

LTPP TRAFFIC DATA
SUMMARY TRANSMITTAL FORM

*STATE ASSIGNED ID [3201]

*STATE CODE [16]

*SHRP SECTION ID [3012]

STATE OR PROVINCE SOUTH DAKOTA COUNTY MEADEHIGHWAY ROUTE NO. I-90 MILEPOST# 37.98NEAREST CITY/TOWN STURGIS (S.E.) NEAREST INTERSECTION SR34FUNCTIONAL CLASS 1 NO. LANES EACH DIRECTION 2 TOTAL NO. LANES 4DIRECTION OF TRAVEL GPS LANE EB DATE OPENED TO TRAF. - - 81FIPS COUNTY CODE 093 FHWA STATION IDENTIFICATION NO. _____HPMS SAMPLE NO. 470090032410 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 _____

| | |
|---|--|
| <p>SHEET 2</p> <p>LTPP TRAFFIC DATA</p> <p>TRAFFIC VOLUMES AND LOAD ESTIMATES</p> | <p>*STATE ASSIGNED ID [39011]</p> <p>*STATE CODE [46]</p> <p>*SHRP SECTION ID [3012]</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 | 10870 | 1522 | 4892 | 685 14 | 88.4 |
| 1988 | 10250 | 1450 | 4658 | 653 14 | 77.7 |
| 1987 | 10,018 | 1435 | 4500 | 736 | 76.3 * |
| 1986 | 9685 | 1220 | 4358 | 819 19 | 74.9 |
| 1985 | 9410 | 1135 | 4235 | 781 | 80.5 * |
| 1984 | 9135 | 1650 | 4111 | 743 18 | 86.1 |
| 1983 | 9008 | 1635 | 4054 | 736 | 77.45 * |
| 1982 | 8280 | 1620 | 3996 | 729 18 | 73.2 |
| 1981 | 7280 | 1630 | 3276 | 738 23 | 57.6 |
| 1980 | | | | | |
| 1979 | | | | | |
| 1978 | | * line has been averaged | | | |
| 1977 | | | | | |
| 1976 | | | | | |
| 1975 | | | | | |
| 1974 | | | | | |
| 1973 | | | | | |
| 1972 | | | | | |
| 1971 | | | | | |
| 1970 | | | | | |
| 1969 | | | | | |
| 1968 | | | | | |
| 1967 | | | | | |
| 1966 | | | | | |
| 1965 | | | | | |

KLL
1/7/02

| | |
|------------------------|---------------|
| NAME OF PREPARER _____ | PHONE # _____ |
| DATE PREPARED _____ | |

| | |
|--|---|
| <p>SHEET 3</p> <p>LTPP TRAFFIC DATA PROCEDURES FOR ESTIMATING ANNUAL AVERAGE VOLUMES AND TOTAL ANNUAL ESALS</p> | <p>*STATE ASSIGNED ID [2201]</p> <p>*STATE CODE [46]</p> <p>*SHRP SECTION ID [3012]</p> |
|--|---|

1. Year Applicable to '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: estimate 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 [3201]

*STATE CODE [46]

*SHRP SECTION ID [3012]

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: Flow map

4. METHOD FOR ESTIMATING AADT BY GPS LANE

- ☐ Based on actual lane count data.
☐ System distribution factors.
☒ Other: estimate 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 [3901] *STATE CODE [46] *SHRP SECTION ID [3012] |
|--|--|

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) | ----- | N/A |
| 2. ADJUSTMENT FACTORS (FILL IN AS APPLICABLE): | | Flow Maps |
| 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 | ----- | |

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 [3701]

*STATE CODE [46]

*SHRP SECTION ID [3012]

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 | _____ | _____ | _____ |

N/A
Flow
Maps

NAME OF PREPARER _____ PHONE # _____

DATE PREPARED _____

LTPP TRAFFIC DATA

VEHICLE CLASSIFICATION DATA
AGENCY DEFINED CLASSES

*STATE ASSIGNED ID [3901]

*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. _____ | _____ | _____ | _____ |

N/A
Flow
Maps

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>3901</u>]</p> <p>*STATE CODE [<u>46</u>]</p> <p>*SHRP SECTION ID [<u>3012</u>]</p> |
|---|--|

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 | | | | | | | | | | | | | |
| TOTAL | | | | | | | | | | | | | |

N/A
Flow
Maps

| | |
|------------------------|---------------|
| NAME OF PREPARER _____ | PHONE # _____ |
| DATE PREPARED _____ | |

TRUCK WEIGHT SESSION INFORMATION

*SHRP SECTION ID [3012]

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>SHEET 9</p> <p>LTPP TRAFFIC DATA</p> <p>TRUCK AXLE LOAD MEASUREMENTS BY VEHICLE CLASSIFICATION</p> | <p>*STATE ASSIGNED ID [3901]</p> <p>*STATE CODE [46]</p> <p>*SHRP SECTION ID [2012]</p> |
|--|---|

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.

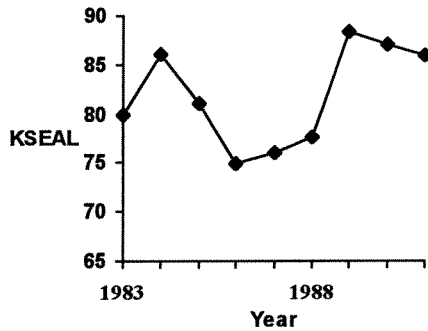
| | |
|------------------------|---------------|
| NAME OF PREPARER _____ | PHONE # _____ |
| DATE PREPARED _____ | |

Agency ID: 46

Agency Name: South Dakota

SHRP ID: 3012

Historical Traffic Data



| Year: | KESAL: | SRO: |
|-------|--------|------|
| 1990 | 87 | |
| 1991 | 86 | |

Permanent System WIM

Installation Date 9/1/91

Manufacturer Pat Equipment

Model DAW 100

Type Bending Plate

Site Location I-90 EB

MP or Station MP 37.98

Design KESAL 250

Level P

Number of Lanes 4

Lanes Monitored 2E/2W

Equipment Location 6.6 MLW

Construction Event 1

| Layer Number | Layer Type | Thickness0 | Thickness5 |
|--------------|------------|------------|------------|
| 1 | SS | | |
| 2 | GB | 4.6 | 4.6 |
| 3 | PC | 10 | 10.1 |