

## Appendix F: Clean Air Act Conformance

# F

### Conformity Documentation of the Metropolitan Council 2009 Transportation Policy Plan to the 1990 Clean Air Act Amendments

December 1, 2009

The United States Environmental Protection Agency's (EPA's) 40 CFR PARTS 51 and 93, referred to together with all applicable amendments as the "Conformity Rule," requires the Metropolitan Council (the Council) to prepare a conformity analysis of the region's *Transportation Policy Plan* (the Plan), as well as the FY 2010-2013 Transportation Improvement Program (TIP). Based on an air quality analysis, the Council must determine whether the transportation plan conforms to the requirements of the 1990 Clean Air Act Amendments (CAAA) with regard to National Ambient Air Quality Standards (NAAQS) for mobile source criteria pollutants. Under consultation procedures developed by the Minnesota Interagency and Transportation Planning Committee, the MPCA reviews the Council's conformity analysis before the plan is approved for public review; a letter describing MPCA's review is on page F-3.

Specifically, the Minneapolis/St. Paul Metropolitan Area is within an EPA-designated carbon monoxide (CO) maintenance area. A map of this area, which for air quality analysis purposes includes the seven-county Metropolitan Council jurisdiction plus Wright County and the City of New Prague, is shown in Exhibit F-1. The term "maintenance" reflects the fact that regional CO emissions were unacceptably high in the 1970s when the NAAQS were introduced, but were subsequently brought under control through a metro-area Vehicle Inspection and Maintenance (VIM) Program completed in the 1990s. The EPA then re-designated the area as in attainment of the NAAQS for CO in 1999 and approved a "maintenance plan" containing a technical rationale and actions designed to keep emissions below a set region-wide budget. This plan has remained the same since 2005, when changes to the emissions rates approved by EPA necessitated an update of the approved CO budget as well. Every long-range Plan or TIP approved by the Council must be analyzed using specific criteria and procedures defined in the Conformity Rule to verify that it does not result in emissions exceeding this current regional CO budget.

A conforming TIP and Plan, satisfying the aforementioned analysis requirement, must be in place in order for any federally funded transportation program or project phase to receive FHWA or FTA approval. This appendix describes the procedures used to analyze the amended *2009 Transportation Policy Plan* and lists findings and conclusions supporting the Metropolitan Council's determination that this Plan conforms to the requirements of the CAAA.

***The analysis described in the appendix has resulted in a Conformity Determination that the projects included in the amended 2009 Transportation Policy Plan meet all relevant regional emissions analysis and budget tests as described herein. The amended 2009 Transportation Policy Plan conforms to the relevant sections of the Federal Conformity Rule and to the applicable sections of Minnesota State Implementation Plan for air quality.***

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## Minnesota Pollution Control Agency

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January 13, 2010

Ms. Arlene McCarthy  
Director  
Metropolitan Transportation Services  
Metropolitan Council  
390 North Robert Street  
St. Paul, MN 55101

RE: Amendment to the Conformity Documentation for the 2030 Transportation Policy Plan

Dear Ms. McCarthy:

The Minnesota Pollution Control Agency (MPCA) staff has completed its review of the above referenced document. The Metropolitan Council (Council) is proposing two amendments to its 2030 Transportation Policy Plan (Plan). The first amendment includes the locally preferred light rail transit (LRT) mode and alignment for the Southwest Transitway. The second includes the existing configuration of Interstate (I)-94 between (I)-35W and Trunk Highway 280, as established after the (I)-35W bridge collapse and slightly modified by the (I)-94 managed corridor project.

As part of this amendment, the Council has revised the Conformity Documentation (Appendix F) for meeting carbon monoxide (CO) standards. This revision includes a detailed description of the LRT mode and alignment for Southwest Transitway as well as the (I)-94 managed corridor. Air quality analysis that shows daily CO emissions in tons/day for the milestone years 2009, 2015, 2020, and 2030 are provided in this evaluation. Based on this information, the future CO emissions in tons/day will remain below the regional emissions budget established by the MPCA's emissions inventory even with the implementation of the two projects. Therefore, the proposed amendment to the Conformity Documentation for the 2030 Plan fully meets and conforms to the relevant sections of the Federal Transportation Conformity Rule and to the applicable sections of the Minnesota State Implementation Plan for Air Quality.

The MPCA staff appreciates the opportunity given to review the Plan amendment as part of the U.S. Environmental Protection Agency's (EPA's) Transportation Conformity Rule consultation process, and looks forward to working with your staff to address any other policy concerns. The staff also appreciates the cooperation of the interagency

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Ms. Arlene McCarthy  
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consultation group that includes the Council, Mn/DOT, EPA, and FHWA, in their immediate assistance in resolving all policy and technical issues with respect to the Plan's air quality conformity determination. Please contact me at 651-757-2347 or by e-mail at [innocent.eyoh@state.mn.us](mailto:innocent.eyoh@state.mn.us) if you have any questions.

Sincerely,

Innocent Eyoh  
Planner Principal  
Air Assessment and Environmental Data Management Section  
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IE:jab

cc: Mark Filipi, Metro Council  
Susan Moe, FHWA  
Brian Isaacson, Mn/DOT  
Michael Leslie, EPA  
John Seltz, MPCA  
David Thornton, MPCA  
Michael Sandusky, MPCA  
Frank Kohlasch, MPCA

# I. Conformity of the 2008 Transportation Policy Plan: Findings and Conclusions

A quantitative analysis of CO emissions impact of the regionally significant projects listed in the Plan was prepared. The analysis included the projects listed in Tables F-1 through F-4 . The analysis shows that daily CO emissions in tons/day for the milestone years of 2009, 2015, 2020 and 2030 are below the regional CO motor vehicle emissions budget, which was revised in 2005 (see Table F-7). This analysis meets the following Conformity Rule requirements:

- **Inter-agency consultation** (§93.105, §93.112). The Minnesota Pollution Control Agency (MPCA), Minnesota Department of Transportation (Mn/DOT), Environmental protection Agency (EPA), and Federal Highway Administration (FHWA) were consulted during the preparation of the Plan and its conformity review and documentation. The “Transportation Conformity Procedures for Minnesota” handbook provides guidelines for agreed-upon roles and responsibilities and inter-agency consultation procedures in the conformity process.
- **Regionally significant and exempt projects** (§93.126, §93.127). The quantitative analysis includes all known federal and nonfederal regionally significant projects as defined in §93.101 of the Conformity Rule. Exempt projects not included in the regional air quality analysis were identified by the inter-agency consultation group and classified in accordance with §93.126 of the Conformity Rule.
- **Donut areas** (§93.105(c)(2)). No regionally significant projects are planned or programmed for the City of New Prague. The air quality analysis of CO emissions for Wright County is prepared by the Council as part of an intergovernmental agreement with the County, MN/DOT and the Council. Four regionally significant projects were identified for Wright County to be built within the analyses period of the Plan and are included in the air quality analysis. The projects are in the maintenance area, but are outside of the Metropolitan Council’s seven-county planning jurisdiction.
- **Latest planning assumptions** (§93.110). The Council is required by Minnesota statute to prepare regional population and employment forecasts for the Twin Cities Seven-County Metropolitan Area. The published source of socioeconomic data for this region is the Metropolitan Council’s 2030 Regional Development Framework. This planning document provides the Council with socio-economic data (planning assumptions) needed to develop long range forecasts of regional highway and transit facilities needs. The latest update to these forecasts was released May 1, 2009; this latest version was used in the amended *2009 Transportation Policy Plan* air quality analysis (see Table F-5).
- **Horizon years; Motor vehicle emissions budget** (§93.118). The motor vehicle emissions budget test was prepared for the following horizon years: 2009, 2015, 2020 and 2030.

The first year of this set is the year for which the current conformity budget was established in the August 2004 “Revision of the Minneapolis-St. Paul Carbon Monoxide Maintenance Plan” approved by EPA, and is also ten years after the approval of the previous Maintenance Plan. The last year of this set is the last year of this plan. No two horizon years within the 2008-2030 forecast period are more than ten years apart.

