CDR EXHIBIT 1

Interagency Review of Planning Assumptions and Modeling Inputs

March 2014 Update

EXHIBIT 1

Interagency Review of Planning Assumptions and Modeling Inputs

Used in Regional Emissions Analysis

For Atlanta Eight-Hour Ozone Nonattainment Area & Annual PM2.5 Nonattainment Area

Interagency Consultation Meeting

Atlanta Regional Commission

The ARC will be conducting a conformity analysis under the 2008 eight-hour ozone standard and the 1997 annual PM2.5 standard as part of the conformity determination for the PLAN 2040/GHMPO 2040 RTP FY 2014-2019 TIP for the respective nonattainment areas. Below is a detailed listing of the procedures and planning assumptions for the upcoming conformity analysis. Interagency concurrence on these planning assumptions was received on October 22, 2013.

2008 EIGHT HOUR OZONE STANDARD PLANNING ASSUMPTIONS & MODELING INPUTS

General Methods and Assumptions

1) Modeling Methodology: Use the MOVES model in inventory mode to determine the total NO_x and VOC emissions in the entire former 20-county nonattainment area. This test serves to meet the criteria established via Interagency consultation to test the 15-county ozone nonattainment area.
2) Analysis Years: 2015, 2020, 2024, 2030, 2040
3) Conformity Test
    a. Motor Vehicle Emission Budget (MVEB) Test[1]
        i. For years prior to 2024[2]
            1. NOx: 272.67 tpd
            2. VOC: 171.83 tpd
        ii. For years 2024 and later[3]
            1. NOx: 126 tpd
            2. VOC: 92 tpd
4) Modeling Start Date: November 2013. This start date is defined by the ARC as the initiation of the first model run for the support of SIP development.

Travel Demand Modeling Assumptions

1) Calibration Year: 2000 (with some 2005 interim validations and benchmarking thereafter)
    a. Model validated to the year 2010 using a comparison between estimated volumes and observed counts (See Appendix A)
2) Social/Economic Data: Updated for this model run (See Appendix B)
3) All other modeling assumptions consistent with those approved in the PLAN 2040 documentation (see Appendix C)

Emissions Modeling Assumptions

1) Emissions Model: MOVES2010b – Database: movesdb20121030
    a. Emissions Process – use MOVES in inventory mode for a July day

[1] The budgets laid out below have not yet been published to the Federal Register. ARC anticipates this occurring prior to the adoption of the plan update.
[2] MVEB established as part of the Atlanta Reasonable Further Progress State Implementation Plan of 2009.
[3] MVEB established as part of the Atlanta Ozone Maintenance Plan of 2012.

i. For the years 2015, 2020, 2030 and 2040 modeled travel data is used to calculate emissions
ii. For the year 2024, emissions are linearly interpolated from 2020 and 2030 data

b. Run separately for the 13-county and 7-county portions of the nonattainment area[4]
i. 13-county area activity, vehicle population and other inputs area assigned to Fulton County while running MOVES
ii. 7-county area activity, vehicle population and other inputs are assigned to Bartow County while running MOVES

2) MOVES Inputs
a. Road Type Distribution – Processed from the travel demand model, GDOT HPMS counts and MOVES defaults. Summarizes VMT fraction by road type and source type for the 13 and 7 counties separately.
b. Source Type Population
i. Started with 2002 R.L. Polk & Co. registration data for the Atlanta nonattainment counties, as well as the Georgia Department of Revenue's registration data for 2003 and 2007.
ii. Vehicles by type were grown from 2002 to 2007 using different growth factors by vehicle type based on either Census person population estimates or on Georgia 2007 registration data. Methodology developed by EPD for inputs to the SMOKE-MOVES Integration Tool.
iii. Future analysis year data is grown from 2007 based on the ratio of MPO population estimates
iv. Since the population of vehicle type 62 (combination long-haul trucks) can easily be underrepresented in areas with lots of through traffic, the vehicle population for MOVES source type 62 was revised using MOVES default VMT/VPOP ratios and VMT for HPMS type 60 data
c. Vehicle Type VMT
i. HPMS VTypeYear - Processed from the travel demand model, GDOT HPMS Counts, and an EPA daily to annual VMT converter. Assigns total annual VMT by HPMS vehicle type.
ii. Month VMT Fraction: MOVES defaults
iii. Day VMT Fraction: MOVES defaults
iv. Hour VMT Fraction: Derived from the travel demand model by source and road type. The fractions are determined separately for the 13 and 7 county areas.

[4] For the eight-hour ozone standard there are two sets of MOVES input files, one for the 13 counties that make up the former one-hour ozone nonattainment area in which a specific set of emission control measures is in place, and one for the seven ring counties.

d. I/M Programs and Stage II Refueling Vapor Recovery – Applied to the 13-county area only (See Appendix D)
e. Age Distribution – MOBILE6 age distributions converted to MOVES format using the EPA converter. MOBILE6 distributions were derived from 2002 R.L. Polk & Co. registration data for the 13 and 7 county areas separately for all vehicle types, except for HDV8B where MOBILE6 defaults were used.
f. Average Speed Distribution – Processed from the travel demand model with HPMS VMT Adjustment factors applied. Calculates VHT by hour by speed bin by source. The distribution is determined separately for the 13 and 7 county areas.
g. Ramp Fraction – Processed from the travel demand model. Calculates VMT by freeway and ramps by area type. The fraction is determined separately for the 13 and 7 county areas.
h. Fuel – MOVES defaults for a July weekday for Fulton (13-county) and Bartow (7-county)
i. Meteorology – Meteorological data from the 2009 Reasonable Further Progress (RFP) SIP were used to represent the ozone season for all analyses before the year 2024. The RFP SIP meteorological input file was developed using 2000-2002 data. Meteorological conditions from the ten worst ozone days were averaged to produce the final input. For all analyses representing the year 2024 or later, 2008 summer meteorological data was used from the 2012 Ozone Maintenance Plan.

3) VMT HPMS Adjustment Factors
   a. Calculated for the year 2010 (See Appendix E)
   b. HPMS adjustment in base year of calibration in accordance with Section 93.122(b)(3) of the Transportation Conformity Rule which recommends that HPMS adjustment factors be developed to reconcile travel model estimates of VMT in base year of validation to HPMS estimates for the same period
   c. Summer (seasonal) adjustment to convert from average annual VMT to summer-season VMT[5]
   d. Factors applied to VMT estimates generated by ARC travel demand model for 13-county portion and 7-county portion of 20-county modeling domain, separately
   a. Factors aggregated up to MOVES road types from base HPMS functional classifications
4) Off-Model Calculations
   a. Senior I/M Exemption (emissions debit)
      i. The Senior I/M Exemption calculated for year 2002 is conservatively high and will be added to the regional emission inventories for each analysis year
5) TCMs
   a. No additional credit is taken in the emissions modeling process for SIP TCMs

[5] *Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources*, Section 3.4.2.6, EPA420-R-92-009, USEPA Office of Air and Radiation, Office of Mobile Sources, 1992.

1997 ANNUAL $PM_{2.5}$ STANDARD PLANNING ASSUMPTIONS & MODELING INPUTS

General Methods and Assumptions

1) Modeling Methodology
    a. 20-County Portion – Use the MOVES model in inventory mode to determine the total NO_x and $PM_{2.5}$ emissions
    b. Putnam Partial County Portion – Use an off-travel model technique to determine emissions in MOVES
2) Conformity Test
    a. No Greater than Base Year interim emissions test
        i. 2002 base year
        ii. Base year emissions to be developed as part of the conformity analysis provided in preamble to the eight-hour ozone and $PM_{2.5}$ Transportation Conformity Rule[6]. Base year emissions will be established using the same modeling methodology presented above.
3) Conformity Analysis Years: 2015, 2020, 2024, 2030, 2040
4) Modeling Start Date: November 2013. This start date is defined by the ARC as the initiation of the first model run for the support of SIP development.

