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2010 KMPO Base Calibration Travel Demand Model Update

Final Documentation

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(KMPO Board accepted on December 13, 2012, Minor change; added updated version file name change, page 10, Para. 4.2)

With Limited Assistance from:



& PTV America, Inc.

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Introduction

In 2007, Kootenai County updated the 2007 KMPO (Kootenai Metropolitan Organization) Travel Demand Forecasting VISUM Model. This 2010 update has improved the previous 2007 base model.

The KMPO Model provides the existing 2010 AM and PM peak hour traffic volumes and is used as a base model to project future traffic forecasts for the AM and PM peak hour traffic in the Kootenai County-wide area.

KMPO staff performed the 2010 model update calibration/validation with some guidance and assistance from PTV America, Inc., and Eco Resource Management System Inc. The 2007 KMPO base model was updated to become the 2010 KMPO base model. The majority of the 2007 modeling components were left as they were in the last update. This documentation outlines what has been changed since the last 2007 model update.

Travel demand forecasting models update the existing base year model every year or every other year or every five years depending on the land use growth and transportation improvements in the modeling area. This is because the traffic volume on streets and roadways change due to the changes in the land use and the transportation system.

The 2010 KMPO model update is expected to revalidate the 2007 existing base year model to reflect the most current 2010 conditions. In addition, since the 2007 version, the 2010 KMPO model application added some enhancements that were found necessary to improve the 2010 KMPO model and forecasting capabilities.

Basic technical information about the 2007 KMPO VISUM model is provided in the “Kootenai County (KMPO) – 2007 KMPO Base Calibration Travel Demand Model Update Documentation.”

This report is focused on the 2010 KMPO travel demand model update, including enhancements.

In this KMPO 2010 model update, KMPO technical staff made the following changes, which are addressed in the fourteen sections of this report as shown below:

1. 2010 Model Geography
2. 2010 KMPO Model Data Sources
3. 2010 KMPO Model Background
4. KMPO Model Procedures
5. 2010 KMPO Land Use Update
6. 2010 AM & PM Peak Hour Trip Generation Update
7. 2010 Traffic Analysis Update (TAZ)
8. 2010 KMPO Auto Network Enhancements
9. Traffic Counts
10. AM/PM Peak Hour Trip Generation
11. AM/PM Peak Hour Trip Distribution
12. AM/PM Peak Hour Traffic Assignments
13. AM/PM Peak Hour Traffic Screenline Validation

14. Model Limitations and Improvements

More detailed technical specifications and model update descriptions are provided to assist the KMPO model users in their understanding of the model applications, data input and output, and validation results.

Attached appendices illustrate even more technical information related to the VISUM model script and parameter files, and the 2010 AM/PM peak hour detailed screenline validation spreadsheets.

1.0 2010 Model Geography

- Kootenai County Area
- County 2010 Population 138,494
- Model Vehicle Miles Traveled (VMT) 332,273 miles, in the model network classified at the collector classification or higher
- Total 2010 Occupied Dwelling Units 54,199

2.0 2010 KMPO Model Data Sources

Data from many agencies are compiled and analyzed for input into the travel demand model. The model is used for transportation travel demand forecasting. Ensuring that the most accurate, reliable and available data is used as well as having a well calibrated and validated model, is vitally important for accurate travel demand forecasting. KMPO uses the following data sources for input into the model:

- A regional household survey is used to estimate current travel behavior. KMPO's most recent survey was performed in 2005 and can be found on our website (www.kmpo.net), listed under Maps/Data/Publications/Spokane and Kootenai County Regional Travel Survey 2005. Household surveys are typically done every 10 years
- US Census Bureau Decennial data (every 10 years) for population, housing and Transportation Analysis Zones (TAZ's) information based currently on the block level. The interim years are calculated based on historical growth
- Idaho Department of Labor for current employment data
- Kootenai County for current housing statistics and Geographical Information Systems (GIS) data
- Building Permits from local jurisdictions
- Additional information that is not readily available is obtained from local sources such as: school & college enrollment, number of rooms in hotels/motels, casino's parking spaces, recreation number of camping spaces, etc.)
- Comprehensive Plans from Kootenai County and Local Jurisdictions
- Traffic Counts
- Real Estate Reports and other verified published professional reports for reasonableness checks

3.0 2010 KMPO Model Background

The Kootenai Metropolitan Planning Organization (KMPO) was formed in 2003. The first KMPO traditional four step travel demand model for the AM Peak Hour and the PM Peak Hour was developed by KMPO staff and PTV of America in 2003.

The typical gravity demand model is called a four step model and is based upon: Trip Generation, Trip Distribution, Mode Choice and Route Assignment. Mode choice is made up of private cars, public transit such as buses, and/or non-motorized travel. The KMPO model is currently a three step model, having only one mode choice which is private vehicles. This mode choice feature is planned to be expanded upon in the future adding other mode choices.

The model was updated in 2005 by PTV of America.

In 2007 the model was updated by HDR Inc. and recently has been updated for 2010 by KMPO staff with assistance from Eco Resource Management Systems Inc. and PTV of America.

4.0 KMPO Model Procedures

4.1 KMPO Calculate Procedures (Step by Step)

As shown in Figure 1, the KMPO “Calculate Procedure” (a step by step procedure) is used in lieu of the previous KMPO Graphic Users Interface (GUI) for output files for the AM and PM peak hour traffic forecasts in the Kootenai County area. Using the Calculate Procedures allows partial model runs (such as only the AM Peak hour) as well as visual checks to see and understand how each step is performing, which can be missed when running a GUI behind the scenes.

Count: 142	lecuti	Active	Procedure	Reference object(s)	Variant/file	Comment
1		<input checked="" type="checkbox"/>	State Procedures Updated by Ro	2 - 47		Capacity calculation - Calculate Procedures
2		<input checked="" type="checkbox"/>	Initialize all filter settings			
3		<input checked="" type="checkbox"/>	Read filter		TSystemCar.fil	
4		<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Set Link Capacity, Lanes * Cap/Lane
5		<input checked="" type="checkbox"/>	Edit attribute	Connectors - T0_TSYS(C)		Test to set Connector Time
6		<input checked="" type="checkbox"/>	Read filter		TWLT-3Lane.fil	3 Lane Road
7		<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Add 300 directional capacity
8		<input checked="" type="checkbox"/>	Read filter		TWLT-5Lane.fil	5 Lane Road
9		<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Add 150 directional capacity
10		<input checked="" type="checkbox"/>	Read filter		Fwy_GT_2_Lanes.fil	3+ Lane Fwy
11		<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Add Cap for 3 Lane + Fwy
12		<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		Set All K4 = 1.0
13		<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes.fil	Start Node Computations
14		<input checked="" type="checkbox"/>	Edit attribute	Nodes - CapPrT		Add all outbound link capacities
15		<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-3plusLegs.fil	3 Plus Leg Nodes
16		<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
17		<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-2Leg.fil	
18		<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
19		<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-3Leg.fil	
20		<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
21		<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-4Leg.fil	
22		<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
23		<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-5Leg.fil	
24		<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
25		<input checked="" type="checkbox"/>	Read filter		NodeCapacityFinalComputations.fil	
26		<input checked="" type="checkbox"/>	Edit attribute	Nodes - CapPrT		
27		<input checked="" type="checkbox"/>	Read filter		Turns-LT-TH-RT-Only.fil	Turns-LT-TH-RT-Only.fil
28		<input checked="" type="checkbox"/>	Edit attribute	Turns - CapPrT		Reset Turn Capacities
29		<input checked="" type="checkbox"/>	Edit attribute	Turns - t0PrT		Reset Turn T0=0
30		<input checked="" type="checkbox"/>	Read filter		SingleLeftTurnsSignalsTwoWayStops.fil	Single Left Turns
31		<input checked="" type="checkbox"/>	Edit attribute	Turns - t0PrT		T0=6Secs
32		<input checked="" type="checkbox"/>	Edit attribute	Turns - CapPrT		TurnCap=300
33		<input checked="" type="checkbox"/>	Read filter		DualLeftTurnsSignalsTwoWayStops.fil	Dual Left Turns
34		<input checked="" type="checkbox"/>	Edit attribute	Turns - CapPrT		TurnCap=275*NumLanes
35		<input checked="" type="checkbox"/>	Read filter		Uncontrolled_Intersections.fil	Set Uncontrolled Controls
36		<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		1-Uncontrolled
37		<input checked="" type="checkbox"/>	Read filter		Stop_2_Way_Intersections.fil	Set 2 Way Stop
38		<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		2-Partial Stop
39		<input checked="" type="checkbox"/>	Read filter		Yield_2_Way_Intersections.fil	Set Yield

Figure 1 KMPO Calculate Procedures (Step by Step)

4.2 KMPO Calculate Procedures Parameter Files

Project directory – KMPO Project dir file.pfd (shown in Appendix 1A) is a VISUM project directory file, which specifies where the model runs.

Base Version – KMPO_2010_FINAL DRAFT Base_12-3-12.ver is a 2010 Base KMPO VISUM Model version file in the project directory. The base model was validated and later resaved in VISUM Version 12-52-09 and renamed as KMPO_2010_FINAL_Base_3-20-13.ver. This includes the updated 2010 land uses and 2010 existing roadway network.

Node Link Capacity Update – UpdateNodeLinkCapTWTL.par (shown in Appendix 1B) is a link and node capacity update parameter file.

AM & PM Peak Assignment – Is included in the “KMPO-Final Calculate Procedures File AM_PM.par” (shown in Appendix 1C). This file combines the AM & PM peak hour model runs into one parameter file that feeds the trip generation, trip distribution, and trip assignment model run for each peak hour time period.

AM/PM Peak Hour Trip Generation - The trip generation rates were updated using ITE trip generation rates. The trip generation rates are built-in to the Trip Generation assignment portion of the AM & PM Peak Calculate Procedures assignment.par file (mentioned above).

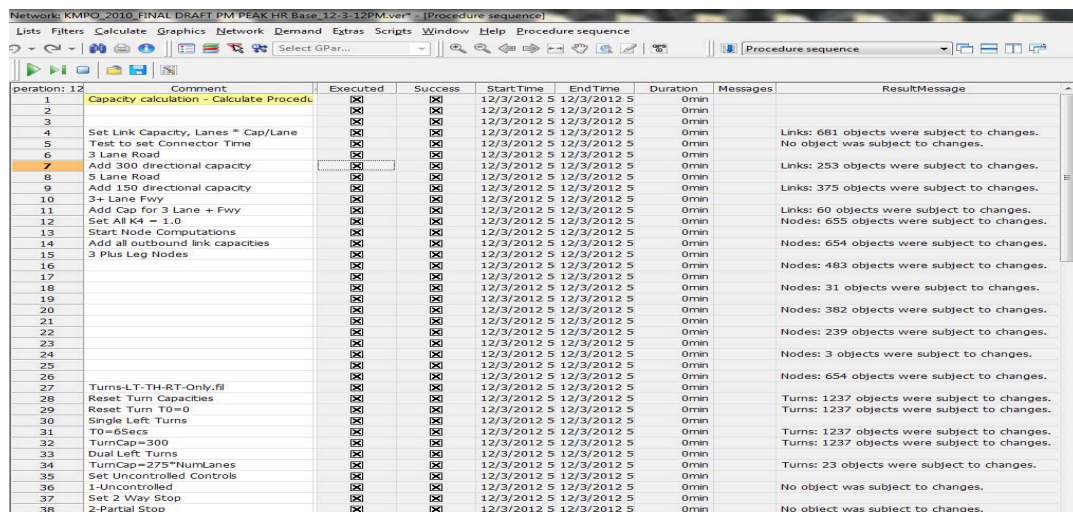
The trip generation for household stratifications: HBW, HBR, HBO, HBS and NHB, match the 2005 Kootenai County Travel Survey trips (trips grown from 2005 to 2010).

4.3 KMPO Final Model Version Output File

Final Version – “KMPO_2010_FINAL_Base_3-20-13” is a final 2010 Base KMPO VISUM Model version file saved in the project directory after the completed AM/PM Peak Hour Model runs.

4.4 KMPO Calculate Procedures Model Run Comments

After the completed final model run, the Calculate Procedures comment area displays comments shows whether the model executed properly with success along with; start time, end time, duration, and any comments showing changes found or errors encountered. The final base model ran correctly with no errors or comments as shown in Figure 2 below:



Iteration	Comment	Executed	Success	StartTime	EndTime	Duration	Messages	ResultMessage
1	Capacity calculation - Calculate Procedu	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
2		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
3		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
4	Set Link Capacity, Lanes = Cap/Lane	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Links: 681 objects were subject to changes.	
5	Test to set Connector Time	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	No object was subject to changes.	
6	3 Lane Road	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
7	Add 300 directional capacity	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Links: 253 objects were subject to changes.	
8	5 Lane Road	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
9	Add 150 directional capacity	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
10	3+ Lane Fwy	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Links: 375 objects were subject to changes.	
11	Add Cap for 3 Lane + Fwy	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Links: 60 objects were subject to changes.	
12	Set All K4 = 1.0	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 655 objects were subject to changes.	
13	Start Node Computations	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
14	Add all outbound link capacities	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 654 objects were subject to changes.	
15	3 Plus Leg Nodes	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
16		[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 483 objects were subject to changes.	
17		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
18		[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 31 objects were subject to changes.	
19		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
20		[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 382 objects were subject to changes.	
21		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
22		[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 239 objects were subject to changes.	
23		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
24		[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 3 objects were subject to changes.	
25		[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
26		[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Nodes: 654 objects were subject to changes.	
27	Turns-LT-TH-RT-Only.fil	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
28	Reset Turn Capacities	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Turns: 1237 objects were subject to changes.	
29	Reset Turn T0=0	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Turns: 1237 objects were subject to changes.	
30	Single Left Turns	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
31	T0=6Secs	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Turns: 1237 objects were subject to changes.	
32	TurnCap=300	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Turns: 1237 objects were subject to changes.	
33	Dual Left Turns	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
34	TurnCap=275*NumLanes	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	Turns: 23 objects were subject to changes.	
35	Set Uncontrolled Controls	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
36	1-Uncontrolled	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	No object was subject to changes.	
37	Set 2 Way Stop	[X]	[X]	12/3/2012 5	12/3/2012 5	0min		
38	2-Partial Stop	[X]	[X]	12/3/2012 5	12/3/2012 5	0min	No object was subject to changes.	

Figure 2 KMPO Calculate Procedures Model Run Comments

4.5 KMPO Python Scripting

The python model script file was omitted from this update since it was created to run the GUI, which was eliminated.

4.6 KMPPO Trip Generation Adjustment

The trip generation adjustment that was made to the 2007 model update was also eliminated. The adjustment was another methodology used to adjust the number of trips in the model. It was determined that it was unnecessary in the current model update.

5.0 2010 KMPO Land Use Update

After reviewing the statistical data reporting of the Idaho Department of Labor (DOL) and the 2007 KMPO AM and PM peak hour trip generation rates in Table 1 and Table 2 (page 5) of the “Kootenai County (KMPO) 2007 KMPO Base Calibration Travel Demand Model Update Documentation,” KMPO decided to re-classify the land use categories to more closely match the way that the Idaho DOL reports the employment data. This allows KMPO to more easily match up to the Idaho DOL labor statistics for comparisons. One difference noted is that the Idaho DOL reports a few unanticipated employees under government workers. This is noted under the land use documentation binder, “2010 Model Update Documentation”. The trip generation rates remained the same, just moved to a different classification. The classifications that incurred changes are noted in 5.1 & 5.2 below:

Land use data are important inputs to travel demand forecasting models because land uses generate travel activities and demands. To make accurate travel demand forecasts, modelers should strive to verify the accuracies of land use data in the traffic analysis zones (TAZ). KMPO staff took several rounds of land use reviews and verifications with local jurisdictions to ensure no errors exist in the land use data by TAZ.

5.1 Land Use Classification Changes

In the previous 2007 KMPO model, sixteen land use categories were made based on NAICS codes. In the 2010 KMPO land use update, all of the previous land use classifications 1 through 6 remained the same. Some abbreviations were changed or added to simplify the coding in the model attributes. Land use categories were modified as outlined in 2.0 through 2.9, for a total of twenty three land use categories as shown in the following land use classifications were modified, added or changed from the last 2007 update:

Figure 3 KMPO Land Use Classifications

2010 KMPO Land Use Update

LU1 - (SFDU) Single Family Residential includes those lands occupied by a single family home, duplex, or a manufactured home on a single lot. During calibration, this category was divided and single family uses in "outer zones" moved to Land Use category LU9 - Outer SFDU. LU1 is measured in single family dwelling units.

LU2 - (MFDU) Multi-Family Residential uses contain five or more residential units on a parcel of land. This category also includes mobile home parks, apartment buildings, and condominiums. LU2 is measured in multi-family dwelling units.

LU3 - (RET) Retail includes a broad range of establishments which sell goods directly to the general public, such as general commercial, home furnishings, food stores, direct selling establishments or other products. NAICS codes 441110 - 448320 & 451110 - 454390. LU3 is measured in employees.

LU4 - (FIRES) Finance, Insurance, Real Estate Rental & Leasing includes Commercial banking, financing, investment brokers, savings institutions, credit unions, investment advice, insurance carriers, real estate, rental and leasing, passenger car rental, recreational rentals, commercial air rail and water transportation, video tape and disc rental and other related companies. NAICS codes 521110 - 525990 & 531110 - 533110. LU4 is measured in employees.

LU5 - (INDUST) Industrial includes Mining, Manufacturing and Wholesale sectors which comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. This also includes the wholesale trade sector which comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The categories are mining operations, processing plants, packaging, mills, foundries, machining, wholesale goods merchants and wholesale trade agents and brokers. NAICS codes include 211111 - 213115, 311111 - 316998, 321113 - 327999, 331110 - 339999 & 423110 - 425120. LU5 is measured in number of employees.

LU6 - (SCH) Schools which include elementary and secondary schools. LU6 is measured in number of students, (manually derived).

LU7 - (ACCOM) Accommodations includes all hotel and motel establishments. NAICS codes 721110 - 721214. Hotels, Motels, bed/breakfast inns and room/board houses. Measured by number of rooms (manually derived).

LU8 - (AER) Arts, Entertainment and Recreation includes theater companies and dinner theatres, musical groups and artists, sports teams and clubs, racetracks, museums, zoos, amusement and theme parks, casinos, marinas, golf courses, recreation centers, bowling centers, RV Parks and campgrounds and other amusement and recreation industries. NAICS codes 711110 - 713990. Measured by number of spaces (manually derived).

LU9 - (OSFDU) Outer Single Family Residential includes those lands occupied by a single family home, duplex, or a manufactured home on a single lot outside the urban area. Units from classification LU1 were moved to this category for zones 1-17, 182-185, 187, 188, 192-213, and 215. LU9 is measured in outer single family dwelling units (rural).

LU10 - (PSS) Post-Secondary School included Colleges, Universities, Computer, Trade, and Other Professional Schools. LU10 is measured by number of students (manually derived).

LU11 - (AGRI) Agriculture includes NAICS code 111110 - 115310 and is measured in number of acres.

LU12 - (WFRT) Waterfront Units includes dwelling units on the water such as houseboats. LU12 is measured in dwelling units. Not included in Land Use at this time (future).

LU13 - (POL) Publicly owned land includes that land that is owned by the public, such as forest and BLM land. LU13 is measured in acres. KMPO used Kootenai County GIS parcel data to establish acreages within each TAZ area.

LU14 - (TRNWH) Transportation & Warehousing includes the Postal Service, Couriers and express delivery services, local messengers and delivery, general, farm & refrigerated warehousing and storage. This category includes the Transportation and Warehousing sector which comprises industries providing transportation passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. NAICS codes 481111 - 488999 & 491110 - 493190. LU14 is measured in employees.

LU15 - (MED) Medical is described in as the Health Care and Social Assistance sector which comprises establishments providing health care and social assistance for individuals. NAICS codes 621111 - 624410 (Note: Kootenai Medical Final Board Approved Land Use August 9, 2012)

KMPO Land Use Updated Classifications (Continued)

2010 KMPO Land Use Update

Center -KMC Employees are not reported under this section by DOL, but instead are under LU 16 Government). In the travel demand model, KMC employees will remain in LU 15 (MED) to maintain the same trip generation rates. LU15 is measured in number of employees.

LU16 - (GOVT) Government includes establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area (KMC medical employees are reported under this LU, by Idaho DOL), Measured in number of employees. NAICS codes 921110 - 928120.

LU17 - (ASWMR) Administrative and Support and Waste Management and Remediation Services includes office administrative services, temporary help services, telemarketing, collection agencies, visitor's bureaus, locksmiths, landscaping services, solid waste collection, landfills, incinerators, septic tank services and related industries. Measured in number of employees. NAICS codes 561110 - 562998.

LU18 - (PSTMC) Professional, Scientific & Technical Services & Management of Companies & Enterprises includes Offices of Notaries, Payroll services, testing laboratories, technical design services, outdoor advertising, etc. Measured in number of employees. NAICS codes 541110 - 541990 & 551111 - 551114.

LU19 - (EDUSRV) Education Services include support staff in elementary and secondary schools, junior colleges, business and secretarial schools, miscellaneous training schools and education support services. Measured in number of employees. NAICS codes 611110 - 611710.

LU20 - OTHER Services (Except Public Administration) includes automotive repair, appliance repair and maintenance, diet centers, funeral homes, laundry services, photo finishing laboratories, religious organizations, civic and social organizations, business associations, political organizations, parking lots and garages and other miscellaneous services. NAICS codes 811111 - 814110. Measured in employees.

LU21 - (INFO) Information includes newspaper companies, software publishers, recording studios, radio stations, telecommunications and libraries. Measured in number of employees. NAICS codes 511110 - 519190.

LU22 - (UTLCONST) Utilities & Construction includes power generation, transmission and distribution by: hydroelectric, fossil, solar, wind, geothermal, biomass, electric, gas and other. Also, includes water supply, steam and air-conditioning supply and sewage treatment facilities, construction of new homes, highway, street and bridge construction, contractors for: structural steel framing, roofing, siding, painting, flooring, site preparation and all other specialty trade contractors. NAICS codes 221111 - 221330 & 236115 - 238990. Measured in number of employees.

LU23 - (FS) Food Services includes caterers, mobile food services, full service restaurants, drive thru's, bars, cafeterias and buffets. NAICS codes 722110 - 722410, measured by number of employees.

5.2 2010 Land Use Summary

After KMPO staff updated the 2010 land use by TAZ, a control total check was made to ensure that the primary residential dwelling units match the local US Decennial census data. Table 1 shows the total 2010 land use data.

As shown in Table 1, the 2010 household number should be less than the sum of SFDU + MFDU + OUTER SFDU, which is $30,967 + 8,127 + 15,105 = 54,199$ total occupied dwelling units countywide. The 2010 US Decennial Census reported a total of 63,177 total housing units with an overall vacancy rate of 14.2%. The following is a summary of the land uses and totals obtained from the 2010 US Decennial Census, the Idaho Department of Labor and other sources manually obtained by KMPO staff through email correspondence, phone calls or the internet:

Table 1: 2010 KMPO Land Use Data Summary

Land Use Type	Total Units in KMPO Area	Units of Measurement
LU1: SFDU (Single Family Dwelling Units)	30,967	Dwelling Units
LU2: MFDU (Multi-Family Dwelling Units)	8,127	Dwelling Units
LU3: Retail	7,559	Employees
LU4: Commercial (FIRES)	2,889	Employees
LU5: Industrial	5,392	Employees
LU6: Schools	23,232	Students
LU7: Accommodations	2,900	Rooms
LU8: Arts, Entertainment & Recreation	19,266	Spaces
LU9: Reserved for Outer Zone SFDU	15,105	Dwelling Units
LU10: Post Secondary Schools	11,833	Students
LU11: Agriculture	783,898	Acres
LU12: Waterfront Units	Not Used	Dwelling Units
U13: Publicly owned lands	301,783	Acres
LU14: Transportation & Warehousing	925	Employees
LU15: Medical	7,907	Employees
LU16: Government	2,824	Employees

Land Uses Added to correlate closer to the Idaho Department of Labor statistics reporting:

LU 17: Administration & Support	3,346 Employees
LU 18: Professional, Science & Technology	2,210 Employees
LU19: Educational Services	3,804 Employees
LU 20: Other Services	1,187 Employees
LU 21: Information	714 Employees
LU 22: Utilities & Construction	3,844 Employees
LU 23: Food Services	4,228 Employees

Note: FIRES stands for Finance, Insurance, Real Estate and Services

6.0 2010 AM & PM Peak Hour Trip Generation Rate Update

Table 2 shows the AM peak hour trip generation rates, based on ITE trip generation rates, which are applied in the “calculate procedures” parameter file under the 2010 KMPO AM Peak Hour Model Run.

Table 3 shows the PM peak hour trip generation rates, based on ITE trip generation rates, which are applied in the “calculate procedures” parameter file under the 2010 KMPO PM Peak Hour Model Run.