- **Network-based travel model** (§93.122 per §93.118). In accordance with past practices, the Regional Travel Demand Forecast Model (RTDFM) was used to develop forecasts of travel on the region’s roadway system based upon the planning assumptions referred to above. Factors were developed to reconcile and calibrate network-based estimates of VMT to Highway Performance Monitoring System (HPMS) estimates of vehicle-miles-traveled for 2000, the validation base year. These factors were then applied to model estimates of future VMT.
- **Latest emissions model** (§93.111). The latest emissions model approved by EPA, MOBILE 6.2, was used to estimate regional emissions based upon the VMT estimates output by the RTDFM described above. CO emissions were calculated in a manner consistent with the methodology presented in the August 2004 “Revision of the Minneapolis-St. Paul Carbon Monoxide Maintenance Plan” documentation. Example emissions model output files were reviewed by MPCA as part of the inter-agency consultation process.

Other conformity requirements have been addressed as follows:

- The Plan was prepared in accordance with the *Public Participation Plan for Transportation Planning*, adopted by the Council on February 14, 2007. This process satisfies SAFETEA-LU requirements for public involvement, in addition to the public consultation procedures requirement of Conformity Rule §93.105.
- The Plan addresses the fiscal constraint requirements of the SAFETEA-LU metropolitan planning rule 23 CFR part 450, §450.324 and §93.108 of the Conformity Rule. Chapter 2 of the Plan documents the consistency of proposed transportation investments with already available and projected sources of revenue.
- The Council has reviewed the Plan and certifies that the Plan does not conflict with the implementation of the SIP, and conforms to the requirement to implement the Transportation System Management Strategies which are the adopted Transportation Control Measures (TCMs) for the region. All of the adopted TCMs have been implemented.
- The Plan includes the 2010-2013 Transportation Improvement Program projects. Moreover, any TIP projects that are not specifically listed in the Plan are consistent with the policies and purposes of the Plan and will not interfere with other projects specifically included in the Plan.
- There are no projects which have received NEPA approval and have not progressed within three years.

- Although a small portion of the Twin Cities Metropolitan Area is a maintenance area for PM-10, the designation is due to non-transportation sources, and therefore is not analyzed herein.

## **II. Consultation Procedures**

### **A. Public Involvement Process**

The Council remains committed to a proactive public involvement process used in the development and adoption of the plan as required by the Council's Public Participation Plan for Transportation Planning. The Public Participation Plan is in Appendix C of the *2030 Transportation Policy Plan* and complies with the public involvement process as defined in 23 CFR 450.316 and the SAFETEA-LU requirements of Title 23 USC 134(i)(5), as well as the most current revisions to the Conformity Rule.

In addition to the Public Participation Plan, the Council continues to develop, refine and test public involvement tools and techniques as part of extensive ongoing public involvement activities that provide information, timely notices and full public access to key decisions and supports early and continuing involvement to the development of plans and programs. For example, open houses, comment mail-in cards, emails, letters, internet bulletin board, voice messages and notices on its web site are used to attract participation at the open houses, disburse informational materials and solicit public comments on transportation plans.

### **B. Interagency Consultation Process**

An interagency consultation process was used to develop the *Transportation Policy Plan*. Consultation continues throughout the public comment period to respond to comments and concerns raised by the public and agencies prior to final adoption by the Council. The Council, MPCA and Mn/DOT confer on the application of the latest air quality emission models, the review and selection of projects exempted from a conformity air quality analysis, and regionally significant projects that must be included in the conformity analysis of the plan. An interagency conformity work group provides a forum for interagency consultation. The work group has representatives from the Council, MPCA, Mn/DOT, EPA and FHWA. An interagency meeting was held on November 18, 2009 to consult during the preparation of the plan document. Ongoing communication occurred along with periodic meetings, draft reports, emails and phone calls.

## **III. Description of Emissions Analysis Methodology and Assumptions**

### **A. Project Lists and Assumptions**

#### *Definition of Regionally Significant and Exempt Projects*

Pursuant to the Conformity Rule, the projects listed in the Plan were reviewed and categorized using the following determinations to identify projects that are exempt from a regional air quality analysis, as well

as regionally significant projects to be included in the analysis. The classification process used to identify exempt and regionally significant projects was developed through an interagency consultation process involving the MPCA, EPA, FHWA, the Council and Mn/DOT. Regionally significant projects were selected according to the definition in §93.101 of the Conformity Rules:

***Regionally significant project*** means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

Junction improvements and upgraded segments less than one mile in length are not normally coded into the Regional Travel Demand Forecast Model (RTDFM), and therefore are not considered to be regionally significant, although they are otherwise not exempt. The exempt air quality classification codes used in the "AQ" column of project tables of the TIP are listed in Exhibit F-4. Projects which are classified as exempt must meet the following requirements:

- The project does not interfere with the implementation of transportation control measures.
- The project is segmented for purposes of funding or construction and received all required environmental approvals from the lead agency under the NEPA requirements including:
  - A determination of categorical exclusion: or
  - A finding of no significant impact: or
  - A final Environmental Impact Statement for which a record of decision has been issued.
- The project is exempt if it falls within one of the categories listed in §93.126 in the Conformity Rule. Projects identified as exempt by their nature do not affect the outcome of the regional emissions analyses and add no substance to the analyses. These projects are determined to be within the four major categories described in the conformity rule.
  - Safety projects that eliminated hazards or improved traffic flows.
  - Mass transit projects that maintained or improved the efficiency of transit operations.
  - Air quality related projects that provided opportunities to use alternative modes of transportation such as ride-sharing, van-pooling, bicycling, and pedestrian facilities.
  - Other projects such as environmental reviews, engineering, land acquisition and highway beautification.

### *2010-2013 Transportation Improvement Program Projects*

The inter-agency consultation group, reviewed the list of projects to be completed by the 2010-2013 TIP timeframe, including the following:

- In-place regionally significant highway or transit facilities, services, and activities;
- Projects selected through the Council's Regional Solicitation process;
- Major Projects from Mn/DOT's ten-year work program; and
- Regionally significant projects (regardless of funding sources) which are currently:
  - under construction, or;
  - undergoing right-of-way acquisition, or;
  - have completed the NEPA process.

Each project was assigned to a horizon year (2009 or 2015) and categorized in terms of potential regional significance and air quality analysis exemption as per §93.126 and §93.127 of the Conformity Rule, using the codes listed in this Appendix. The resulting list of regionally significant projects for 2009 is shown in Table F-1.

### *2030 Transportation Policy Plan*

The inter-agency consultation group also reviewed projects to be completed before 2030 but not within the 2009-2012 TIP timeframe, including the project types listed above, as well as regionally significant planned projects in the *Transportation Policy Plan* and other regionally significant projects, regardless of funding source. Each project was assigned to a horizon year (2015, 2020, or 2030) and categorized in terms of potential regional significance and air quality analysis exemption as per §93.126 and §93.127 of the Conformity Rule, using the codes listed in this Appendix. These projects include the I-94 managed lane (in Minneapolis and St. Paul) Mn/DOT preferred concept. The resulting list of regionally significant projects for 2015, 2020 and 2030 is shown in Tables F-2 through F-5. Although not in the tables, included in the analysis are all transitway corridors under study or development listed on page 120-121 of the 2009 Transportation Policy Plan. The analysis assumes the construction of the Southwest Transitway as LRT in the "3A" alignment.

### *Wright County and City of New Prague Projects*

A significant portion of Wright County and the City of New Prague are included in the Twin Cities CO maintenance area established in October 1999. However, since neither the county nor the cities are part of the Seven County Metropolitan Area, Wright County and New Prague projects were not coded into the Seven-County regional transportation model. However, Wright County and New Prague projects are evaluated for air quality analysis purposes, and the emissions associated with the regionally significant

projects identified are added to the Seven-County region's emissions total. No regionally significant projects are currently planned or programmed for the City of New Prague during the time period of this plan. Six Wright County projects were considered in the regional air quality analysis:

- TH 23 from TH 95 E. of St. Cloud to TH 25 in Foley; 2 to 4 lane expansion (2015)
- TH 25 from TH 55 in Buffalo to beginning 4-lane in Monticello; 2 to 4 lane expansion (2015)
- I-94; construct new interchange at Orchard Rd and at Naber Ave (2015)
- New river crossing south of Clearwater (2020)
- TH 55 from Annandale to Rockford; construct to four lanes (2030)
- I-94 from Rogers to Monticello; construct to six lanes (2030), construct new interchange at Kadler Ave