Travel Demand Modeling Assumptions

1) Calibration Year: 2000 (with some 2005 interim validations and benchmarking thereafter)
    a. Model validated to the year 2010 using a comparison between estimated volumes and observed counts (See Appendix A)
2) Social/Economic Data: Produced as part of PLAN 2040 (see Appendix B)
3) All other modeling assumptions consistent with those approved in the PLAN 2040 documentation (see Appendix C)

Emissions Modeling Assumptions

1) Emissions Model: MOVES2010b – Database: movesdb20121030
    a. Emissions Process – using MOVES in Inventory mode
        i. For the years 2015, 2020, 2030 and 2040 modeled travel data is used to calculate emissions
        ii. For the year 2024, emissions are linearly interpolated from 2020 and 2030 data

[6] Federal Register, Vol. 69, No.126, July 1, 2004, p. 40015, first column.

b. Run separately for the 13-county and 7-county portions of the nonattainment area[7]
    i. 13-county area activity, vehicle population, and other inputs are assigned to Fulton County while running MOVES
    ii. 7-county area activity, vehicle population, and other inputs are assigned to Bartow County while running MOVES

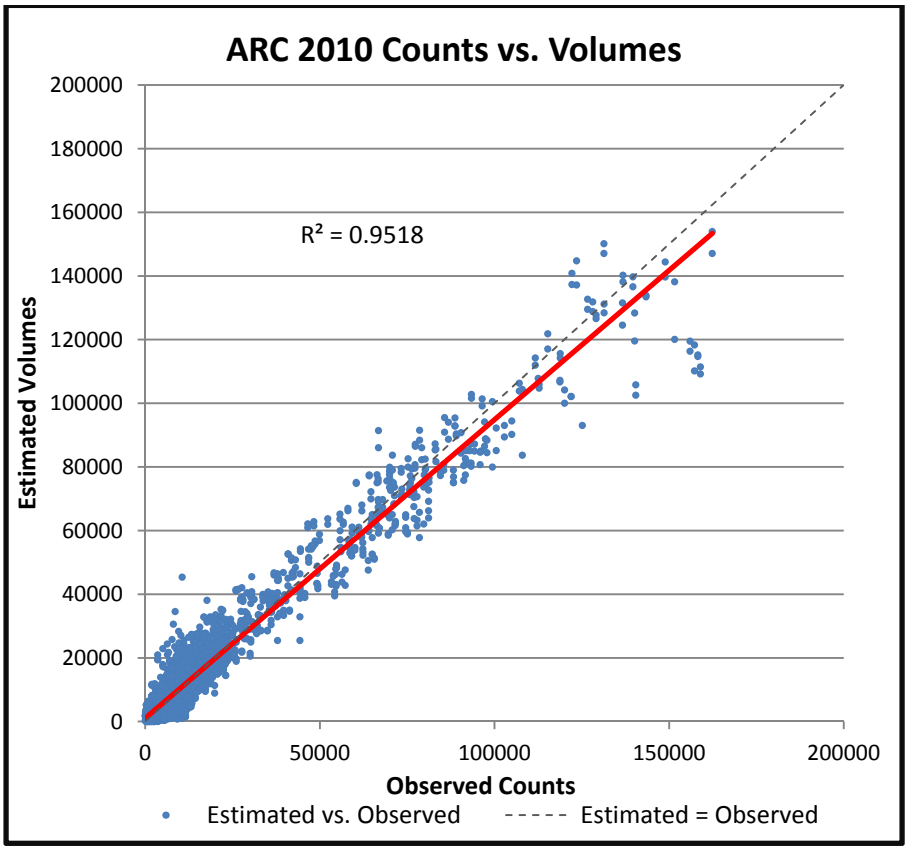
2) MOVES Inputs
    a. Road Type Distribution – Processed from the travel demand model, GDOT HPMS counts and MOVES defaults. Summarizes VMT fraction by road type and source type for the 13 and 7 counties separately.
    b. Source Type Population
        i. Started with 2002 R.L. Polk & Co. registration data for the Atlanta nonattainment counties, as well as the Georgia Department of Revenue's registration data for 2003 and 2007
        ii. Vehicles by type were grown from 2002 to 2007 using different growth factors by vehicle type based on either Census person population estimates or on Georgia 2007 registration data. Methodology developed by EPD for inputs to the SMOKE-MOVES Integration Tool
        iii. Future analysis year data is grown from 2007 based on the ratio of MPO population estimates
        iv. Since the population of vehicle type 62 (combination long-haul trucks) can easily be underrepresented in areas with lots of through traffic, the vehicle population for MOVES source type 62 was revised using MOVES default VMT/VPOP ratios and VMT for HPMS type 60 data
        v. 2024 Putnam County data grown from 2007 based on the ratio of Georgia Office of Planning and Budget future people population estimates
    c. Vehicle Type VMT
        i. HPMS VTypeYear - Processed from the travel demand model, GDOT HPMS Counts, and an EPA daily to annual VMT converter. Assigns total annual VMT by HPMS vehicle type
        ii. Month VMT Fraction: MOVES defaults
        iii. Day VMT Fraction: MOVES defaults
        iv. Hour VMT Fraction: Derived from the travel demand model by source and road type. Determined separately for the 13 and 7 county areas.

[7] For the annual $PM_{2.5}$ standard there are two sets of MOVES input files, one for the 13 counties that make up the former one-hour ozone nonattainment area in which a specific set of emission control measures is in place and one for the seven "ring" counties.

d. I/M Programs and Stage II Refueling Vapor Recovery – Applied to 13 county area only (See Appendix D)
e. Age Distribution – MOBILE6 age distributions converted to MOVES format using EPA converter. MOBILE6 distributions were derived from 2002 R.L. Polk & Co. registration data for the 13 and 7 county areas separately for all vehicle types, except for HDV8B where MOBILE6 defaults were used.
f. Average Speed Distribution – Processed from the travel demand model with HPMS VMT Adjustment factors applied. Calculates VHT by hour by speed bin by source. Determined separately for the 13 and 7 county areas.
g. Ramp Fraction – Processed from the travel demand model. Calculates VMT by freeway and ramps by area type. Determined separately for the 13 and 7 county areas.
h. Fuel – Annualized MOVES defaults for Fulton (13-county) and Bartow (7-county)
i. Meteorology – Annual averages of the hourly average temperature and relative humidity for each hour of each month for the years 2000 – 2002

3) VMT HPMS Adjustment Factors
   a. Calculated for the year 2010 (See Appendix E)
   b. HPMS adjustment in base year of calibration in accordance with Section 93.122(b)(3) of the Transportation Conformity Rule which recommends that HPMS adjustment factors be developed to reconcile travel model estimates of VMT in base year of validation to HPMS estimates for the same period
   c. Factors applied to VMT estimates generated by ARC travel demand model for 13-county portion and 7-county portion of 20-county modeling domain, separately.
   d. Factors aggregated up to MOVES road types from base HPMS functional classifications
4) Off-Model Calculations
   a. Senior I/M Exemption (emissions debit)
      i. The Senior I/M Exemption calculated for year 2002 is conservatively high and will be added to the regional emission inventories for each analysis year.
   b. Putnam Partial Nonattainment Area
      i. Total MOVES inventory-mode derived emissions in Putnam County were scaled down to the nonattainment area's contribution based on the ratio of human population in the nonattainment area to the entire county.
      ii. VMT in Putnam County is estimated using historical VMT estimates from GDOT's 445 Reports
      iii. Congested flow speeds for Putnam County are taken from the 7-county portion of the ARC travel demand model for each analysis year
5) TCMs
   a. No additional credit is taken in the emissions modeling process for SIP TCMs

Appendix A – Model Validation



Appendix B – Socioeconomic Data for the Travel Model

ARC periodically revises its population and employment forecasts based on best available current information. Each revision is a two-step process. First, new region-level forecasts are produced. These then become region-level controls for census tract and traffic analysis zone (TAZ) forecasts.

The most current region-level control forecasts (PLAN 2040 Update for Plan2040 Amendment 1) were completed in late spring of 2013. The accompanying charts summarize the new updated population and employment controls for the 20-county study area.