Table 2: Updated AM Peak Hour Trip Rates in 2010 KMPO AM Model

LU	ATT	HW-O	HW-D	WH-O	WH-D	HR-O	HR-D	RH-O	RH-D	HO-O	HO-D	OH-O	OH-D	HS-O	HS-D	SH-O	SH-D	NHB-O	NHB-D	Total-O	Total-D	TOT O+D
1	SFDU	0.21945	0	0	0.02376	0.03534	0	0	0.01368	0.1425	0	0	0.1062	0.16074	0	0	0.036	0.01197	0.00036	0.57	0.18	0.75
2	MFDU	0.143451	0	0	0.0115368	0.0231012	0	0	0.0066424	0.089424	0	0	0.051566	0.11178	0	0	0.01748	0.0048438	0.0001748	0.3726	0.0874	0.46
3	RETAIL	0	0.11742	0.026574	0	0	0.11742	0.048719	0	0	0	0	0	0	0	0	0	0.367607	0.35226	0.4429	0.5871	1.03
4	FIRES	0	0.14014	0.004784	0	0.00598	0.024024	0	0	0	0.12012	0.0598	0	0	0	0	0	0.049036	0.116116	0.1196	0.4004	0.52
5	INDUST	0	0.153	0.006	0	0	0	0	0	0	0.102	0.024	0	0	0	0	0	0.03	0.085	0.06	0.34	0.4
6	SCH	0	0.022848	0.002688	0	0	0	0	0	0	0	0	0	0	0.262752	0.0672	0	0.064512	0	0.1344	0.2856	0.42
7	ACCOM	0.0144	0.0162	0.0144	0	0	0	0	0	0	0.0486	0.0432	0	0	0	0	0	0.216	0.0972	0.288	0.162	0.45
8	AER	0	0.055125	0.00105	0	0	0	0	0	0	0.063	0.034125	0	0	0	0	0	0.017325	0.039375	0.0525	0.1575	0.21
9	OSFDU	0.138908	0	0	0.0104544	0.0223696	0	0	0.0060192	0.0902	0	0	0.046728	0.1017456	0	0	0.01584	0.0075768	0.0001584	0.3608	0.0792	0.44
10	PSS	0	0.00984	0.000432	0	0	0	0	0	0	0	0	0	0	0.08856	0.0108	0	0.010368	0	0.0216	0.0984	0.12
11	AGRI	0	0.001575	0.000075	0	0	0	0	0	0	0.000875	0.0006	0	0	0	0	0	0.000825	0.00105	0.0015	0.0035	0.005
12	Not Used	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	POL	0	0.0001995	0.0000215	0	0	0	0	0	0	0.000171	0.000301	0	0	0	0	0	0.0001075	0.0001995	0.00043	0.00057	0.001
14	TRNWH	0	0.1862	0.0228	0	0	0	0	0	0	0.1596	0.0912	0	0	0	0	0	0.114	0.1862	0.228	0.532	0.76
15	MED	0	0.1575	0.045	0	0	0	0	0	0	0.135	0.27	0	0	0	0	0	0.135	0.1575	0.45	0.45	0.9
16	GOVT	0	0.18788	0.00366	0	0	0	0	0	0	0.16104	0.04758	0	0	0	0	0	0.02196	0.18788	0.0732	0.5368	0.61
17	ASWMR	0	0.14469	0.004664	0	0.00583	0.02067	0	0	0	0.12402	0.0583	0	0	0	0	0	0.047806	0.12402	0.1166	0.4134	0.53
18	PSTMC	0	0.14469	0.004664	0	0.00583	0.02067	0	0	0	0.12402	0.0583	0	0	0	0	0	0.047806	0.12402	0.1166	0.4134	0.53
19	EDUSRV	0	0.14469	0.004664	0	0.00583	0.02067	0	0	0	0.12402	0.0583	0	0	0	0	0	0.047806	0.12402	0.1166	0.4134	0.53
20	OTHER	0	0.14469	0.004664	0	0.00583	0.02067	0	0	0	0.12402	0.0583	0	0	0	0	0	0.047806	0.12402	0.1166	0.4134	0.53
21	INFO	0	0.14469	0.004664	0	0.00583	0.02067	0	0	0	0.12402	0.0583	0	0	0	0	0	0.047806	0.12402	0.1166	0.4134	0.53
22	UTLCONST	0	0.1862	0.0228	0	0	0	0	0	0	0.1596	0.0912	0	0	0	0	0	0.114	0.1862	0.228	0.532	0.76
23	FS	0	0.11742	0.026574	0	0	0.11742	0.053148	0	0	0	0	0	0	0	0	0	0.363178	0.35226	0.4429	0.5871	1.03
	XI-O-AM	0.19	0	0.08	0	0.05	0	0.03	0	0.22	0	0.1	0	0.18	0	0.06	0	0.09	0	1	0	1

Note: Numbers rounded in table

Table 3: Updated PM Peak Hour Trip Rates in 2010 KMPO PM Model

LU	ATT	HW-O	HW-D	WH-O	WH-D	HR-O	HR-D	RH-O	RH-D	HO-O	HO-D	OH-O	OH-D	HS-O	HS-D	SH-O	SH-D	NHB-O	NHB-D	Total-O	Total-D	TOT O+D
1	SFDU	0.0144618	0	0	0.171399	0.053991	0	0	0.093241	0.29386	0	0	0.38051	0.001928	0	0	0.021939	0.021403	0.018511	0.385648	0.685597	1.0712456
2	MFDU	0.0075735	0	0	0.09801	0.028274	0	0	0.053317	0.15389	0	0	0.21758	0.00101	0	0	0.012937	0.011209	0.010193	0.20196	0.39204	0.594
3	RETAIL	0	0.02208	0.1196	0	0	0.15456	0.2392	0	0	0.15456	0.07176	0	0	0	0	0	0.76544	0.7728	1.196	1.104	2.3
4	FIRES	0	0.007208	0.13992	0	0	0.01802	0.06996	0	0	0.25228	0.41976	0	0	0	0	0	0.06996	0.082892	0.6996	0.3604	1.06
5	INDUST	0	0.00666	0.0407	0	0	0	0	0	0	0.08325	0.10175	0	0	0	0	0	0.06105	0.07659	0.2035	0.1665	0.37
6	SCH	0	0.0012	0.0189	0	0	0	0	0	0	0.015	0.009	0	0	0.0018	0.0315	0	0.0306	0.042	0.09	0.06	0.15
7	ACCOM	0	0.005076	0.04324	0	0	0	0	0	0	0.15228	0.14053	0	0	0	0	0	0.03243	0.096444	0.2162	0.2538	0.47
8	AER	0	0.0014208	0.015392	0	0	0	0	0	0	0.049728	0.050024	0	0	0	0	0	0.011544	0.019891	0.07696	0.07104	0.148
9	OSFDU	0.0059063	0	0	0.073125	0.02205	0	0	0.03978	0.12002	0	0	0.16234	0.000788	0	0	0.00936	0.008741	0.007898	0.1575	0.2925	0.45
10	PSS	0	0.001536	0.009072	0	0	0	0	0	0	0.0192	0.00432	0	0	0.002304	0.01512	0	0.014688	0.05376	0.0432	0.0768	0.12
11	AGRI	0	0.000015	0.0007	0	0	0	0	0	0	0.0006	0.0014	0	0	0	0	0	0.0014	0.000885	0.0035	0.0015	0.005
12	WFRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	POL	0	0.0000043	0.000114	0	0	0	0	0	0	0.000301	0.000399	0	0	0	0	0	0.000057	0.000125	0.00057	0.00043	0.001
14	TRNWH	0	0.00456	0.1292	0	0	0	0	0	0	0.057	0.323	0	0	0	0	0	0.1938	0.05244	0.646	0.114	0.76
15	MED	0	0.020172	0.14514	0	0	0	0	0	0	0.35301	0.43542	0	0	0	0	0	0.14514	0.131118	0.7257	0.5043	1.23
16	GOVT	0	0.003239	0.09322	0	0	0	0	0	0	0.22673	0.27966	0	0	0	0	0	0.09322	0.093931	0.4661	0.3239	0.79
17	ASWMR	0	0.003604	0.13992	0	0	0.01802	0.06996	0	0	0.25228	0.41976	0	0	0	0	0	0.06996	0.086496	0.6996	0.3604	1.06
18	PSTMC	0	0.003604	0.13992	0	0	0.01802	0.06996	0	0	0.25228	0.41976	0	0	0	0	0	0.06996	0.086496	0.6996	0.3604	1.06
19	EDUSRV	0	0.003604	0.13992	0	0	0.01802	0.06996	0	0	0.25228	0.41976	0	0	0	0	0	0.06996	0.086496	0.6996	0.3604	1.06
20	OTHER	0	0.003604	0.13992	0	0	0.01802	0.06996	0	0	0.25228	0.41976	0	0	0	0	0	0.06996	0.086496	0.6996	0.3604	1.06
21	INFO	0	0.003604	0.13992	0	0	0.01802	0.06996	0	0	0.25228	0.41976	0	0	0	0	0	0.06996	0.086496	0.6996	0.3604	1.06
22	UTLCONS	0	0.0057	0.1292	0	0	0	0	0	0	0.0798	0.323	0	0	0	0	0	0.1938	0.0285	0.646	0.114	0.76
23	FS	0	0.01104	0.1196	0	0	0.1656	0.2392	0	0	0.1656	0.07176	0	0	0	0	0	0.76544	0.76176	1.196	1.104	2.3
	XI-O-PM	0.03	0	0.14	0	0.06	0	0.1	0	0.24	0	0.3	0	0	0	0.01	0	0.12	0	1	0	1
	IX-D-PM	0	0.03	0	0.13	0	0.1	0	0.06	0	0.3	0	0.24	0	0	0	0.01	0	0.13	0	1	1

Note: Numbers rounded in table

7.0 2010 Traffic Analysis Zone (TAZ) Update

Another major network update to the base model are the TAZ's and the centroid connector revisions. The 2010 US Decennial Census required MPO's to revise the TAZ boundaries based on certain requirements of population or employment densities and to match the block level. Due to this recommendation by the US Census Bureau, some TAZ's were split, some were added and some were re-numbered to meet the recommended criteria.

Within each TAZ are centroid connectors extending out from the center of the TAZ to a point on the roadway that loads trips from all of land uses within that zone onto the roadway network. Centroid connectors are coded in travel demand models to emulate local driveways for vehicle trips to access and egress the TAZ centroid. Many of the connectors were affected by the revision of the TAZ's due to the 2010 US Census requirements. The jurisdictions reviewed the TAZ changes as well as the connectors and made changes to the connector locations and/or percentages where they felt it was necessary.

8.0 2010 KMPO Auto Network Enhancements

Between 2007 and 2010, several roadway improvement projects were made in the KMPO area. The 2010 roadway network should include these improvements to reflect what's on the ground in 2010. Updates were made to the project list by the jurisdictions and the changes were reflected in the base model network for any projects already existing in the year 2010.

8.1 Link Types/Capacities Update

The link capacities were updated in the network to simulate the travel patterns in the region. The link types and capacity ranges are listed in Table 4 below:

2010 Base Model Link Capacities & Ranges			
Link Type #	NAME	CAPPRT	Range
1	Rural Freeway	1800	1800-2000
11	Urban Interstate	2000	
25	Urban Principal Arterial I	1600	1500-1600
70	Urban Principal Arterial II	1500	
3	Rural Principal Arterial Type II	1400	1200-1400
4	Rural Principal Arterial I	1200	
47	Rural Minor Arterial I	1000	900-1000
69	Rural Minor Arterial 2	900	
19	Local Street	500	500
9	Rural Local Street	500	500
43	Rural Minor Collector I	600	600
10	Rural Major Collector I	800	800
45	Urban Minor Arterial II	900	900-1600
23	Urban Minor Arterial I	1600	
24	Urban Collector Arterials I	1000	600-1000
49	Urban Collector Arterials II	600	
50	Ramps	1500	1000-1800
51	Rural Ramps	1000	
52	Rural Highways	1800	
57	Urban Ramp I	1600	

Table 4: Link Type Classifications & Capacities

8.2 Node Types Update

The node types were updated from the previous model versions. These were modified to represent current practice in Table 5 below:

Node Type	Node Description	Node Capacity Equation (vph) $C = K_1 + K_4 * (\text{Ent. Capacity})$	
		K_1	K_4
1	Shape Nodes		1.00
2	Centroid Connector Nodes		1.00
5	Ramp Diverge		1.00
6	Ramp Merge	-1500	1.00
7	At-Grade Rail Crossing (UPRR 5-7 Trains/Day)		1.00
8	At-Grade Rail Crossing (BNSF – up to 70 Trains/Day)		1.00
10	All – Way Stop		0.45-0.60
11	Partial Stop Control (Two Way Stop)		0.45-0.70
12	Yield Control		0.50-0.60
13	Uncontrolled Intersections		0.45-0.70
20	Signalized Intersections		0.45-0.70
22	Pedestrian Only Signal or Mid-Block Crosswalk with large volume		-
99	Future Intersections		1.00

Table 5: Node Type Classifications & Capacity Factors

Note: K_4 factor variances listed for the node types above are calculated and are dependent upon the incoming and outgoing link capacities within the intersection (see 8.4 below). The factors are calculated internally within the “Calculate Procedures” for links and nodes.

8.3 Node Control Types

Control Type	Description
0	Unknown
1	Uncontrolled
2	2 Way Stop
3	Signalized
4	All Way Stop

Table 6: KMPO Node Control Types

8.4 Node Capacities

Using capacities at all nodes is one of VISUM's three options to model delays based upon traffic congestion at the intersections. This feature has been incorporated into the KMPO model so that delays at these critical points on the network can be modeled to reflect the impacts upon traffic flow patterns.

For this model, VISUM calculates preliminary node capacities using the following node equation:

$$\text{Cap.} = K_1 + K_4(\text{Ent. Cap})$$

where:

Cap. = Intersection capacity

K1 = Capacity Constant added or subtracted in computation

K4 = Capacity Factor multiplied by sum of entering link capacities

Entr. Cap. = Sum of entering Capacities from all links entering the node

Node capacities for this model use the K_1 and K_4 constants. K_4 was used to simulate the effect that a green time-to-cycle length (G/C) ratio has at an intersection.

Table 5 lists the capacity constraints for the VISUM node capacity equations. The capacities work with the node coefficients to compute the delay at each intersection depending on the volume of entering traffic. When adding or editing nodes it is important that the K_1 and K_4 constants be properly modified, for this reason, the calculation was built into the calculate procedures parameter file and is automatically updated at the beginning of each model run.

8.5 Network Link/Node Delay Function Calibration

The link and node delay functions use the BPR function in this update as recommended by the ERMSI.

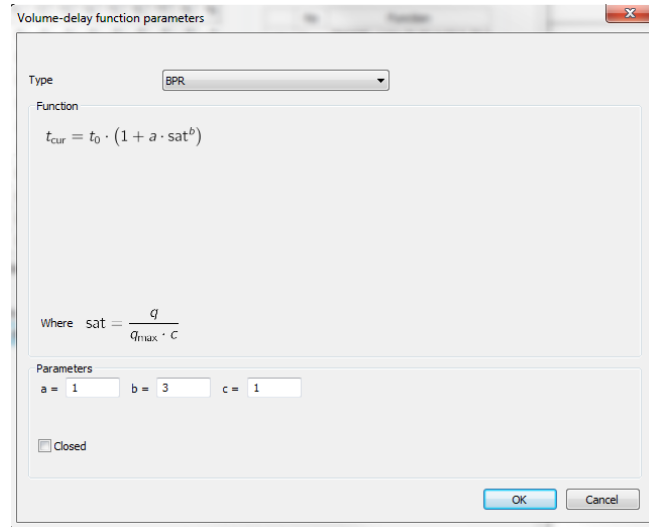


Figure 4: Link Volume-Delay Functions

Intersection node delay functions were revised, as shown in Figure 5 below, for the arterial and local street traffic turning volumes.

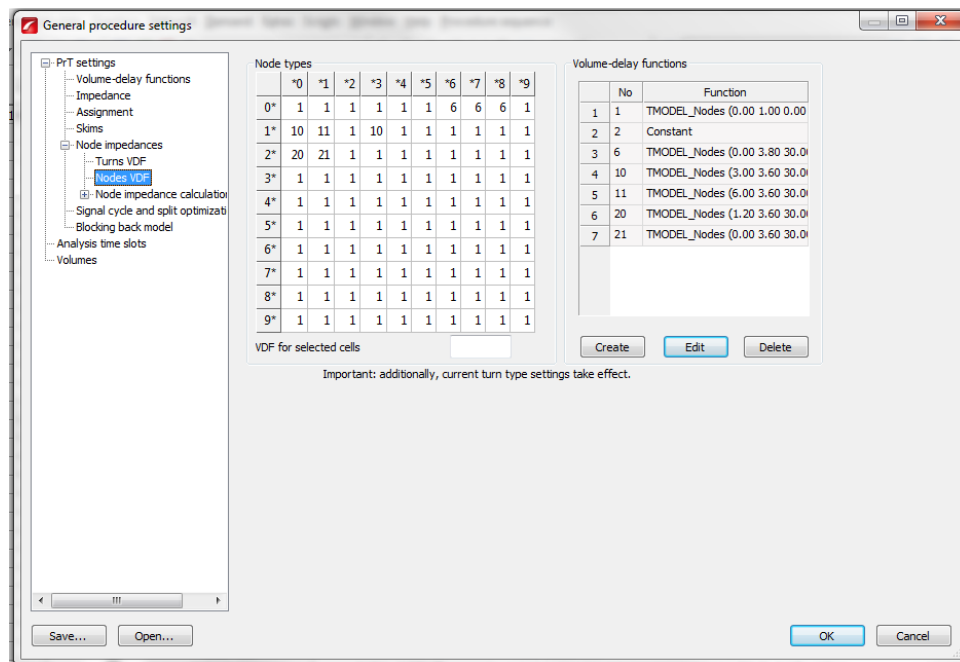


Figure 5: Node Volume-Delay Functions

8.6 2010 External Trip Update

In the 2010 KMPO model, the trips coming from and to external areas are not based on the land use data for trip generation but instead are based on the existing 2010 directional traffic counts at the external stations. Fourteen external stations (TAZ 576 – TAZ 591) were used in the 2010 KMPO model to conceptually represent external TAZs.

Table 6 lists all of AM and PM peak hour directional traffic count data at each of the external TAZs. Note X-I stands for “from External to Internal” and vice versa.

Table 7 and Table 8 respectively list the 2010 AM and PM peak hour external-external through trips, which were also extracted from the external traffic counts and adjusted using the VISUM T-Flow Fuzzy method as input to the 2010 KMPO model. (The VISUM T-Flow Fuzzy process adjusts the demand matrices to better match the actual traffic counts).

8.7 2010 Link Traffic Count Update

The 2010 AM and PM peak hour traffic counts were coded by KMPO staff in the KMPO model for the purpose of model validation. Regression analyses can be directly performed by using the model volumes to compare with the peak hour traffic counts.

Counts for other time periods were also coded by KMPO staff, such as: AM Peak Period (6 AM – 9 AM), Mid-day Period (9 AM – 3 PM), PM Peak Period (3 PM – 6 PM), Night Period (6 PM – 6 AM), and 24-Hour Daily Period (6 AM – 6 AM), which will be used to verify the daily volume forecasts.

8.8 Model's External Traffic Analysis Zone (TAZ) Update

The external stations exist at the model borders and are used to simulate traffic entering and exiting the travel demand model. Actual traffic counts were used at each external TAZ station and then adjusted using the VISUM T-Flow Fuzzy process to correct the internal model matrices to match the counts. A travel demand model uses matrices to calculate the trip generation and distribution from a trip origin to a trip destination. Table 6 shows the adjusted counts at the external to internal (X-I) and internal and external (I-X) count locations for both the AM PK Hr and PM PK Hr time frames. Tables 8 & 9 respectively show the internal matrices that correspond to the external to external TAZ's (travel beginning at one external TAZ and exiting at the other external TAZ location).

TAZ #	Location	XI-O-AM	IX-D-AM	XI-O-PM	IX-D-PM
576	State Hwy. 41 - N. County Line	61	99	169	244
577	US 95 - N. County Line	216	206	349	426
578	Bayview Road - N. County Line	13	11	25	19
580	E. Canyon Road - E. County Line	3	4	9	5
581	I-90 - E. County Line	179	182	327	343
582	Future	0	0	0	0
583	State Hwy. 3 - S. County Line	41	72	86	41
584	Heyburn Rd. - S. County Line	12	7	10	15
585	US 95 - S. County Line	81	199	316	237
586	W. Worley West Rd. - W. County Line	1	2	1	1
587	State Hwy. 58 (E. Hoxie Rd.) - W. County Line	42	42	105	160
588	W. Riverview Drive - W. County Line	61	87	25	56
589	I-90 - W. County Line	1115	2073	2166	1684
590	Seltice Way - W. County Line	378	388	478	458
591	State Hwy. 53 (Trent Ave.) - W. County Line	144	353	497	279
TOTALS		2347	3725	4563	3968

Table 7: 2010 AM/PM Peak Hour Counts (Adjusted using T-Flow Fuzzy method) at External TAZs

2010 AM Peak Hour External-External Through Traffic Volumes																
TAZ No.	Name	576	577	578	580	581	582	583	584	585	586	587	588	589	590	591
576	State Hwy 41 - North County Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.82	0.00	0.13	134.32
577	US 95 - North County Line	0.00	0.00	0.00	9.17	63.35	0.00	0.10	0.0	3.72	0.00	0.87	0.00	0.00	0.0	0.00
578	Bayview Rd. - North County Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0	0.00
580	East Canyon Rd. - East County Line	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.81	0.0	0.00
581	I-90 East County Line	0.00	0.34	0.00	0.00	0.00	0.00	0.02	0.0	0.00	0.00	0.00	0.00	71.84	0.0	0.00
582	FUTURE (Not Used)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0	0.00
583	State Hwy 3 - South County Line	0.00	0.08	0.00	0.40	2.51	0.00	0.00	0.0	0.00	0.00	0.00	0.00	5.00	0.0	0.00
584	Heyburn Rd. - South County Line	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.02	0.00	0.00	0.0	0.00
585	US 95 - South County Line	0.00	60.68	0.00	0.00	4.52	0.00	0.00	0.00	0.00	0.00	19.57	0.49	1.75	0.0	0.00
586	Worley West Road - West County Line	0.00	1.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.00
587	State Hwy 58 (East Hoxie Rd.) West County Line	0.00	24.06	0.00	0.00	0.00	0.00	0.00	0.0	33.08	0.00	0.00	0.21	0.00	0.0	0.00
588	West Riverview Drive - West County Line	0.00	3.02	0.00	0.02	0.14	0.00	0.00	0.0	0.01	0.00	0.00	0.00	0.00	0.0	0.00
589	I-90 West County Line	0.00	0.00	0.00	0.30	26.76	0.00	0.00	0.0	0.21	0.00	0.00	0.00	0.01	0.0	0.00
590	Seltice Way - West County Line	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0	0.00
591	State Hwy 53 (Trent Ave.) West County Line	30.18	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0	0.00

Table 8: 2010 AM Peak Hour External-External Through Traffic Volumes

2010 PM Peak Hour External-External Through Traffic Volumes																
TAZ No.	Name	576	577	578	580	581	582	583	584	585	586	587	588	589	590	591
576	State Hwy 41 - North County Line	0.00	0.00	0.00	0.07	0.09	0.00	0.06	0.04	0.07	0.03	0.08	0.17	0.10	0.16	0.70
577	US 95 - North County Line	0.00	0.00	0.00	0.90	1.28	0.00	0.15	0.49	0.43	0.34	0.30	0.13	0.49	0.01	0.03
578	Bayview Rd. - North County Line	0.00	0.00	0.00	0.18	0.02	0.00	0.15	0.10	0.17	0.07	0.20	0.13	0.00	0.00	0.01
580	East Canyon Rd. - East County Line	0.08	0.41	0.11	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.16	1.77	0.32	0.25
581	I-90 East County Line	0.10	0.63	0.01	0.00	0.00	0.00	0.14	0.02	0.21	0.00	0.12	0.06	67.71	0.30	0.26
582	FUTURE (Not Used)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
583	State Hwy 3 - South County Line	0.04	0.07	0.06	0.25	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.67	0.03	0.03
584	Heyburn Rd. - South County Line	0.10	0.46	0.12	0.00	0.28	0.00	0.00	0.00	0.00	0.52	0.43	0.01	0.32	0.03	0.02
585	US 95 - South County Line	0.34	0.93	0.40	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.29	0.00	7.22	0.04	0.04
586	Worley West Road - West County Line	0.06	0.28	0.07	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
587	State Hwy 58 (East Hoxie Rd.) West County Line	0.37	0.33	0.43	0.00	0.00	0.00	0.00	0.77	0.13	0.00	0.00	0.00	0.21	0.01	0.02
588	West Riverview Drive - West County Line	0.14	0.00	0.00	0.11	0.06	0.00	0.01	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.01
589	I-90 West County Line	0.42	0.62	0.01	0.79	67.66	0.00	9.07	1.03	22.53	0.10	0.00	0.00	0.00	0.00	0.00
590	Seltice Way - West County Line	1.05	0.02	0.01	0.16	0.21	0.00	0.03	0.14	0.12	0.00	0.08	0.00	0.00	0.00	0.00
591	State Hwy 53 (Trent Ave.) West County Line	1.16	0.02	0.01	0.08	0.14	0.00	0.02	0.00	0.04	0.00	0.03	0.01	0.00	0.00	0.00

Table 9: 2010 PM Peak Hour External-External Through Traffic Volumes

9.0 Traffic Counts

Existing 2007 and 2008 traffic counts were grown up to the update year of 2010 to be used for the 2010 KMPO base model validation. The existing traffic count data had previously been collected during normal travel patterns, taken in 15 minutes increments, 24 hours a day, for a five day period (Monday through Friday), in the spring and/or fall of the years 2007 or 2008.

Traffic counts are checked for errors and consistency to ensure they are accurate. Traffic counts taken exclude: weekends, holidays, vacation days, and construction. Three out of the five days of data are then averaged for each of the following model periods: AM period (6 AM – 9AM), AM peak hour (7 -8 AM), Midday (9 AM – 3 PM), PM period (3 PM – 6 PM), PM Peak hour (5 PM – 6 PM) and the Nighttime period (6 pm – 6 am), as previously mentioned in chapter 8.4. Any suspect counts (example: tube malfunctioned) during that time period are excluded and another day will be used to calculate the average. The AM Peak Hour, PM Peak Hour, AM Period and PM Period actual traffic counts are used to validate the modeled traffic volumes and are discussed later in the “Screenline Validation” section of this documentation.

A traffic count analysis was also performed using the Idaho Transportation Department’s (ITD) Automatic Traffic Recorder (ATR) data analysis, over the last 20 year period from 1990 to 2010. During the five year period from 2005 to 2010, the analysis showed an average growth rate of 2.34% per year and the more recent analysis between the years 2008 to 2010 showed an average growth rate of 1.06% per year. While the ATR count data reflects the mainline regional traffic growth, it may not accurately reflect local roadway network growth. An estimated 2% per year was used, as a fair and reasonable compromise to grow the existing 2007/2008 traffic counts to 2010.

10.0 AM/PM Peak Hour Trip Generation

The KMPO VISUM model trip generation is categorized by four primary trip purposes. After the AM and PM peak hour trip generation model is run, the total KMPO region-wide trip productions and attractions are summarized to compare with the expanded travel survey samples reported in the “Spokane and Kootenai County Regional Travel Survey Final Report.”

NuStats was contacted during this model update to separate out the actual AM Pk Hr, PM Pk Hr and School trip percentages from the 2005 travel survey that was done. Previously, the survey report excluded this specific peak hour information and was estimated in the prior 2007 model update. The calculated 2010 trip generation rates were then checked against the 2005 Kootenai County/Spokane County travel survey results for both the AM and PM Peak Hour time frames.

10.1 AM Peak Hour Trip Generation Validation

Table 10 lists the 2010 AM peak hour trip generation model percentages results compared with the actual AM peak hour (7 AM – 8 AM) trips as reported by NuStats.

The AM peak hour model results show reasonable comparison with the survey results as the percentage of modeled vehicle trips that exclude the external inbound, outbound, and through trips. The 2005 Kootenai County/Spokane Travel survey percentages were used to calculate the trip generation rates in the model.

TRIP PURPOSE	AM-PK HR % of Trips Modeled 2010 Base Model	AM PK HR of 2005 Trips Reported by NuStats
Home Based Work	24.1%	25.2%
Home Based Retail	5.1%	5.3%
Home Based Other	29.3%	28.2%
Non-Home Based	21.8%	20.7%
School – not included in other trip purposes	19.7%	20.6%
Total	100%	100%

Table 10: 2010 AM Peak Hour Trip Generation Validation Results

10.2 PM Peak Hour Trip Generation Validation

Table 11 lists the 2010 PM peak hour trip generation model percentages results compared with the actual PM peak hour (5 PM – 6 PM) trips as reported by NuStats.

The PM peak hour model results show reasonable comparison with the survey results as the modeled vehicle trips that exclude the external inbound, outbound and through trips. The 2005 Kootenai County/Spokane Travel survey percentages were used to calculate the trip generation in the model. The trip generation rates were then checked against the 2005 Kootenai County/Spokane County travel survey results.

TRIP PURPOSE	PM-PK HR % of Trips Modeled 2010 Base Model	PM PK HR of 2005 Trips Reported by NuStats
Home Based Work	13.4%	13.4%
Home Based Retail	10.8%	10.6%
Home Based Other	47.6%	48.1%
Non-Home Based	26.5%	26.2%
Schools - not included in other trip purposes	1.7%	1.7%
Total	100%	100%

Table 11: 2010 PM Peak Hour Trip Generation Validation Results

11.0 AM/PM Peak Hour Trip Distribution

The KMPO VISUM model trip distributions by four primary trip purposes are based on Gravity Model functions. The a, b, and c parameters in the Gravity Model functions are re-calibrated in the 2010 KMPO model to fit the trip length distribution patterns in terms of frequencies and average travel times reported in the “Spokane and Kootenai County Regional Travel Survey Final Report.”

11.1 AM Peak Hour Gravity Model Parameters

Figure 6 displays the AM PK HR home-based work gravity model function parameters and other trip distribution characteristics, such as: direction of the trip distribution balance to production; doubly constrained balancing by Multi procedure; multi-parameters with maximum number of iterations being 10 and quality factor being 3.

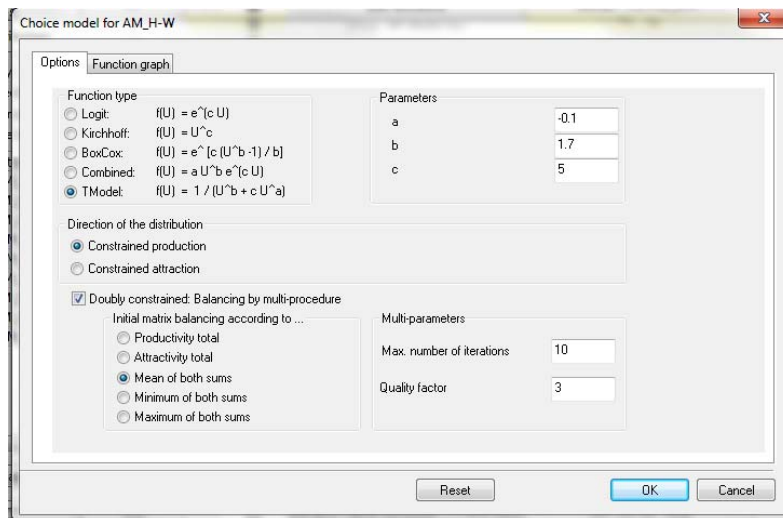


Figure 6: AM PK HR Home-Based Work Gravity Model Functions

Figure 7 below, displays the AM PK HR Home-Based Retail gravity model function parameters and other trip distribution characteristics discussed above.