**Table F-1: Regionally Significant TIP Projects - 2009 Action Scenario**

Route	Description	Agency	MN/DOT Project Number/Comments
I-94	I-94 RECONFIGURATION I-35W TO TH 280	MN/DOT	

*\*note: 2009 is now a past year scenario. All previous 2009 action year projects are now assumed as a base-case.*

**Table F-2: Regionally Significant TIP Projects - 2015 Action Scenario**

Route	Description	Agency	MN/DOT Project Number/Comments
TH 25	TH 55 IN MONTICELLO TO I-94 IN BUFFALO, WRIGHT CO. - RECONSTRUCT TO 4 LANES	MN/DOT	8605-44
TH 23	FROM E OF ST. CLOUD TO TH 25 IN FOLEY - 2 TO 4 LANE EXPANSION	MN/DOT	
CSAH 116	SUNFISH LAKE BOULEVARD TO GERMANIUM ST - RECONSTRUCT TO FOUR LANES	ANOKA COUNTY	
CSAH 23	147TH ST TO 160TH ST - CONSTRUCTION OF 6-LANE FACILITY, INTERSECTION UP-GRADES TO ACCOMMODATE BRT BUSES ON CEDAR AVENUE	DAKOTA COUNTY	
CSAH 109	MAIN ST TO JEFFERSON HWY - CONSTRUCT 4-LANE DIVIDED ROAD	HENNEPIN COUNTY	
CSAH 17	CSAH 14 (MAIN ST) TO CSAH 116 (BUNKER LAKE BLVD) - RECONSTRUCTION TO SIX-LANE ROADWAY IN BLAINE AND FOUR-LANE ROADWAY IN HAM LAKE	ANOKA COUNTY	
CSAH 2	19TH ST SW TO 12TH ST SW AND THE I-35 INTERCHANGE - RECONSTRUCTION	WASHINGTON COUNTY	
CSAH 21	CSAH 16 TO CSAH 18 - RECONSTRUCTION	SCOTT COUNTY	
CSAH 81	TH 100 TO CSAH 10 - RECONSTRUCT TO 6-LANE URBAN DIVIDED ROADWAY	HENNEPIN COUNTY	

**Table F-2: Regionally Significant TIP Projects - 2015 Action Scenario**

Route	Description	Agency	MN/DOT Project Number/Comments
TH 242	THRUSH ST TO CRANE ST - RECONSTRUCT TO 4-LANE DIVIDED ROADWAY, INTERSECTION IMPROVEMENTS AND ACCESS MANAGEMENT	ANOKA COUNTY	
CSAH 21	FROM CSAH 42 IN PRIOR LAKE TO CSAH 15 IN SHAKOPEE	SCOTT COUNTY	
CSAH 96	AT TH 10 IN ARDEN HILLS-CONSTRUCT INTERCHANGE, ETC.	RAMSEY COUNTY	
TH 7	AT LOUISIANA AVE IN ST. LOUIS PARK- CONSTRUCT INTERCHANGE ETC.	ST. LOUIS PARK	
CSAH 10	FROM VICKSBURG LANE TO PEONY LN IN MAPLE GROVE-RECONSTRUCT TO 4-LANE DIVIDED ROADWAY, TRAILS, ETC.	MAPLE GROVE	
CSAH 116	FROM CSAH 7 TO 38TH AVE IN ANOKA & ANDOVER-RECONSTRUCT TO 4-LANE DIVIDED RDWY, PED/BIKE TRAIL, ETC.	ANOKA COUNTY	
CSAH 81	N OF CSAH 10 IN CRYSTAL TO N OF 63RD AVE N IN BROOKLYN PARK-RECONSTRUCT TO 6-LANE DIVIDED RDWY, ETC.	HENNEPIN COUNTY	
TH 169	S OF CSAH 81 TO N OF CSAH 109 IN BROOKLYN PARK, CONSTRUCT INTERCHANGE	MN/DOT	2750-57UGAC
I-494	FROM 10TH ST IN OAKDALE TO LAKE RD IN WOOBURY- REPLACE CONCRETE PAVEMENT, CONNECT AUSILIARY LANES, ETC.	MN/DOT	8285-93
TH 13	FROM ZINRAN AVE S TO LOUISIANA AVE S IN SAVAGE-RECONSTRUCT TH 13/101 INCLUDING AN OVERPASS FOR EB 101 TRAFFIC, ETC	SCOTT COUNTY	
TH 36	AT HILTON TRAIL IN PINE SPRINTS-RECONSTRUCT INTERSECTION	MN/DOT	8204-55
CSAH 10	REALIGN AND WIDEN CSAH 10 AND CSAH 101 FROM CSAH 101 TO EAST OF PEONY LN	MAPLE GROVE	189-020-019
TH 101/I-94	CONSTRUCT I-94 WB OFF RAMP TO N. OF S. DIAMOND LK. RD., EXTEND RAMP AND GRADE SEPERATION OVER S. DIAMOND LK. RD. ETC	ROGERS	238-010-02
CR 83	CONSTRUCT BRIDGE AND RETAINING WALLS FOR CR 83 OVERPASS OF I-35	WASHINGTON COUNTY	
TH 610	FROM CSAH 81 TO TH 169 IN BROOKLYN PARK AND MAPLE GROVE- CONSTRUCT TH 610	MN/DOT	2771-38
I-94	I-94 MANAGED CORRIDOR JOHN IRELAND TO I-35W	MN/DOT	

**Table F-3: Regionally Significant TIP Projects - 2020 Action Scenario**

Route	Description	Agency	Mn/DOT Project Numbers / Comments
TH 61	REPLACE MISSISSIPPI RIVER BRIDGE AND APPROACHES	Mn/DOT	1913-64
TH 52	REPLACE LAFAYETTE BRIDGE	Mn/DOT	6244-30
I-35E	REPLACE CAYUGA BRIDGE	Mn/DOT	6280-308

Table F-4: Regionally Significant TIP Projects - 2030 Action Scenario			
Route	Description	Agency	Mn/DOT Project Numbers / Comments
	NO REGIONALLY SIGNIFICANT PROJECTS IDENTIFIED		

## B. Travel Forecasting Model Overview

The following provides a summary of the traffic forecast models used in the air quality analysis. Detailed technical information on the models is found in technical memorandums developed as part of the 2000 Travel Behavior Inventory. The information is available through the Council’s web site or the Metropolitan Transportation Services Division.

The RTDFM is broadly based upon the classical “four-step” family of travel demand models, with some added features that implement Conformity Rule analysis requirements. Exhibit F-2 illustrates the flow of the sub-models used in the RTDFM; these are described in further detail below. All sub-models were calibrated using of the 2000 Travel Behavior Inventory Home Interview Survey, which provides a database of observed daily trips by origin, destination, purpose, and mode.

### *Highway Model Network*

Travel analysis zones (TAZ’s) are used in the travel demand modeling process as a common geographic unit for data summary. The system of TAZ’s covers the entire seven-county Twin Cities Metropolitan Area, plus the adjoining collar counties. All home-interview data and selected other trip and socioeconomic data were compiled by TAZ. In addition, the TAZ system forms the geographic framework for coding highway and transit networks. Each TAZ is linked to all others by the highway network, and within the region’s core, most are linked to one another by the transit network as well. The most significant application of the TAZ is as the geographic unit used by the models to predict attractions and productions of person-trips.

The year 2000 zone system consists of 1201 zones within the 7-county region (Anoka, Dakota, Carver, Hennepin, Ramsey, Scott, and Washington), 35 “inner” external station zones around these 7 counties, 364 zones in the 13 collar or ring counties (Chisago, Isanti, Mille Lacs, Sherburne, Wright, McLeod, Sibley, LeSueur, Rice, Goodhue, Pierce, WI; St. Croix, WI; and Polk, WI) and 32 zones representing “outer” external stations around the ring counties. Internal zone boundaries most often lie along major highways or arterial streets or on any other significant physical boundary that shapes and directs trip movements, such as a large lake or major river. County boundaries also form edges of zones where appropriate. An external station is a point at the edge of the twenty-county area where vehicle trips leave and/or enter the twenty-county area.