ARC staff was assisted in the development of these regional forecasts by a Technical Advisory Committee (TAC) of nationally known, local experts on the Atlanta Regional Economy. The committee met three times and advised both on REMI model calibration, policy variable development, and related iterative revisions to model runs. The group then recommended the final regional forecasts for use in the Plan2040 Update in late spring of 2013.

The second step in the Plan2040 update process was development of county-level control totals. Regression analysis and third-party datasets were core resources in arriving at these control totals. The REMI model's regional forecast was then recalibrated to mirror/reflect the county control totals. The county level controls will be finalized in late Fall, 2013.

The third and final step in the forecasting process uses mathematical models to disaggregate the region-level/county-level control population and employment forecasts to "small areas": the superdistrict, census tract and traffic analysis zone (TAZ) level. TAZs are nested within census tracts. Census tracts nest within superdistricts. The mathematical models underlying the region-level controls have evolved and become more complex, but ARC's basic approach is the same today as in 1975.

The TAZ Disaggregator (TAZ-D) model will be used in the Plan2040 Update to disaggregate the regional and county controls to small areas. This model runs annually and iteratively (unlike the five-year iterative sequence of the previous model small area model, DRAM/EMPAL). The process is integrated with the ARC travel demand model, as impedances (travel costs) from the travel model are a significant influence layer for small-area spatial allocation of population and job growth.

Population and job levels from each successive single-year forecast become the base for forecasts in the next model year. First, the Cube/TP+ (TDM) model analyzes base year traffic patterns and produces accessibility measures (impedances or travel costs) within the 20-county forecasted area. Then, the TAZ-D model uses: the composite impedances from the TDM; Superdistrict-level distribution of base-year population, employment and land use; and other spatial influence layers (e.g. like land use, interchange locations, major arterials, transit stations, etc.) to develop grid-level forecasts one year into the future. The size of the grid areas in the TAZ-D model vary by geographic area of the region, as do the weights assigned to various spatial influence factors for growth. The Unified Growth Policy Map (UGPM) was used by the TAZ-D as the baseline source to generate household and job density and/or intensity levels to allocate future growth. The grid-level forecasts are then aggregated back up to the TAZ, tract, and

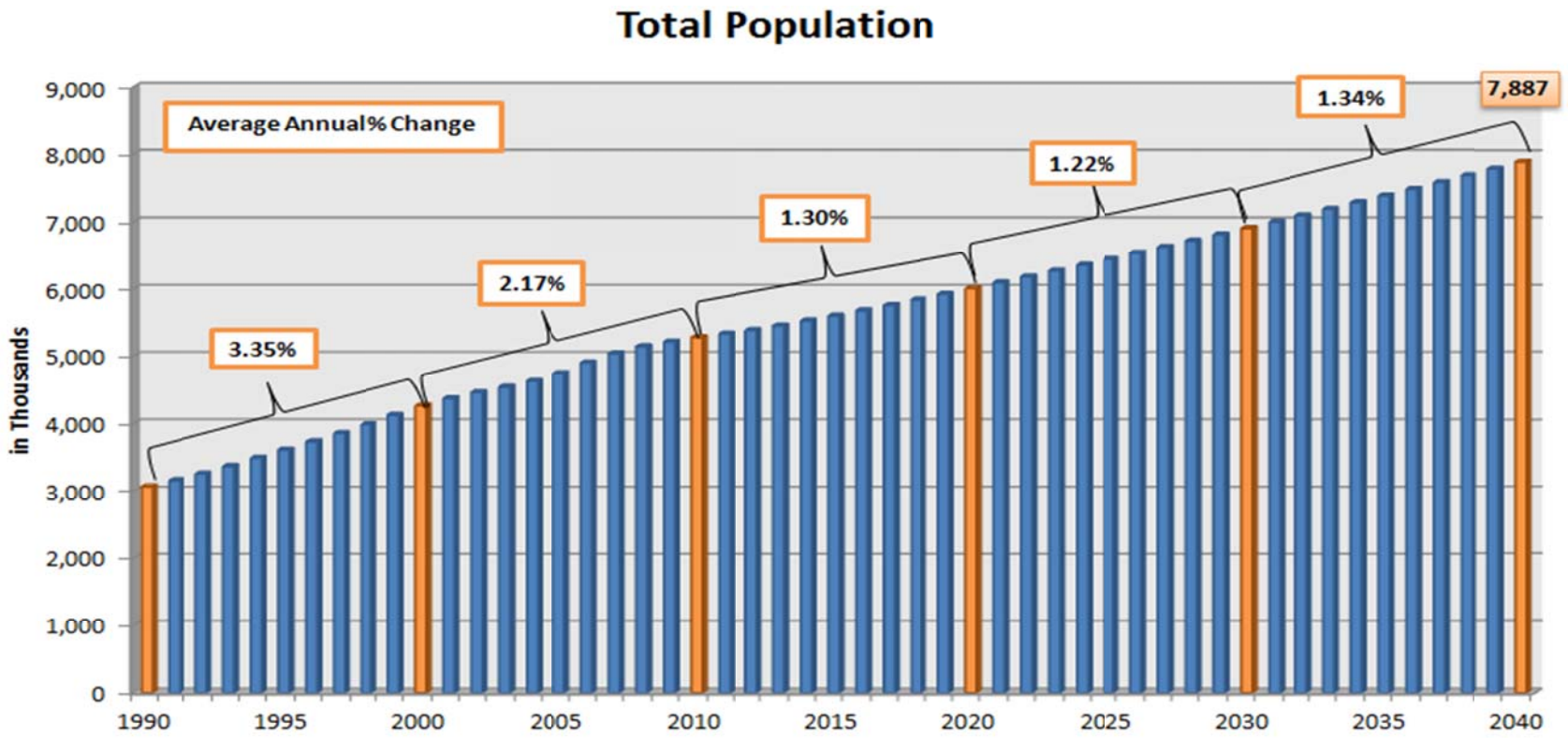
superdistrict levels. The TAZ-level forecasts then become the input used by the TDM to produce the impedance(s) measure that drives the next iteration of the integrated model run.