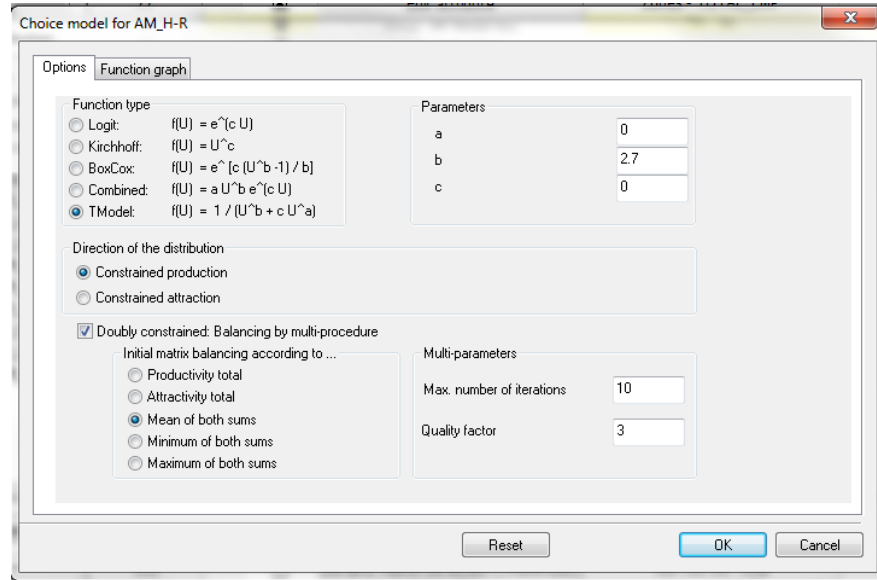


Figure 7: AM PK HR Home-Based Retail Gravity Model Functions

Figure 8 below, displays the AM Home-Based Other gravity model function parameters and other trip distribution characteristics.

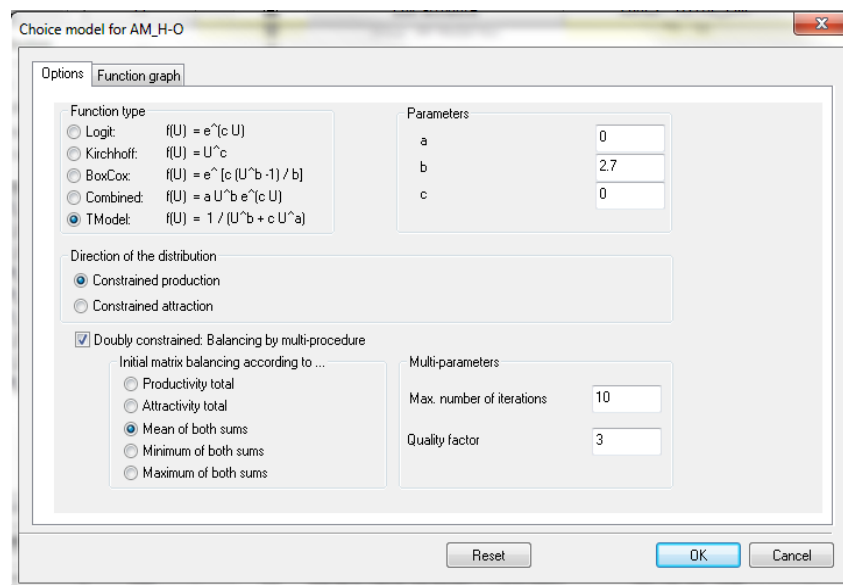


Figure 8: AM PK HR Home-Based Other Gravity Model Functions

Figure 9 below, displays the AM PK HR Non-Home-Based gravity model function parameters and other trip distribution characteristics.

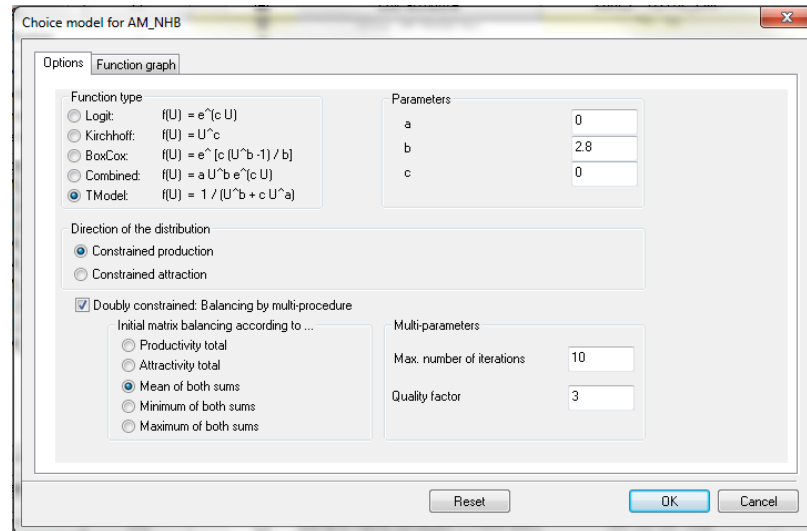


Figure 9: AM PK HR Non-Home-Based Gravity Model Functions

Figure 10 below, displays the AM PK HR Home-Based School gravity model function parameters and other trip distribution characteristics.

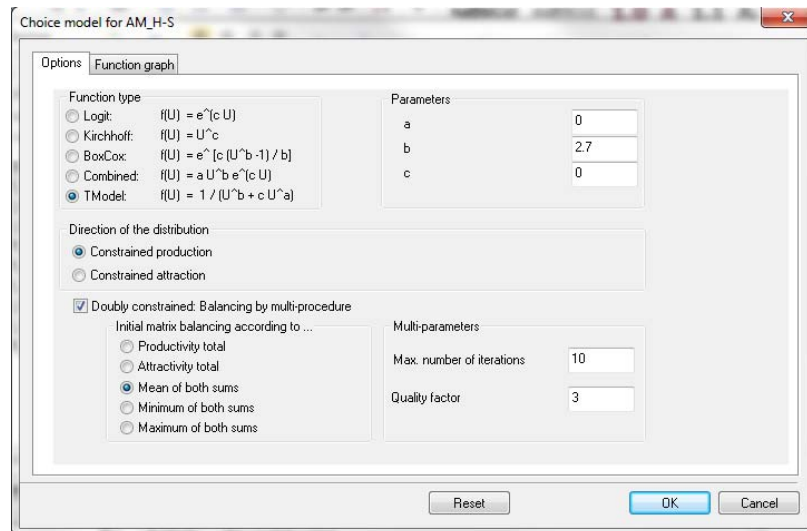


Figure 10: AM PK HR Home-Based School Gravity Model Functions

The trip distribution utility parameters are summarized in Table 12 below:

Trip Purpose	Trip Distribution Parameter		
	a	b	c
HB-Work	-0.1	1.7	5
HB-Retail	0	2.7	0
HB-Other	0	2.7	0
Non-Home Based	0	2.8	0
HB-School	0	2.7	0

Table 12: Trip Distribution Utility Parameters AM PK HR

11.2 PM Peak Hour Gravity Model Parameters

Figure 11 displays the PM PK HR home-based work gravity model function parameters and other trip distribution characteristics, such as: direction of the trip distribution balance to production; doubly constrained balancing by Multi procedure; multi-parameters with maximum number of iterations being 10 and quality factor being 3.

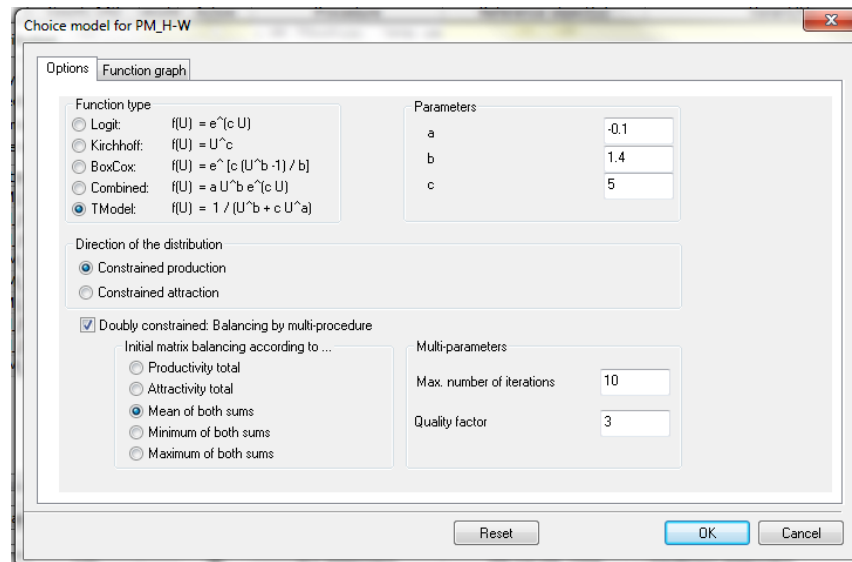


Figure 11: PM PK HR Home-Based Work Gravity Model Functions

Figure 12 displays the PM PK HR Home-Based Retail gravity model function parameters and other trip distribution characteristics discussed above.

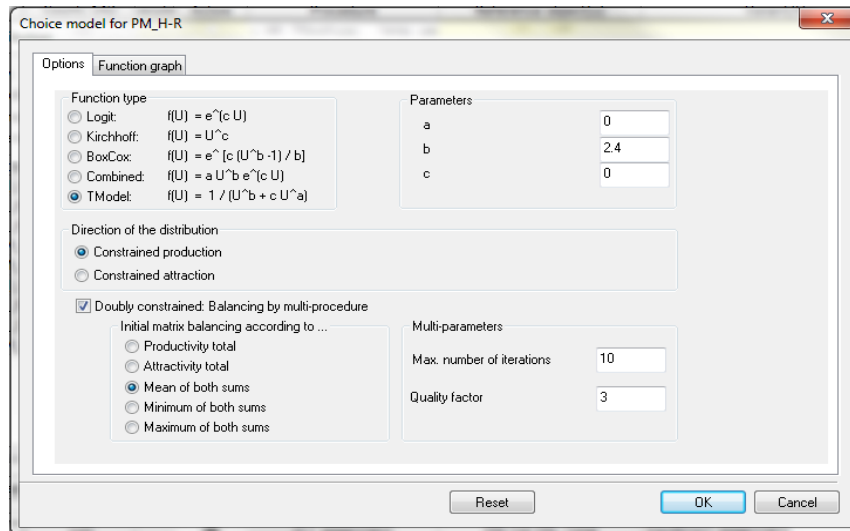


Figure 12: PM PK HR Home-Based Retail Gravity Model Functions

Figure 13 displays the PM PK HR Home-Based Other gravity model function parameters and other trip distribution characteristics.

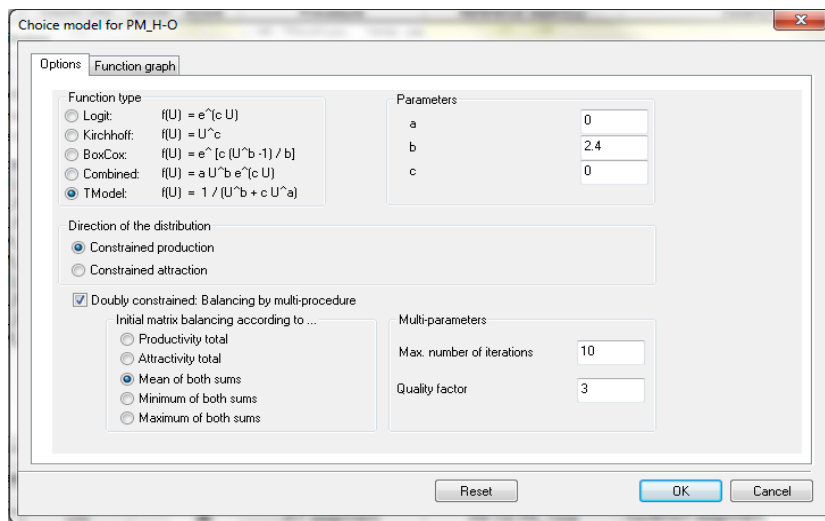


Figure 13: PM PK HR Home-Based Other Gravity Model Functions

Figure 14 displays the PM PK HR Non-Home-Based gravity model function parameters and other trip distribution characteristics.

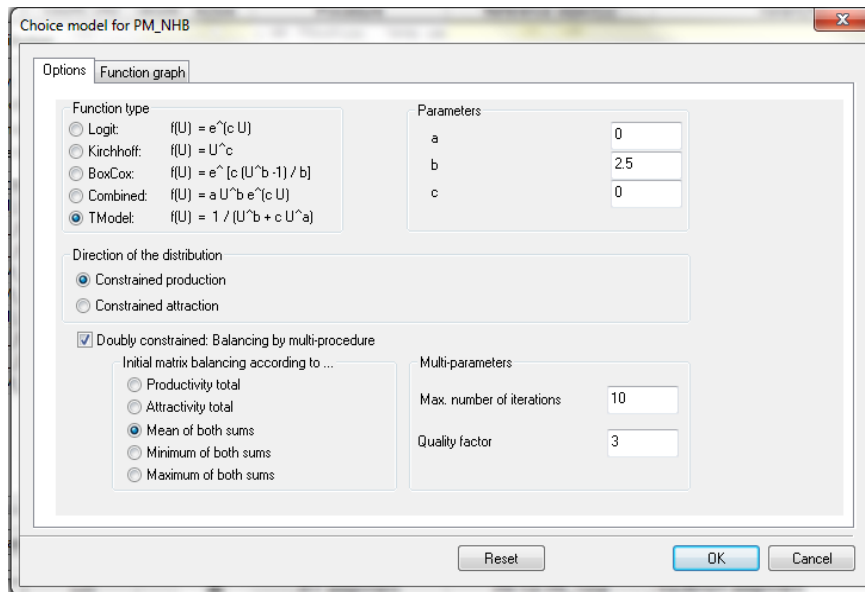


Figure 14: PM PK HR Non-Home-Based Gravity Model Functions

Figure 15 displays the PM PK HR Home-Based School gravity model function parameters and other trip distribution characteristics discussed above.

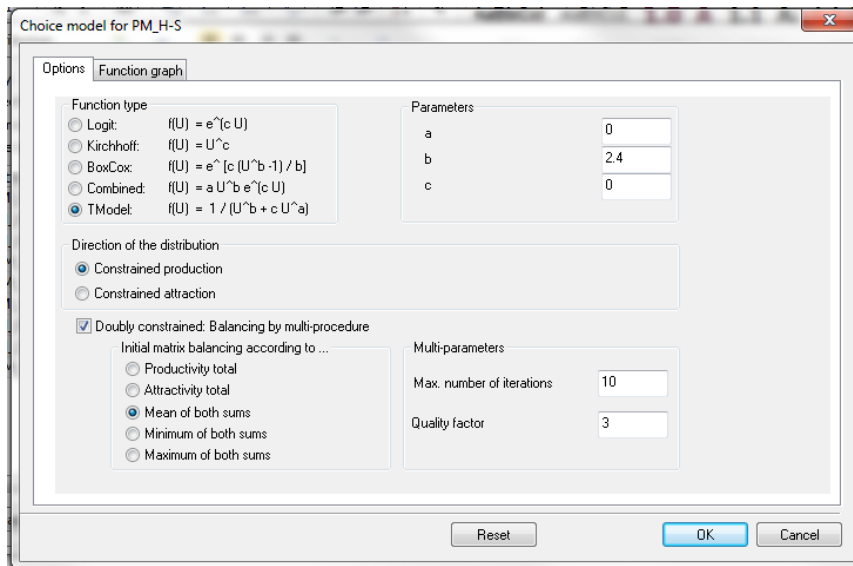


Figure 15: PM PK HR Home-Based School Gravity Model Functions

The trip distribution utility parameters are summarized in Table 13 below:

Trip Purpose	Trip Distribution Parameter		
	a	b	c
HB-Work	-0.1	1.4	5
HB-Retail	0	2.4	0
HB-Other	0	2.4	0
Non-Home Based	0	2.5	0
HB-School	0	2.4	0

Table 13: Trip Distribution Utility Parameters PM PK HR

11.3 Gravity Model Calibration/Validation Results

A random sampling of travel times from one traffic analysis zone (TAZ) to

another were extracted from the model using flow bundles. The same path was input into google map to estimate actual travel times during the AM PK hour and PM PK hours.

As shown in Table 14 and 15, the average model travel time roughly matches the average survey travel time for overall KMPO region-wide, despite some average travel time variations.

Table 14: 2010 AM Peak Hour Average Travel Time (Minutes) – 2010 Base Model Vs. Google Estimated Travel Times (In Current Traffic when available)

O Zone	D Zone	From Place	To Place	Length	T0	TCur	Google TT	Difference
401	20	Cabelas	Rathdrum	11.98mi	14min	16min	18min	2min
402	10	Cabelas	Silverwood Vic.	22.02mi	25min	37min	37min	0min
424	10	KMPO State	Silverwood Vic. Kootenai	19.98mi	23min	27min	27min	0min
589	161	Line State	Medical Center Kootenai East	13.05mi	12min	14min	13min	1min
589	581	Line State	Border	43.88mi	37min	39min	40min	0min
589	204	Line E/O	E/O Worley	45.03mi	43min	48min	46min	2min
204	12	Worley Hauser	Athol Downtown	50.10mi	52min	61min	57min	4min
400	424	Lake	CDA	16.07mi	17min	24min	23min	1min

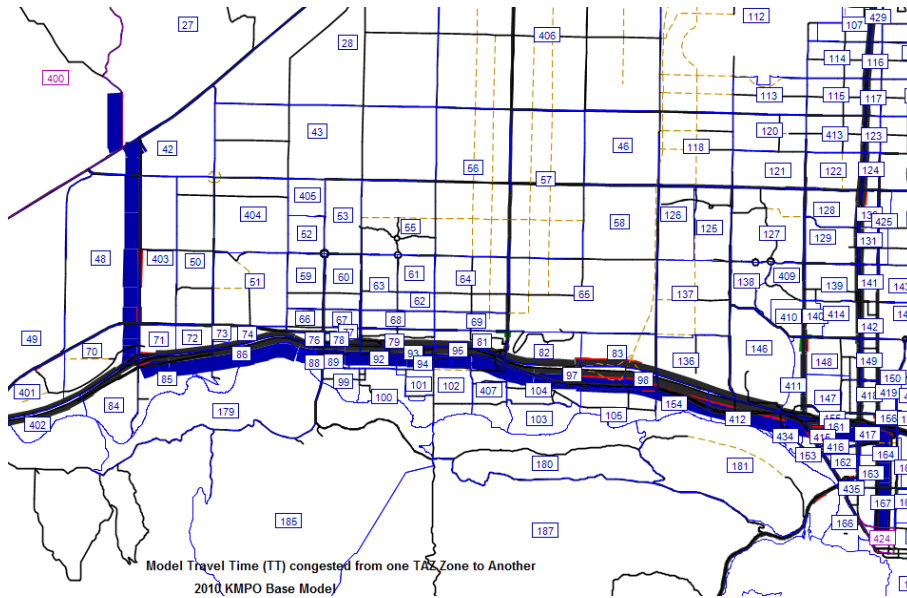
Legend: TT= Travel Time, O Zone = OriginZone, D Zone = Destination Zone, T0= Free flow TT, TCur (Congested TT).

Table 15: 2010 PM Peak Hour Average Travel Time (Minutes) – 2010 Base Model Vs. Google Estimated Travel Times (In Current Traffic when available)

O Zone	D Zone	From Place	To Place	Length	T0	TCur	Google TT	Difference
401	20	Cabelas	Rathdrum	11.98mi	15min	17min	19min	2min
402	10	Cabelas	Silverwood Vic.	22.02mi	25min	37min	40min	3min
424	10	KMPO State Line	Silverwood Vic. Kootenai	19.98mi	23min	29min	31min	2min
589	161	State Line	Medical Center Kootenai East	13.05mi	12min	16min	15min	1min
589	581	State Line	Border	43.88mi	37min	41min	40min	1min
589	204	E/O Worley	E/O Worley	45.03mi	43min	52min	48min	3min
204	12	Worley Hauser	Athol Downtown	50.10mi	52min	65min	62min	3min
400	424	Lake CDA	Lake CDA	16.07mi	17min	24min	26min	2min

Legend: TT= Travel Time, O Zone = OriginZone, D Zone = Destination Zone, T0= Free flow TT, TCur (Congested TT).

Figure 16 : Model Flow Bundle to Calculate Travel Time



The model flow bundle path to calculate the congested average travel time (tCur) from one TAZ zone to another.

12.0 AM/PM Peak Hour Traffic Assignments

The 2010 AM peak hour KMPO Model traffic assignments are displayed in Figure 17 and the 2010 PM peak hour KMPO Model traffic assignments are displayed in Figure 18.

The traffic assignment figures, provide a snapshot of directional traffic volumes for the AM and PM peak hour in the urbanized KMPO area.

Since the directional traffic forecasts need to be evaluated for statistical accuracy and confidence, screenline validation analysis is performed for both AM and PM peak hour conditions. Appendix 1D and Appendix 1E show the 2010 KMPO Model AM/PM peak hour screenline spreadsheets, respectively.

13.0 AM/PM Peak Hour Traffic Screenline Validation

As shown in the following Figure 19 and Figure 20, twenty-eight screenlines are drawn to display ratios of the 2010 KMPO model AM and PM peak hour traffic modeled volumes over their corresponding traffic counts. Table 16 below, shows a summary of the screenline results.

Table 16: 2010 KMPO Model AM/PM Peak Hour Screenline Summary Results

Screenline Location and No.	AM Peak Hour Model/Count Ratio	PM Peak Hour Model/Count Ratio
Spokane River Crossing Screenline #1	1.51	1.21
Seltice Screenline #2	1.15	1.32
Harrison Avenue Screenline # 3	0.98	0.85
Appleway Ave/Best Screenline #4	1.20	1.06
Seltice/Mullan Rd/Kathleen Screenline #5	1.03	0.98
Poleline Rd Screenline #6	0.98	1.05
Prairie Rd. Screenline #7	1.14	1.11
Hayden Avenue Screenline #8	1.04	0.96
Lancaster Rd. Screenline #9	1.20	1.10
SH 53 – US 95 Screenline #10	0.81	0.72
Twin Lakes to National Forest Screenline #11	1.25	1.00
US 95 to SH 3 South Screenline #12	1.07	1.04
SH 95 to LaTour Creek Rd Screenline #13	1.91	1.77
Spirit Lake Pend'O Reille Screenline #14	1.13	1.06
Pleasant View Rd Screenline #15	1.24	1.24
McGuire Rd. Screenline #16	1.35	1.22
Chase Rd. Screenline #17	1.28	1.14
Spokane St. Screenline #18	1.07	0.93
Idaho St. Screenline #19	1.04	0.94
Greensferry Rd. Screenline #20	1.03	0.95
SH 41 Screenline #21	0.88	0.95
Huetter Rd. Screenline #22	0.99	1.01
Ramsey Rd. Screenline #23	0.95	0.90

US 95 Screenline #24	1.20	0.94
West Side KMPO Screenline #25	1.31	1.25
East Side KMPO Screenline #26	1.07	1.00
Government Way Screenline #27	1.19	0.96
I-90 Ramps Screenline #28	1.02	1.04
Overall Avg. Screenline	1.14	1.06

13.1 Allowable Deviation Standards

The closer the model/count ratios by screenlines approach 1.00, the better matches the screenline traffic volumes are compared with the traffic counts. The Federal Highway Administration (FHWA) developed a maximum allowable screenline validation error range and formula as shown below:

% Allowable Deviation per TMIP FHA

For volumes less than 100,000:

$$\text{Tol (\%)} = 1/100 * [(-0.00005*(V)^3 + 0.013*(V)^2 - 1.1822*(V) + 65.465)]$$

For over 100,000:

$$\text{Tol (\%)} = 2.1783*(V)^{-0.4784}$$

Where V is volume in thousands

By using the formula, the screenlines can be evaluated to see if they meet the percent allowable deviation ranges. Figure 21 and Figure 22 display the screenline validations against FHWA Maximum Allowable Error Range (Source: Figure 7-2 Maximum Desirable Deviation in Total Screenline Volumes in the *Model Validation and Reasonableness Checking Manual* published by FHWA Travel Model Improvement Program).

By the FHWA standards, the 2010 KMPO Model is validated for both AM peak hour and PM peak hour, and can be used to build future year travel demand models in KMPO areas.