The development of the 2000 highway network was completed by the Council with assistance from Mn/ DOT and the transportation departments of counties and cities. Future year projects were added to this

base to create future year networks including roadway condition information for all horizon years. Every TAZ is classified by area type (e.g. Rural, Developing, Developed, Residential Core, Business Core and Outlying Business Center), and every roadway link is assigned the same area type as the TAZ within which it lies (using GIS). These area types are then combined with facility types to create a matrix of assumed speeds and capacities based upon the 2000 Travel Behavior Inventory (TBI) highway speed and capacity survey. Facility types are categories of roads which operate in a similar manner, including the following:

- |                      |                       |                           |
|----------------------|-----------------------|---------------------------|
| 1. Metered Freeway   | 6. Undivided Arterial | 13. Metered System Ramp   |
| 2. Unmetered Freeway | 7. Collector          | 14. Unmetered System Ramp |
| 3. Metered Ramp      | 8. HOV                | 15. Expressway            |
| 4. Unmetered Ramp    | 9. Centroid Connector |                           |
| 5. Divided Arterial  | 10. HOV Ramp          |                           |

A revision completed in December 2005 added two new fields to the highway network. One of these is used to assign differential capacities by time of day to HOV facilities on I-394 and I-35W, while the other is used to store manually coded default speeds for freeways, which are set at 10% above observed posted speed limits.

#### *Trip Generation Model*

The traffic forecasts used to calculate the CO emissions listed in Table F-7 are based on the most recent socioeconomic data prepared by the Council for the 2030 Regional Framework. The Trip Generation Model produces total trip productions and attractions by purpose for each transportation analysis zone based on the population, number of households, employment level and socio-economic characteristics of each zone, including estimated auto ownership. Table F-5 lists the assumed population, household, and employment totals by year for the seven-county metro area, based upon the 2030 Regional Development Framework, revised March 15, 2007.

**Table F-5: METROPOLITAN AREA FORECAST SUMMARY**

	1990	2000	2015	2020	2030
Population	2,288,729	2,642,062	3,169,500	3,334,000	3,608,000
Households	875,504	1,021,459	1,280,000	1,362,000	1,492,00
Employment	1,272,773	1,563,245	1,903,000	1,990,000	2,124,000

*Destination Choice Model*

The Destination Choice Model (also known as the trip distribution model) estimates the probability of selecting a particular destination zone, given a particular zone of origin, as defined by the regional network and zone system. This sub-model estimates the number of person-trips to be anticipated between any two zones in the regional model on an average weekday, regardless of mode.

The probability of selecting any particular destination zone is a

decreasing function of the composite impedance to said zone, calculated using a “logsum” combination of level of service and cost variables extracted from the congested highway and transit networks, computed in a manner consistent with the mode choice model described below.

*Mode Choice Model*

The Mode Choice Model applies a hierarchical nested logit model to estimate the percentage of trips by purpose assigned to non-motorized (bicycle/pedestrian), transit, single-occupancy vehicle (SOV) and high-occupancy vehicle (HOV) travel modes. For a given trip and market segment, weighting factors are applied to level of service and cost values extracted from the congested highway and transit networks to compute an overall “utility” associated with each alternative mode available. The difference between these utilities is used to calculate the probability of selecting each alternative mode, using a mathematical formulation that ensures that the probabilities of all alternatives add to one. Different parameters are used for off-peak and peak trips by purpose, including home-based work, home-base other and non-home-based trips (the last of these being further sub-divided into work-related and non-work related trip types). Home-based trips destined to the University of Minnesota are dealt with separately, in a special combination destination/mode choice model.

*Diurnal Factoring Model*

The Diurnal Factoring Model (also known as the Temporal Distribution Model) splits the daily trip tables into 24 time segments to replicate the peak and off-peak period travel shares observed in the 2000 TBI. This permits the network to be reasonably sensitive to peak and off-peak travel congestion as required by §93.122 of the Conformity Rule.

*Assignment Model*

The Assignment Model assigns vehicle trips to capacity restrained equilibrium shortest paths built from the individual links of the highway system. Initially, all speeds are set to free-flow (uncongested) values, and all trips are assigned to the shortest path between their respective origins and destinations. Then, the speeds on each link are reduced to reflect the effects of congestion, and the set of shortest paths is re-calculated based upon the congested travel times. A percentage of the trips are assigned to these congested paths, and the process is repeated iteratively until user equilibrium is reached. Congested speeds are a decreasing function of the volume-to-capacity ratio, so that the final congested travel time is

influenced by utilization levels as well as distances and posted speeds. The delay function used to adjust link speeds is based upon a conical function calibrated using 2000 Travel Behavior Inventory Highway Speed Survey data, rather than the default Bureau of Public Roads equation.

The I-394 MnPASS lanes, which opened in May 2005, are also taken into account in the highway assignment step of the regional travel demand model by using dynamic toll tables (provided by Mn/DOT) and the estimated sample distribution of I-394 corridor drivers' willingness to pay for time savings (derived from a research study by the University of Minnesota). This route diversion approach is common throughout the traffic and revenue forecasting industry. It is assumed that these lanes will continue operation into the future, and that the current relationship between congestion levels and toll rates reflected in the aforementioned dynamic toll tables will remain the same in real terms through 2030. The same approach is followed for modeling the dynamic shoulder lanes on I-35W.

#### *External Travel Model*

A parallel four-step process is performed for the counties surrounding the seven-county Metro to address the effects of improvements within the Council jurisdiction area on travel crossing the seven-county boundary. This process includes simplified trip generation, distribution, and mode choice steps, as well as an external station choice step which determines which roadways crossing the boundary are used by externally-based vehicle trips. The external travel model is not intended to address the effects of improvements outside the seven-county area on vehicle travel in the "collar" counties. A separate "Collar County Travel Demand Model" has been created for this purpose by Mn/DOT and is under evaluation for potential air quality analysis use in the Wright County portion of the CO maintenance area. No network-based modeling was used to analyze the impacts of Wright County projects.

#### *Method of Successive Averages Model Loop*

In accordance with §93.122 of the Conformity Rule, which specifies that, "zone-to-zone travel impedances used to distribute trips between origin and destination pairs must be in reasonable agreement with the travel times that are estimated from final assigned traffic volumes," the Regional Travel Demand Forecast Model includes a feedback loop which extracts congested level of service and cost values from the assignment step and inputs these to prior steps. The entire model is run iteratively and volumes from each iteration are averaged together until input and output travel times are in reasonable agreement with one another. Typically 3-4 model iterations are required to reach the assumed 2% link volume convergence criterion; the feedback loop and convergence check process is automated using a batch file.

### **C. Air Quality Modeling**

The MOBILE 6.2 model is used to produce carbon monoxide emission factors from mobile sources for the region. Sample input and output files for MOBILE 6.2 are in Exhibit F-3. Daily mobile source CO air pollution was calculated based on emission factors from MOBILE 6.2 (in grams per vehicle mile), applied to vehicle miles of travel (VMT) aggregated by county and road facility type. The model also accounts for

**Table F-6: MOBILE 6.2 INPUT VALUES**

The EPA-MOBILE 6.2 model produced the vehicular CO emissions for the inventory using the following input values:

Passenger/light vehicle Registration.....	2004, 7-county area
Heavy Duty Trucks .....	MOBILE 6 Default
Gasoline volatility .....	13.4 RVP
Minimum temperature.....	16 degrees F.
Maximum temperature.....	38 degrees F.
Altitude .....	low altitude

travel on centroid connectors (which serve as proxies for local roads), as well as intra-zonal travel. Adjustment factors were implemented to ensure consistency with 2000 Highway Performance Measures System (HPMS) data and to adjust for the use of January CO rates. Further information on the recalculation of the regional Motor Vehicle Emissions Budget (MVEB) shown in Table F-7 is in the *Revision of the Minneapolis-St. Paul Carbon Monoxide Maintenance Plan* prepared in August 2004 by Sonoma Technology, Inc. for the MPCA. The revised maintenance plan was submitted to the USEPA by the MPCA in October 2004 to revise the SIP.

The series of models currently used are not capable of analyzing individual travel demand management strategies. This type of analysis must be performed “off-model” by applying CO reduction estimate techniques developed to analyze the benefits of CMAQ-type projects.

Table F-6 lists the input values applied by the MOBILE 6.2 model.

**D. Conformity Emissions Budget Test**

The conformity test as defined in §93.118 requires that the CO emissions calculated in the conformity analysis for the plan and the TIP must be equal to or less than the CO MVEB for the region, 1,961 short tons/day. The budget is assumed to remain constant throughout the 25-year planning period of the plan.