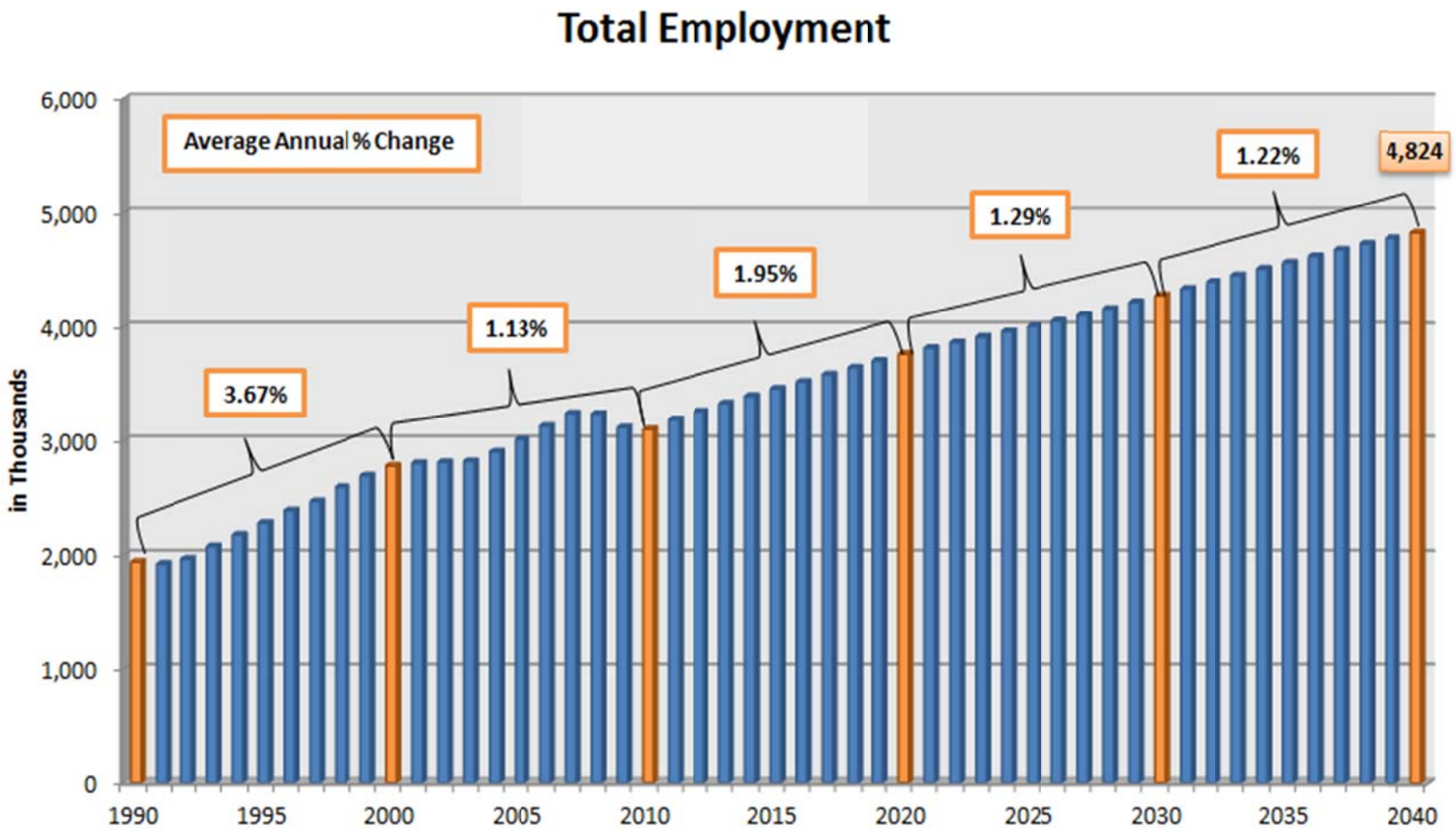
All these models are carefully calibrated based on the best and most current data available. Data used in the current effort include 2010 United States Census results, ARC annual major jurisdiction estimates of population (using a hybrid method involving building permit information, birth and death data, and American Community Survey data), and ARC semi- annual estimates of employment by industry for counties, superdistricts, tracts and TAZs/blockgroups from the state of Georgia unemployment insurance base file. National forecasts of employment and population were derived from the REMI TranSight model. The results of ARC travel surveys included the SMARTRAQ household travel survey, transit on-board survey, Hartsfield air passenger survey, travel time studies, speed studies, and others. Highway projects and the schedule for their completion (primary inputs to the Cube/TP+ model) are developed as part of an extensive discussion between ARC staff, local planners, Georgia Department of Transportation and various federal agencies.

The area modeled by ARC for transportation/air quality purposes expanded from ten (10) to twenty (20) counties over the last 15 years. There will be further expansion of the nonattainment area, to 21 counties, in subsequent forecasting efforts. To meet current and future data needs, ARC produced employment estimates by county and census block group for the state of Georgia beginning in 2008, and continues to produce these estimates on a semi-annual basis. The county coverage by land-use data produced in the LandPro program expands as needed. ARC's population estimates' program area will be expanded as required, from the current 20 counties, using the 2010 Census and intercensal estimates as data baselines.

Post- processing adjustments are made to the ARC forecasts to account for expected large scale changes and policy priorities that would not be reflected in historical data. Events such as expected construction of a new highway or policy input restricting development within the region are accounted for directly in the models with the spatial influence layers or density limitations. Factors such as expected job and household growth from the completion of "known" major development projects (e.g. Atlantic Station) or transit-oriented development are incorporated as post processing adjustments to the model output.

The forecasts will be used as part of Plan2040 (February 2014). The forecast set will also be used for the Needs Assessment portion of work contributing to the next full RTP/RDP scheduled for completion in early 2016.


Total Population
Average Annual% Change
3.35%
2.17%
1.30%
1.22%
1.34%
7,887
in Thousands
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040


Total Employment
Average Annual % Change
3.67%
1.13%
1.95%
1.29%
1.22%
4,824
in Thousands
6,000
5,000
4,000
3,000
2,000
1,000
0
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040

Appendix C – Transportation Model Inputs

1) Calibration Year: 2000 (with some 2005 interim validations and benchmarking thereafter)
2) Project Listing: Project listings will be provided in electronic format to Interagency Consultation Group for review in the third quarter of 2013.
    a. Regionally Significant and Federally Funded
    b. Regionally Significant and Non-Federally Funded
3) Demographic Data: Provided as separate attachment
4) Speed Data: Free-flow Speed by Area Type and Facility Type[8]

		Area Type							
	Facility Type	Urban Very High Density	Urban High Density	Urban Medium Density	Urban Low Density	Suburban	Exurban	Rural	Metered Ramps
0	Zone Centroid Connectors	7	11	11	11	11	14	14	
1	Interstate / Freeway Free Flow	55	58	58	61	61	63	65	
2	Parkway	50	50	55	55	57	60	60	
3	HOV Buffer Separated	55	58	58	61	61	63	65	
4	HOV Barrier Separated	55	58	58	61	61	63	65	
5	High Speed Ramp / CD Road	50	50	55	55	57	60	60	15
6	Medium Speed Ramp	50	50	50	50	50	50	50	10
7	Low Speed Ramp	40	40	40	40	40	40	40	10
8	Loop Ramp	30	30	30	30	30	30	30	10
9	Off Ramp w/ Intersection	25	25	25	25	25	25	25	
10	On Ramp w/ Intersection	40	40	40	40	40	40	40	5
11	Expressway	40	42	45	48	52	55	60	
12	Principal Arterial - Class I	26	30	33	36	42	46	55	
13	Principal Arterial - Class II	24	27	30	34	40	44	48	
14	Minor Arterial - Class I	22	25	28	31	38	42	45	
15	Minor Arterial - Class II	20	23	26	29	34	38	42	
16	HOV - Arterial (all classes)	20	27	30	33	36	39	42	
17	Major Collector	18	22	25	28	31	34	38	
18	Minor Collector	15	18	21	24	27	30	35	
19	Planned Ramps w/ Intersections	30	30	30	30	30	30	30	5
20	Planned Directional Ramps	45	45	45	45	45	45	45	10

[8] Within the ARC travel demand and emission modeling process, free flow speeds are adjusted to reflect the increase in delay and travel time on a roadway segment as traffic volumes build and congestion levels increase. Link-level congested flow speeds are used to estimate NOx and VOC emissions as required by Sections 93.122(b)(i)(iv) and 93.122(b)(2) of the Transportation Conformity Rule.

5) Transit Modeling
    a. Model recalibrated to 2000 transit ridership estimates, provided by transit operators
    b. Reflects results from the 2001-2002 Transit On Board Survey, with preliminary adjustments from the 2009 Transit On Board Survey
    c. Routes updated to reflect current operating plans
    d. Transit mode split is estimated using the mode choice model
        i. Estimates individual modal trips from the person trip movements developed in the trip distribution model
        ii. Composed of three nested logit models:
            1. Home based work trips, which includes home based university trips;
            2. Home based other trips, which include home based other, home based shopping and home based grade school; and
            3. Non-home based trips
        iii. The mode choice models is organized in terms of seven characteristics:
            1. Mathematical structure;
            2. Trip purposes and choice sets;
            3. Limitations on choice sets;
            4. Analysis of transit access;
            5. Treatment of HOV lanes;
            6. Stratification by income groups; and
            7. Analysis of alternative transit paths.
    e. Transit Fare Modeling
        i. Fare structure and operating plans supplied by the local transit operators
            1. Fares remain constant over time, across all network years
            2. Fares reflect current transit operating plans
        ii. Transit fare structure uses a fare matrix on a zone to zone level with a universal fare structure (flat fare) for all bus and rail lines
            1. Changes to the existing fare structure and service frequency are coded directly into the model
            2. Current fare values in the model are weighted according to the percentage of riders using a discounted fare pass; changes to these assumptions can be incorporated directly into the model
            3. Peak and off-peak fares are equivalent
    f. 2009 Transit On Board Survey interim adjustments
        i. Update of regional transit travel targets based on a preliminary expansion of the raw on-board survey data
            1. Modifications to express bus and BRT transfer constants
            2. Modifications to travel demand model estimates of zero-car transit work trips
            3. Modifications to travel demand model estimates of kiss-and-ride passenger access and use of transit system
            4. Overall evaluation of all modal constants
            5. Refinement to park-and-ride lot assumptions
            6. Updated walk connector and percent walk procedures

ii. Modified transit skimming procedures
iii. Re-calibrated air passenger model
iv. Assessment of travel demand model understanding of market segments and travel patterns relative to the on-board survey records

