	3290	201	1645	101	13.8 6
1988	2660	260	1320	130 10	18.3
1987				155	18.85 *
1986	2220	360	1110	180 16	17.4
1985	3870	360	1935	180 9	15.7
1984					
1983					
1982					
1981		* line has been averaged			
1980					
1979					
1978					
1977					
1976					
1975					
1974					
1973					
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 [3161]

\*STATE CODE [46]

\*SHRP SECTION ID [3053]

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: FST 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 3

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

\*STATE ASSIGNED ID [3161]

\*STATE CODE [46]

\*SHRP SECTION ID [2053]

1. Year Applicable \_\_\_\_\_

## 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: \_\_\_\_\_

## 4. METHOD FOR ESTIMATING AADT BY GPS LANE

- \_\_\_ Based on actual lane count data.
- \_\_\_ System distribution factors.
- \_\_\_ Other: \_\_\_\_\_

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

- \_\_\_ Based on actual lane count data.
- \_\_\_ System distribution factors.
- \_\_\_ Other: \_\_\_\_\_

## 6. METHOD FOR ESTIMATING ESAL/VEHICLE

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

## 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 4 LTPP TRAFFIC DATA TRAFFIC VOLUME COUNTS	*STATE ASSIGNED ID [2161] *STATE CODE [46] *SHRP SECTION ID [3053]
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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*  
*N/A*  
*Flow maps*

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 [ 3 1 6 1 ]

\*STATE CODE [ 4 6 ]

\*SHRP SECTION ID [ 3 0 5 3 ]

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 [3161]

\*STATE CODE [46]

\*SHRP SECTION ID [3023]

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</b></p> <p><b>CONVERSION CHART</b></p>	<p>*STATE ASSIGNED ID [<u>3161</u>]</p> <p>*STATE CODE [<u>46</u>]</p> <p>*SHRP SECTION ID [<u>3623</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 [ 3053 ]

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.

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 [3141]</p> <p>*STATE CODE [46]</p> <p>*SHRP SECTION ID [2223]</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 _____	

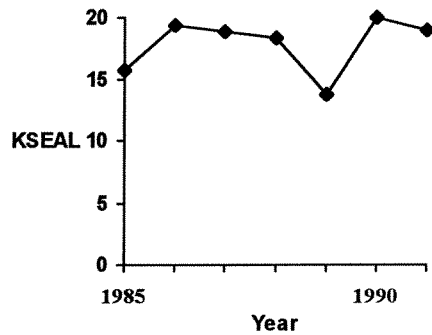


Agency ID: 46

SHRP ID: 3053

Agency Name: South Dakota

#### Historical Traffic Data



Year:	KESAL:	SRO:
1990	20	
1991	19	

Permanent System AVC

Installation Date 12/1/93

Manufacturer StreeterAmet

Model TrafiCOMP III 241

Type Piezo Cable

Site Location US-16 EB

MP or Station MP 46.22

Design KESAL 78

Level M

Number of Lanes 2

Lanes Monitored 1E/1W

Equipment Location

Construction Event 1

Layer Number	Layer Type	Thickness0	Thickness5
1	SS		
2	GB	1.3	1.3
3	PC	8	8.3