*The Action Scenario* as described in the Conformity Rules §93.119(g) and referenced in §93.122(a)(5), is the future transportation system that would result from the implementation of the plan and other regionally significant projects to start construction in the time frame of the plan.

The results of the emissions budget conformity test for the plan are shown in Table F-1. CO emissions from motor vehicle sources remain below the MVEB for the analysis milestone years 2009, 2015, 2020 and 2030. The emissions can be reasonably expected to remain below the emissions budget for the following reasons:

1. Continued improvement in auto emissions controls systems and the ongoing implementation of an oxygenated gasoline program as reflected in the modeling assumptions used in the January 2005 amendment to the SIP.
2. A regional commitment to continue capital investments to maintain and improve the operational efficiencies of the highway and transit systems

Adoption of a regional long-term 2030 Regional Development Framework. The Development Framework strategies support land use patterns that efficiently connect housing, jobs, retail centers and civil uses with neighborhoods, urban and rural centers and transit oriented development along transit corridors. A land use development pattern is expected to emerge that

is more compact, mixed-use and pedestrian-friendly particularly along designated transitway corridors. Further, the Council has the authority by state statute to periodically review local comprehensive plans for consistency with regional plans and conformity to regional systems such as transportation and sewers, make capital investments for the regional sewer collection and treatment system and the metropolitan transit system which it operates, and approve design and capital investments on principal arterials. These capital investments are programmed to implement the regional land use and system plans. Also by statute, the Council must approve significant regional highways proposed for construction by Mn/DOT. A memorandum of understanding between the Council and Mn/DOT commits both agencies to pursuing innovative strategies for reducing passenger delay and growth in vehicle-miles-traveled such as congestion pricing.

4. Extensive CO air quality emissions modeling by the MPCA, accepted by the EPA as part of the documentation for the redesignation request, demonstrated that the National Ambient Air Quality standards can be met without the operation of a regional vehicle inspection maintenance program.

5. The continued involvement of local governmental units in the regional 3C transportation planning process allows the region to address local congestion, effectively manage available capacities in the transportation system, and promote transit supportive land uses and more compact development patterns as part of a coordinated regional growth management strategy.

The model results in a decrease in CO emissions from 2015 to 2020 and then an increase from 2020 to 2030. This is because reductions in the rate of CO emissions have been decreasing at a faster pace than vehicle-miles traveled (VMT) has been increasing in the region, such that overall CO emissions have been declining. This trend should continue between 2015 and 2020, but will reverse between 2020 and 2030 as the degree of improvement in CO emissions rates is expected to level off while VMT will continue to increase.

An attainment area for PM-10 is located in the City of St. Paul. The attainment designation is based on an USEPA approved MPCA plan to bring this area into attainment. The previous non-attainment designation was not due to transportation sources.

#### **IV. Estimated Future Emissions in the Twin Cities Carbon Monoxide Maintenance Area**

The USEPA, in response to a MPCA request, redesignated the Twin Cities seven-county Metropolitan Area and Wright County as in attainment for CO in October 1999. A 1996 motor vehicle emissions budget (MVEB) was revised in January 2005 in a revision to the SIP. The SIP amendment revised the MVEB budget to a not-to-exceed threshold of 1,961 tons per day of CO emissions for the analysis milestone years of 2009, 2015, 2020 and 2030. The results of the emissions analysis is shown in Table F-7.

## V. Timely Implementation of Transportation Control Measures

Pursuant to the Conformity Rule, the Council reviewed the plan and certifies that the plan conforms with the SIP and does not conflict with its implementation. All Transportation System Management (TSM) strategies which were the adopted TCM's for the region have been implemented or are ongoing and funded. There are no TSM projects remaining to be completed. There are no fully adopted regulatory

new TCM's nor fully funded non-regulatory TCM's that will be implemented during the programming period of the TIP. There are no prior TCM's that were adopted since November 15, 1990, nor any prior TCM's that have been amended since that date.

As part of the Urban Partnership Agreement (UPA), additional transit lanes will be added to Marquette and 2nd Ave in Minneapolis, and transit capacity in the I-35W corridor will be enhanced through dynamic priced shoulder lanes.

A list of officially adopted TCM's for the region may be found in the November 27, 1979 Federal Register notice for EPA approval of the Minneapolis-St. Paul CO Maintenance Plan, based upon the 1980 Air Quality Control

Plan for Transportation, which in turn cites transit strategies in the 1978-1983 Transportation Systems Management Plan. It is anticipated that the Transportation Air Quality Control Plan will be revised in the near future. The following lists the summary and status of the currently adopted TCM's:

- **Vehicle Inspection and Maintenance Program** (listed in Transportation Control Plan as a potential strategy for hydrocarbon control with CO benefits). This program became operational in July 1991 and was terminated in December 1999.
- **I-35W Bus/Metered Freeway Project.** Metered freeway access locations have bus and carpool bypass lanes at strategic intersections on I-35W. In March, 2002 a revised metering program became operational. The *2030 Transportation Policy Plan* calls for the implementation of Bus Rapid Transit in the I-35W corridor. As part of the Urban Partnership Agreement (UPA), additional transit lanes will be added to Marquette and 2nd Ave in Minneapolis, and transit capacity in the I-35W corridor will be enhanced through dynamic priced shoulder lanes.
- **Traffic Management Improvements** (multiple; includes SIP amendments):
  - *Minneapolis Computerized Traffic Management System.* The Minneapolis system is installed. New hardware and software installation were completed in 1992. The system has been significantly extended since 1995 using CMAQ funding. Traffic signal improvements will be made to downtown street system to provide daily enhanced preferred treatment for bus and LRT transit vehicles in 2009.

**Table F-7: CO EMISSION BUDGET CONFORMITY TEST PLAN ACTION SCENARIOS DAILY CO EMISSIONS FOR ANALYSIS MILESTONE**

**YEARS 2009, 2015, 2020, 2030 (Short Tons/day)**

NETWORK	2009	2015	2020	2030
BASELINE EMISSIONS BUDGET (MVEB)	1,961	1,961	1,961	1,961
ACTION (BUILD) SCENARIO	1,408	1,210	1,161	1,198
CO EMISSIONS BELOW THE EMISSIONS BUDGET	553	751	800	763

- *St. Paul Computerized Traffic Management System.* St. Paul system completed in 1991.
  - *University and Snelling Avenues, St. Paul.* Improvements were completed in 1990 and became fully operational in 1991.
- **Fringe Parking Programs.** Minneapolis and St. Paul are implementing ongoing programs for fringe parking and incentives to encourage carpooling through their respective downtown traffic management organizations. These programs include the 3rd Ave. distributor in Minneapolis and parking messaging signage in both downtowns.
- **Stricter Enforcement of Traffic Ordinances.** Ongoing enforcement of parking idling and other traffic ordinances is being aggressively pursued by Minneapolis and St. Paul.
- **Public Transit Strategies** (from the 1983 Transportation Systems Management Plan):
  - *Reduced Transit Fares.* Current transit fares include discounts for off-peak and intra-CBD travel and are below 1978 levels in real terms. Reduced fares are also offered to seniors, youth, and medicare holders.
  - *Transit Downtown Fare Zone.* All transit passengers can ride either the Minneapolis or Saint Paul fare zones for 50 cents.
  - *Community-Centered Transit.* The Council is authorized by legislation to enter into and administer financial assistance agreements with local transit providers in the metropolitan region, including community-based dial-a-ride systems. This program is used to provide funding assistance to local agencies operating circulation service coordinated with regular route transit service.
  - *Flexible Transit.* Routes 755 and 756 in Medicine Lake were operated on a flex-route in 2006 by First Student, a private provider. Also, Metro Mobility, a service of the Council, as well as the dial-a-ride services mentioned above, operates with flexible routes catered to riders' special needs.
  - *Total Commuter Service.* The non-CBD employee commuter vanpool matching services provided by this demonstration project, mentioned in the 1983 Transportation Systems Management Plan as well as the Transportation Control Plan, are now offered in an expanded form by Metro Transit Rideshare and the Van-Go! program, both services of the Council
  - *Elderly and Handicapped Service.* ADA Paratransit Service is available for people who are unable or have extreme difficulty using regular route transit service because of a disability or health condition. ADA Paratransit Service provides "first-door-through-first-door" transportation in 89 communities throughout the metropolitan area for persons who are ADA-certified. The region's ADA paratransit service is provided by four programs, namely Metro Mobility,

Anoka County Traveler, DARTS, and H.S.I. (serving Washington County). In addition, every regular-route bus has a wheelchair lift, and drivers are trained to help customers use the lift and secure their wheelchairs safely. Hiawatha Line trains offer step-free boarding, and are equipped with designated sections for customers using wheelchairs. In addition, all station platforms are fully accessible.