Appendix D – I/M Program

1) Exhaust and Evaporative (OBD and gas cap pressure test) for 1996 and newer vehicles
    a. Began in 1982
    b. Annual inspection required
    c. Computerized test and repair OBD – Exhaust
    d. Computerized test and repair OBD & GC - Evaporative
    e. Applies to all LDG vehicle types
    f. Three year grace period
    g. 3% waiver rate for all vehicles – Exhaust test
    h. 0% waiver rate for all vehicles – Evaporative test
    i. 97% compliance rate
2) Exhaust and Evaporative test for 1975 – 1995 vehicles
    a. Began in 1982
    b. Annual inspection required
    c. Computerized test and repair ASM 2525/5015 Phase-in – Exhaust
    d. Computerized test and repair GC – Evaporative
    e. Applies to all LDG vehicle types
    f. 3% waiver rate for all vehicles – Exhaust
    g. 0% waiver rate for all vehicles – Evaporative
    h. 97% compliance rate
    i. 25 year and older model years are exempt
3) Stage II Refueling and Vapor Recovery
    a. Started in 1992
    b. Three phase in years
    c. 81% efficiency

Appendix E – VMT Adjustment Factors

Ozone VMT Adjustment Factors

Functional Class Name	Functional Classifications	Factor for 13 County Area	Factor for 7 County Area
Interstates / Freeways	1, 11, 12	0.96	0.84
Arterials	2, 14	0.75	0.98
Collectors	6, 7, 8, 16, 17	1.00	1.03
Local	9, 19	1.41	1.55

$PM_{2.5}$ VMT Adjustment Factors

Functional Class Name	Functional Classifications	Factor for 13 County Area	Factor for 7 County Area
Interstates / Freeways	1, 11, 12	0.98	0.89
Arterials	2, 14	0.75	1.01
Collectors	6, 7, 8, 16, 17	1.01	1.04
Local	9, 19	1.41	1.58

CDR EXHIBIT 2

Status of Atlanta SIP Transportation Control Measures

March 2014 Update

Exhibit 2 – Status of Atlanta SIP Transportation Control Measures

Description	ARC Project #	GDOT PI #	TIP	Status
HOV LANES Sponsor – GDOT I-85N from Chamblee-Tucker Rd to SR 316 (HOT Lanes), I-85 @ SR 316, Interchange Reconstruction	AR 073B	713760	98-00, 99-01	Implemented
	GW-AR 053A GW-AR 053B	110530	01-03 02-04 03-05 05-10	Implemented Implemented
ALTERNATIVE FUEL STATION Sponsor – Douglas County	DO-AR 211	771035	98-00 99-01 00-02 01-03 02-04	TCM removed from SIP on 11/28/2006 (71 FR 68740, November 28, 2006)
ATLANTIC STATION, 17th STREET BRIDGE Sponsor – City of Atlanta A – Bridge and Southbound off ramps C – Northside Dr over Norfolk Southern Railroad to Atlantic Station D – Northbound off ramp to 17th Street Bridge, Williams St Relocation	AT-AR 224A AT-AR 224C AT-AR 224D	714190 0001297 0001298	00-02 01-03 02-04 03-05 05-10	A – Implemented C – Implemented D – Implemented
CLEAN FUEL BUSES Sponsors – MARTA and CCT	M-AR 232	N/A	94-95	Implemented
EXPRESS BUS ROUTES Sponsor – MARTA	M-R 160 M-R 162	770632 770632	94-96	Implemented
IMPROVE / EXPAND BUS SERVICE Sponsor – MARTA	M-R 161	770633	96-98	Implemented
INTERSECTION UPGRADE, COORDINATION & COMPUTERIZATION Sponsor(s) – GDOT in partnership with local Jurisdictions	AT 089	04Y108	93-95	Implemented
	CL 094	770600	94-96	Implemented
	CO 249	770601	94-96	Implemented
	DK 118	770603	94-96	Implemented
	FN 086	770605	94-96	Implemented
	FS 068	770605	94-96	Implemented
	GW 135	170950	94-96	Implemented
	R 098	04418	93-95	Implemented
	R 098	770391	94-96	Implemented
ITS – ADVANCED TRAFFIC MANAGEMENT SYSTEM / INCIDENT MANAGEMENT PROGRAM Sponsor – GDOT I-75/I-85 within I-285, Northern portion of I-285 between I-75 and I-85	R 098	770391	94-96	Implemented
CLEAN FUELS REVOLVING LOAN PROGRAM Sponsor – GEFA	R 195	770790, 770795	96-98	Implemented
HOV LANES Sponsor – GDOT I-75 and I-85 within I-285	R 174	320H94	94-96	Implemented

Description	ARC Project #	GDOT PI #	TIP	Status
PARK & RIDE LOTS Sponsor(s) – Douglas & Rockdale Counties Douglas County – Chapel Hill @ I-20, Rockdale County – Sigman @ I-20	DO 211C		94-96	Implemented
REGIONAL COMMUTE OPTIONS & HOV MARKETING PROGRAMS Sponsor(s) – GDOT	R 159	770631	94-96	Implemented
SIGNAL PREEMPTION Sponsor – MARTA	M-R 164	770636	94-96	Implemented
TRANSIT INCENTIVES PROGRAM Sponsor - MARTA	M-AR 231A M-AR 231B	771031 771119	98-00 99-01 00-02	Implemented
TRANSPORTATION MANAGEMENT ASSOCIATIONS Sponsor – ARC	AR 221A AR 221B AR 221C AR 221E AR 221F	771033 771140 771141 0000570 0000571	98-00 99-01 00-02 01-03	Implemented
UNIVERSITY RIDESHARE PROGRAM Sponsor - ARC	AR 220A AR 220B AR 220C AR 220D AR 200E	771032 771113 0000351 0000567 0000568	98-00 99-01 00-02 01-03 02-04	Implemented

CDR EXHIBIT 3

MOVES Input Development Guide

March 2014 Update

Exhibit 3 – MOVES Input Development Guide

MOVES Overview

The Motor Vehicle Emissions Simulator (MOVES) is EPA's latest available, state-of-the-art tool for estimating mobile source emissions from highway vehicles. MOVES replaces the MOBILE6 emissions model for use in State Implementation Plans (SIPs) and transportation conformity analyses. It must be used for new SIP development and for all conformity determinations after a three year conformity grace period ending on March 2, 2013.[1] In preparation for the transition to MOVES, ARC and GA EPD jointly, along with support from interagency, developed MOVES-based methodologies to estimate emissions inventories for the Atlanta region.

The MOVES modeling platform is substantially different than MOBILE6 due to the availability of a graphical user interface (GUI) to set the general parameters for running MOVES and a County Data Manager to assist the user in managing data inputs and data format. In addition, MOVES provides two modes to estimate emissions – emissions rate mode and emissions inventory mode. Inventory mode was chosen over emission rate mode after extensive testing of both approaches. The following section provides detail on MOVES general parameters and data inputs, as applied in the PM2.5 and ozone conformity analyses.