2010 KMPO VISUM TRAVEL DEMAND BASE MODEL AM PEAK HOUR VOLUMES

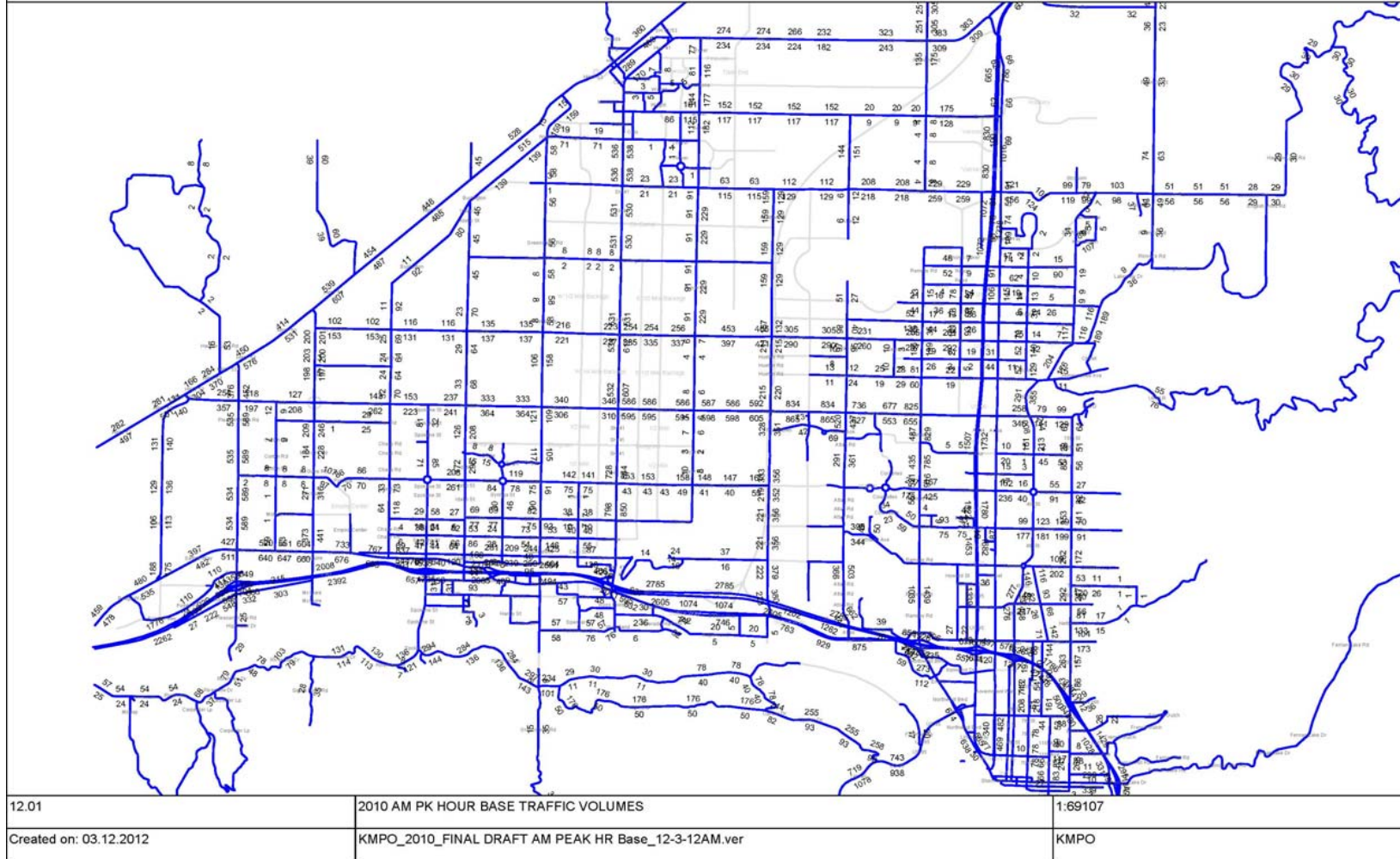


Figure 17: 2010 KMPO VISUM Model AM Peak Hour Traffic Assignment Results

2010 KMPO VISUM TRAVEL DEMAND BASE MODEL PM PEAK HOUR VOLUMES

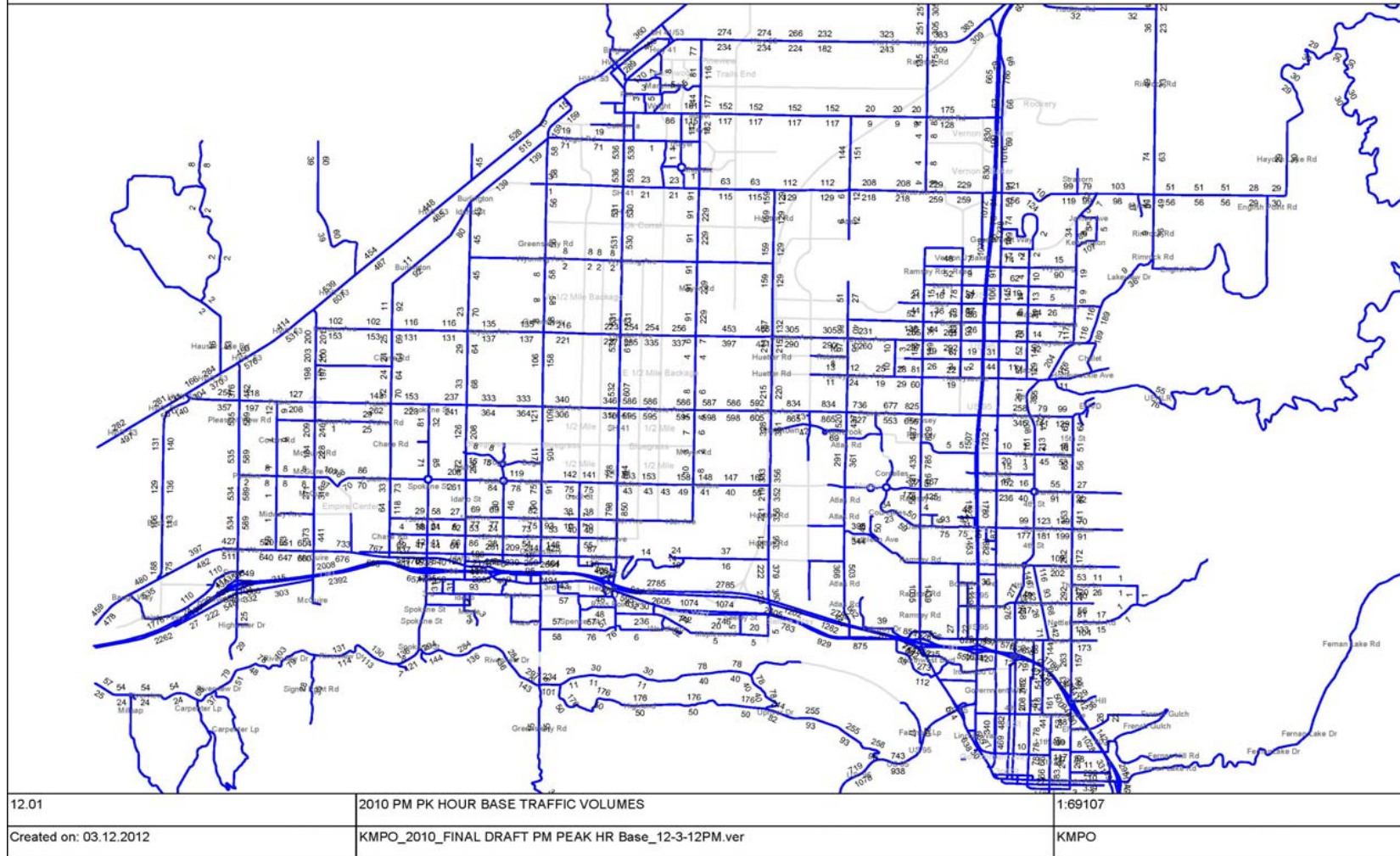


Figure 18: 2010 KMPO VISUM Model PM Peak Hour Traffic Assignment Results

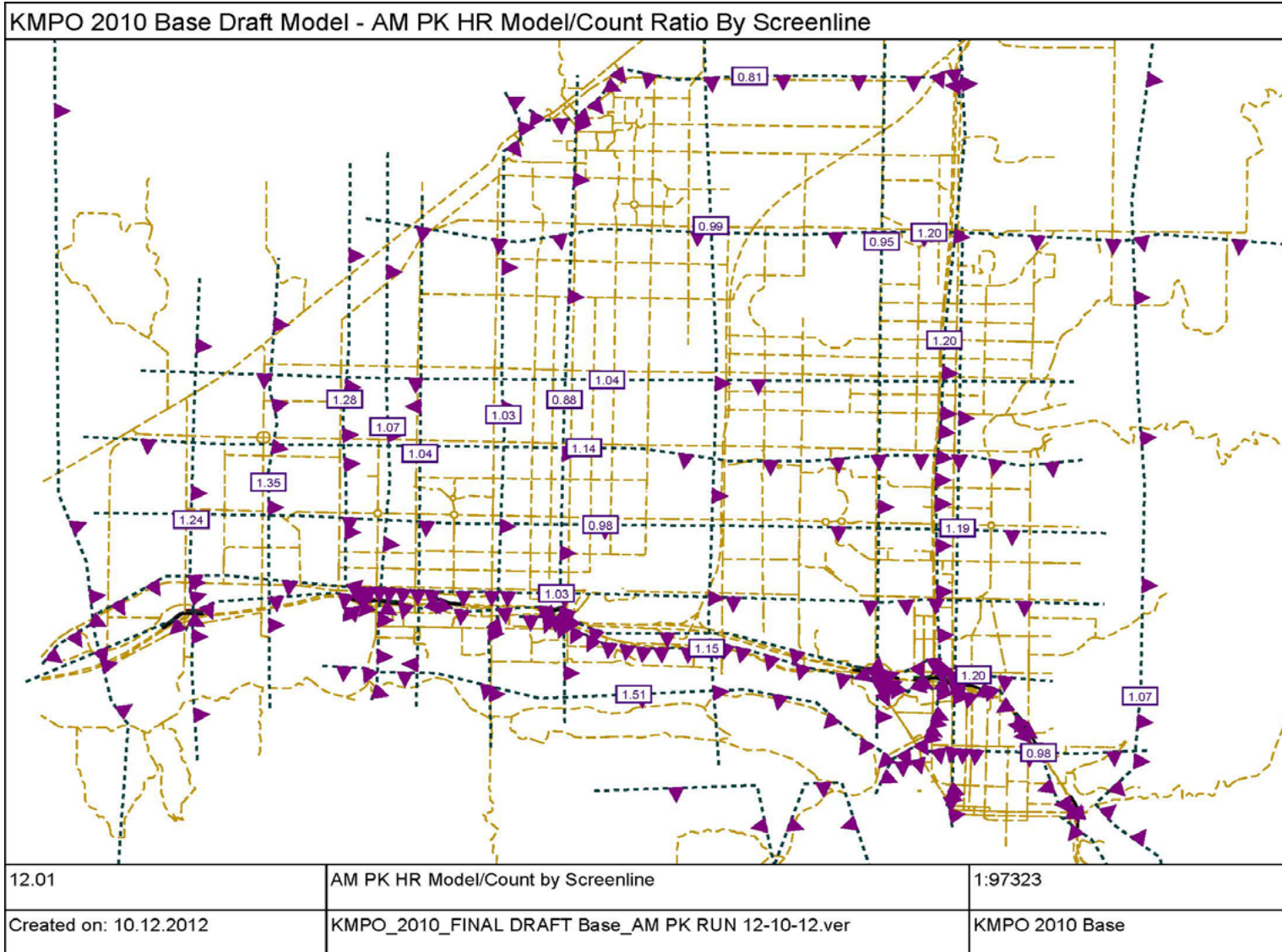


Figure 19 : 2010 KMPO VISUM Model AM Peak Hour Traffic Forecast Screenline Results

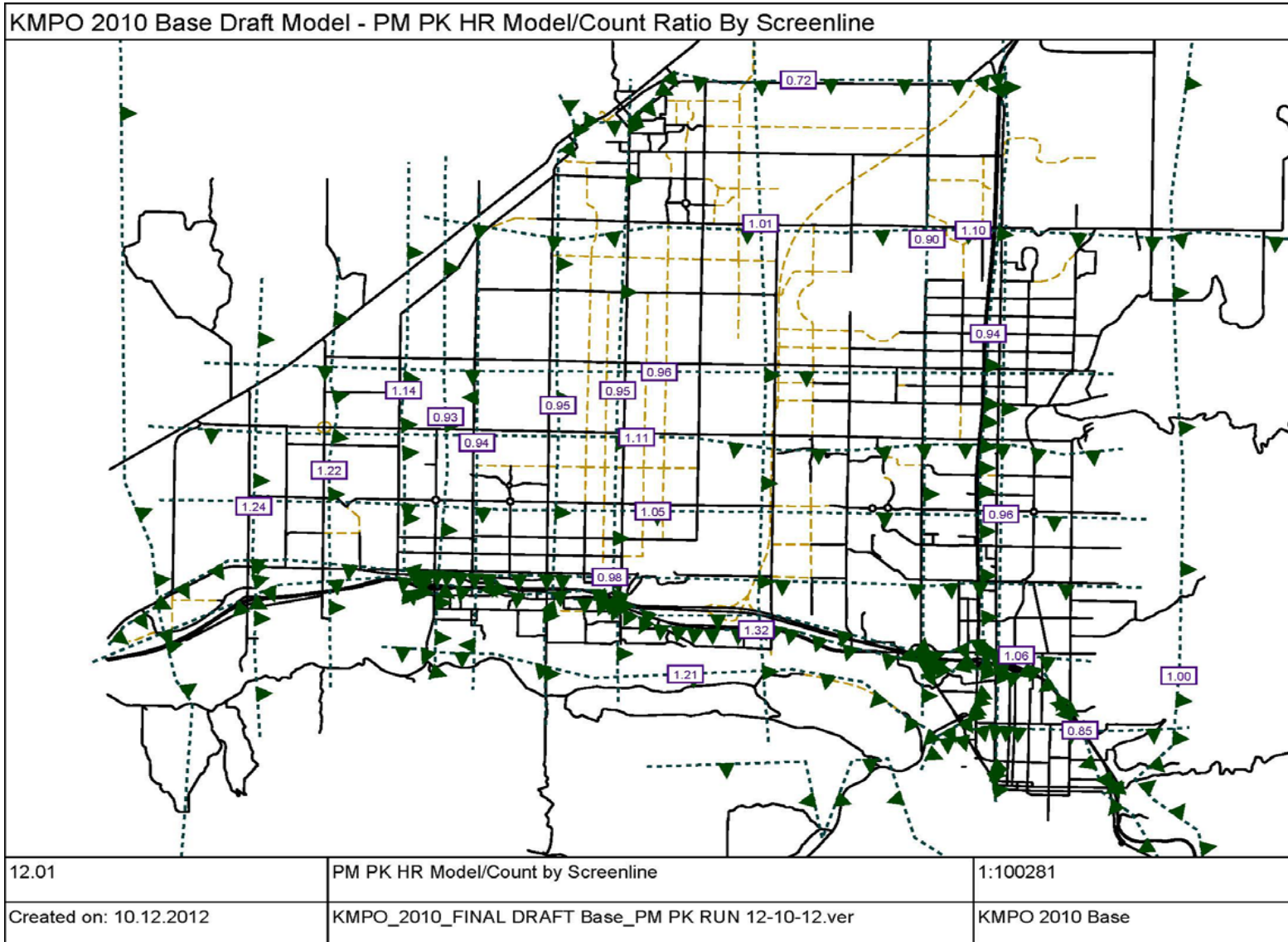


Figure 20: 2010 KMPO VISUM Model PM Peak Hour Traffic Forecast Screenline Results

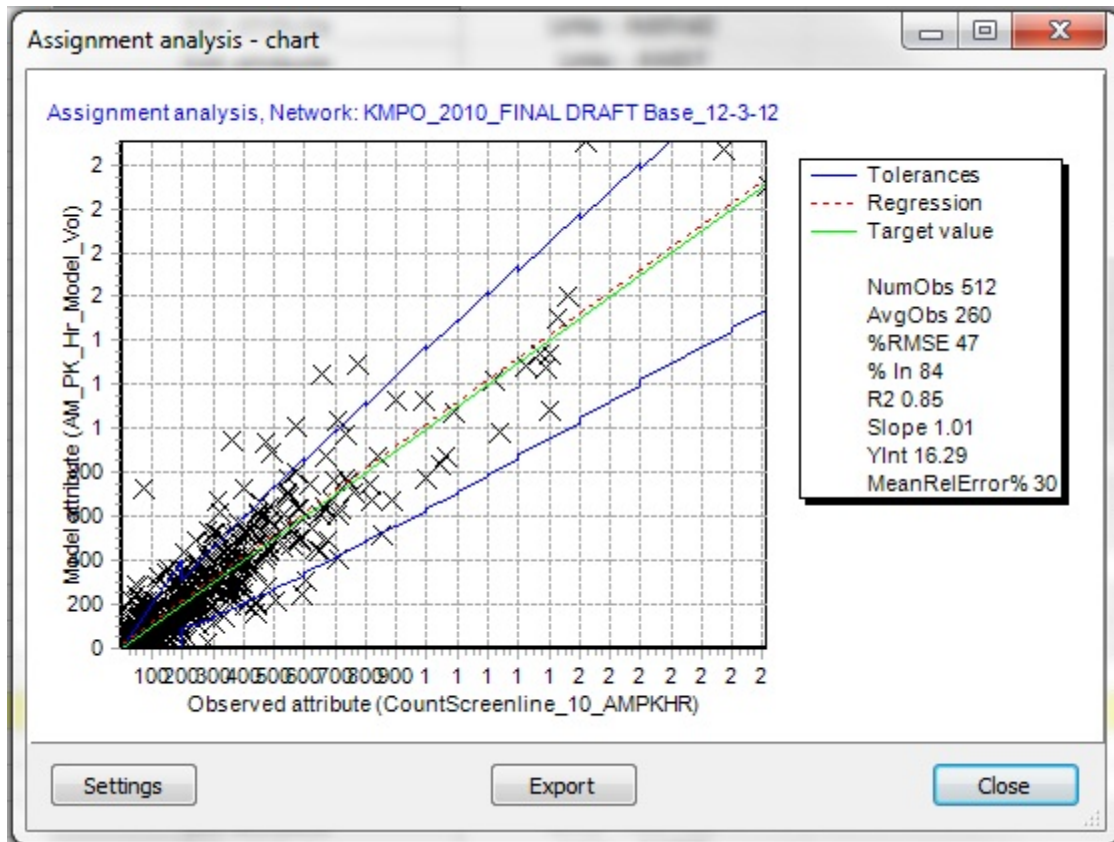


Figure 21: 2010 KMPO Model AM Peak Hour Screenline Error Range

Assignment analysis, Network: KMPO_2010_FINAL DRAFT Base_PM PK RUN 12-10-12

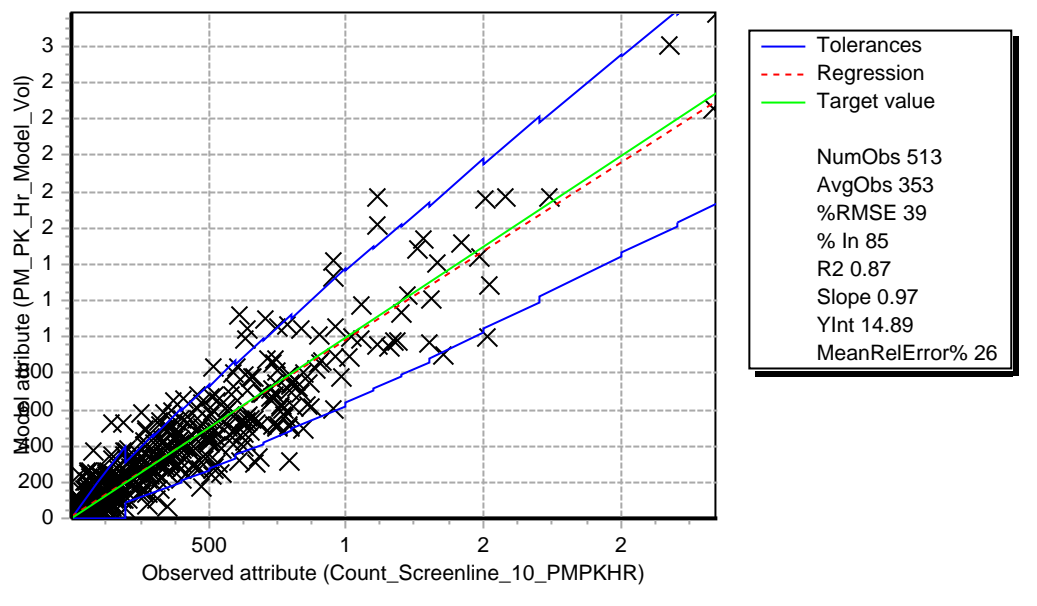


Figure 22: 2010 KMPO Model PM Peak Hour Screenline Error Range

14.0 Model Limitations and Improvements

The 2010 KMPO model has some limitations that lead to potential improvements in the future.

- The KMPO model is vehicle based travel demand forecasting model and does not have multimodal forecasting capability as the model only follows the three steps of the traditional four-step modeling procedures: trip generation, trip distribution, and trip assignment without the mode choice modeling step.
- The model trip generation rates are simply based on the ITE Trip Generation Manual but not based on the regional travel survey data, although the total trips generated by purpose are calibrated against the 2005 Kootenai/Spokane expanded travel survey results.
- The model produces better traffic forecasts in the urbanized area with higher traffic volume than in the rural area with lower traffic volumes possibly because of the larger zones and less street network in rural areas, or because the rural areas have lower trip generation rates than the ITE urban and suburban trip generation rates used in the KMPO model. Further statistical analysis of the rural and urban area travel behaviors will help evaluate this hypothesis.
- The trip distribution patterns roughly match with the 2005 regional travel survey; the statistical results were extracted from the travel survey for the AM and PM conditions, by NuStats as requested by KMPO staff during this 2010 model update; therefore, the statistical analysis results are based on the “2005 Spokane and Kootenai County Regional Travel Survey”.
- Intersection level of service calculation can be implemented by using the VISUM module TRAFFIX based on the Highway Capacity Manual but was not done at this update and should be implemented for operational analysis in the future.
- Some local zonal details or network details may not be sufficient to reflect the traffic forecast conditions in the local sub-area transportation study and planning, or project specific sites and should be enhanced further to meet the local travel demand modeling needs in the future.

Appendices

Appendix 1A: KMPO Project dir file.pfd – KMPO Project directory file that directs the model to the proper file directory location.

Edit project directories

Note: Several extensions can be separated by ','

	Type	Directory	Extension(s)
1	Project directories	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	pfd
2	Version	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	ver
3	Network	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	net
4	OD demand data	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	dmd
5	Matrix	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	mbx;mx;fma;*
6	Access database	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	mdb
7	Access 2007 database	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	accdb
8	Model transfer file	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	tra
9	ESRI shapefile	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	shp
10	Attributes	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	att
11	Active network objects	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	ane
12	Filter	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	fil
13	Procedure parameters	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	par;xml
14	VISUM add-in	%APPDATA%\Visum\120\AddIns\	vai
15	Script	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	vbs;js;py;py;rb;pl;td
16	Graphic parameters	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	gpa
17	Background	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	emf;wmf;bmp;dwg;dxg;ecw;jp2;jpg;png;shp;sid
18	Texts	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	txt
19	Image	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	bmp;jpg;wmf;emf;gif;tiff;png
20	SVG file	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	svg
21	DXF file	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	dxg
22	Screenshot	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	jpg;wmf;emf;bmp;gif;tiff;png
23	Exported turn volumes	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	jpg;png;gif;wmf;emf;bmp;tiff;svg
24	Legend parameters	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	lgd
25	Matrix editor graphic param	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	gpm
26	Timetable editor layout	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	tly
27	List layout	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	lla
28	Quickview layout	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	qla
29	Matrix editor layout	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	mly
30	Survey data	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	*
31	PuT connections	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	con
32	PrT routes	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	rim
33	EMME project	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	emme
34	HAFAS project	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	puti;haf
35	TModel project	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	tla
36	Network merge parameters	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	nmp
37	Parameters for 'Read network	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	anrp
38	Parameters for 'Read deman	C:\Users\Bgow\Desktop\KMPO 2010 NEW Procedures\ ...	adro

Appendix 1B: UpdateNodeLinkCapTWTL.par - A parameter file to update node/link capacity

Operation:	Procedure	Reference object(s)	Variant/file	Comment
1	Calculation - Calculate Procedures Updated	2 - 47		Capacity calculation - Calculate Procedures Updated
2	Initialize all filter settings			
3	Read filter		TSysCar.fil	
4	Edit attribute	Links - CapPrT		Set Link Capacity, Lanes * Cap/Lane
5	Edit attribute	Connectors - T0_TSYS(C)		Test to set Connector Time
6	Read filter		TWLT-3Lane.fil	3 Lane Road
7	Edit attribute	Links - CapPrT		Add 300 directional capacity
8	Read filter		TWLT-5Lane.fil	5 Lane Road
9	Edit attribute	Links - CapPrT		Add 150 directional capacity
10	Read filter		Fwy_GT_2_Lanes.fil	3+ Lane Fwy
11	Edit attribute	Links - CapPrT		Add Cap for 3 Lane + Fwy
12	Edit attribute	Nodes - K4		Set All K4 = 1.0
13	Read filter		ActiveLinksNodes.fil	Start Node Computations
14	Edit attribute	Nodes - CapPrT		Add all outbound link capacities
15	Read filter		ActiveLinksNodes-3plusLegs.fil	3 Plus Leg Nodes
16	Edit attribute	Nodes - K4		
17	Read filter		ActiveLinksNodes-2Leg.fil	
18	Edit attribute	Nodes - K4		
19	Read filter		ActiveLinksNodes-3Leg.fil	
20	Edit attribute	Nodes - K4		
21	Read filter		ActiveLinksNodes-4Leg.fil	
22	Edit attribute	Nodes - K4		
23	Read filter		ActiveLinksNodes-5Leg.fil	
24	Edit attribute	Nodes - K4		
25	Read filter		NodeCapacityFinalComputations.fil	
26	Edit attribute	Nodes - CapPrT		
27	Read filter		Turns-LT-TH-RT-Only.fil	Turns-LT-TH-RT-Only.fil
28	Edit attribute	Turns - CapPrT		Reset Turn Capacities
29	Edit attribute	Turns - t0PrT		Reset Turn T0=0
30	Read filter		SingleLeftTurnsSignalsTwoWayStops.fil	Single Left Turns
31	Edit attribute	Turns - t0PrT		T0=6Secs
32	Edit attribute	Turns - CapPrT		TurnCap=300
33	Read filter		DualLeftTurnsSignalsTwoWayStops.fil	Dual Left Turns
34	Edit attribute	Turns - CapPrT		TurnCap=275*NumLanes
35	Read filter		Uncontrolled_Intersections.fil	Set Uncontrolled Controls
36	Edit attribute	Nodes - ControlType		1-Uncontrolled
37	Read filter		Stop_2_Way_Intersections.fil	Set 2 Way Stop
38	Edit attribute	Nodes - ControlType		2-Partial Stop
39	Read filter		Yield_2_Way_Intersections.fil	Set Yield
40	Edit attribute	Nodes - ControlType		6-Yield
41	Read filter		Stop_All_Way_Intersections.fil	Set All Way Stop
42	Edit attribute	Nodes - ControlType		4-All Way Stop
43	Read filter		Signal_Intersections.fil	Set Signals
44	Edit attribute	Nodes - ControlType		3-Signals
45	Read filter		Roundabout_Intersections.fil	Set Roundabouts
46	Edit attribute	Nodes - ControlType		7-Roundabout
47	Read filter		TSysCar.fil	

Appendix 1C: Final Calculate Procedures File AM_PM_12-3-12.par - An AM/PM combined parameter file for the AM/PM peak hour KMPO Model (Procedures 1 – 39).

Network: KMPO_2010_FINAL DRAFT PM PEAK HR Base_12-3-12PM.ver* - [Procedure sequence]

Lists Filters Calculate Graphics Network Demand Extras Scripts Window Help Procedure sequence

Select GPar... Procedure sequence

Iteration	Active	Procedure	Reference object(s)	Variant/file	Comment
1	<input checked="" type="checkbox"/>	Simulation - Calculate Procedures Update	2 - 47		Capacity calculation - Calculate Procedures
2	<input checked="" type="checkbox"/>	Initialize all filter settings			
3	<input checked="" type="checkbox"/>	Read filter		TSysCar.fil	
4	<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Set Link Capacity, Lanes * Cap/Lane
5	<input checked="" type="checkbox"/>	Edit attribute	Connectors - T0_TSYS(C)		Test to set Connector Time
6	<input checked="" type="checkbox"/>	Read filter		TWLT-3Lane.fil	3 Lane Road
7	<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Add 300 directional capacity
8	<input checked="" type="checkbox"/>	Read filter		TWLT-5Lane.fil	5 Lane Road
9	<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Add 150 directional capacity
10	<input checked="" type="checkbox"/>	Read filter		Fwy_GT_2_Lanes.fil	3+ Lane Fwy
11	<input checked="" type="checkbox"/>	Edit attribute	Links - CapPrT		Add Cap for 3 Lane + Fwy
12	<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		Set All K4 = 1.0
13	<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes.fil	Start Node Computations
14	<input checked="" type="checkbox"/>	Edit attribute	Nodes - CapPrT		Add all outbound link capacities
15	<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-3plusLegs.fil	3 Plus Leg Nodes
16	<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
17	<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-2Leg.fil	
18	<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
19	<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-3Leg.fil	
20	<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
21	<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-4Leg.fil	
22	<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
23	<input checked="" type="checkbox"/>	Read filter		ActiveLinksNodes-5Leg.fil	
24	<input checked="" type="checkbox"/>	Edit attribute	Nodes - K4		
25	<input checked="" type="checkbox"/>	Read filter		NodeCapacityFinalComputations.fil	
26	<input checked="" type="checkbox"/>	Edit attribute	Nodes - CapPrT		
27	<input checked="" type="checkbox"/>	Read filter		Turns-LT-TH-RT-Only.fil	Turns-LT-TH-RT-Only.fil
28	<input checked="" type="checkbox"/>	Edit attribute	Turns - CapPrT		Reset Turn Capacities
29	<input checked="" type="checkbox"/>	Edit attribute	Turns - t0PrT		Reset Turn T0=0
30	<input checked="" type="checkbox"/>	Read filter		SingleLeftTurnsSignalsTwoWayStops.fil	Single Left Turns
31	<input checked="" type="checkbox"/>	Edit attribute	Turns - t0PrT		T0=6Secs
32	<input checked="" type="checkbox"/>	Edit attribute	Turns - CapPrT		TurnCap=300
33	<input checked="" type="checkbox"/>	Read filter		DualLeftTurnsSignalsTwoWayStops.fil	Dual Left Turns
34	<input checked="" type="checkbox"/>	Edit attribute	Turns - CapPrT		TurnCap=275*NumLanes
35	<input checked="" type="checkbox"/>	Read filter		Uncontrolled_Intersections.fil	Set Uncontrolled Controls
36	<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		1-Uncontrolled
37	<input checked="" type="checkbox"/>	Read filter		Stop_2_Way_Intersections.fil	Set 2 Way Stop
38	<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		2-Partial Stop
39	<input checked="" type="checkbox"/>	Read filter		Yield_2_Way_Intersections.fil	Set Yield

Appendix 1C (Continued): Final Calculate Procedures File AM_PM_12-3-12.par (Procedures 84-121).

40	<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		6-Yield
41	<input checked="" type="checkbox"/>	Read filter		Stop_All_Way_Intersections.fil	Set All Way Stop
42	<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		4-All Way Stop
43	<input checked="" type="checkbox"/>	Read filter		Signal_Intersections.fil	Set Signals
44	<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		3-Signals
45	<input checked="" type="checkbox"/>	Read filter		Roundabout_Intersections.fil	Set Roundabouts
46	<input checked="" type="checkbox"/>	Edit attribute	Nodes - ControlType		7-Roundabout
47	<input checked="" type="checkbox"/>	Read filter		TSysCar.fil	
48	<input checked="" type="checkbox"/>	Group Set Land Use to 2010 for Base Y	49 - 77		Set Land Use to 2010 for Base Year
49	<input checked="" type="checkbox"/>	Edit attribute	Zones - SFDU_LU1		
50	<input checked="" type="checkbox"/>	Edit attribute	Zones - MFDU_LU2		
51	<input checked="" type="checkbox"/>	Edit attribute	Zones - RET_LU3		
52	<input checked="" type="checkbox"/>	Edit attribute	Zones - FIRES_LU4		
53	<input checked="" type="checkbox"/>	Edit attribute	Zones - INDUST_LU5		
54	<input checked="" type="checkbox"/>	Edit attribute	Zones - SCH_LU6		
55	<input checked="" type="checkbox"/>	Edit attribute	Zones - ACCOM_LU7		
56	<input checked="" type="checkbox"/>	Edit attribute	Zones - AER_LU8		
57	<input checked="" type="checkbox"/>	Edit attribute	Zones - OSFDU_LU9		
58	<input checked="" type="checkbox"/>	Edit attribute	Zones - PSS_LU10		
59	<input checked="" type="checkbox"/>	Edit attribute	Zones - AGRI_LU11		
60	<input checked="" type="checkbox"/>	Edit attribute	Zones - WFRT_LU12		
61	<input checked="" type="checkbox"/>	Edit attribute	Zones - POL_LU13		
62	<input checked="" type="checkbox"/>	Edit attribute	Zones - TRNWH_LU14		
63	<input checked="" type="checkbox"/>	Edit attribute	Zones - MED_LU15		
64	<input checked="" type="checkbox"/>	Edit attribute	Zones - GOVT_LU16		
65	<input checked="" type="checkbox"/>	Edit attribute	Zones - ASWMMR_LU17		
66	<input checked="" type="checkbox"/>	Edit attribute	Zones - PSTMC_LU18		
67	<input checked="" type="checkbox"/>	Edit attribute	Zones - EDUSRV_LU19		
68	<input checked="" type="checkbox"/>	Edit attribute	Zones - OTHER_LU20		
69	<input checked="" type="checkbox"/>	Edit attribute	Zones - INFO_LU21		
70	<input checked="" type="checkbox"/>	Edit attribute	Zones - UTLCONST_LU22		
71	<input checked="" type="checkbox"/>	Edit attribute	Zones - FS_LU23		
72	<input checked="" type="checkbox"/>	Edit attribute	Zones - XI-O-AM		
73	<input checked="" type="checkbox"/>	Edit attribute	Zones - IX-D-AM		
74	<input checked="" type="checkbox"/>	Edit attribute	Zones - XI-O-PM		
75	<input checked="" type="checkbox"/>	Edit attribute	Zones - IX-D-PM		
76	<input checked="" type="checkbox"/>	Edit attribute	Zones - TOTAL_DU		
77	<input checked="" type="checkbox"/>	Edit attribute	Zones - TOTAL_EMP		
78	<input checked="" type="checkbox"/>	Group AM Model Run	79 - 99		AM Model Run
79	<input checked="" type="checkbox"/>	Init assignment		All	Latest Update 5-8-12 Bonnie PTV Visit
80	<input checked="" type="checkbox"/>	Read filter		TSysCar.fil	TSysCarLinks.fil
81	<input checked="" type="checkbox"/>	Edit attribute	Links - AddVal2		ADDVALUE2=0 (sets value to zero)
82	<input checked="" type="checkbox"/>	Edit attribute	Links - AWDT		SETS AWDT To Zero
83	<input checked="" type="checkbox"/>	Trip generation	H-W, AM NHB AM NHB, AM C		

Appendix 1C (Continued): Final Calculate Procedures File AM_PM_12-3-12.par (Procedures 84-121).