- *Responsiveness in Routing and Scheduling.* Metro Transit has begun a series of Transit Redesign “sector studies” to reconfigure service to better meet the range of needs based on these identified transit market areas. The Sector 1 and 2 studies, covering the northeast quadrant of the region, were the first to be completed. Following the successful reorganization of transit service in those areas, the Central-South Sector (5) and a portion of Sector 3 in the western suburbs were implemented. The Sector 8 (Northwest Minneapolis and suburbs) bus-route restructuring plan is currently being completed.
- *CBD Parking Shuttles.* The downtown fare zones mentioned above provide fast, low-cost, convenient service to and from parking locations around the CBD. The Access Minneapolis plan currently under development also includes a proposal to provide free shuttle service on the bus-only Nicollet Mall in downtown Minneapolis.
- *Simplified Fare Collection.* The fare zone system in place at the time of the Transportation Systems Management Plan has since been eliminated. Instead, a simplified fare structure based upon time (peak vs. off-peak) and type (local vs. express) of service has been implemented, with discounts for select patrons (e.g. elderly, youth). Convenient electronic fare passes are also available from Metro Transit, improving ease of fare collection and offering bulk-savings for multi-ride tickets.
- *Bus Shelters.* Metro Transit coordinates bus shelter construction and maintenance throughout the region. Shelter types include standard covered wind barrier structures as well as lit and heated transit centers at major transfer points and light-rail stations.
- *Rider Information.* Rider information services have been greatly improved since the 1983 Transportation Systems Management Plan was created. Schedules and maps have been redesigned for improved clarity and readability, and are now available for download on Metro Transit’s web-site, which also offers a custom trip planner application to help riders choose the combination of routes that best serves their needs. Bus arrival and departure times are posted in all shelters, along with the phone number of the TransitLine automated schedule information hotline.
- *Transit Marketing.* Metro Commuter Services, under the direction of Metro Transit, coordinates all transit and rideshare marketing activities for the region, including five Transportation Management Organizations (TMOs) that actively promote alternatives to driving alone through employer outreach, commuter fairs, and other programs. Metro

Commuter Services also conducts an annual Commuter Challenge, which is a contest encouraging commuters to pledge to travel by other means than driving alone.

- *Cost Accounting and Performance-Based Funding.* Key criteria in the aforementioned Transit Redesign process include service efficiency (subsidy per passenger) and service effectiveness (passengers per revenue-hour). Metro Transit uses these metrics to evaluate route cost-effectiveness and performance and determine which routes are kept, re-tuned, or eliminated.
- *“Real-Time” Monitoring of Bus Operations.* The regional Transit Operations Center permits centralized monitoring and control of all vehicles in the transit system.
- *Park-and-Ride.* The Park-and-Ride Facility Site Location Study provides guidelines intended for use in planning, designing, and evaluating proposed park-and-ride facilities served by regular route bus transit. The guidelines can also be used for park-and-ride lots without bus service and at rail stations. The Metropolitan Council administers capital funding to transit operating agencies building, operating, and maintaining park-and-ride facilities.
- **Hennepin and First Avenue One-Way Pair.** These streets in downtown Minneapolis were re-configured subsequent to the 1980 Air Quality Control Plan for Transportation to address a local CO hot-spot issue that has since been resolved. The Access Minneapolis plan includes a proposal to revert to a two-way configuration in the future; this proposal will be evaluated as part of a separate SIP revision process and as such will be the subject of further inter-agency consultation.


The above list includes two TCM’s that are traffic flow amendments to the SIP. The MPCA added them to the SIP since its original adoption. These include in St. Paul, a CO Traffic Management System at the Snelling and University Avenue. While not control measures, the MPCA added two additional revisions to the SIP which reduce CO: a vehicle emissions inspection/maintenance program, implemented in 1991, to correct the region-wide carbon monoxide problem, and a federally mandated four-month oxygenated gasoline program implemented in November 1992. In December 1999 the vehicle emissions inspection/maintenance program was eliminated.

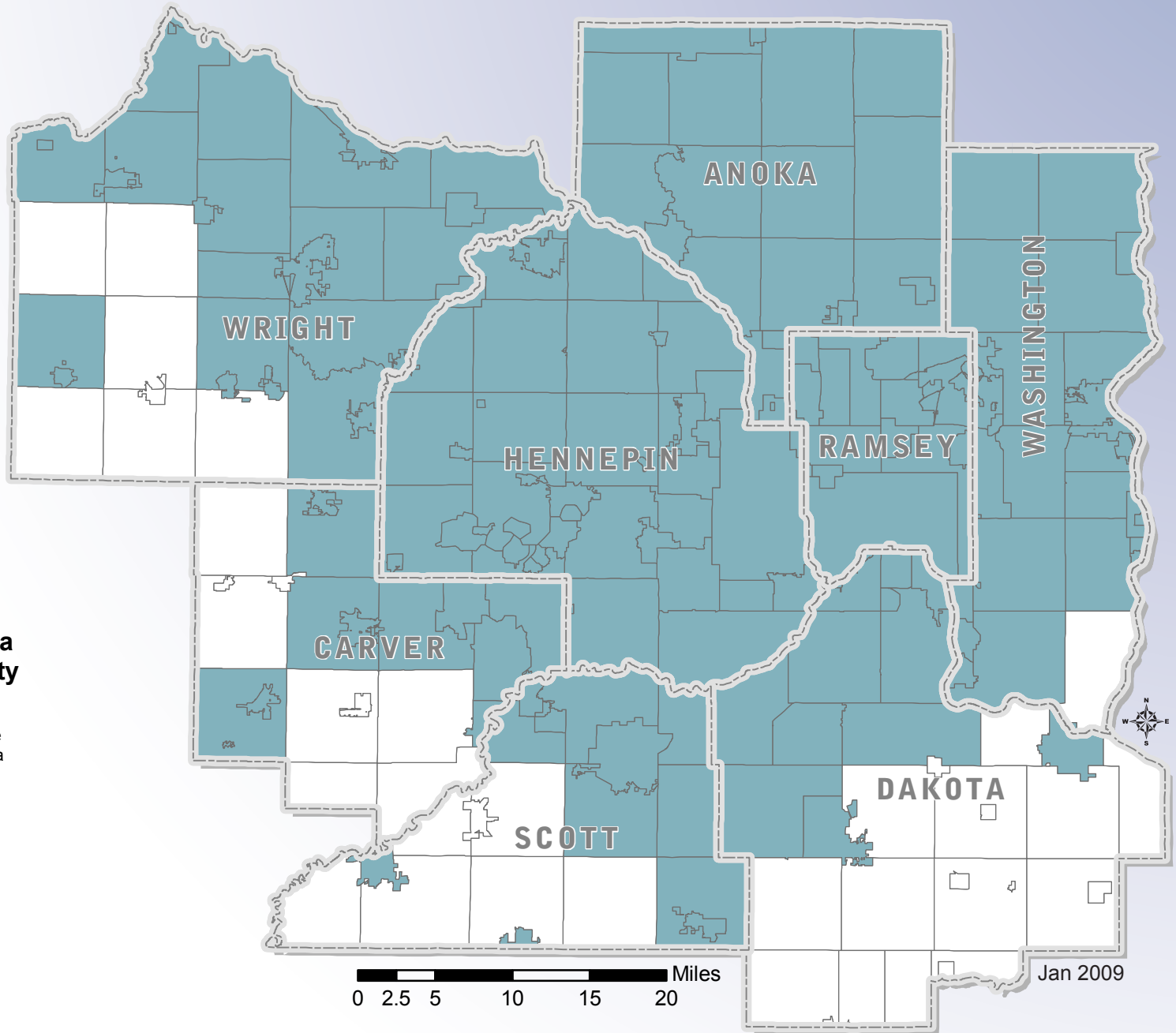
The MPCA requested that the USEPA add a third revision to the SIP, a contingency measure consisting of a year-round oxygenated gasoline program if the CO standards were violated after 1995. The USEPA approved the proposal. Because of current state law which remains in effect, the Twin Cities area has a state mandate year-round program that started in 1995. The program will remain regardless of any USEPA rulemaking.