The MOVES GUI is used to set the general parameters of a particular MOVES run, while the County Data Manager is used to tailor the MOVES inputs using local data. Table 1 shows the selections applied through the MOVES GUI to set the general parameters for each of the four types of MOVES runs needed to estimate emissions for the Atlanta PM2.5 and ozone nonattainment areas. It should be noted that for $PM_{2.5}$ runs the month July is chosen as a "dummy month," but the fuel and meteorology inputs provided through the County Data Manager represent the entire year by providing average annual data.

Fulton County is chosen to represent the 13 I/M program counties included in the previous one-hour ozone nonattainment area and Bartow County is chosen to represent the 7 additional ring counties that were added with the transition to the eight-hour ozone standard and $PM_{2.5}$ standard. This distinction was needed to reflect different types of emission controls in place in the two geographies. Note that additional inputs imported through the County Data Manager represent the entire 13 or 7 county areas, respectively.

[1] Based on the EPA's Direct Final Rule from October 13, 2011 to extend the MOVES grace period for regional conformity analysis for one year.

Table 1 – MOVES General Parameters

MOVES Screen	Input Item	13-County Ozone	13-County PM2.5	7-County Ozone	7-County PM2.5
Description	Description	User Choice			
Scale	Domain/Scale	County			
	Calculation Type	Inventory			
Time Spans	Time Agg. Level	Hour	Hour	Hour	Hour
	Year	Varies	Varies	Varies	Varies
	Months	July	July	July	July
	Days	Weekday	Weekday	Weekday	Weekday
	Hours	Select All	Select All	Select All	Select All
Geographic Bounds	Geographic Bounds	Fulton	Fulton	Bartow	Bartow
Vehicles	Vehicles	All Gas & Diesel Combinations + CNG Transit Buses			
Road Type	Road Type	Select All			
Pollutants/ Processes	Pollutants/Processes	VOC, NO_x, and supporting	$PM_{2.5}$ with all sub-species, NO_x	VOC, NO_x, and supporting	$PM_{2.5}$ with all sub-species, NO_x
General Output	Database Name	13-County Ozone [Year]	13-County PM [Year]	7-County Ozone [Year]	7-County PM [Year]
	Units	Select "Grams", "Joules", and "Miles"			
	Activity	No Selections Required			
Output Emissions Detail	On Road	Select "Source Use Type"			

Travel Demand Post Processing Procedures

The Atlanta regional travel demand model produces estimates of travel and vehicle hours traveled (VHT) and for each link in the highway network for four separate time of day periods. The links from the highway assignment contain a variety of attributes such as the number of lanes, distance, speed, capacities and daily volumes. In order to account for travel conditions throughout the day, vehicle miles traveled (VMT) estimates, times and speeds by hour were produced. Other refinements to the network link data discussed below were performed to produce the files needed for MOVES. The highway and transit assignments were used in addition to Highway Performance Monitoring System (HPMS) counts, Georgia Department of Transportation (GDOT) vehicle classification counts[2] and MOVES defaults to develop input files for MOVES using Cube Voyager scripts.

[2] See Appendix A

VMT Adjustment Factors

Traffic volumes produced by the travel model are adjusted within the emissions modeling process by applying a VMT adjustment factor, which is a combination of HPMS adjustment factors, used to reconcile travel model VMT to HPMS VMT estimates,[3] and to reflect seasonal adjustment. For the purpose of ozone precursor emissions modeling,[4] seasonal adjustment factors are used to convert the average annual daily traffic produced by the travel model to average summer-time daily traffic. For the purpose of PM2.5 emissions modeling, no seasonal adjustment is necessary since the HPMS data in the GDOT 445 report reflects annual average travel conditions and a direct adjustment factor between the model data and the HPMS data can be developed.

EPA requires[5] that reasonable methods be used to estimate VMT on off-network (off-model) roadways within the urban transportation planning area. Off-model VMT is travel that is accounted for within HPMS estimates, but not accounted for within the coded transportation network; it typically reflects travel on the local road system. EPA also recommends[6] for areas with travel demand models in place, that HPMS adjustments be made based on comparison of base year VMT from the transportation model to base year HPMS VMT estimates. The ARC calculates HPMS adjustment factors by comparing HPMS VMT to travel model VMT by HPMS functional classes for the 2010 calibration year. In the past, the adjustment factors were developed for the 12 functional classes which stratifies the facilities by urban versus rural designation. To be consistent with the new USDOT policy which eliminated the urban/rural stratification in the functional classification designations beginning with 2009 data reported in 2010,[7] the aggregate functional classification level was used. The resulting factors are then applied to travel model VMT estimates for future analysis years. The following equation was used to calculate the HPMS adjustment factors:

$$\text{HPMS Adjustment Factor}_i = \text{2010 HPMS VMT}_i \,/\, \text{2010 MODEL VMT}_i$$

Where i = HPMS functional class

To determine the 2010 HPMS VMT, average daily VMT for the year 2010 were summarized by the aggregate HPMS functional classes for the 13 and 7-county areas separately. County-level HPMS data by functional class was taken from the GDOT Office of Transportation Data 445 Report. GDOT's 445 Report provides information on mileage and VMT by route type and road system and contains county-specific State Route, County Road and City Street mileage and VMT broken down by functional classification. VMT by county and functional class were aggregated to total VMT by HPMS functional class. 2010 Travel Demand Model VMT at the HPMS functional class level was derived from the recalibrated 2010 travel

[3] 40 CFR Sections 93.122(a)(7) and 93.122(b)(3)
[4] Section 3.4.2.6, *Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources*, EPA420-R-92-009, USEPA Office of Air and Radiation, Office of Mobile Sources, 1992.
[5] 40 CFR Section 93.122(a)(7)
[6] 40 CFR Section 93.122(b)(3)
[7] *Guidance for the Functional Classification of Highways (updated), Federal Highway Administration,* October 14, 2008

model network. HPMS adjustment factors for the 13- and 7-county areas are listed below which are used for PM2.5 emission modeling.

Table 2 – 13-County $PM_{2.5}$ HPMS Adjustment Factors

Functional Class Name	Functional Class No.	HPMS Data	Model Data	VMT HPMS Adjustment
Interstates/Frwy	1,11,12	48,545,000	49,628,000	0.98
Arterials	2,6,14,16	16,475,000	21,829,000	0.75
Collectors	7,8,17	37,708,000	37,346,000	1.01
Local	9,19	35,077,000	24,867,000	1.41
Total		137,805,000	133,671,000	1.03

Table 3 – 7-County $PM_{2.5}$ HPMS Adjustment Factors

Functional Class Name	Functional Class No.	HPMS Data	Model Data	VMT HPMS Adjustment
Interstates/Frwy	1,11,12	3,975,000	4,470,000	0.89
Arterials	2,6,14,16	3,119,000	3,084,000	1.01
Collectors	7,8,17	7,590,000	7,319,000	1.04
Local	9,19	5,636,000	3,556,000	1.58
Total		20,320,000	18,429,000	1.10

Summer (seasonal) adjustment factors are used to convert from average annual daily VMT to average summer-season daily VMT for the purposes of ozone precursor emissions modeling.[8] Seasonal adjustment factors reflect the latest factors provided by the GDOT Office of Transportation Data on August 9, 2006. Summer-adjustment factors for the 13- and 7-county geographies are listed below.

Table 4 – Summer Adjustment Factors

Functional Class Name	Functional Class No.	13 Counties	7 Counties
Interstates/Freeways	1,11,12	1.02	1.04
Arterials	2,6,14,16	1.00	1.02
Collectors	7,8,17	0.99	1.01
Local	9,19	0.98	1.01
Total		1.00	1.02

HPMS adjustment factors were multiplied by the seasonal adjustment factors for the HPMS functional classification categories to produce a set of VMT adjustment factors by HPMS functional classification for

[8] *Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources*, Section 3.4.2.6, EPA420-R-92-009, USEPA Office of Air and Radiation, Office of Mobile Sources, 1992.

13-county and 7-county portions of the 20-county eight-hour ozone analysis area, separately. The final VMT adjustment factors listed below are used for ozone precursor modeling.