84	<input checked="" type="checkbox"/>	Calculate PrT skim matrix	AM_HBW AM_HBW		TT0
85	<input checked="" type="checkbox"/>	Calculate PrT skim matrix	AM_HBW AM_HBW		TTC
86	<input checked="" type="checkbox"/>	Combination of matrices and vectors	2 TT0 (AM_HBW AM_HBW)		$TT0=0.75*TTC+0.25*TT0$
87	<input checked="" type="checkbox"/>	Trip distribution	_H-W, AM_NHB AM_NHB, AM_C		
88	<input checked="" type="checkbox"/>	Combination of matrices and vectors	13 AM_HBW		
89	<input checked="" type="checkbox"/>	Combination of matrices and vectors	15 AM_HBR		
90	<input checked="" type="checkbox"/>	Combination of matrices and vectors	17 AM_HBO		
91	<input checked="" type="checkbox"/>	Combination of matrices and vectors	19 AM_HBS		
92	<input checked="" type="checkbox"/>	Combination of matrices and vectors	1 AM_Total		
93	<input checked="" type="checkbox"/>	PrT assignment	AM-Tot AM_Total	Equilibrium assignment	
94	<input checked="" type="checkbox"/>	Go to the procedure	Procedure 85		
95	<input checked="" type="checkbox"/>	Edit attribute	Links - AM_PK_HR_MODEL_VOL		AM_PK_HR_Model_Vol=VolVehPrT
96	<input checked="" type="checkbox"/>	Read filter		AMVolumeCount.fil	
97	<input checked="" type="checkbox"/>	Edit attribute	Links - AddVal2		AM Model Deviation
98	<input checked="" type="checkbox"/>	Assignment analysis			AM Analysis
99	<input checked="" type="checkbox"/>	Read filter		TSysCar.fil	TSysCarLinks.fil
100	<input checked="" type="checkbox"/>	Group PM Model Run	101 - 121		PM Model Run
101	<input checked="" type="checkbox"/>	Init assignment		All	
102	<input checked="" type="checkbox"/>	Read filter		TSysCarLinks.fil	TSysCarLinks.fil
103	<input checked="" type="checkbox"/>	Edit attribute	Links - AddVal3		ADDDVALUE3=0 (Sets value to zero)
104	<input checked="" type="checkbox"/>	Edit attribute	Links - AWDT		SETS AWDT TO Zero
105	<input checked="" type="checkbox"/>	Trip generation	_H-W, PM_NHB PM_NHB, PM_C		Updated 10-10-12 R.S/B.G.
106	<input checked="" type="checkbox"/>	Calculate PrT skim matrix	PM_HBW PM_HBW		TT0
107	<input checked="" type="checkbox"/>	Calculate PrT skim matrix	PM_HBW PM_HBW		TTC
108	<input checked="" type="checkbox"/>	Combination of matrices and vectors	220 TT0 (PM_HBW PM_HBW)		$TT0=TTC+TT0$
109	<input checked="" type="checkbox"/>	Trip distribution	_H-W, PM_NHB PM_NHB, PM_C		
110	<input checked="" type="checkbox"/>	Combination of matrices and vectors	14 PM_HBW		
111	<input checked="" type="checkbox"/>	Combination of matrices and vectors	16 PM_HBR		
112	<input checked="" type="checkbox"/>	Combination of matrices and vectors	18 PM_HBO		
113	<input checked="" type="checkbox"/>	Combination of matrices and vectors	20 PM_HBS		
114	<input checked="" type="checkbox"/>	Combination of matrices and vectors	3 PM_Total		
115	<input checked="" type="checkbox"/>	PrT assignment	PM-Tot PM_Total	Equilibrium assignment	
116	<input checked="" type="checkbox"/>	Go to the procedure	Procedure 107		
117	<input checked="" type="checkbox"/>	Edit attribute	Links - PM_PK_HR_MODEL_VOL		PM_PK_HR_Model_Vol=VolVehPrT
118	<input checked="" type="checkbox"/>	Read filter		PMVolumeCount.fil	
119	<input checked="" type="checkbox"/>	Edit attribute	Links - AddVal3		PM Model Deviation
120	<input checked="" type="checkbox"/>	Assignment analysis			PM Analysis
121	<input checked="" type="checkbox"/>	Read filter		TSysCar.fil	TSysCarLinks.fil

Appendix 1D: 2010 KMPO Model AM Peak Hour Screenline Validation Spreadsheets

SOUTH - NORTH SCREENLINES - KMPO									
Location	AM Total	AM Peak Time	AM Peak Count	Link #	From Node	To Node	Modeled AM Peak Volume	Modeled - Actual AM Peak Volume	Modeled-Actual / Actual AM Peak Count
Spokane River Crossing Screenline #1									
Southbound									
Spokane St	579	700	230	13273	11026	818	354	124	0.539130435
US 95 @ Spokane River Bridge	1300	800	474	13617	11201	10871	937	463	0.976793249
Northwest Blvd South of US 95	2958	800	1322	13909	896	11337	1287	-35	-0.026475038
Totals	1879	704	704				1291	687	0.833806918
Northbound									
Spokane St	512	800	208	13273	818	11026	238	30	0.144230769
US 95 @ Spokane River Bridge	1512	700	619	13617	10871	11201	744	125	0.201938611
Northwest Blvd South of US 95	773	700	363	13909	11337	896	411	-48	0.132231405
Totals	2024	800	827				982	155	0.187424426
Seltice Screenline #2									
Southbound									
Ross Point Rd	287	800	135	9139	734	9272	180	45	0.333333333
Ramsey Rd	3297	800	1400	10413	943	9789	1338	-62	-0.044235714
Huetter Rd	468	700	191	10473	774	9814	202	-11	0.057516223
Atlas Rd	890	700	363	10477	9388	9815	446	83	0.228850138
Cedar St	174	800	77	13219	10995	790	118	-41	-0.532467532
Saeley Rd	79	700	36	12719	793	10733	52	16	0.444444444
Totals	6195	2202	2202				2336	134	0.060853769
Northbound									
Ross Point Rd	800	700	346	9139	9272	734	451	105	0.303468208
Ramsey Rd	1637	800	734	10413	9789	843	978	244	0.332425068
Huetter Rd	201	800	83	10473	9814	774	122	39	0.468879518
Atlas Rd	553	800	227	10477	9815	9388	273	46	0.202643172
Cedar St	448	700	186	13219	790	10995	142	-44	-0.23655914
Saeley Rd	103	700	46	12719	10733	793	32	-14	-0.304347826
Totals	3802	1622	1622				1998	376	0.231812577
Harrison Ave. Screenline #3									
Southbound									
3rd St	938	800	474	977	901	917	424	-50	-0.105485232
7th St	248	800	107	13875	904	11320	154	-47	-0.439252336
11th St	122	700	62	986	907	920	38	-24	-0.387096774
15th St	893	800	409	990	910	921	352	-57	-0.139364303
Government Way	416	800	206	8963	899	9144	353	147	0.713592233
Totals	2617	1258	1258				1321	63	0.050079491
Northbound									
7th St	276	800	129	13875	11320	904	69	-60	-0.465116279
11th St	185	700	91	986	920	907	15	-76	-0.835164835
15th St	1450	700	496	990	921	910	493	-3	-0.006048387
4th St	736	800	366	10854	9988	902	350	-16	-0.043715847
Government Way	364	800	179	13762	11267	9812	225	46	0.25698324
Totals	3011	1261	1261				1152	-109	-0.086439334
Appleway Ave/Best Screenline #4									
Southbound									
Government Way	1241	800	573	12956	833	10830	1011	438	0.754397506
15th St	993	800	402	889	841	866	253	-149	-0.370646786
SR 95 (N by Haycraft)	2606	700	969	9429	814	9113	1133	144	0.145501518
Totals	4840	1964	1964				2397	433	0.220468432
Northbound									
Government Way	740	800	475	12956	10830	833	526	513	1.08
15th St	601	800	237	889	866	841	107	134	0.555400844
SR 95 (North by Haycraft)	1675	700	709	10844	9975	9984	1042	1046	1.475317348
Totals	3016	1421	1421				1675	254	0.178747381
Seltice/Mulan Rd/Kathleen Screenline #5									
Southbound									
Spokane St	1033	700	380	13788	658	11277	574	194	0.510526316
Idaho St	1368	800	542	13790	660	11278	696	156	0.237822878
Greenferry Rd	109	700	57	888	684	683	148	89	1.561403509
SR 41	3247	700	1236	13916	669	11340	988	-248	-0.200647249
Huetter Rd	490	700	225	691	685	738	202	-23	-0.102222222
Atlas Rd	673	800	273	693	687	739	218	-55	-0.201465201
Ramsey Rd	3228	800	1401	13448	689	11129	1084	-317	-0.226266052
4th St	698	700	299	12931	10735	10813	292	-7	-0.023411371
15th St	793	700	353	711	698	716	281	-72	-0.203966006
US 95	3339	800	1389	9557	691	9421	1275	-114	-0.082073434
Baugh Rd	174	700	75	13224	10998	9015	46	-29	-0.386666667
Pleasant View Rd	847	700	312	8830	9017	647	528	216	0.692307692

Location	AM Total	M Peak	Tin	Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual	AM Peak Count
Government Way	1120	800	502	13820	10160	11292	560	58	0.115537849		
Totals	17119		7044				6892	-152	-0.021578648		
Northbound											
Spokane St	811	800	350	13788	11277	658	383	33	0.094285714		
Idaho St	983	800	383	13790	11278	660	380	-3	-0.007832898		
Government Way	890	800	394	13820	11292	10160	385	-9	-0.02284264		
Greensterry Rd	69	800	39	668	663	664	108	69	1.769230769		
SR 41	1736	700	715	13916	11340	869	641	-74	-0.10348503		
Huettner Rd	196	800	73	691	738	685	123	49	0.67123277		
Atlas Rd	734	800	291	693	739	697	286	-5	-0.017182131		
Ramsey Rd	2376	800	897	13448	11129	689	744	-153	-0.170688562		
4th St	536	700	227	12931	10813	10735	154	-73	-0.321589303		
15th St	807	700	381	711	716	698	352	-29	-0.076115486		
US 95	2241	800	845	12128	10486	10487	1128	283	0.334911243		
Baugh Rd	82	700	32	13224	9015	10998	118	86	2.6975		
Pleasant View Rd	531	800	184	8830	647	9017	366	182	0.869130435		
Totals	11994		4811				5167	356	0.07399709		
Location											
Poteline Rd Screenline #6											
Southbound											
Pleasant View Rd	763	700	301	496	544	595	528	227	0.754152824		
Chase Rd	271	800	118	507	550	579	79	-39	-0.330508475		
Spokane St	731	800	291	13865	552	11315	323	32	0.109965636		
Idaho St	810	700	340	13864	554	11314	257	-83	-0.244117647		
Greensterry Rd	256	800	116	520	558	583	62	-54	-0.465517241		
SR41	2653	800	1042	526	562	585	836	-206	-0.197686737		
Ramsey Rd	1690	700	689	536	569	590	676	-13	-0.018867925		
Government Way	1279	700	534	542	573	592	687	163	0.286516854		
15th St	531	700	280	548	577	594	146	-134	-0.478571429		
Huettner Rd	402	700	157	559	1100	587	180	23	0.146496915		
US 95	3818	700	1401	1671	571	815	1501	100	0.071377587		
4th St	739	700	333	13453	11142	9052	149	-184	-0.552552453		
Atlas Rd	1220	700	522	13855	9458	11309	465	-57	-0.103195402		
Totals	14981		6124				5889	-235	-0.038373612		
Northbound											
Pleasant View Rd	444	700	153	496	595	544	366	213	1.392156863		
Chase Rd	432	800	172	507	579	550	29	-143	-0.831395349		
Spokane St	412	800	163	13865	11315	552	125	-38	-0.23128834		
Idaho St	478	800	186	13864	11314	554	163	-23	-0.123655914		
Greensterry Rd	347	700	159	520	583	558	35	-124	-0.778874214		
SR41	1624	700	676	526	585	582	491	-185	-0.273688630		
Ramsey Rd	1250	800	478	536	590	569	450	-28	-0.058577406		
Government Way	834	800	345	542	592	573	330	-15	-0.043478261		
15th St	531	700	280	548	594	577	49	-231	-0.825		
Huettner Rd	219	700	86	559	587	1100	116	30	0.348837209		
US 95	2076	700	756	1671	615	571	1460	704	0.821216931		
4th St	387	700	169	13483	9052	11142	52	-117	-0.692307662		
Atlas Rd	731	700	312	13855	11309	9458	287	-25	-0.080128205		
Totals	9765		3935				3953	18	0.004574333		
Location											
Prairie Rd. Screenline #7											
Southbound											
Idaho Rd	211	700	95	13202	482	10986	93	-2	-0.021052632		
Huettner Rd	293	800	110	434	451	522	296	186	1.690900991		
Ramsey Rd	1651	700	666	13847	498	11305	625	-41	-0.061561562		
US 95	3766	700	1459	13855	500	11325	1606	147	0.100753941		
Government Way	1116	700	455	13796	502	11281	579	124	0.272527473		
4th St	896	700	413	452	504	512	200	-213	-0.515738499		
Atlas Rd	850	700	363	9330	498	9081	297	-86	-0.181818182		
McGuire Rd	116	800	47	13592	11190	11188	293	246	5.234042553		
15th St	348	700	173	10600	9878	513	68	-105	-0.806936416		
Spokane St	139	700	56	10684	480	9911	76	20	0.357142857		
Chase Rd	258	800	103	10686	478	9912	83	-20	-0.194174757		
Greensterry Rd	271	700	125	10696	486	9917	54	-71	-0.588		
SR 41	1955	800	739	10998	488	9918	756	17	0.02300406		
Totals	11740	9500	4804				5026	222	0.04621149		
Northbound											
Idaho Rd	234	700	89	13202	10986	482	152	63	0.707865189		
Government Way	650	800	282	13796	11281	502	191	-91	-0.322695035		
4th St	544	700	230	452	512	504	120	-110	-0.47826087		
Huettner Rd	345	700	133	434	452	491	129	-4	-0.030079188		
Ramsey Rd	950	800	382	13847	11305	498	821	61	0.153638584		
Atlas Rd	836	700	285	9330	9081	498	370	104	0.390977444		
McGuire Rd	56	800	28	13592	11188	11190	124	96	3.428571429		
15th St	86	700	41	10600	513	9878	36	-5	-0.12195122		
Spokane St	177	700	72	10684	9911	480	47	-25	-0.347222222		
Chase Rd	263	700	103	10686	9912	478	131	28	0.27184466		
Greensterry Rd	223	700	80	10696	9917	486	96	16	0.2		
SR 41	1270	700	474	10998	9918	488	523	49	0.103375527		
US 95	1747	800	658	12182	10027	10491	1246	588	0.893617021		
Totals	7181		2838				3486	648	0.22832981		
Location											
Hayden Ave. Screenline #8											
Southbound											
Chase Rd	140	700	53	13941	411	11352	21	-32	-0.603773585		
Idaho St	119	700	52	313	412	1163	16	-36	-0.692307662		
SR 41	1942	700	708	13861	415	11313	611	-95	-0.134560907		
Huettner Rd	157	700	57	326	418	435	208	151	2.649122807		

Hauser Lake Rd north of SH 53	299	700	129	13239	11006	445	33	-96	-0.744186047
Greensferry Rd	160	800	69	6343	413	446	37	-32	-0.463788116
Totals	2817		1066				926	-140	-0.131332083
Northbound									
Chase Rd	137	700	53	13941	11352	411	70	17	0.320754717
Idaho St	108	700	39	313	1163	412	53	14	0.358974359
SR 41	1068	700	390	13651	11313	415	410	20	0.051252051
Huettner Rd	124	700	49	326	435	418	112	63	1.285714286
Hauser Lake Rd north of 53	68	800	23	13239	445	11006	19	-9	-0.321438571
Greensferry Rd	100	700	43	6343	446	413	65	22	0.511627907
Totals	1606		602				729	127	0.210863455
Lancaster Rd. Screenline # 9									
Southbound									
Greensferry Rd	158	700	57	194	330	1144	0	-57	-1
Government Way	329	700	147	13442	339	11126	29	-118	-0.802721088
Strahom Rd	34	800	15	13461	341	11135	29	14	0.933333333
Rimrock Rd/Meadowwood Ln	42	800	19	221	344	351	34	5	0.263157895
Meyer Rd	430	700	175	13634	1093	11207	123	-52	-0.297142857
English Point Rd	16	700	7	1279	900	357	0	-7	-1
Huettner Rd	2757	600	30	9472	334	9412	133	103	3.483333333
US 95	2688	700	1091	9551	338	9418	1072	-19	-0.017415215
Totals	6634		1541				1410	-131	-0.085009734
Northbound									
Greensferry Rd	91	700	37	194	1144	330	40	3	0.081081081
Government Way	168	800	73	13442	11126	339	60	-13	-0.178082192
Strahom Rd	95	700	47	13461	11135	341	8	-39	-0.829787234
Rimrock Rd/Meadowwood Ln	128	700	55	221	351	334	44	-14	-0.24137931
Meyer Rd	155	700	70	13634	11207	1093	109	39	0.557142857
English Point Rd	11	800	6	1279	357	900	0	-6	-1
Huettner Rd	64	700	24	9472	9412	334	50	26	1.083333333
US 95	1411	700	493	13638	9983	11210	856	403	0.817444219
Totals	2120		808				1207	399	0.493811681
SH 53 - US 95 Screenline # 10									
Eastbound									
BNSF RR Bridge in Rathdrum	933	700	352	13898	263	11331	227	-125	-0.355113636
Ramsay Rd	530	800	185	104	1137	269	230	45	0.243243243
US 95 n/o SH53	2340	700	851	1308	252	271	515	-336	-0.394828612
Govt Way e/o US95	101	700	44	13643	11211	300	32	-12	-0.272727273
Totals	3804		1432				1004	-428	-0.258852682
Westbound									
BNSF RR Bridge in Rathdrum	1502	700	589	13898	11331	263	242	-347	-0.589134126
Ramsay Rd	229	800	109	104	269	1137	217	106	0.990825688
US 95 n/o SH53	1227	700	425	13654	11211	11215	526	101	0.237647059
Govt Way e/o US95	110	800	48	13643	300	11211	64	36	0.750000000
Totals	3066		1171				1069	-102	-0.087105038
Twin Lakes to Nat. Forest. Screenline # 11									
Southbound									
Ramsey Rd south of Brunner	196	700	71	44	226	237	89	18	0.253521127
Diagonal Rd south of Brunner	44	700	18	9610	230	1099	70	52	2.888888888
SH 41 south of Seasons Rd	1004	600	364	13078	10914	239	380	-4	-0.010416667
East Twin Lake Rd near SH 41	76	800	49	10385	9776	239	170	121	2.469387755
US 95 south of Brunner Rd	1758	700	647	13717	11245	9902	451	-196	-0.302936631
Totals	3078		1169				1160	-9	-0.007698888
Northbound									
Ramsey Rd south of Brunner	69	600	28	44	237	226	160	132	4.714285714
SH 41 south of Seasons Rd	422	700	180	13078	239	10914	281	101	0.561111111
East Twin Lake Rd near SH 41	250	700	101	10385	239	9776	186	85	0.841564156
Diagonal Rd south of Brunner Rd	98	700	39	9610	1099	230	52	13	0.333333333
US 95 south of Brunner Rd	1045	800	375	13717	9902	11245	417	42	0.112000000
Totals	1894		723				1086	373	0.515905947
US 95 to SH 3 South Screenline # 12									
Southbound									
SH 97 north of Harrison	32	700	17	13052	1061	10899	75	58	3.411764706
Cave Bay Rd @ Rock Creek	62	800	25	1206	1073	10015	0	-25	-1
SH 97 north of SH 3	72	800	28	1213	1077	1078	42	14	0.500000000
US 95 S/O Worley	483	700	210	1217	1079	1085	232	22	0.104781905
SH 3 @ Benawah Co Line	319	700	136	1220	1081	1083	70	-66	-0.485294118
US 95 N/O Worley	444	700	200	13614	11168	11199	279	79	0.395000000
Ogara Rd west of SH 97	106	800	44	10283	9726	9364	66	22	0.500000000
Totals	1518		660				764	104	0.157575758
Northbound									
SH 97 north of Harrison	70	600	37	13052	10899	1061	52	15	0.405405405
Cave Bay Rd @ Rock Creek	52	700	22	1206	10015	1073	4	-18	-0.818181818
SH 97 north of SH 3	52	600	18	1213	1078	1077	51	33	1.833333333
US 95 S/O Worley	435	700	182	1217	1085	1079	174	-8	-0.043956044
SH 3 @ Benawah Co Line	179	700	78	1220	1083	1081	52	-26	-0.333333333
Ogara Rd west of SH 97	96	700	43	10283	9364	9726	27	-16	-0.372093023
US 95 N/O Worley	460	800	183	13614	11199	11168	190	7	0.038251366
Totals	1344		563				550	-13	-0.028090580
Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count

Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
SH 93 to LaTour Creek Rd Screenline # 13									
Southbound									
UpRiver Dr west of US 95	54	800	28	13235	11004	940	94	86	2.357142857
SH 3 S/O I 90	147	700	52	1148	1030	1034	282	230	4.423076923
SH 97 N/O Burma	193	600	76	13759	1017	11266	104	28	0.368421053
Cougar Gulch Rd west of US 95	71	700	32	9644	969	9457	41	9	0.281250000
LaTour Creek Rd south of I 90	10	800	5	11687	10339	1057	20	15	3.000000000
Totals	475		193				541	348	1.803108808
Northbound									
Sh 3 S/O I 90	237	700	95	1148	1034	1030	168	73	0.768421053
SH 97 N/O Burma	393	700	173	13759	11266	1017	144	-29	-0.167630058
Cougar Gulch Rd west of US 95	235	800	114	9644	9457	969	77	-37	-0.324561404
LaTour Creek Rd south of I 90	33	600	16	11687	1057	10339	13	-3	-0.187500000
Totals	898		398				402	4	0.010050251
Spirit Lake Pend'O Reille Screenline #14									
Southbound									
SH 41 south of Spirit Lake	999	600	351	13597	11191	213	387	36	0.102564103
Perimeter Rd north of SH 54	46	600	18	13462	202	11136	39	21	1.166666667
US 95 north of Athol	694	700	254	10563	201	9857	308	54	0.212534235
SH 41 north of Spirit Lake	674	600	246	13800	11192	198	200	-46	-0.186991870
Totals	2413		869				934	65	0.074798619
Northbound									
SH 41 south of Spirit Lake	446	800	184	13597	213	11161	293	109	0.502391304
Perimeter Rd north of SH 54	17	700	6	13462	11136	202	16	10	1.666666667
US 95 north of Athol	803	800	286	10563	9857	201	291	5	0.017482517
SH 41 north of Spirit Lake	296	800	138	13800	198	11192	127	-11	-0.079710145
Totals	1562		614				727	113	0.184039088
EAST - WEST SCREENLINES - KMPO									
Pleasant View Rd. Screenline # 15									
Eastbound									
SH 53	997	700	366	13930	440	11347	289	-77	-0.210382514
Seltice Way	564	800	231	13164	647	10965	200	-31	-0.134199134
Prairie Rd	256	700	98	8834	473	9019	90	-8	-0.081632853
Riverbend Ave	92	800	41	9371	9222	9226	81	-13161	321.000000000
SH 53 (W/O Prairie Ave)	762	700	273	10750	9945	471	207	-66	-0.241758242
Poleline Ave	28	800	11	13161	544	10964	1	-10	-0.909090909
Totals	2699		1020				868	-152	-0.149019608
Westbound									
SH 53	1174	600	487	13930	11347	440	648	161	0.330595483
Seltice Way	693	700	242	13164	10965	647	489	247	1.026611557
Prairie Rd	339	700	133	8834	9019	473	125	-8	-0.060150376
Riverbend Ave	189	700	74	9371	9226	9222	727	653	8.824324324
SH 53 W/O Prairie Ave	1444	600	544	10750	471	9945	470	-74	-0.136029412
Poleline Ave	88	700	34	13161	10964	544	1	-33	-0.970588235
Totals	3927		1514				2460	946	0.624834675
McGuire Rd. Screenline # 16									
Eastbound									
SH 53	829	800	308	248	401	366	344	36	0.116893117
Seltice Way	964	800	405	13231	651	652	406	1	0.002469136
Poleline Ave	114	700	44	10165	547	9672	44	0	0.000000000
Prairie Rd	300	700	120	13581	478	9907	122	-21	-0.016688887
Totals	2207		877				916	39	0.044469783
Westbound									
SH 53	1468	700	553	248	366	401	709	156	0.282097649
Seltice Way	746	800	321	13231	11002	651	621	300	0.934579439
Poleline Ave	107	700	39	10168	9672	547	145	106	2.717948718
Prairie Rd	317	700	118	13591	9907	11189	226	108	0.915254237
Totals	2638		1031				1701	670	0.649854510
Chase Rd. Screenline # 17									
Eastbound									
Hayden Rd.	251	700	101	308	411	1148	69	-32	-0.316831683
Prairie Rd	392	700	163	13173	478	479	107	-56	-0.343558282
Poleline Ave	217	700	98	506	550	551	134	36	0.367346939
Seltice Way	1282	800	548	12744	9439	10635	495	-53	-0.066715328
Totals	2142		910				805	-105	-0.115384615
Westbound									
Hayden Rd.	260	700	100	308	1148	411	141	41	0.410000000
Prairie Rd	323	700	119	13173	10970	478	205	86	0.722689076
Poleline Rd	222	800	87	506	551	550	216	129	1.482758621
Seltice Way	870	800	403	12744	10635	9439	627	224	0.555831266
Totals	1675		709				1189	480	0.677009873
Spokane St. Screenline # 18									
Eastbound									
Prairie Rd.	504	700	213	410	480	401	153	60	-0.281690141

Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
Potoline Ave.	547	700	249	13478	11141	553	160	-89	-0.357429719
4th St	277	700	120	743	753	721	105	-15	-0.125000000
Seltice Way	1010	800	482	13899	9004	11332	453	-29	-0.060165975
3rd St	282	800	124	10721	765	9930	141	17	0.137096774
Totals	2620		1188				1012	-176	-0.148148148
Westbound									
Prairie Rd	416	700	153	410	481	480	275	122	0.707385621
Potoline Ave.	529	800	217	13478	553	11141	238	21	0.096774194
4th St	168	800	73	743	721	753	55	-16	-0.246575342
Seltice Way	1019	800	425	13899	11332	9004	587	162	0.381176471
3rd St	463	700	183	10721	9930	765	196	13	0.071038251
Totals	2595		1051				1351	300	0.288442436
Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
Idaho St. Screenline # 19									
Eastbound									
Prairie Rd.	584	700	240	413	482	483	217	-23	-0.095833333
Potoline	651	700	304	13802	554	11283	116	-188	-0.618421053
Seltice Way	1542	700	661	689	682	709	646	-15	-0.022692890
4th St	142	700	58	747	724	725	35	-23	-0.396551724
Totals	2919		1283				1014	-249	-0.197149644
Westbound									
Prairie Rd	444	700	176	413	483	482	311	135	0.767045455
Potoline	577	700	228	13802	11283	554	164	-44	-0.192662456
Seltice Way	973	800	449	689	709	682	611	162	0.360801782
4th St	24	700	15	747	725	724	7	-8	-0.533333333
Totals	2018		868				1113	245	0.282258065
Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
Greensferry Rd. Screenline # 20									
Eastbound									
Prairie Rd.	644	700	252	421	486	487	221	-31	-0.123015873
Potoline Ave	1030	700	482	519	558	559	287	-195	-0.404564315
10th	151	700	73	587	606	607	144	71	0.972602740
12th	136	700	67	628	635	636	81	24	0.421052632
Mullan Ave	635	800	276	667	664	665	316	40	0.144927535
Seltice Way	1070	800	430	13807	11285	728	461	31	0.072093023
Wyoming Ave	54	700	18	1246	1101	1154	1	-17	-0.944444444
Hayden Rd	343	700	132	6243	413	414	103	-30	-0.227272727
SH 53	716	700	285	8854	309	9029	428	140	0.485111111
3rd St	240	800	95	10720	9929	771	57	-38	-0.400000000
Totals	5019		2103				2098	-5	-0.002377556
Westbound									
Prairie Rd	443	800	177	421	487	486	297	120	0.677096102
Potoline Ave.	471	800	202	519	559	558	121	-81	-0.400990099
10th	151	700	77	587	607	606	119	42	0.548454545
12th	131	700	52	628	636	635	24	-28	-0.538461538
Mullan Ave	592	800	282	667	665	664	235	-47	-0.166666667
Seltice Way	860	800	427	13807	728	11285	408	-19	-0.044486487
Wyoming Ave	58	700	28	1246	1154	1101	10	-18	-0.642857143
Hayden Rd	330	700	118	6243	414	413	185	67	0.567796610
SH 53	1352	600	564	8854	9029	309	638	74	0.131205674
3rd St	228	800	88	10720	771	9929	92	4	0.045454545
Totals	4616		2015				2129	114	0.056575682
Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
SH 41 Screenline # 21									
Eastbound									
McCarney St N/O SR41	91	800	40	128	287	293	31	-9	-0.225
Potoline Rd	662	700	254	13801	561	562	170	-84	-0.330788661
Mullan Ave	863	800	351	672	668	669	349	-2	-0.00568006
Seltice Way	2333	800	947	9318	9382	734	679	-168	-0.198347107
Lancaster	16	700	6	9346	1151	332	0	-6	-1.000000000
Wyoming	161	800	65	9449	9037	1094	1	-64	-0.984615385
Seltice Way (Duplicate - new count)	2145	700	870	10417	731	9382	679	-191	-0.219540230
Nagel Ln	231	800	102	13703	11238	324	186	84	0.823529412
Prairie Rd	629	700	232	10990	10057	498	225	-7	-0.030172414
Hayden Rd	340	700	131	11241	10138	415	109	-22	-0.167838931
Boekel Rd	87	700	33	11679	10335	310	88	65	1.969696970
Totals	7558		2931				2527	-404	-0.137836916
Westbound									
McCarney St N/O SR41	133	800	52	128	293	287	7	-45	-0.885384615
Potoline Rd	542	700	261	13801	562	561	190	-71	-0.272030851
Mullan Ave	723	800	343	672	669	668	306	-37	-0.107871720
Seltice Way	912	800	443	9318	734	9382	165	-278	-0.627539503
Lancaster	21	600	8	9346	332	1151	2	-6	-0.750000000
Wyoming	125	800	55	9449	1094	9037	10	-45	-0.818181818
Seltice Way (Duplicate - new count)	797	800	341	10417	9382	731	413	72	0.211143695
Nagel Ln	161	800	108	13703	324	11238	69	-39	-0.361111111
Prairie Rd	438	800	175	10990	488	10057	299	124	0.708571429
Hayden Rd	330	700	120	11241	415	10138	188	68	0.566666667
Boekel Rd	32	800	15	11679	301	10335	72	57	3.800000000
Totals	4214		1921				1721	-200	-0.104112441
Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
Huetter Rd Screenline # 22									
Eastbound									
Wyoming Ave	3	700	2	250	1160	367	0	-2	-1
Hayden Rd	848	700	325	323	417	418	338	13	0.04
Prairie Rd	1185	700	465	432	494	491	409	-56	-0.120430108

Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count
Ramsey Rd Screenline # 23									
Eastbound									
Ohio Match Rd	29	800	13	65	245	1139	22	9	0.692307692
Garwood Rd	277	600	101	76	251	1140	31	-70	-0.663069307
Hwy 53	981	6,00	348	103	269	270	288	-80	-0.229885057
Lancaster Ave	148	700	51	207	336	337	181	130	2.549019608
Wyoming Ave	221	700	85	251	368	369	20	-65	-0.764705882
Miles Ave	52	800	22	276	397	388	10	-12	-0.545454545
Hayden Ave	769	700	289	332	422	423	196	-93	-0.321799308
Honeysuckle Ave	226	800	103	13457	450	11133	52	-51	-0.495145631
Praine Ave	2092	700	574	13926	498	11345	505	69	0.120209059
Appleyway	782	800	350	8917	813	9097	204	-146	-0.417142857
Kathleen Ave	1629	700	692	9440	689	9087	406	-286	-0.413294798
Dalton Ave	397	700	189	13949	613	11306	58	-131	-0.893121693
Hanley Ave	706	700	274	9492	569	9100	433	168	0.576642336
Ironwood Dr	1512	800	600	10300	857	9734	540	-60	-0.100000000
Boekel Rd	288	800	109	11559	9032	10275	136	27	0.247706422
Wilbur Ave Pinegrove	181	700	76	12891	524	10788	195	119	1.565789474
Totals	10290		3876				3256	-620	-0.159958720
Westbound									
Ohio Match Rd	55	700	22	65	1139	245	15	-7	-0.318181818
Garwood Rd	114	800	60	76	1140	251	24	-36	-0.6
Hwy 53	877	700	240	103	270	269	308	68	0.283333333
Lancaster Ave	75	700	36	207	337	336	218	182	5.055555556
Wyoming Ave	252	700	100	251	369	368	42	-58	-0.580000000
Miles Ave	134	600	48	276	388	387	32	-16	-0.333333333
Hayden Ave	780	800	303	332	423	422	292	-11	-0.036303630
Honeysuckle Ave	194	800	80	13457	451	450	84	-4	0.050000000
Praine Ave	1066	700	397	13926	9050	498	560	163	0.410579345
Appleyway	808	800	347	8917	9097	813	205	-142	-0.409221902
Kathleen Ave	1133	800	495	9440	9087	689	218	-277	-0.559595960
Dalton Ave	360	700	169	13949	9083	613	87	-82	-0.485207101
Hanley Ave	562	700	264	9492	610	569	278	14	0.053030303
Boekel Rd	141	600	55	11559	10275	9032	100	45	0.818181818
Wilbur Ave Pinegrove	197	700	74	12891	10788	524	119	45	0.808108108
Ironwood Dr	503	800	235	10300	9734	857	520	285	1.212765957
Totals	7051		2925				3102	177	0.060512821
US 95 Screenline # 24									
Eastbound									
Ohio Match Rd	31	800	16	66	246	247	13	-3	-0.1875
Garwood Rd	100	800	54	13780	252	253	56	2	0.037037037
Lancaster Ave	171	800	69	13640	338	339	87	18	0.260666667
Hayden Ave	616	800	260	12169	10494	427	271	11	0.042307692
Honeysuckle Ave	540	800	230	13841	10493	11302	338	108	0.469585217
Praine Ave	833	800	359	12159	10491	501	335	-24	-0.068852368
Dalton Ave	657	700	307	12129	10488	616	318	11	0.035830619
Kathleen Ave	802	800	354	12917	10487	10803	362	38	0.107344633
Neider Ave	560	800	270	11795	10485	762	333	63	0.233333333
Appleyway Ave	1004	800	458	874	831	832	439	-19	-0.041484716
Ironwood Blvd	608	800	262	13002	868	10867	307	25	0.088652482
Walnut St	282	700	116	970	892	898	101	-15	-0.129310345
Hanley Ave	749	700	292	12132	10495	9054	411	119	0.407934247
US 95 S by Spokane River	918	800	360	10649	851	8895	300	-60	-0.166868687
Old US 95 n/o SH53	241	700	85	10666	9821	9903	87	-11	-0.011363636
Miles Ave	331	700	145	10833	9982	392	58	-87	-0.800000000
Wyoming Ave	159	800	71	10838	9983	373	107	36	0.507042254
Totals	8602		3731				3953	222	0.059501474
Westbound									
Ohio Match Rd	101	700	45	66	247	246	7	-38	-0.844444444
Garwood Rd	355	700	153	13780	253	252	117	-36	-0.235294118
Lancaster Ave	125	800	44	13640	339	338	249	205	4.659090909
Hayden Ave	914	800	359	12169	427	10494	251	-108	-0.300835655
Honeysuckle Ave	587	800	250	13841	11302	10493	245	-5	-0.020000000
Praine Ave	736	700	288	12159	501	10491	491	203	0.704881111
Dalton Ave	486	700	202	12129	616	10488	268	66	0.326732673
Kathleen Ave	873	700	369	12917	10803	10487	385	16	0.043360434
Neider Ave	438	800	195	11795	762	10485	275	80	0.410256410
Appleyway Ave	1013	800	392	874	832	831	525	133	0.339285714
Ironwood Blvd	928	800	442	13002	10867	868	665	223	0.504524887
Walnut St	207	800	77	970	898	892	177	100	1.286701289
Hanley Ave	862	700	260	12132	9054	10495	209	-51	-0.196153946
US 95	912	800	395	10649	8995	851	946	551	1.394936709
Old US 95 n/o SH53	456	700	182	10666	9903	9821	133	-49	-0.269230769

Location	AM Total	M Peak Tr	M Peak Cou	Link #	From Node	To Node	Peak Volume	Peak Volume	Actual AM Peak Count	
Miles Ave	264	700	101	10833		392	9982	62	-39	-0.386138614
Wyoming Ave	231	700	92	10838		373	9983	123	31	0.336956522
Totals	9288		3846					5128	1282	0.333333333
West Side KMPO Screenline # 25										
Eastbound										
Seltice Way W/O Beck Rd	377	700	142	8826	9015	717	347	205		1.443661972
Rockford Bay Rd east of US 95	205	600	92	9001	1046	9177	16	-76		-0.82608957
Elder Rd @ Washington Line	61	600	25	9274	1049	9355	0	-25		-1.000000000
SH 58 @ Washington Line	241	700	82	9283	1068	9362	102	20		0.243902439
Conking Rd east of US 95	23	800	8	13365	1079	11081	56	48		6.000000000
SH 53 @ Washington State Line	499	700	178	13244	514	11008	184	6		0.033707885
Totals	1406		527				705	178		0.337760911
Westbound										
Seltice Way W/O Beck Rd	564	700	199	8826	717	9015	441	242		1.216080402
Rockford Bay Rd east of US 95	116	700	41	9001	1046	9177	12	-29		-0.707317073
Elder Rd @ Washington Line	60	700	28	9274	9355	1049	0	-28		-1.000000000
SH 58 @ Washington Line	141	800	59	9283	9362	1068	67	3		0.058417458
Conking Rd east of US 95	34	700	16	13365	11081	1079	52	36		2.250000000
SH 53 @ Washington State Line	1191	600	478	13244	514	11008	480	2		0.004184100
Totals	2106		821				1047	226		0.275274056
East Side KMPO Screenline # 26										
Eastbound										
Bunco Rd @ Nunn Rd	8	700	4	13713	231	11243	7	3		0.75
Ohio Match Rd East of Rimrock Rd	39	600	15	13950	249	250	16	1		0.066666667
Mullan Trail Rd north of I 90	48	800	24	1075	980	976	74	50		2.083333333
Sunnyside Rd south of Mullan Trail	21	800	10	1089	990	987	20	10		1.000000000
I 90 @ Shoshone Co. Line	1065	700	416	1160	1040	1042	275	-141		-0.338942308
Fernan Lake Rd @ Cda City Limit	28	800	11	10296	949	9965	28	17		1.545454545
SH 54 West of Farragut Park Entrance	180	600	81	10875	9999	200	110	29		0.358024691
Lancaster Rd east of Rimrock	116	700	51	11515	344	10253	33	-18		-0.352941176
Totals	1505		612				563	-49		-0.080065359
Westbound										
Bunco Rd @ Nunn Rd	55	700	21	13713	11243	231	7	-14		-0.666666667
Ohio Match Rd East of Rimrock Rd	26	600	9	13950	11357	249	6	-3		-0.333333333
Mullan Trail Rd north of I 90	186	700	96	1075	976	980	103	7		0.072016667
Sunnyside Rd south of Mullan Trail	30	800	26	1089	987	990	39	13		0.500000000
I 90 @ Shoshone Co. Line	763	700	290	1167	1037	1041	264	-26		-0.089855172
Fernan Lake Rd @ Cda City Limit	24	700	10	10296	9965	949	155	145		14.500000000
SH 54 West of Farragut Park Entrance	235	700	102	10875	399	9999	97	-5		-0.049019608
Lancaster Rd east of Rimrock	139	800	55	11515	10253	344	70	15		0.272727273
Totals	1458		609				741	132		0.216748768
Government Way Screenline # 27										
Eastbound										
Lancaster Ave	169	800	80	13640	11210	339	87	7		0.0875
Miles Ave	141	800	60	285	393	394	20	-40		-0.666666667
Hayden Ave	305	800	132	341	428	428	96	38		-0.272727273
Honeysuckle Ave	233	800	108	13829	456	457	158	50		0.462962963
Prairie Ave	413	800	170	448	502	503	191	21		0.128529412
Wilbur Ave	67	700	31	475	527	528	4	-27		-0.870967742
Hanley Ave	255	800	117	13792	573	11279	90	-27		-0.230769231
Dalton Ave	633	700	317	602	617	618	285	-32		-0.100946372
Appleway/Best Ave	839	800	401	877	833	834	392	-9		-0.022443890
Neider Ave	317	800	157	816	777	779	136	-21		-0.133757962
N/O Sherman Ave	1062	800	443	1032	944	951	542	99		0.223476298
Wyoming Ave	31	800	15	8875	374	9044	66	51		3.400000000
Government Way	232	800	114	10297	944	9733	160	46		0.403508772
Harrison Ave	437	800	196	10468	9872	900	227	236		2.622222222
Foster Ave	107	700	48	13015	9825	10875	134	31		0.188163265
Margaret Ave	539	800	231	11310	10160	694	156	86		1.791686667
Totals	5780		2620				2744	124		0.047328244
Westbound										
Lancaster Ave	348	700	139	13640	339	11210	249	110		0.791366906
Miles Ave	287	700	114	285	394	393	52	62		-0.548859649
Hayden Ave	584	800	242	341	428	428	186	-56		-0.231404959
Honeysuckle Ave	466	800	190	13829	456	456	323	133		0.700000000
Prairie Ave	1075	700	458	448	503	502	610	152		0.331877729
Wilbur Ave	109	700	43	475	528	527	11	-32		-0.744186047
Hanley Ave	482	700	196	13792	573	11279	182	-14		-0.071428571
Dalton Ave	589	700	258	602	618	617	332	74		0.286821705
Neider Ave	567	800	230	816	779	777	325	95		0.413043478
Appleway/Best Ave	1112	800	440	877	834	833	595	155		0.352227272
N/O Sherman Ave	790	800	350	1032	951	944	527	177		0.505714286
Wyoming Ave	110	700	46	8875	374	9044	374	98		1.130434783
Government Way	174	800	90	10297	9733	944	326	133		0.536290323
Harrison Ave	600	800	248	10468	900	9812	381	144		1.920000000
Foster Ave	159	800	75	13015	10875	9825	219	-115		-0.236391753
Margaret Ave	344	700	388	11310	10160	694	273	1182		0.337040205
Totals	8296		3507				4689	1182		0.337040205
I 90 Ramps Screenline # 28										
Eastbound										
I 90 Ramp @ Spokane St EB Off	698	700	279	713	701	703	231	-48		-0.172043011

I 90 Ramp @ Spokane St EB On	1158	700	466	717	703	704	461	-5	-0.010729614
I 90 Ramp @ Sellice Way EB On	860	700	361	749	726	712	436	75	0.207756233
SR 90 @ Pleasant View Rd	795	700	312	786	752	719	357	45	0.144230769
SR 90 @ Pleasant View Rd EB Off	787	700	285	785	751	752	412	127	0.445614035
I 90 Ramp @ NW Blvd/Ramsey EB Off	2557	700	996	866	826	843	774	-222	-0.222891566
I 90 Ramp @ NW Blvd/Ramsey EB On	790	700	305	892	843	844	269	-37	-0.121311479
I 90 Ramp @ US 95 EB Off	1726	700	648	12707	847	859	610	-38	-0.058611975
I 90 Ramp @ US 95 EB On Ramp	528	800	194	915	859	849	311	117	0.603022784
I 90 Ramp @ 3rd/4th St EB On	353	700	134	919	861	867	181	47	0.350746269
I 90 Ramp @ SH 41 EB Off	1050	700	407	12739	10742	731	203	-204	-0.501228501
I 90 Ramp @ 23rd St EB On	195	700	73	8818	9011	968	117	44	0.602739726
I 90 Ramp @ SH 41 EB On	1493	700	586	10250	9709	736	642	56	0.095563140
I 90 Ramp @ 3rd/4th St EB Off	1247	700	520	10408	860	9788	527	7	0.013461538
I 90 Ramp @ 15th St EB On	177	800	68	10428	9795	912	120	52	0.764705882
I 90 Ramp @ 15th St EB Off	596	700	241	10430	885	9796	248	7	0.029045643
I 90 Ramp @ 23rd St (One Way) EB Off	625	800	239	10758	947	9948	166	-73	-0.305439331
Totals	15635		6114				6064	50	0.006177952
Westbound									
I 90 Ramp @ Spokane St WB On	1551	700	639	684	679	677	459	-180	-0.281690141
I 90 Ramp @ Spokane St WB Off	574	800	232	720	705	679	377	145	0.625
I 90 Ramp @ Sellice Way WB Off	603	800	234	729	713	711	197	-37	-0.158119658
I 90 Ramp @ SH 41 WB On	1667	700	623	731	714	733	549	-74	-0.118760096
SR 90 @ Pleasant View Rd WB On	935	600	335	737	718	750	441	106	0.316417910
SR 90 @ Pleasant View Rd WB Off	873	700	315	740	720	718	676	361	1.146031746
I 90 Ramp @ NW Blvd/Ramsey WB On	1495	700	570	869	828	827	803	-233	0.403771930
I 90 Ramp @ NW Blvd/Ramsey WB Off	926	700	437	896	845	828	209	-238	-0.521739130
I 90 Ramp @ US 95 WB On	1151	800	431	900	848	846	342	-89	-0.208496520
I 90 Ramp @ US 95 WB Off	874	700	316	904	850	848	433	117	0.370253165
I 90 Ramp @ 3rd/4th St WB On	1164	700	452	907	853	852	567	115	0.254424779
I 90 Ramp @ 3rd/4th St WB Off	505	700	201	923	863	853	140	-61	-0.303482587
I 90 Ramp @ 23rd St WB On	677	700	275	1059	964	948	206	-69	-0.250909091
I 90 Ramp @ 23rd St WB Off	202	700	83	1061	965	964	83	0	0.000000000
I 90 Ramp @ 15th St WB Off to Hazel	124	700	55	8814	911	9009	5	-50	-0.900090909
I 90 Ramp @ SH 41 WB Off	866	800	326	10422	737	9792	399	73	0.223926380
I 90 Ramp @ 15th St WB On	1314	700	558	10432	9797	878	506	-52	-0.093189964
Totals	15501		6082				6392	310	0.050970076

Screenline	Peak Actual Directional Count	Peak Modeled Directional	Modeled - Actual AM Peak Count	(Modeled - Actual) / Actual AM Peak Count * 100	Peak Actual Bi-Directional	Peak Modeled Bi-Directional	Peak Volume - Actual Bi-Directional	(Actual) / Actual Bi-Directional	Allowable Deviation per TMP	Within Allowable Deviation?
SRAID Screenlines Screenlines										
Spokane River Crossing Screenline # 1										
Southbound	704	1291	587	83	1531	2273	742	48.46506	63	Y
Northbound	827	982	155	19						
Sellice Screenline # 2										
Southbound	2202	2336	134	6	3824	4334	510	13	61	Y
Northbound	1622	1990	376	23						
Harrison Ave Screenline # 3										
Southbound	1258	1321	63	5	2519	2473	-46	-2	63	Y
Northbound	1261	1152	-109	-9						
Appleway Ave/Best Screenline # 4										
Southbound	1964	2397	433	22	1385	4372	2987	20	61	Y
Northbound	1421	1678	254	18						
Sellice Way/Mullan Rd/Kathleen Screenline # 5										
Southbound	7044	6892	-152	-2	11855	12059	204	2	63	Y
Northbound	4811	5167	356	7						
Poleline Rd Screenline # 6										
Southbound	6124	6089	-35	-1	10059	9842	-217	-2	66	Y
Northbound	3525	3953	428	12						
Prairie Rd. Screenline # 7										
Southbound	4804	5028	222	5	7642	8612	970	11	66	Y
Northbound	2830	3486	648	23						
Hayden Ave Screenline # 8										
Southbound	1066	926	-140	-13	1668	1655	-13	-1	64	Y
Northbound	802	729	-73	-9						
Lancaster Rd. Screenline # 9										
Southbound	1541	1410	-131	-9	2349	2617	268	11	62	Y
Northbound	808	1207	399	49						
SH 53 - US 95 Screenline # 10										
Southbound	1432	1004	-428	-30	2603	2073	-530	-20.3611	63	Y
Northbound	1171	1069	-102	-9						
Twin Lakes Nat. Forest Screenline # 11										
Southbound	1169	1160	-9	-1	1092	2256	1164	19	63	Y
Northbound	723	1096	373	52						
US 95 to SH 3 Screenline # 12										
Southbound	660	764	104	16	1223	1314	91	7	64	Y
Northbound	963	850	-113	-12						
SH 93 to LaTour Creek Screenline # 13										
Southbound	193	541	348	180	991	943	-48	-5	64	Y
Northbound	598	402	-196	-33						
Spirit Lake/Pand O'Reille Screenline # 14										
Southbound	939	934	-5	-1	1483	1661	178	12	64	Y
Northbound	814	720	-94	-12						
EB/WB Screenlines Screenlines										
Pleasant View Rd. Screenline # 15										
Eastbound	1020	868	-152	-15	2534	3328	794	31.33386	62	Y
Westbound	1514	2460	946	62						
McGuire Rd. Screenline # 16										
Eastbound	877	916	39	4	1908	2617	709	37	62	Y
Westbound	1031	1701	670	65						
Chase Rd. Screenline # 17										
Eastbound	910	805	-105	-12	1619	1994	375	23	63	Y
Westbound	709	1189	480	68						
Spokane St. Screenline # 18										
Eastbound	1188	1012	-176	-15	2239	2363	124	6	63	Y
Westbound	1051	1351	300	29						
Idaho St Screenline # 19										
Eastbound	1263	1014	-249	-20	2131	2127	-4	0	63	Y
Westbound	868	1113	245	28						
Greensferry Screenline # 20										
Eastbound	2103	2090	-13	-1	4118	4227	109	3	61	Y
Westbound	2018	2129	114	6						
SH 41 Screenline # 21										
Eastbound	2931	2527	-404	-14	4852	4248	-604	-12.4485	61	Y
Westbound	1921	1721	-200	-10						
Huetter Rd Screenline # 22										
Eastbound	1522	890	-632	-42	2631	2432	-199	-7.56366	63	Y
Westbound	1109	1542	433	39						
Ramsey Rd Screenline # 23										
Eastbound	3876	3256	-620	-16	8801	8365	-436	-5.1376	68	Y
Westbound	2929	3102	177	6						
US 95 Screenline # 24										
Eastbound	3731	3953	222	6	7577	9081	1504	19.84954	66	Y
Westbound	3846	5126	1282	33						
West Side KMPO Screenline # 25										
Eastbound	527	705	178	34	1349	1752	404	29.97033	63	Y
Westbound	821	1047	226	28						
East Side KMPO Screenline # 26										
Eastbound	612	563	-49	-8	1221	1304	83	6.797707	64	Y
Westbound	609	741	132	22						
Government Way Screenline # 27										
Eastbound	2620	2744	124	5	6127	7433	1306	21.31549	67	Y
Westbound	3507	4689	1182	34						
190 Ramps Screenline # 28										
Eastbound	6114	6064	-50	-1	12196	12456	260	2.131847	63	Y
Westbound	6092	6392	310	5						
Total Screenlines										
All North-South Screenlines	Total AM Peak	Total AM Modeled	Total AM Peak Count - (Modeled - Actual) AM Peak Count	(Modeled - Actual) / Actual AM Peak Count * 100	Total AM Peak	Total AM Peak	Total AM Peak	(Modeled - Actual) / Actual AM Peak Count * 100	% Allowable	Allowable Dev
Southbound	31030	31891	861	3	62624	62654	30	0.047892	31	Y
Northbound	21594	24193	2599	12						
All East-West Screenline					67302	67120	-182	-0.2704	30	Y
Eastbound	29294	27415	-1879	-6						
Westbound	20008	34305	6297	22	109926	117004	7078	7	25	Y

Appendix 1E: 2010 KMPO Model PM Peak Hour Screenline Validation Spreadsheets

**SOUTH - NORTH SCREENLINES
- KMPO**

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Spokane River Crossing Screenline #1									
Southbound									
Spokane St	1102	1700	400	13273	818	11026	305	-95	-0.2375
US 95 @ Spokane River Bridge	1818	1600	637	13617	11201	10871	797	160	0.251177394
Northwest Blvd South of US 95	2764	1600	1017	13909	11337	896	784	-233	-0.229105211
Totals	2920		1037				1102	65	0.06268081
Northbound									
Spokane St	595	1500	413	13273	11026	818	433	20	0.04842615
US 95 @ Spokane River Bridge	1780	1500	630	13617	10871	11201	991	361	0.573015873
Northwest Blvd South of US 95	2826	1500	983	13909	896	11337	1004	21	0.021363174
Totals	2375		1043				1424	381	0.365292426

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Seltice Screenline #2									
Southbound									
Ross Point Rd	1084	1700	403	9139	734	9272	435	32	0.079404467
Ramsey Rd	1979	1500	1058	10413	843	9789	1173	115	0.108695652
Huetter Rd	354	1700	122	10473	774	9814	223	101	0.827868852
Atlas Rd	928	1600	331	10477	9388	9815	441	110	0.332326284
Cedar St	594	1700	220	13219	10995	790	179	-41	-0.186363636
Seeley Rd	114	1600	48	12719	793	10733	46	-2	-0.041666667
Totals	5053		2182				2497	315	0.14436297
Northbound									

Ross Point Rd	970	1600	355	9139	9272	734	321	-34	-0.095774648
Ramsey Rd	3125	1600	1111	10413	9789	843	1775	664	0.597659766
Huetter Rd	565	1700	208	10473	9814	774	380	172	0.826923077
Atlas Rd	1082	1600	409	10477	9815	9388	664	255	0.623471883
Cedar St	349	1700	123	13219	790	10995	171	48	0.390243902
Seeley Rd	110	1600	46	12719	10733	793	62	16	0.347826087
Totals	6201		2252				3373	1121	0.497779751

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Harrison Ave. Screenline #3									
Southbound									
3rd St	1666	1500	597	977	901	917	482	-115	-0.192629816
7th St	460	1500	161	13875	904	11320	166	5	0.031055901
11th St	254	1700	88	986	907	920	44	-44	-0.5
15th St	2061	1700	790	990	910	921	520	-270	-0.341772152
Government Way	1056	1600	370	8963	899	9144	364	-6	-0.016216216
Totals	5497		2006				1576	-430	-0.214356929
Northbound									
7th St	482	1500	185	13875	11320	904	111	-74	-0.4
11th St	247	1600	95	986	920	907	53	-42	-0.442105263
15th St	1450	1500	496	990	921	910	550	54	0.108870968
4th St	2551	1600	872	10854	9988	902	622	-250	-0.286697248
Government Way	1163	1600	404	13762	11267	9812	556	152	0.376237624
Totals	5893		2052				1892	-160	-0.07797271

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Appleway Ave/Best Screenline #4									
Southbound									

Government Way	1997	1700	705	12956	833	10830	1099	394	0.558865248
15th St	1333	1700	466	889	841	866	316	-150	-0.321888412
SR 95 (North by Haycraft)	3408	1700	1307	9429	814	9113	1209	-98	-0.074980872
Totals	6738		2478				2624	146	0.058918483
Northbound									
Government Way	2716	1600	952	12956	10830	833	1329	377	0.396008403
15th St	1382	1700	475	889	866	841	181	-294	-0.618947368
SR 95 (North by Haycraft)	1675	1700	1331	10844	9975	9984	1413	82	0.061607814
Totals	5773		2758				2923	165	0.059825961