## **VI. Exhibits**

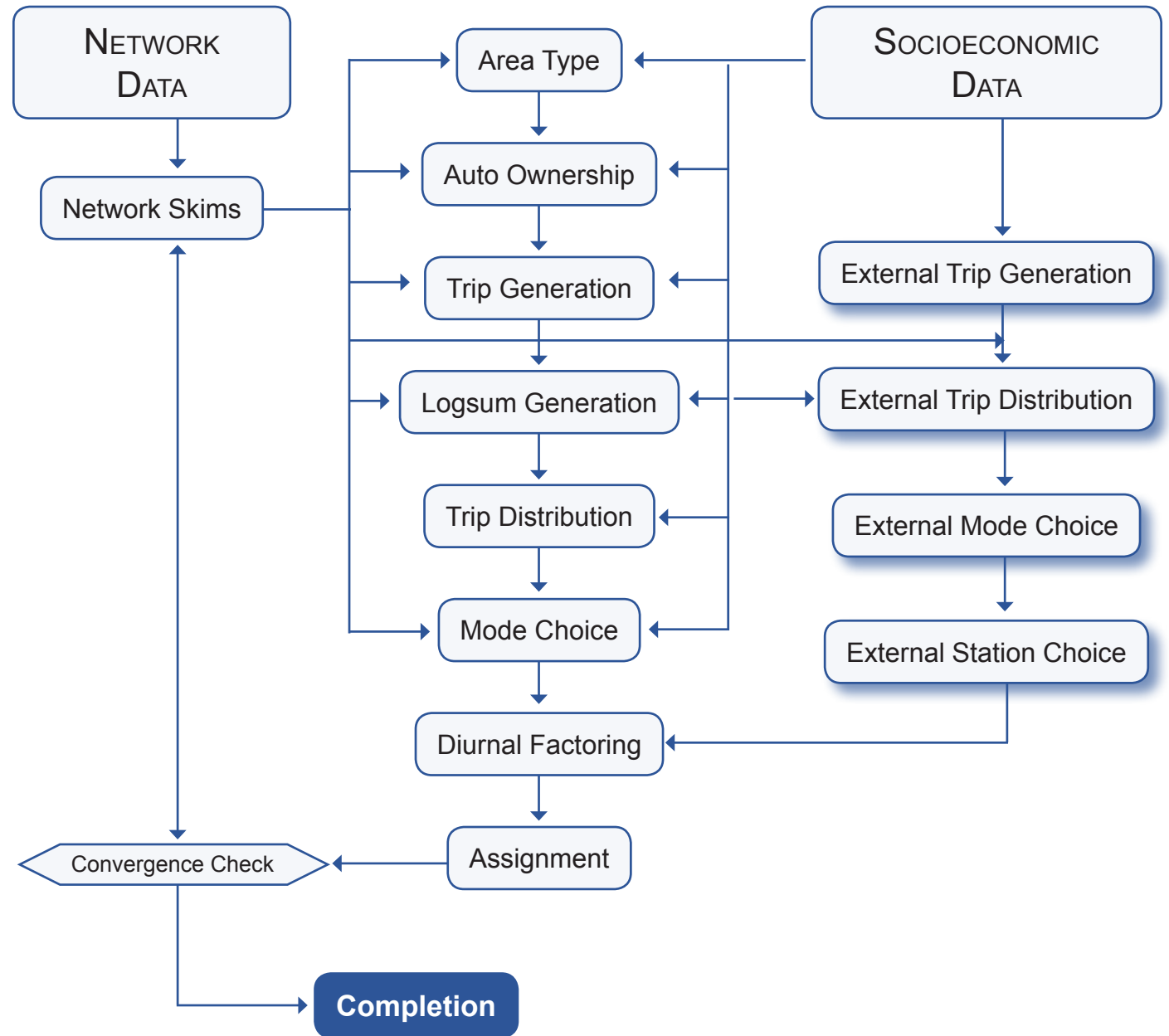
This section contains the exhibits referenced in this appendix.

**Seven County  
Metropolitan Area  
and Wright County**

 Carbon Monoxide  
Maintenance Area



## Exhibit F-2: Regional Travel Demand Forecasting Model Flow Chart



# Exhibit F-3: Samples of MOBILE 6.2 Input and Output Files for 2015 Analysis Milestone Year MOBILE 6.2 Input Command Set for 2015

```

*****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: TIP2015.IN (file 1, run 1). *
*****
** Definition of General Parameters
*****

* Reading Registration Distributions from the following external
* data file: 04REGDAT.MN
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.01 MYR sum not = 1. (will normalize)
M 49 Warning:
1.01 MYR sum not = 1. (will normalize)
M 49 Warning:
1.01 MYR sum not = 1. (will normalize)
M 49 Warning:
1.01 MYR sum not = 1. (will normalize)
M616 Comment:
User has supplied post-1999 sulfur levels.
*****
** Generation of CO Emission Rate Tables *
*****

```

```

* #####
* Anoka freeway - 65.8 mph
* File 1, Run 1, Scenario 1.
* #####
M 96 Warning:
65.8 speed reduced to 65 mph maximum
M581 Warning:
The user supplied freeway average speed of 65.0
will be used for all hours of the day. 100% of VMT
has been assigned to the freeway roadway type for
all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2015
Month: Jan.
Altitude: Low
Minimum Temperature: 16.0 (F)
Maximum Temperature: 38.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 13.4 psi
Weathered RVP: 13.9 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

```

```

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000
Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027
Alcohol Blend RVP Waiver: Yes

```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVMR:		<6000	>6000	(All)						
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	17.19	15.92	17.45	16.34	9.15	0.665	0.375	0.707	20.28	15.017









\* #####  
 \* Scott freeway - 70.0 mph  
 \* File 1, Run 1, Scenario 10.  
 \* #####

M 96 Warning: 70.0 speed reduced to 65 mph maximum

M515 Warning:  
 The combined freeway and ramp average speed entered cannot be greater than 60.7 miles per hour. The average speed will be reset to this value.

M582 Warning:  
 The user supplied freeway average speed of 60.7 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

M 48 Warning: there are no sales for vehicle class HDGV8b

M 48 Warning: there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	17.29	15.99	17.51	16.40	8.93	0.662	0.373	0.703	19.51	15.072

\* #####  
 \* Scott arterial/collector - 43.0 mph  
 \* File 1, Run 1, Scenario 11.  
 \* #####

M583 Warning:  
 The user supplied arterial average speed of 43.0  
 will be used for all hours of the day. 100% of VMT  
 has been assigned to the arterial/collector roadway  
 type for all hours of the day and all vehicle types.

M 48 Warning:  
 there are no sales for vehicle class HDGV8b  
 M 48 Warning:  
 there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000

-----  
 Composite Emission Factors (g/mi):  
 Composite CO : 15.31 14.02 15.31 14.37 5.83 0.590 0.329 0.567 9.39 13.141  
 -----

\* #####  
 \* Washington freeway - 71.1 mph  
 \* File 1, Run 1, Scenario 12.  
 \* #####

M 96 Warning:  
 71.1 speed reduced to 65 mph maximum

M581 Warning:  
 The user supplied freeway average speed of 65.0  
 will be used for all hours of the day. 100% of VMT  
 has been assigned to the freeway roadway type for  
 all hours of the day and all vehicle types.

M 48 Warning:  
 there are no sales for vehicle class HDGV8b  
 M 48 Warning:  
 there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000

-----  
 Composite Emission Factors (g/mi):  
 Composite CO : 17.19 15.92 17.45 16.34 9.15 0.665 0.375 0.707 20.28 15.017  
 -----

\* #####  
 \* Washington arterial/collector - 39.7 mph  
 \* File 1, Run 1, Scenario 13.  
 \* #####

M583 Warning:  
 The user supplied arterial average speed of 39.7  
 will be used for all hours of the day. 100% of VMT  
 has been assigned to the arterial/collector roadway  
 type for all hours of the day and all vehicle types.