Table 6 – VMT Adjustment Factors for Ozone

Functional Class Name	Functional Class No.	13 Counties	7 Counties
Interstates/Frwy	1,11,12	0.96	0.84
Arterials	2,6,14,16	0.75	0.98
Collectors	7,8,17	1.00	1.03
Local	9,19	1.41	1.55
Total		1.00	1.02

Network Refinements

The following refinements were performed on the final highway assignment:

- Transit volumes from the daily transit assignment reflecting bus service were added to the highway network
- Links with missing or out of range HPMS code were assigned a code based on the link facility and area type
- Centroid connector speeds were set based on area type to represent speeds on local roads
    - Urban Very High Density = 15
    - Urban High Density = 18
    - Urban Medium Density = 21
    - Urban Low Density = 24
    - Suburban = 27
    - Exurban = 30
    - Rural = 35

VMT by Hour

MOVES requires the stratification of the VMT, VHT and speeds by hour to provide more accurate information for use in estimating emissions. The regional travel demand model produces VMT estimates and speeds by the four time-of-day periods listed below:

- AM Period 6:00 am – 10:00 am 4 hours
- Midday Period 10:00 am – 3:00 pm 5 hours
- PM Period 3:00 pm – 7:00 pm 4 hours
- Night Period 7:00 pm – 6:00 am 11 hours

To allocate the VMT by time period from the assignment, the MOVES national factors that stratify VMT by hour and source type were used. First, the hourly shares of the VMT based on the MOVES factors were normalized within the four time periods. Next, the hourly share of each associated time period was calculated and applied to each link to determine the hourly volumes. The sum of the hourly volumes by time of day matched the time of day volumes from the highway assignments. The hourly volumes were then processed through the volume/delay curves based on the time of day to estimate hourly speeds and times.

Roadtype Classification

The network link data was also classified by MOVES roadtype based on functional classification. The mapping of Federal Highway Administration (FHWA) highway functional system classifications to the appropriate MOVES roadtypes used for this modeling is listed in Table 6. Interstate and freeway ramps are functionally classified as local facilities in Georgia. Since these facilities operate with restricted access, the facility type definition variable (a unique variable in the highway network that defines the highway facilities based on their operation) was used to classify ramps as either rural or urban restricted facilities. Off-network activity is calculated within the MOVES process based on the source type vehicle population and is not an input from the travel demand model data.

Table 6 – Listing of FHWA Highway Functional Classifications Mapped to MOVES Road Types

FHWA Highway Functional System	MOVES Road Type	MOVES Value
Rural interstate	Rural restricted access	2
Rural other principal arterial	Rural restricted access	2
Rural minor arterial	Rural unrestricted access	3
Rural major collector	Rural unrestricted access	3
Rural minor collector	Rural unrestricted access	3
Rural local	Rural unrestricted access	3
Urban interstate	Urban restricted access	4
Urban other freeways	Urban restricted access	4
Urban other principal arterial	Urban unrestricted access	5
Urban minor arterial	Urban unrestricted access	5
Urban collector	Urban unrestricted access	5
Urban local	Urban unrestricted access	5

MOVES County Data Manger Input Files

The MOVES County Data Manager serves as the user interface to input locally derived data for an emissions analysis. Local data are derived using a variety of modeled and available sources. Table 7 outlines the range of local data incorporated into the MOVES model. An explanation of how these data are developed follows.

Table 7 – County Data Manager Worksheets

County Data Manager Input	Worksheet Name
Age Distribution	sourceTypeAgeDistribution
Average Speed Distribution	avgSpeedDistribution
Fueltype and Technologies	avft
Fuel	FuelSupply
	FuelFormulation
I/M Programs	IMCoverage
Meteorology	DayMonthHour
Ramp Fraction	roadType
Road Type Distribution	roadTypeDistribution
Source Type Population	sourceTypeYear
Vehicle Type VMT	HPMSVTypeYear
	monthVMTFraction
	dayVMTFraction
	hourVMTFraction

Age Distribution

Latest available age distribution data for the Atlanta region was converted from a MOBILE6 to a MOVES format using an EPA converter.[9] MOBILE6 age distributions are shown over 25 years, but MOVES requires age distributions over 30 years. The EPA converter spreadsheet makes assumptions about how vehicles that are 25-30 years old are distributed over the oldest 5 years. MOBILE6 distributions were derived from 2002 R.L. Polk & Co. registration data for the 13 and 7 county areas separately for all vehicle types, except for HDV8B where MOBILE6 defaults were used.

Average Speed Distribution

To prepare this input the weekday link hourly vehicle hours travelled (VHT) is summarized by road type and speed bin. The MOVES defaults for the 13 source types by year are used to allocate to vehicle type. The fraction of time in each speed bin for each hour based on vehicle type, road type, and average speed is calculated where the fractions sum to one for each combination of vehicle type and road type by hour.

[9] RegistrationDistributionConverter_Veh16 (XLS) available at http://www.epa.gov/otaq/models/moves/tools.htm

Fuel & Fueltype and Technologies

MOVES defaults for fuel characteristics in Fulton County (13-county) and Bartow County (7-county) were reviewed and determined to accurately reflect the local fuel in use, which has the following characteristics:

- Fuel - Phase 2 Low Sulfur, Low RVP Georgia Gasoline[10]
- 100% market share of 10% ethanol-blend gasoline (E10) assumed
- Volatility waiver for E10 allows 1.0 psi RVP increase

The following provides more details on the MOVES default values used:

- Ozone - MOVES defaults are used for a July weekday for Fulton County and Bartow County
- $PM_{2.5}$ – MOVES defaults are used for the 12 months of the year for Fulton County and Bartow County. The 12 months of fuel data are annualized by setting the single month market share equal to the fraction of time that fuel is used throughout the year (number of months in use divided by 12).

I/M Program

The 13-county area has an inspection/maintenance program that is modeled in MOVES, but the 7-county area does not. MOVES defaults for Fulton County were inspected and modified to provide the correct model years covered and testing methods used as summarized in the I/M program characteristics below:

- Stage II Refueling Vapor Recovery
  - Started in 1992
  - Three phase in years
  - 81% efficiency
- Exhaust and Evaporative (OBD and gas cap pressure test) for 1996 and newer vehicles
  - Annual inspection required
  - Computerized test and repair OBD – Exhaust
  - Computerized test and repair OBD & GC - Evaporative
  - Applies to all LDG vehicle types
  - Three year grace period
  - 3% waiver rate for all vehicles – Exhaust test
  - 0% waiver rate for all vehicles – Evaporative test
  - 97% compliance rate
- Exhaust and Evaporative test for 1975 – 1995 vehicles
  - Annual inspection required
  - Computerized test and repair ASM 2525/5015 Phase-in – Exhaust

[10] In 2002, Georgia's two-phase gasoline sulfur control program limited average sulfur in gasoline sold in the 13-county Atlanta area and in 12 surrounding counties to 150 parts per million (ppm). In addition, there was a seasonal (June 1 to September 15) 7.0 pounds per square inch (psi) Reid vapor pressure cap on gasoline sold in this Phase 1 area. In 2003, Phase 2 of Georgia's gasoline rule reduced average sulfur to 30 ppm year-round and added 20 additional counties to the sulfur and RVP control program.

- Computerized test and repair GC – Evaporative
- Applies to all LDG vehicle types
- 3% waiver rate for all vehicles – Exhaust
- 0% waiver rate for all vehicles – Evaporative
- 97% compliance rate
- 25 year and older model years are exempt

Appendix B documents the calculations of the emissions reductions credit loss from the senior I/M exemption.

Meteorology

Meteorological data used varies based on the year of the analysis and the pollutant. The following provides more details on the differences between meteorology data used for ozone and $PM_{2.5}$ analyses:

- Ozone – Meteorological data from the 2009 Reasonable Further Progress (RFP) SIP were used to represent the ozone season for all analyses before the year 2024. The RFP SIP meteorological input file was developed using 2000-2002 data. Meteorological conditions from the ten worst ozone days were averaged to produce the final input. For all analyses representing the year 2024 or later, 2008 summer meteorological data was used from the 2012 Ozone Maintenance Plan.
- $PM_{2.5}$ – Meteorological data from all 12 months of the years 2000-2002 were extracted and averaged together to represent an average annual meteorological condition.