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Seltice/Mullan Rd/Kathleen Screenline #5									
Southbound									
Spokane St.	1454	1500	526	13788	658	11277	490	-36	-0.068441065
Idaho St.	1701	1500	593	13790	660	11278	560	-33	-0.055649241
Greensfery Rd	125	1600	53	688	664	683	168	115	2.169811321
SR 41	3777	1500	1300	13916	669	11340	967	-333	-0.256153846
Huetter Rd	291	1500	98	691	685	738	222	124	1.265306122
Atlas Rd	673	1600	273	693	687	739	366	93	0.340659341
Ramsey Rd	4436	1600	1522	13448	689	11129	1003	-519	-0.340998686
4th St	953	1600	352	12931	10735	10813	254	-98	-0.278409091
15th St	1112	1600	393	711	698	716	402	9	0.022900763
Pleasant View Rd,	395	1500	145	8830	9017	647	533	388	2.675862069
US 95	4180	1600	1434	9557	691	9421	1287	-147	-0.10251046
Baugh Rd	304	1500	116	13224	10998	9015	166	50	0.431034483
Government Way	2307	1500	790	13820	10160	11292	710	-80	-0.101265823
Totals	21708		7595				7128	-467	-0.061487821
Northbound									
Spokane St.	2043	1700	743	13788	11277	658	883	140	0.188425303
Idaho St	2653	1600	962	13790	11278	660	897	-65	-0.067567568
Greensfery Rd	326	1600	125	688	683	664	253	128	1.024
SR 41	3902	1700	1356	13916	11340	669	901	-455	-0.335545723
Huetter Rd	522	1600	201	691	738	685	379	178	0.885572139
Atlas Rd	734	1600	291	693	739	687	505	214	0.735395189
Ramsey Rd	4303	1600	1481	13448	11129	689	1538	57	0.038487508
4th St	1299	1500	499	12931	10813	10735	424	-75	-0.150300601
15th St	1240	1700	452	711	716	698	270	-182	-0.402654867
Pleasant View Rd	664	1600	257	8830	647	9017	589	332	1.291828794
US 95	4055	1500	1396	12128	10486	10487	1447	51	0.036532951
Baugh Rd	389	1500	150	13224	9015	10998	134	-16	-0.106866667
Government Way	2647	1600	912	13820	11292	10160	874	-38	-0.041666667
Totals	24777		8825				9094	269	0.030481586

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Poleline Rd Screenline #6									
Southbound									
Pleasant View Rd	529	1600	189	496	544	595	533	344	1.82010582
Chase Rd.	539	1600	184	507	550	579	33	-151	-0.820852174
Spokane St	697	1600	238	13865	552	11315	267	29	0.121848739
Idaho St	1027	1600	354	13864	554	11314	257	-97	-0.274011299
Greensfery Rd.	332	120	113	520	558	583	75	-38	-0.336283186
SR41	2154	747	704	526	562	585	812	108	0.153409091
Ramsey Rd	1829	1500	652	536	569	590	550	-102	-0.156441718
Government Way	2126	1500	768	542	573	592	777	9	0.01171875
15th St	580	1600	199	548	577	594	113	-86	-0.432160804
Huetter Rd	334	1500	115	559	1100	587	219	104	0.904347826
US 95	3983	1500	1392	1671	571	615	1523	131	0.094109185
4th St	906	1500	317	13483	11142	9052	115	-202	-0.637223975
Atlas Rd	1029	1600	355	13855	9458	11309	499	144	0.405633803
Totals	18065		5580				5773	193	0.034587814
Northbound									
Pleasant View Rd	962	1600	335	496	595	544	589	254	0.758208955
Chase Rd	416	1500	144	507	579	550	73	-71	-0.493055556

Spokane St	1028	1700	382	13865	11315	552	482	100	0.261780105
Idaho St	1192	1700	435	13864	11314	554	381	-54	-0.124137931
Greensfery Rd	386	1700	137	520	583	558	91	-46	-0.335766423
SR41	2754	1010	952	526	585	562	890	-62	-0.06512605
Ramsey Rd	2646	1600	905	536	590	569	1017	112	0.123756906
Government Way	2242	1600	776	542	592	573	797	21	0.027061856
15th St	768	1700	270	548	594	577	82	-188	-0.696296296
Huetter Rd	505	1600	190	559	587	1100	351	161	0.847368421
US 95	4510	1600	1545	1671	615	571	1802	257	0.166343042
4th St	1128	1700	401	13483	9052	11142	221	-180	-0.448877805
Atlas Rd	1431	1600	508	13855	11309	9458	674	166	0.326771654
Totals	19968		6980				7450	470	0.067335244

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Prairie Rd. Screenline #7									
Southbound									
Idaho Rd.	460	1600	170	13202	482	10986	168	-2	-0.011764706
Huetter Rd	553	1600	197	434	491	522	328	131	0.664974619
Ramsey Rd	1551	1600	666	13847	498	11305	548	-118	-0.177171777
US 95	3564	1500	1256	13885	500	11325	1489	233	0.185509554
Government Way	1554	1500	581	13796	502	11281	541	-40	-0.068846816
4th St	823	1600	305	452	504	512	208	-97	-0.318032787
Atlas Rd	880	1700	300	9330	496	9061	521	221	0.736666667
McGuire Rd	157	1700	56	13592	11190	11188	208	152	2.714285714
15th St	235	1500	82	10600	9878	513	61	-21	-0.256097561
Spokane St.	306	1700	120	10684	480	9911	92	-28	-0.233333333
Chase Rd.	331	1600	122	10686	478	9912	136	14	0.114754098
Greensfery Rd.	327	1600	116	10696	486	9917	121	5	0.043103448
SR 41	1856	1600	642	10698	488	9918	709	67	0.104361371
Totals	12597		4613				5130	517	0.112074572
Northbound									
Idaho Rd.	470	1700	170	13202	10986	482	230	60	0.352941176
Huetter Rd	396	1600	147	434	522	491	351	204	1.387755102
Ramsey Rd	2104	1600	735	13847	11305	498	857	122	0.165986395
Government Way	2033	1600	701	13796	11281	502	683	-18	-0.025677603
4th St	1307	1700	483	452	512	504	246	-237	-0.49068323
Atlas Rd	1026	1600	357	9330	9061	496	437	80	0.224089636
McGuire Rd	80	1700	28	13592	11188	11190	247	219	7.821428571
15th St	343	1700	122	10600	513	9878	64	-58	-0.475409836
Spokane St.	270	1500	96	10684	9911	480	32	-64	-0.666666667
Chase Rd.	346	1600	122	10686	9912	478	128	6	0.049180328
Greensfery Rd.	299	1700	105	10696	9917	486	108	3	0.028571429
SR 41	2366	1600	839	10698	9918	488	829	-10	-0.011918951
US 95	4392	1700	1504	12162	10027	10491	1761	257	0.17087766
Totals	15432		5409				5973	564	0.10427066

Idaho Rd.	470	1700	170	13202	10986	482	230	60	0.352941176
Huetter Rd	396	1600	147	434	522	491	351	204	1.387755102
Ramsey Rd	2104	1600	735	13847	11305	498	857	122	0.165986395
Government Way	2033	1600	701	13796	11281	502	683	-18	-0.025677603
4th St	1307	1700	483	452	512	504	246	-237	-0.49068323
Atlas Rd	1026	1600	357	9330	9061	496	437	80	0.224089636
McGuire Rd	80	1700	28	13592	11188	11190	247	219	7.821428571
15th St	343	1700	122	10600	513	9878	64	-58	-0.475409836
Spokane St.	270	1500	96	10684	9911	480	32	-64	-0.666666667
Chase Rd.	346	1600	122	10686	9912	478	128	6	0.049180328
Greensfery Rd.	299	1700	105	10696	9917	486	108	3	0.028571429
SR 41	2366	1600	839	10698	9918	488	829	-10	-0.011918951
US 95	4392	1700	1504	12162	10027	10491	1761	257	0.17087766
Totals	15432		5409				5973	564	0.10427066

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Hayden Ave. Screenline # 8									
Southbound									
Chase Rd	155	1600	55	13941	411	11352	25	-30	-0.545454545
Idaho St	173	1700	68	313	412	1163	29	-39	-0.573529412
SR 41	1791	1600	638	13861	415	11313	535	-103	-0.161442006
Huetter Rd	149	1600	58	326	418	435	209	151	2.603448276
Hauser Lake Rd north of SH 53	174	1700	70	13239	11006	445	16	-54	-0.771428571
Greensfery Rd	180	1500	64	6343	413	446	107	43	0.671875
Totals	2622		953				921	-32	-0.033578174
Northbound									
Chase Rd	224	1600	79	13941	11352	411	70	-9	-0.113924051
Idaho St	220	1700	81	313	1163	412	61	-20	-0.24691358
SR 41	2171	1600	763	13861	11313	415	612	-151	-0.197903014
Huetter Rd	258	1600	89	326	435	418	215	126	1.415730337
Hauser Lake Rd north of 53	329	1700	128	13239	445	11006	53	-75	-0.5859375

Greensferry Rd	274	1700	95	6343	446	413	158	63	0.663157895
Totals	3476		1235				1169	-66	-0.053441296

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Lancaster Rd. Screenline # 9									
Southbound									
Greensferry Rd	139	1500	49	194	330	1144	0	-49	-1.000000000
Meyer Rd.	289	1600	104	13634	1093	11207	91	-13	-0.125000000
Huetter Rd	92	1600	35	9472	334	9412	159	124	3.542857143
US 95	2177	1500	785	9551	338	9418	1072	287	0.365605096
Government Way	373	1600	136	13442	339	11126	61	-75	-0.551470588
Rimrock Rd/Meadowwood Ln	120	1500	42	221	344	351	41	-1	-0.023809524
Strahorn Rd	116	1700	43	13461	341	11135	32	-11	-0.255813953
English Point Rd	22	1500	8	1279	9000	357	0	-8	-1.000000000
Totals	3328		1202				1456	254	0.211314476
Northbound									
Greensferry Rd	180	1600	61	194	1144	330	56	-5	-0.081967213
Meyer Rd.	500	1700	185	13634	11207	1093	230	45	0.243243243
Huetter Rd	171	1600	63	9472	9412	334	129	66	1.047619048
US 95	3487	1700	1224	13638	9983	11210	1238	14	0.011437908
Government Way	536	1600	187	13442	11126	339	55	-132	-0.705882353
Rimrock Rd/Meadowwood Ln	95	1500	33	221	351	334	49	16	0.484848485
Strahorn Rd	95	1500	33	13461	11135	341	7	-26	-0.787878788
English Point Rd	24	1500	10	1279	357	9000	0	-10	-1.000000000
Totals	5088		1796				1764	-32	-0.017817372

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
SH 53 - US 95 Screenline # 10									
Eastbound									
BNSF RR Bridge in Rathdrum	1904	1600	671	13898	263	11331	308	-363	-0.540983607
Ramsey Rd	376	1500	148	104	1137	269	251	103	0.695945946
US 95 n/o SH53	1798	1500	677	1308	252	271	526	-151	-0.223042836
Govt Way e/o US95	126	1500	46	13643	11211	300	62	16	0.347826087
Totals	4204		1542				1147	-395	-0.256160830
Westbound									
BNSF RR Bridge in Rathdrum	1485	1500	514	13898	11331	263	278	-236	-0.459143969
Ramsey Rd	597	1500	210	104	269	1137	305	95	0.452380952
US 95 n/o SH53	2687	1600	953	13654	11211	11215	609	-344	-0.360965373
Govt Way e/o US95	392	1700	134	13643	300	11211	66	-68	-0.507462687
Totals	5161		1811				1258	-553	-0.305356157

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Twin Lakes to Nat. Forest. Screenline # 11									
Southbound									
Ramsey Rd south of Brunner	91	1500	33	44	226	237	100	67	2.030303030
Diagonal Rd south of Brunner	74	1500	26	9610	230	1099	71	45	1.730769231
SH 41 south of Seasons Rd	542	1500	209	13078	10914	239	286	77	0.368421053
East Twin Lake Rd near SH 41	258	1700	105	10385	9776	239	211	106	1.009523810
US 95 south of Brunner Rd	1758	1700	647	13717	11245	9902	472	-175	-0.270479134
Totals	2723		1020				1140	120	0.117647059
Northbound									
Ramsey Rd south of Brunner	259	1700	99	44	237	226	102	3	0.030303030
Diagonal Rd south of Brunner Rd	57	1700	23	9610	1099	230	103	80	3.478260870
SH 41 south of Seasons Rd	1288	1700	506	13078	239	10914	425	-81	-0.160079051
East Twin Lake Rd near SH 41	130	1600	52	10385	239	9776	157	105	2.019230769
US 95 south of Brunner Rd	2321	1600	792	13717	9902	11245	507	-285	-0.359848485
Totals	4055		1472				1294	-178	-0.120923913

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
US 95 to SH 3 South Screenline # 12									
Southbound									
SH 97 north of Harrison	94	1500	42	13052	1061	10899	57	15	0.357142857
Cave Bay Rd @ Rock Creek	72	1500	25	1206	1073	10015	5	-20	-0.800000000
SH 97 north of SH 3	86	1500	40	1213	1077	1078	41	1	0.025000000
US 95 S/O Worley	669	1500	261	1217	1079	1085	261	0	0.000000000
SH 3 @ Benewah Co. Line	274	1500	112	1220	1081	1083	51	-61	-0.544642857
Ogara Rd west of SH 97	57	1700	28	10283	9726	9364	24	-4	-0.142857143
US 95 N/O Worley	591	1700	213	13614	11168	11199	234	21	0.098591549
Totals	1843		721				673	-48	-0.066574202
Northbound									
SH 97 north of Harrison	48	1700	18	13052	10899	1061	95	77	4.277777778
Cave Bay Rd @ Rock Creek	78	1700	28	1206	10015	1073	1	-27	-0.964285714
SH 97 north of SH 3	125	1500	54	1213	1078	1077	39	-15	-0.277777778
US 95 S/O Worley	716	1600	258	1217	1085	1079	325	67	0.258689922
SH 3 @ Benewah Co. Line	366	1700	130	1220	1083	1081	94	-36	-0.276923077
Ogara Rd west of SH 97	102	1600	60	10283	9364	9726	65	5	0.083333333
US 95 N/O Worley	691	1500	283	13614	11199	11168	338	55	0.194346290
Totals	2126		831				957	126	0.151624549

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
SH 93 to LaTour Creek Rd Screenline # 13									
Southbound									
SH 3 S/O I 90	328	1700	114	1148	1030	1034	141	27	0.236842105
SH 97 N/O Burma	413	1700	220	13759	1017	11266	193	-27	-0.122727273
Cougar Gulch Rd west of US 95	249	1500	101	9644	969	9457	65	-36	-0.356435644
LaTour Creek Rd south of I 90	34	1700	15	11687	10339	1057	12	-3	-0.200000000
Totals	1024		450				411	-39	-0.086666667
Northbound									
SH 3 S/O I 90	246	1600	82	1148	1034	1030	372	290	3.536585366
SH 97 N/O Burma	200	1500	70	13759	11266	1017	104	34	0.485714286
Cougar Gulch Rd west of US 95	127	1600	54	9644	9457	969	61	7	0.129629630
LaTour Creek Rd south of I 90	17	1500	8	11687	1057	10339	27	19	2.375000000
Totals	590		214				564	350	1.635514019

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Spirit Lake Pend'O Reille Screenline #14									
Southbound									
Perimeter Rd north of SH 545	43	1600	18	13462	202	11136	40	22	1.222222222
SH 41 south of Spirit Lake	738	1500	276	13597	11191	213	286	10	0.036231884
US 95 north of Athol	765	1600	270	10563	201	9857	353	83	0.307407407
SH 41 north of Spirit Lake	429	1500	154	13600	11192	198	170	16	0.103896104
Totals	1975		718				849	131	0.182451253
Northbound									
Perimeter Rd north of SH 54	50	1600	20	13462	11136	202	30	10	0.500000000
SH 41 south of Spirit Lake	1256	1700	496	13597	213	11191	436	-80	-0.120967742
US 95 north of Athol	1158	1600	426	10563	9857	201	428	2	0.004694836
SH 41 north of Spirit Lake	754	1700	268	13600	198	11192	247	-21	-0.078358209
Totals	3218		1210				1141	-69	-0.057024793

**EAST - WEST SCREENLINES -
KMPO**

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count

Pleasant View Rd. Screenline # 15									
Eastbound									
SH 53	1808	1600	651	13930	440	11347	575	-76	-0.116743472
Seltice Way	1060	1600	367	13164	647	10965	595	228	0.621253406
Prairie Rd.	475	1500	162	8834	473	9019	196	34	0.209876543
Riverbend Ave	393	1600	144	9371	9222	9226	332	188	1.305555556
SH 53 (W/O Prairie Ave)	916	1600	330	10750	9945	471	501	171	0.518181818
Poleline Ave.	102	1600	38	13161	544	10964	2	-36	-0.947368421
Totals	4754		1692				2201	509	0.300827423
Westbound									

SH 53	784	1500	295	13930	401	440	450	155	0.525423279
Seltice Way	1109	1500	385	13164	10965	647	460	75	0.194805195
Prairie Rd.	375	1600	140	8834	9019	473	116	-24	-0.171428571
Riverbend Ave	251	1700	87	9371	9226	9222	250	163	1.873563218
SH 53 W/O Prairie Ave	732	1600	381	10750	471	9945	281	-100	-0.262467192
Poleline Ave.	64	1700	22	13161	10964	544	0	-22	-1.000000000
Totals	2531		1310				1557	247	0.188549818

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
McGuire Rd. Screenline # 16									
Eastbound									
SH 53	1616	1600	585	248	401	366	612	27	0.046153846
Seltice Way	1557	1600	533	13231	651	11002	651	118	0.221388368
Poleline Ave.	166	1700	59	10168	547	9672	97	38	0.644067797
Prairie Rd.	484	1600	169	13591	11189	9907	274	105	0.621301775
Totals	3823		1346				1634	288	0.213987311
Westbound									
SH 53	1032	1500	388	248	366	401	538	150	0.386597938
Seltice Way	1703	1600	583	13231	11002	651	686	103	0.176672384
Poleline Ave.	261	1700	101	10168	9672	547	107	6	0.059405941
Prairie Rd.	369	1600	137	13591	9907	11189	153	16	0.116788321
Totals	3365		1209				1484	275	0.227460711

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Chase Rd. Screenline # 17									
Eastbound									
Hayden Rd.	278	1500	97	308	411	1148	131	34	0.350515464
Prairie Rd.	536	1600	193	13173	478	479	228	35	0.181347150
Poleline Ave.	306	1600	110	506	550	551	196	86	0.781818182
Seltice Way	1886	1500	661	12744	9439	9004	701	40	0.060514372
Totals	3006		1061				1256	195	0.183788878
Westbound									
Hayden Rd.	347	1600	128	308	1148	411	116	-12	-0.093750000
Prairie Rd.	516	1600	201	13173	479	478	154	-47	-0.233830846
Poleline Rd.	478	1700	176	506	551	550	215	39	0.221590909
Seltice Way	2046	1700	710	12744	9004	9439	837	127	0.178873239
Totals	3387		1215				1322	107	0.088065844

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Spokane St. Screenline # 18									
Eastbound									
Prairie Rd.	674	1500	236	410	480	481	255	19	0.080508475
Poleline Ave.	722	1700	259	13478	11141	553	337	78	0.301158301
4th St.	381	1500	128	743	753	721	237	109	0.851582500
Seltice Way	2127	1600	747	13899	9004	11332	521	-226	-0.302543507
3rd St	576	1600	205	10721	765	9930	254	49	0.239024390
Totals	4480		1575				1604	29	0.018412698
Westbound									
Prairie Rd.	721	1600	283	410	481	480	243	-40	-0.141342756

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Poleline Ave.	815	1600	290	13478	553	11141	252	-38	-0.131034483
4th St.	266	1500	114	743	721	753	129	15	0.131578947
Seltice Way	2180	1600	760	13899	11332	9004	622	-138	-0.181578947
3rd St	634	1600	232	10721	9930	765	165	-67	-0.288793103
Totals	4616		1679				1411	-268	-0.159618821

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Idaho St. Screenline # 19									
Eastbound									
Prairie Rd.	700	1600	245	413	482	483	364	119	0.485714286
Poleline	733	1700	281	13802	554	11283	221	-60	-0.213523132
Seltice Way	2535	1600	868	689	682	709	754	-114	-0.131336406
4th St.	260	1500	98	747	724	725	93	-5	-0.051020408
Totals	4228		1492				1432	-60	-0.040214477
Westbound									
Prairie Rd.	807	1600	305	413	483	482	330	25	0.081967213
Poleline	727	1600	264	13802	11283	554	167	-97	-0.367424242
Seltice Way	2993	1600	1053	689	709	682	988	-65	-0.061728395
4th St.	57	1500	37	747	725	724	47	10	0.270270270
Totals	4584		1659				1532	-127	-0.07655214

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Greensferry Rd. Screenline # 20									
Eastbound									
Prairie Rd.	698	1600	251	421	486	487	309	58	0.231075697
Poleline Ave.	745	1700	262	519	558	559	139	-123	-0.468465649
16th	189	1500	67	587	606	607	93	26	0.388059701
12th	228	1600	78	628	635	636	147	69	0.884615385
Mullan Ave	1685	1600	589	667	664	665	404	-185	-0.314091681
Seltice Way	1853	1500	643	13807	11285	728	557	-86	-0.133748056
Wyoming Ave	67	1500	33	1246	1101	1154	2	-31	-0.939393939
Hayden Rd.	379	1600	132	6243	413	414	218	86	0.651515152
SH 53	1524	1600	558	8854	309	9029	618	60	0.107526882
3rd St.	453	1700	162	10720	11285	728	117	-45	-0.277777778
Totals	7821		2775				2604	-171	-0.061621622
Westbound									
Prairie Rd.	844	1600	325	421	487	486	339	14	0.043076923
Poleline Ave.	868	1500	310	519	559	558	250	-60	-0.193548387
16th	236	1500	82	587	607	606	138	56	0.682926829
12th	224	1500	82	628	636	635	53	-29	-0.353658537
Mullan Ave	1427	1600	502	667	665	664	420	-82	-0.163346614
Seltice Way	2343	1600	837	13807	11285	728	695	-142	-0.169653524
Wyoming Ave	80	1500	39	1246	1154	1101	8	-31	-0.794871795
Hayden Rd.	469	1600	182	6243	414	413	216	34	0.186813187
SH 53	948	1500	342	8854	9029	309	487	145	0.423976608
3rd St.	377	1700	127	10720	771	9929	113	-14	-0.110236220
Totals	7816		2828				2719	-109	-0.03854314

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
SH 41 Screenline # 21									
Eastbound									
McCamey St N/O SR41	163	1600	61	128	287	293	65	4	0.065573770
Poleline Rd.	778	1500	278	13801	10348	562	141	-137	-0.492805755
Mullan Ave	2056	1600	732	672	668	669	516	-216	-0.295081967
Seltice Way	3424	1600	1182	9318	9382	734	981	-201	-0.170050761
Lancaster	18	1500	8	9346	1151	332	0	-8	-1.000000000
Wyoming	146	1500	71	9449	9037	1094	2	-69	-0.971830986
Seltice Way (Duplicate - new count)	3338	1600	1148	10417	731	9382	981	-167	-0.145470383
Nagel Ln	196	1700	72	13703	11238	323	142	70	0.972222222

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Prairie Rd.	676	1600	235	10990	10057	488	313	78	0.331914894
Hayden Rd.	376	1600	127	11241	10138	415	224	97	0.763779528
Boekel Rd	89	1700	33	11679	10335	10335	84	51	1.545454545
Totals	11260		3947				3449	-498	-0.126171776
Westbound									
McCamey St N/O SR41	168	1600	59	128	293	287	44	-15	-0.254237288
Poleline Rd.	744	1600	259	13801	562	10348	213	-46	-0.177606178
Mullan Ave	1609	1600	546	672	669	668	387	-159	-0.291208791
Seltice Way	2198	1600	200	9318	734	9382	322	122	0.610000000
Lancaster	22	1500	10	9346	332	1151	0	-10	-1.000000000
Wyoming	143	1500	58	9449	1094	9037	8	-50	-0.862068966
Seltice Way (Duplicate - new count)	2077	1600	724	10417	9382	731	750	26	0.035911602
Nagel Ln	302	1700	103	13703	323	11238	173	70	0.679611650
Prairie Rd.	856	1600	318	10990	488	10057	345	27	0.084905660
Hayden Rd.	468	1600	183	11241	415	10138	223	40	0.218579235
Boekel Rd	127	1700	44	11679	310	10335	107	63	1.431818182
Totals	8714		2504				2572	68	0.02715655

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Huetter Rd Screenline # 22									
Eastbound									
Wyoming Ave	7	1500	4	250	1160	367	0	-4	-1.000000000
Hayden Rd.	848	1500	325	323	417	418	418	93	0.286153846
Prairie Rd.	1319	1600	458	432	494	491	608	150	0.327510917
Seltice Way	1617	1600	587	13954	793	794	0	-587	-1.000000000
Mullan Ave	114	1500	36	8873	9043	685	16	-20	-0.555555556
Maplewood	150	1500	52	10753	9766	9846	5	-47	-0.903846154
Boekel Ave	307	1500	113	11233	10036	1096	117	4	0.035398230
Totals	4362		1575				1164	-411	-0.260952381
Westbound									
Wyoming Ave	6	1600	4	250	367	1160	0	-4	-1.000000000
Hayden Rd.	1257	1600	473	323	418	417	468	-5	-0.010570825
Prairie Rd.	975	1600	516	432	491	494	590	74	0.143410853
Mullan Ave	209	1600	71	8873	685	9043	38	-33	-0.464788732
Seltice Way	1727	1500	611	12732	9814	10738	1121	510	0.834697218
Maplewood	177	1600	61	10753	9846	9766	20	-41	-0.672131148
Boekel Ave	370	1700	138	11233	1096	10036	152	14	0.101449275
Totals	4721		1874				2389	515	0.274813234

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Ramsey Rd Screenline # 23									
Eastbound									
Ohio Match Rd	69	1700	25	65	245	1139	19	-6	-0.240000000
Garwood Rd	176	1500	80	76	251	1140	27	-53	-0.662500000
Hwy 53	851	1600	301	103	269	270	308	7	0.023255814
Lancaster Ave	312	1600	128	207	336	337	259	131	1.023437500
Wyoming Ave	304	1600	114	251	368	369	29	-85	-0.745614035
Miles Ave	153	1600	59	276	387	388	36	-23	-0.389830508
Hayden Ave	1190	1500	416	332	422	423	395	-21	-0.050480769
Honeysuckle Ave	435	1600	155	13457	450	11133	107	-48	-0.309877419
Prairie Ave	2091	1500	714	13926	498	11345	712	-2	-0.002801120
Appleway	1501	1600	533	8917	813	9097	250	-283	-0.530956848
Kathleen Ave	2130	1500	780	9440	689	9087	315	-465	-0.596153846
Dalton Ave	331	1500	126	13849	613	11306	53	-73	-0.579365079
Hanley Ave	1088	1500	386	9492	569	9100	425	39	0.101036269
Ironwood Dr	1176	1500	478	10300	857	9734	627	149	0.311715481
Boekel Rd	205	1500	88	11559	9032	10275	129	41	0.465909091
Wilbur Ave Pinegrove	294	1700	105	12891	524	10788	240	135	1.285714286
Totals	12306		4488				3931	-557	-0.124108734
Westbound									
Ohio Match Rd	52	1500	18	65	1139	245	18	0	0.000000000
Garwood Rd	279	1700	105	76	1140	251	27	-78	-0.742857143
Hwy 53	1133	1700	392	103	270	269	383	-9	-0.022959184

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Lancaster Ave	187	1600	69	207	337	336	229	160	2.318840580
Wyoming Ave	287	1600	116	251	369	368	29	-87	-0.750000000
Miles Ave	95	1500	40	276	388	387	16	-24	-0.600000000
Hayden Ave	955	1500	333	332	423	422	281	-52	-0.156156156
Honeysuckle Ave	406	1600	142	13457	11133	450	87	-55	-0.387323944
Prairie Ave	2183	1700	785	13926	11345	498	750	-35	-0.044585987
Appleway	1713	1600	603	8917	9097	813	324	-279	-0.462866567
Kathleen Ave	2407	1500	825	9440	9087	689	492	-333	-0.403636364
Dalton Ave	368	1600	137	13849	11306	613	102	-35	-0.255474453
Hanley Ave	1169	1600	432	9492	9100	569	466	34	0.078703704
Ironwood Dr	2087	1600	741	10300	9734	857	1044	303	0.408906883
Boekel Rd	395	1600	168	11559	10275	9032	175	7	0.041666667
Wilbur Ave Pinegrove	359	1600	155	12891	10788	524	233	78	0.503225806
Totals	14073		5061				4656	-405	-0.080023711