M 48 Warning:  
 there are no sales for vehicle class HDGV8b  
 M 48 Warning:  
 there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000
-----										
Composite Emission Factors (g/mi):										
Composite CO :	15.02	13.72	14.97	14.06	5.93	0.601	0.336	0.589	9.79	12.884
-----										

\* #####  
 \* Wright freeway - 73.9 mph  
 \* File 1, Run 1, Scenario 14.  
 \* #####

M 96 Warning: 73.9 speed reduced to 65 mph maximum

M515 Warning:  
 The combined freeway and ramp average speed entered cannot be greater than 60.7 miles per hour. The average speed will be reset to this value.

M582 Warning:  
 The user supplied freeway average speed of 60.7 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

M 48 Warning: there are no sales for vehicle class HDGV8b

M 48 Warning: there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	17.29	15.99	17.51	16.40	8.93	0.662	0.373	0.703	19.51	15.072

\* #####  
 \* Wright arterial/collector - 51.8 mph  
 \* File 1, Run 1, Scenario 15.  
 \* #####

M583 Warning:  
 The user supplied arterial average speed of 51.8  
 will be used for all hours of the day. 100% of VMT  
 has been assigned to the arterial/collector roadway  
 type for all hours of the day and all vehicle types.

M 48 Warning:  
 there are no sales for vehicle class HDGV8b  
 M 48 Warning:  
 there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000

-----  
 Composite Emission Factors (g/mi):  
 Composite CO : 16.06 14.78 16.17 15.16 6.18 0.585 0.327 0.559 8.95 13.830  
 -----

\* #####  
 \* All ramps - 34.6 mph  
 \* File 1, Run 1, Scenario 16.  
 \* #####

M586 Warning:  
 100% of VMT has been assigned to the freeway ramp  
 roadway type for all hours of the day for all  
 vehicle types with an average speed of 34.6 mph.

M 48 Warning:  
 there are no sales for vehicle class HDGV8b  
 M 48 Warning:  
 there are no sales for vehicle class LDDT12

Calendar Year: 2015  
 Month: Jan.  
 Altitude: Low  
 Minimum Temperature: 16.0 (F)  
 Maximum Temperature: 38.0 (F)  
 Absolute Humidity: 75. grains/lb  
 Nominal Fuel RVP: 13.4 psi  
 Weathered RVP: 13.9 psi  
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No  
 Evap I/M Program: No  
 ATP Program: No  
 Reformulated Gas: No

Ether Blend Market Share: 0.000 Alcohol Blend Market Share: 1.000  
 Ether Blend Oxygen Content: 0.000 Alcohol Blend Oxygen Content: 0.027  
 Alcohol Blend RVP Waiver: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2928	0.4227	0.1590		0.0345	0.0003	0.0024	0.0832	0.0050	1.0000

-----  
 Composite Emission Factors (g/mi):  
 Composite CO : 18.51 16.72 18.13 17.10 6.44 0.636 0.357 0.653 10.65 15.702  
 -----



## Exhibit F-4: Projects that do not Impact Regional Emissions, and Projects that also do not Require Local Carbon Monoxide Impact Analysis

Certain transportation projects eligible for funding under Title 23 U.S.C. or the Urban Mass Transportation Act have no impact on regional emissions. These are “exempt” projects that, because of their nature, will not affect the outcome of any regional emissions analyses and add no substance to those analyses. These projects (as listed in §93.126 of conformity rules) are excluded from the regional emissions analyses required in order to determine conformity of the *Transportation Policy Plan* and TIPs.

Following is a list of “exempt” projects and their corresponding codes used in column “AQ” of the 2009-2012 TIP. The coding system is revised from previous TIPs to be consistent with the coding system for exempt projects in the proposed Minnesota Pollution Control Agency (MPCA) revision to the State Implementation Plan for Air Quality for Transportation Conformity.

Except for projects given an “A” code or a “B” code, the categories listed under Air Quality should be viewed as advisory in nature, and relate to project specific requirements rather than to the TIP air quality conformity requirements. They are intended for project applicants to use in the preparation of any required federal documents. Ultimate responsibility for determining the need for a hot-spot analysis for a project under 40 CFR Pt. 51, Subp. T (The transportation conformity rule) rests with the U.S. Department of Transportation. The Council has provided the categorization as a guide to project applicants of possible conformity requirements, if the applicants decide to pursue federal funding for the project.

### SAFETY

Railroad/highway crossing	S-1
Hazard elimination program	S-2
Safer non-federal-aid system roads	S-3
Shoulder improvements	S-4
Increasing sight distance	S-5
Safety improvement program	S-6
Traffic control devices and operating assistance other than signalization projects	S-7
Railroad/highway crossing warning devices	S-8
Guardrails, median barriers, crash cushions	S-9
Pavement resurfacing and/or rehabilitation	S-10
Pavement marking demonstration	S-11

Emergency relief (23 U.S.C. 125)	S-12
Fencing	S-13
Skid treatments	S-14
Safety roadside rest areas	S-15
Adding medians	S-16
Truck climbing lanes outside the urbanized area	S-17
Lighting improvements	S-18
Widening narrow pavements or reconstructing bridges (no additional travel lanes)	S-19
Emergency truck pullovers	S-20
<i>MASS TRANSIT</i>	
Operating assistance to transit agencies	T-1
Purchase of support vehicles	T-2
Rehabilitation of transit vehicles	T-3
Purchase of office, shop, and operating equipment for existing facilities	T-4
Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.)	T-5
Construction or renovation of power, signal, and communications systems	T-6
Construction of small passenger shelters and information kiosks	T-7
Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures)	T-8
Rehabilitation or reconstruction of track structures, track and trackbed in existing rights-of-way	T-9
Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet	T-10
Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR 771	T-11

## *AIR QUALITY*

Continuation of ride-sharing and van-pooling promotion activities at current levels AQ-1

Bicycle and pedestrian facilities AQ-2

## *OTHER*

Specific activities which do not involve or lead directly to construction, such as:

Planning and technical studies  
Grants for training and research programs  
Planning activities conducted pursuant to titles 23 and 49 U.S.C.  
Federal-aid systems revisions O-1

Engineering to assess social, economic and environmental effects of the proposed action or alternatives to that action O-2

Noise attenuation O-3

Advance land acquisitions (23 CFR 712 or 23 CFR 771) O-4

Acquisition of scenic easements O-5

Plantings, landscaping, etc. O-6

Sign removal O-7

Directional and informational signs O-8

Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities) 0-9

Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational, or capacity changes O-10

### *Projects Exempt from Regional Emissions Analyses that may Require Further Air Quality Analysis*

The local effects of these projects with respect to carbon monoxide concentrations must be considered to determine if a “hot-spot” type of an analysis is required prior to making a project-level conformity determination. These projects may then proceed to the project development process even in the absence of a conforming transportation plan and TIP. A particular action of the type listed below is not exempt from regional emissions analysis if the MPO in consultation with other state agencies MPCA, Mn/DOT, the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur

that it has potential regional impacts for any reason.

Channelization projects include left and right turn lanes and continuous left-turn lanes as well as those turn movements that are physically separated. Signalization projects include reconstruction of existing signals as well as installation of new signals. Signal preemption projects are exempt from hotspot analysis. Final determination of which intersections require an intersection analysis by the project applicant rests with the U.S.DOT as part of its conformity determination for an individual project.

#### *Projects Exempt from Regional Emissions Analyses*

Intersection channelization projects	E-1
Intersection signalization projects at individual intersections	E-2
Interchange reconfiguration projects	E-3
Changes in vertical and horizontal alignment	E-4
Truck size and weight inspection stations	E-5
Bus terminals and transfer points	E-6

#### *Regionally significant projects*

The following codes identify the projects included in the “action” scenarios of the TIP air quality analysis:

Baseline - Year 2000	B-00
Action - Year 2005	A-05
Action - Year 2010	A-10

#### *Non-Classifiable Projects*

Certain unique projects cannot be classified as denoted by a “NC.” These projects were evaluated through an interagency consultation process and determined not to fit into any exempt nor intersection-level analysis category, but they are clearly not of a nature which would require inclusion in a regional air quality analysis.

#### *Traffic Signal Synchronization*

Traffic signal synchronization projects (Sec. 83.128 of the Conformity Rules, Federal Register, August 15, 1997) may be approved, funded, and implemented without satisfying the requirements of this subpart. However, all subsequent regional emissions analysis required by subparts 93.118 and 93.119 for transportation plans, TIPS, or projects not from a conforming plan and TIP must include such regionally significant traffic signal synchronization projects.