

**Exhibit 3**

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# Missoula MT, I-90 East West Corridor Study P1

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## TRAFFIC VOLUME FACTORS

March 20, 2003. This memo describes the methodology used in four sections described below. The first section describes the methodology used to develop balanced volumes for the corridor study. The other three sections describe what was used for truck percentages, grades and speeds.

### I. Volume Methodology

#### Classification of Roadways

##### Freeway:

Rural Interstate: western ½ of DeSmet interchange and eastern ½ of Bonner interchange.

Urban Interstate: eastern ½ of DeSmet interchange to western ½ of Bonner interchange.

*This information was provided to CH2M by Dan Bisom/MDT.*

##### Arterials:

- DeSmet (US 93) – Rural Principle Arterial
- Airport (Airway Boulevard) – Urban Minor Arterial
- Reserve (Reserve Street – US 93) – Urban Principle Arterial
- Orange (North Orange Street) – Urban Principle Arterial
- Van Buren (Van Buren Street) – Urban Principle Arterial
- East Missoula - Urban Minor Arterial
- Bonner (MT 200) – Rural Principal Arterial

*This information was provided to CH2M by Dan Bisom/MDT.*

#### Seasonal Adjustment Factors:

Loop Adjustment (for freeway loops and turning movement counts based on classification of roadway).

Tube Adjustment (for tube count data based on classification of roadway).

*This information was provided to CH2M by Dan Bisom/MDT.*

#### Peak Hours:

Freeway: 7– 8 AM, 4- 5 PM

Arterial: Peak-hour based on each arterials peak hour closest to the peak hour for the freeway. Then a peak hour was determined for the arterial based on the most prevalent peak hour at each interchange.

- DeSmet (US 93) – 7:15 – 8:15am, 4:30 – 5:30 pm
- Airport (Airway Boulevard) – 7:15 – 8:15am, 4:30 – 5:30 pm
- Reserve (Reserve Street – US 93) – 7:30 – 8:30am, 4:45 – 5:45 pm
- Orange (North Orange Street) – 7:15 – 8:15am, 4:45 – 5:45 pm
- Van Buren (Van Buren Street) – 7:15 – 8:15am, 5:00 – 6:00pm
- East Missoula - 7:30 – 8:30am, 4:45 – 5:45 pm

- Bonner (MT 200) – 7:00 – 8:00am, 5:00 – 6:00pm

*Each arterial corridor has its unique peak hour – we were directed by instruction from Dan Bisom to use the peak hour of each corridor to dictate the volumes on each arterial and for the ramps leading to that arterial.*

#### Balancing Methodology:

Balance freeway to ramp eastbound & westbound.

Balance arterial volumes between freeway eastbound ramps and westbound ramps.

Balance arterial volumes between freeways and connected study intersections.

Review balanced volumes for any discrepancies.

Check volumes against existing data collected on freeway segments, ramps, and arterials.

### II. Truck Percentage:

Base on lengths *greater* than 47 feet.

Based on classification of type 5 or greater.

Counted summarized data and presented eastbound and westbound truck percentage for each freeway segment.

### III. Grades

Review plan sets of as-builts for grades to use in operational analysis.

### IV. Speed Limits

#### Mainline:

Truck speed limits are 65 mph for the corridor

The passenger vehicle speed limit transitions from 75 mph to 65 mph in the urban corridor. Where available, the 85% speed will be used in Corsim, otherwise the speed limit will be used as the 85% running speed.

We have found one issue with Corsim not being able to process running speeds in excess of 70 mph. We are trying to determine a method of resolving the issue. It has been found that the maximum free flow speed the program will allow is 70 mph, which is almost 15 mph below the free flow speed in the field. The program will not run with any entries greater than 70 or else a fatal error occurs. The output is show below:

```
*****FATAL ERROR - 6036 - Link (502,504) defined in Record Type 19 has no Record Type 20 to
define its operations. A Record Type 20 must be present in the first time period for every
non-exit link defined.
```