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
US 95 Screenline # 24									
Eastbound									
Ohio Match Rd	132	1700	53	66	246	247	19	-34	-0.641509434
Garwood Rd	338	1700	117	13780	253	11215	76	-41	-0.350427250
Lancaster Ave	283	1600	101	13840	338	339	162	61	0.603960396
Hayden Ave	1309	1600	458	12169	10494	427	276	-182	-0.397379913
Honeysuckle Ave	963	1600	351	13841	10493	455	318	-33	-0.094017094
Prairie Ave	2122	1600	734	12159	10491	501	505	-229	-0.311989101
Dalton Ave	595	1600	310	12129	10488	616	303	-7	-0.022580645
Kathleen Ave	1678	1600	611	12917	10487	692	521	-90	-0.147299509
Neider Ave	1586	1600	557	11795	10485	762	504	-53	-0.095152603
Appleway Ave	2133	1600	716	874	831	832	855	-61	-0.085195531
Ironwood Blvd	2159	1600	765	13002	868	1172	558	-207	-0.270588235
Walnut St	457	1600	163	970	892	9129	217	54	0.331288344
Hanley Ave	1386	1500	476	12132	10495	9054	436	-40	-0.084033613
US 95	1509	1700	517	10649	891	9895	452	-65	-0.125725338
Old US 95 n/o SH53	522	1600	188	10666	9821	9903	108	-13	-0.084967320
Miles Ave	304	1500	124	10833	9982	392	68	-56	-0.451612903
Wyoming Ave	450	1600	167	10838	9983	373	213	46	0.275449102
Totals	17936		6408				5391	-1017	-0.158707865
Westbound									
Ohio Match Rd	51	1600	21	66	247	246	5	-16	-0.781904762
Garwood Rd	213	1600	84	13780	11215	253	76	-8	-0.095238095
Lancaster Ave	127	1600	46	13840	339	338	162	116	2.521739130
Hayden Ave	1369	1500	482	12169	427	10494	333	-149	-0.309128631
Honeysuckle Ave	1212	1600	438	13841	11302	10493	296	-142	-0.324200913
Prairie Ave	1286	1700	447	12159	501	10491	552	105	0.234899329
Dalton Ave	871	1600	303	12129	616	10488	353	50	0.165016502
Kathleen Ave	1541	1700	516	12917	10803	10487	680	164	0.317829457
Neider Ave	1694	1600	567	11795	762	10485	467	-100	-0.176366843
Appleway Ave	2215	1600	756	874	832	831	602	-154	-0.203703704
Ironwood Blvd	1902	1600	644	13002	10867	868	778	134	0.208074534
Walnut St	343	1600	117	970	898	892	120	3	0.025641026
Hanley Ave	1406	1600	487	12132	9054	10495	455	-32	-0.065708419
US 95	1478	1600	522	10649	9895	891	832	310	0.593869732
Old US 95 n/o SH53	388	1600	153	10666	9903	9821	140	-80	-0.425531915
Miles Ave	291	1500	136	10833	392	9982	66	-70	-0.514705882
Wyoming Ave	238	1700	90	10838	373	9983	102	12	0.133333333
Totals	16625		5809				6019	210	0.0361508

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
West Side KMPO Screenline # 25									
Eastbound									
Seltice Way W/O Beck Rd	912	1600	312	8826	9015	717	534	222	0.711538462
Rockford Bay Rd east of US 95	122	1600	44	9001	1046	9177	14	-30	-0.681818182
Elder Rd @ Washington Line	61	1700	26	9274	1049	9355	0	-26	-1.000000000
SH 58 @ Washington Line	271	1700	93	9283	1068	9362	107	14	0.150537634

Conkling Rd east of US 95	55	1700	23	13365	1079	11081	47	24	1.043478261
SH 53 @ Washington State Line	1123	1600	395	13244	514	11008	497	102	0.258227848
Totals	2544		893				1199	306	0.342665174
Westbound									
Seltice Way W/O Beck Rd	752	1500	267	8826	717	9015	480	213	0.797752809
Rockford Bay Rd east of I90	190	1500	100	9001	9177	1046	19	-81	-0.810000000
Elder Rd @ Washington Line	87	1700	35	9274	9355	1049	0	-35	-1.000000000
SH 58 @ Washington Line	377	1500	141	9283	9362	1068	161	20	0.141843972
Conkling Rd east of US 95	45	1500	16	13365	11081	1079	59	43	2.687500000
SH 53 @ Washington State Line	856	1600	301	13244	11008	514	282	-19	-0.063122924
Totals	2307		860				1001	141	0.163953488

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
East Side KMPO Screenline # 26									
Eastbound									
Bunco Rd @ Nunn Rd	81	1700	25	13713	231	11243	6	-19	-0.760000000
Ohio Match Rd East of Rimrock Rd	55	1500	24	13950	249	250	20	-4	-0.166666667
Mullan Trail Rd north of I 90	146	1600	52	1075	980	976	86	34	0.653846154
Sunnyside Rd south of Mullan Trail	91	1600	33	1089	990	987	34	1	0.030303030
I 90 @ Shoshone Co. Line	1560	1500	542	1160	1040	1042	413	-129	-0.238007380
Feman Lake Rd @ CdA City Limit	59	1700	25	10296	949	9965	120	95	3.800000000
SH 54 West of Farragut Park Entrance	270	1500	99	10875	9999	200	110	11	0.111111111
Lancaster Rd east of Rimrock	157	1600	56	11515	344	10253	56	0	0.000000000
Totals	2399		856				845	-11	-0.012850467
Westbound									
Bunco Rd @ Nunn Rd	84	1500	31	13713	11243	231	9	-22	-0.709677419
Ohio Match Rd East of Rimrock Rd	25	1500	11	13950	11357	249	9	-2	-0.181818182
Mullan Trail Rd north of I 90	77	1600	27	1075	976	980	112	85	3.148148148
Sunnyside Rd south of Mullan Trail	55	1600	25	1089	987	990	30	5	0.200000000
I 90 (@ Shoshone Co. Line)	1411	1500	506	1157	1037	1041	366	-110	-0.217391304
Feman Lake Rd @ CdA City Limit	68	1700	28	10296	9965	949	117	89	3.178571429
SH 54 West of Farragut Park Entrance	320	1500	133	10875	200	9999	100	-33	-0.248120301
Lancaster Rd east of Rimrock	135	1500	55	11515	10253	344	51	-4	-0.072727273
Totals	2175		816				824	8	0.009803922

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
Government Way Screenline # 27									
Eastbound									
Lancaster Ave	407	1700	149	13640	11210	339	172	23	0.154362416
Miles Ave	356	1700	122	285	393	394	57	-65	-0.532786885
Hayden Ave	871	1700	317	341	428	429	166	-151	-0.476340694
Honeysuckle Ave	724	1700	280	13829	456	11296	344	64	0.228571429
Prairie Ave	1344	1700	502	448	502	11102	568	66	0.131474104
Wilbur Ave	186	1500	68	475	527	528	20	-48	-0.705882353
Hanley Ave	609	1600	210	13792	573	11279	237	27	0.128571429
Dalton Ave	1033	1600	361	602	617	618	359	-2	-0.005540186
Neider Ave	1541	1600	524	816	777	779	411	-113	-0.215648855
Appleyway/Best Ave	2419	1700	827	877	833	834	800	-27	-0.032648126
N/O Sherman Ave	2019	1600	684	1032	944	951	693	9	0.013157895
Wyoming Ave	154	1700	58	8875	374	9044	176	118	2.034482759
Government Way	486	1600	173	10297	944	9733	377	204	1.179190751
Harrison Ave	1192	1600	430	10468	9812	900	366	-64	-0.148837209
Foster Ave	256	1700	93	13015	9825	10875	217	124	1.333333333
Margaret Ave	1358	1600	480	11310	10160	694	353	-127	-0.264583333
Totals	14955		5278				5316	38	0.007199697
Westbound									
Lancaster Ave	297	1600	105	13640	339	11210	162	57	0.542857143
Miles Ave	284	1500	118	285	394	393	33	-85	-0.720338983
Hayden Ave	688	1500	245	341	429	428	145	-100	-0.408163265
Honeysuckle Ave	632	1600	237	13829	11296	456	253	16	0.067510549
Prairie Ave	1097	1600	373	448	11102	502	396	23	0.061662198
Wilbur Ave	122	1600	44	475	528	527	10	-34	-0.772727273
Hanley Ave	678	1500	258	13792	11279	573	152	-106	-0.410852713

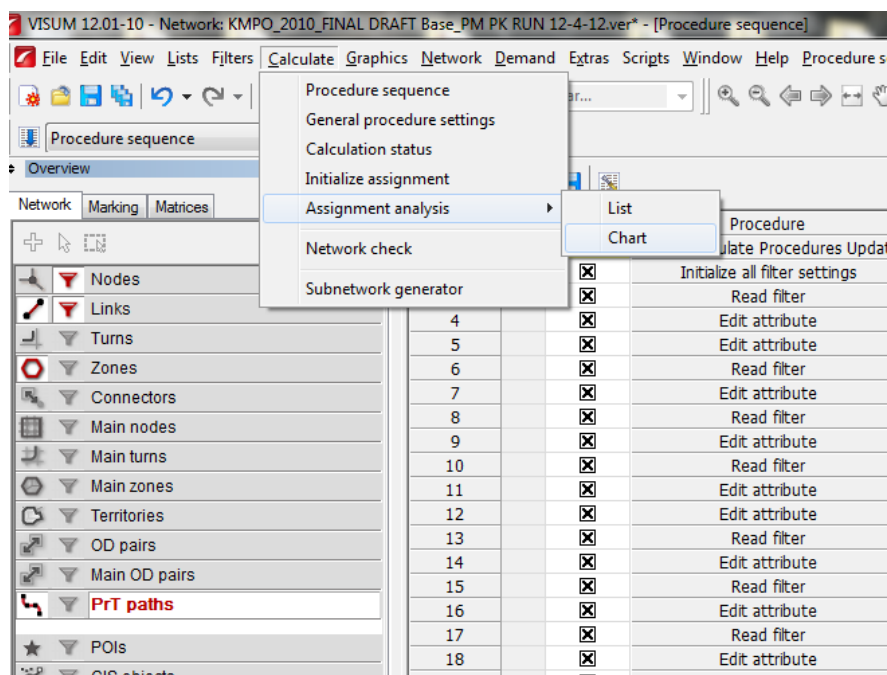
Dalton Ave	793	1500	286	602	618	617	286	0	0.000000000
Neider Ave	1493	1500	520	816	779	777	309	-211	-0.405769231
Appleway/Best Ave	1963	1500	677	877	834	833	520	-157	-0.231905465
N/O Sherman Ave	2006	1500	676	1032	951	944	699	23	0.034023669
Wyoming Ave	90	1700	34	8875	9044	374	74	40	1.176470588
Government Way	533	1500	194	10297	9733	944	228	34	0.175257732
Harrison Ave	901	1500	343	10468	900	9812	380	37	0.107871720
Foster Ave	180	1500	69	13015	10875	9825	264	195	2.826086957
Margaret Ave	1102	1600	380	11310	694	10160	292	-88	-0.231578947
Totals	12859		4559				4203	-356	-0.078087300

Location	PM Total	PM Peak Time	PM Peak Count	Link #	From Node	To Node	Modeled PM Peak Volume	Modeled - Actual PM Peak Count	Modeled-Actual / Actual PM Peak Count
I 90 Ramps Screenline # 28									
Eastbound									
I 90 Ramp @ Spokane St EB Off	2015	1700	734	713	701	703	657	-77	-0.104904632
I 90 Ramp @ Spokane St EB Off	930	1500	328	717	703	704	349	21	0.064024390
I 90 Ramp @ Seltice Way EB On	816	1600	276	749	726	712	412	136	0.492753623
SR 90 @ Pleasant View Rd EB Off	1195	1600	426	786	752	719	888	282	0.615023474
SR 90 @ Pleasant View Rd	1218	1600	458	785	751	752	558	100	0.218340611
I 90 Ramp @ NW Blvd/Ramsey EB Off	2382	1500	815	866	826	843	757	-58	-0.071185644
I 90 Ramp @ NW Blvd/Ramsey EB On	1015	1700	342	892	843	844	336	-6	-0.017543860
I 90 Ramp @ US 95 EB Off	1863	1600	668	12707	847	859	556	-112	-0.167664671
I 90 Ramp @ US 95	982	1700	338	915	859	849	422	84	0.248520710
I 90 Ramp @ 3rd/4th St EB On	901	1700	330	919	861	862	232	-98	-0.296969697
I 90 Ramp @ SH 41 EB Off	1807	1700	648	12739	10742	731	483	-165	-0.254629630
I 90 Ramp @ 23rd St EB On	259	1500	92	8818	9011	968	123	31	0.336956522
I 90 Ramp @ SH 41 EB On	1580	1500	569	10250	9709	736	595	26	0.045694200
I 90 Ramp @ 3rd/4th St EB Off	1715	1700	606	10408	860	9788	832	226	0.372937294
I 90 Ramp @ 15th St EB On	214	1700	74	10428	9795	912	80	6	0.081081081
I 90 Ramp @ 15th St EB Off	1241	1700	458	10430	885	9796	501	43	0.093886463
I 90 Ramp @ 23rd St (One Way)	1014	1700	361	10758	847	9948	334	-27	-0.074792244
Totals	21147		7523				7915	392	0.052106872
Westbound									
I 90 Ramp @ Spokane St WB On	1169	1500	392	684	679	677	471	79	0.201530612
I 90 Ramp @ Spokane St Off	1257	1600	435	720	705	679	641	206	0.473563218
I 90 Ramp @ Seltice Way Off Ramp	1399	1700	472	729	713	711	504	32	0.087796610
I 90 Ramp @ SH 41WB On	1769	1600	629	731	714	733	469	-160	-0.254372019
SR 90 @ Pleasant View Rd WB On	961	1600	329	737	718	750	417	88	0.267477204
SR 90 @ Pleasant View Rd WB Off	1070	1600	374	740	720	718	651	277	0.740641711
I 90 Ramp @ NW Blvd/Ramsey WB On	2642	1600	903	869	828	827	858	-45	-0.049833887
I 90 Ramp @ NW Blvd/Ramsey WB Off	981	1500	360	896	845	828	308	-52	-0.144444444
I 90 Ramp @ US 95 WB On	1142	1700	271	900	848	846	623	352	1.298892989
I 90 Ramp @ US 95 EB On Ramp	2506	1500	859	904	850	848	496	-363	-0.422584400
I 90 Ramp @ 3rd/4th St WB On	1698	1700	586	907	853	852	578	-8	-0.013651877
I 90 Ramp @ 3rd/4th St WB Off	675	1500	248	923	863	853	258	10	0.040322581
I 90 Ramp @ 23rd St WB On	882	1500	332	1059	964	948	297	-35	-0.105421687
I 90 Ramp @ 23rd St WB Off	226	1600	91	1061	965	964	152	61	0.670329670
I 90 Ramp @ 15th St to Hazel	262	1500	98	8814	911	9009	12	-86	-0.877551020
I 90 Ramp @ SH 41 WB Off	2206	1700	773	10422	737	9792	570	-203	-0.262613195
I 90 Ramp @ 15th St WB On	950	1600	331	10432	9797	878	370	39	0.117824773
Totals	21795		7483				7675	192	0.025685158

	Total PM Peak Actual Directional Count	Total PM Peak Modeled Directional Volume	Modeled - Actual PM Peak Count	((Modeled - Actual) / Actual PM Peak Count)*100	Total PM Peak Actual Bi-Directional Count	Total PM Peak Modeled Bi-Directional Volume	Total PM Peak Volume - Actual Bi-Directional Count	((Modeled - Actual) / Actual Bi-Directional PM Peak Count)*100	% Allowable Deviation per TMP FHA	Within Allowable Deviation?
SMB Screenlines Screenlines										
Spokane River Crossing Screenline # 1										
Southbound	1037	1105	68	6	2001	2026	246	12	63	Y
Northbound	1043	1424	381	37						
Selkirk Screenline # 2										
Southbound	2185	2497	315	14	4434	5070	1436	32	59	Y
Northbound	2265	3373	1121	50						
Harrison Ave Screenline # 3										
Southbound	2008	1878	-130	-7	4058	3468	-590	-15	62	Y
Northbound	2052	1895	-157	-8						
Appleyard Ave/Inst Screenline # 4										
Southbound	2478	2624	146	6	5236	5547	311	6	60	Y
Northbound	2758	2923	165	6						
Selkirk Way/Mullan Rd/Kathoon Screenline # 5										
Southbound	7596	7126	-467	-6	16420	16222	-198	-1	49	Y
Northbound	8025	9094	1069	13						
Parkway Rd Screenline # 6										
Southbound	5583	5773	193	3	12550	13223	673	5	52	Y
Northbound	6983	7453	470	7						
Prairie Rd. Screenline # 7										
Southbound	4813	5130	317	7	10222	11103	1081	11	54	Y
Northbound	5409	5973	564	10						
Hayden Ave Screenline # 8										
Southbound	953	921	-32	-3	2185	2090	-95	-4	63	Y
Northbound	1298	1168	-130	-10						
Langcaster Rd. Screenline # 9										
Southbound	1200	1456	254	21	2998	3200	202	7	62	Y
Northbound	1796	1764	-32	-2						
SH 93 - US 95 Screenline # 10										
Southbound	1542	1147	-395	-26	3393	2405	-988	-29	63	Y
Northbound	1811	1268	-543	-31						
Twain Lakes Nat. Forest Screenline # 11										
Southbound	1020	1140	120	12	2492	2434	-58	-2	63	Y
Northbound	1472	1294	-178	-12						
US 95 to SH 3 Screenline # 12										
Southbound	721	673	-48	-7	1562	1630	70	5	64	Y
Northbound	831	957	126	15						
SH 93 to LaFour Creek Screenline # 13										
Southbound	450	411	-39	-9	664	975	311	47	64	Y
Northbound	214	264	50	24						
Spirit Lake/Pond O'Rourke Screenline # 14										
Southbound	718	849	131	18	1920	1990	70	4	63	Y
Northbound	1210	1141	-69	-6						
EBWB Screenlines Screenlines										
Pleasant View Rd. Screenline # 15										
Eastbound	1695	2201	509	30	3002	3759	756	25	61	Y
Westbound	1310	1507	197	15						
McGuire Rd. Screenline # 16										
Eastbound	1348	1634	286	21	2555	3118	563	22	62	Y
Westbound	1308	1484	176	13						
Chano Rd. Screenline # 17										
Eastbound	1081	1256	175	16	2276	2578	302	13	63	Y
Westbound	1218	1322	107	9						
Spokane St. Screenline # 18										
Eastbound	1575	1694	119	8	3254	3075	-179	-5	62	Y
Westbound	1672	1411	-261	-16						
Idaho St. Screenline # 19										
Eastbound	1493	1432	-61	-4	3151	2964	-187	-6	62	Y
Westbound	1699	1532	-167	-10						
Greenoak Rd. Screenline # 20										
Eastbound	2775	2804	29	1	5603	5323	-280	-5	60	Y
Westbound	2020	2719	699	35						
SH 41 Screenline # 21										
Eastbound	2947	2449	-498	-17	6451	6021	-430	-7	59	Y
Westbound	2504	2573	69	3						
Huettner Rd. Screenline # 22										
Eastbound	1575	1164	-411	-26	3449	2552	-897	-26	61	Y
Westbound	1874	2399	525	28						
Ramsay Rd. Screenline # 23										
Eastbound	4483	3931	-552	-12	9545	8907	-638	-7	66	Y
Westbound	5361	4696	-665	-12						
US 95 Screenline # 24										
Eastbound	6408	6391	-17	-0	12217	11410	-807	-7	64	Y
Westbound	6009	6019	10	0						
West Side KMPO Screenline # 25										
Eastbound	893	1199	306	34	1753	2200	447	25	63	Y
Westbound	884	1001	117	13						
East Side KMPO Screenline # 26										
Eastbound	894	649	-245	-27	1672	1669	-3	0	64	Y
Westbound	818	829	11	1						
Government Way Screenline # 27										
Eastbound	6278	5318	-960	-15	9837	9519	-318	-3	65	Y
Westbound	4658	4203	-455	-10						
190 Ramp Screenline # 28										
Eastbound	7623	7918	295	4	15006	15593	587	4	60	Y
Westbound	7463	7675	212	3						
Total Screenlines										
All North-South Screenlines										
Southbound	32097	32427	330	1	68869	72203	2718	4	29	Y
Northbound	37890	42276	2386	6						
All East-West Screenline										
Eastbound	40003	39941	-62	-2	79775	79005	-770	-1	29	Y
Westbound	30662	35364	480	1	148763	152001	2240	1	11	Y

Appendix 1F : Final Model Results Assignment Analysis Comparison

The 2010 KMPO Base Model PM PK HR “**assignment analysis**” is reported internally within the model and shows the final AM/ PM PK HR model results. The formula the program measures the observed traffic counts against the modeled traffic volumes.



The (GEH) formula used was created by Geoffrey E. Havers, is a statistical mathematical formula that is used internally within the VISUM assignment analysis graph calculations that checks the model calibration. The assignment analysis uses this formula and graphs a plot that tells you how accurately the traffic volumes match the modeled volumes.

This widely accepted approach compares the actual traffic counts taken in the field to the modeled output volumes using the GEH formula:

For hourly flows, the GEH formula is:

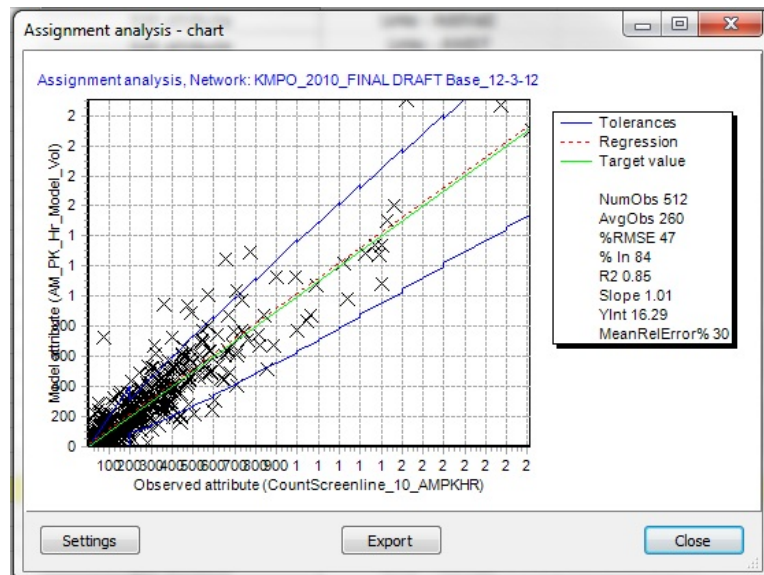
$$GEH = \sqrt{\frac{2(m - c)^2}{m + c}}$$

Notes:

m = output traffic volume from the simulation model (vph)

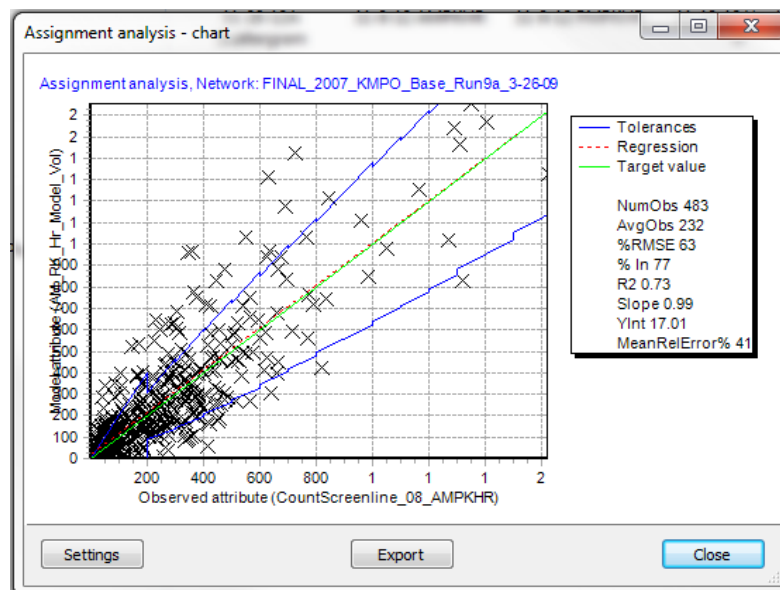
c = input traffic volume (vph)

The graph below displays the final 2010 KMPO Base Model PM PK HR “assignment analysis” of the network reported inside the model for PM PK HR results.



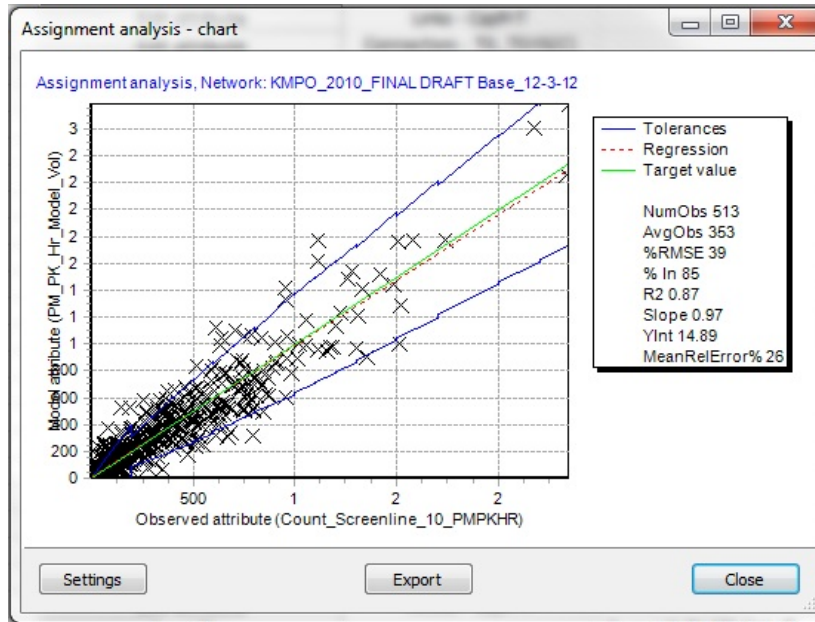
2010 KMPO AM PK HR Final Base Model Assignment Analysis Chart

The final 2007 KMPO Base Model AM PK HR “assignment analysis” of the network is reported inside the model for AM PK HR results. This is used for comparison only to the previous 2007 model version. Comparison of the two assignment results shows that there is improvement from the previous 2007 base model to the updated 2010 base model.



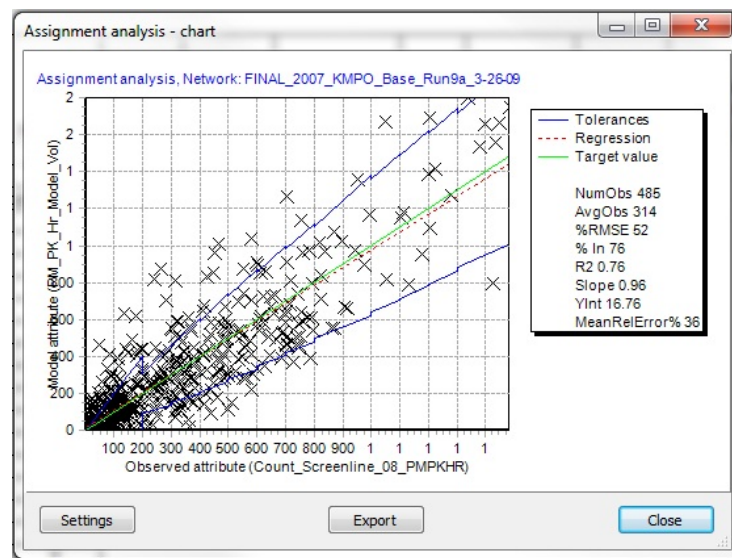
2007 KMPO Previous AM PK HR Final Base Model Assignment Analysis Chart (for comparison only)

The final 2010 KMPO Base Model PM PK HR “assignment analysis” of the network is reported inside the model for PM PK HR results.



2010 KMPO PM PK HR Final Base Model Assignment Analysis Chart

The graph above is from the final 2007 KMPO Base Model PM PK HR “assignment analysis” of the network is reported inside the model for PM PK HR results. This is used for comparison only to the previous 2007 model version. Comparison of the two assignment results shows that there is improvement from the previous 2007 base model to the updated 2010 base model.



2007 Previous PM PK HR Final Base Model Assignment Analysis Chart (for comparison only)