Ramp Fraction

The weekday link VMT is summarized for interstate, freeway and ramp facilities by urban versus rural area type classifications. The percent of ramp VMT of the total interstate, freeway and ramp VMT was calculated by area type.

Road Type Distribution

The weekday link hourly VMT is summarized by roadtype. The MOVES defaults for the 13 source types by year are used to allocate to vehicle type. The fraction of VMT by road type and vehicle type is calculated, where the fractions sum to one for each vehicle type.

Source Type Population

Source Type Population (the number of each of 13 vehicle types) is an input that was not required with MOBILE6. Registration data, which were used to produce age distributions, are used to produce this input for most vehicle types. However, for long-haul combination trucks (source type 62) a VMT-based method is used since these types of trucks from around the country move through the region and are usually not registered here.

Source type population for source types 11-61 are derived from registration data and human population estimates and forecasts. The following data sources are used:

- 2002 R.L. Polk & Co. registration data each of the 20 counties
- Georgia registration data (2003 and 2007)[11]
- 2002 and 2007 Census human population estimates
- 2007-2040 ARC human population forecasts

After this data was accumulated, the following method is used to project future source type population:

1. Grow 2002 Polk registration data to 2007 using different growth factors that depend on vehicle type as shown in Table 8.
2. Convert the Polk registration data to MOVES vehicle types using a modified EPA converter spreadsheet[12]
3. Grow the 2007 source type population by county to the appropriate future year(s) using 2007-2040 ARC human population forecasts by county
4. Summarize the source type population by 13 and 7-county areas separately

Table 8 – 2002-2007 Growth Factors used

Vehicle types	Growth factor
HDBS	Georgia registration data (2003 and 2007), Buses
HDBT	Georgia registration data (2003 and 2007), Buses
MC	Georgia registration data (2003 and 2007), Motorcycles
All Others	Population 2002 and 2007

Vehicle population for source type 62 (long-haul trucks) was recalculated using corresponding VMT and national default ratios of VMT and vehicle population in order to account for activity from trucks not registered but run locally.

Vehicle Type VMT

Vehicle Type VMT is broken into four separate MOVES worksheets (HPMSVTypeYear, monthVMTFraction, dayVMTFraction and hourVMTFraction). These four variables define travel characteristics in the area of study and are calculated separately or derived from MOVES defaults.

HPMSVTypeYear

The weekday VMT is summarized by MOVES roadtype and then weighted by the vehicle classification counts[13] for the 13 or 7-county area by the 6 HPMS vehicle types. The fractions for vehicle type 20 and 30 are then re-distributed based on the MOVES source vehicle defaults for the year. This is because the vehicle classification counts are collected using counters which count vehicles by the number of axles

[11] Obtained from www.georgiastats.uga.edu
[12] A converter was developed by EPD based on the EPA RegistrationDistributionConverter_Veh16 (XLS) available at http://www.epa.gov/otaq/models/moves/tools.htm
[13]The summary of the vehicle classification counts is in Exhibit 2

and as a result, the counts do not accurately reflect the difference between passenger cars and SUVs. The daily VMT is annualized using the EPA AADVMT Calculator Excel workbook.

monthVMTFraction and dayVMTFraction

MOVES national defaults were used for these two inputs because reliable local data was not available. The regional travel demand model is developed for an average weekday. The vehicle classification counts used for some analyses were not collected to be statistically reliable by day of week or monthly basis.

hourVMTFraction

The weekday link hourly VMT is summarized by roadtype and hour. The MOVES defaults for the 13 source types by year are used to allocate to vehicle type. The fraction of VMT by road type and vehicle type is calculated where the fractions sum to one for each vehicle type by roadtype. This variable must sum to 1 for each source type-road type-type of day combination.

Off-Model Putnam County Mobile Emissions Analysis

The Atlanta $PM_{2.5}$ Nonattainment Area includes small parts of two counties, Heard and Putnam, which fall outside of the core 20 whole counties which make up the eight-hour ozone and $PM_{2.5}$ nonattainment areas. A travel model is not in place for these counties. According to the Transportation Conformity Rule 93.122(a)(7), reasonable methods shall be used to estimate nonattainment or maintenance area VMT on off-network roadways within the urban transportation planning area, and on roadways outside the urban transportation planning area. Therefore, a revised off-travel model technique was developed to estimate average annual daily VMT for use in the MOVES model in the partial county areas.

For Heard County the roads identified are private roads that service Georgia Power's Plant Wansley. These roads do not experience through-traffic and, therefore, do not need to be included in the regional emission analysis. As such, this methodology only applies to Putnam County.

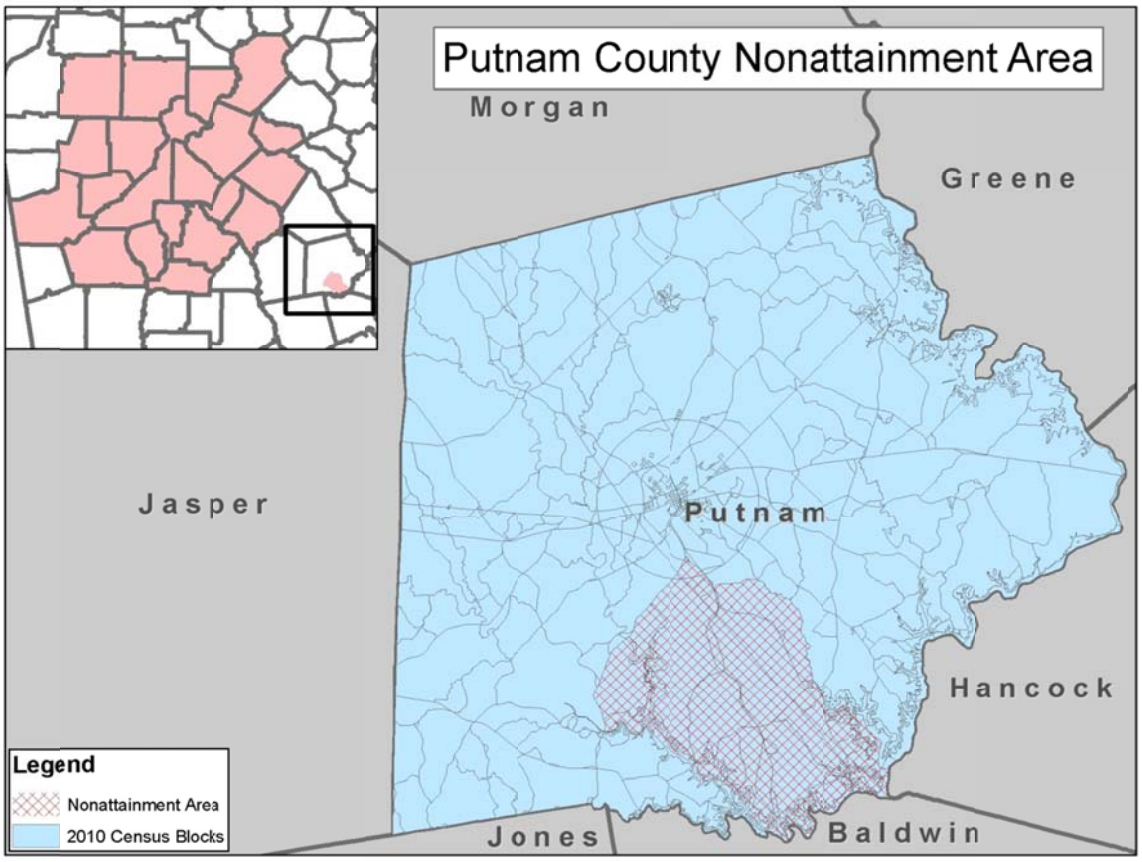
Like the 7 and 13-county portions, a MOVES run was prepared for Putnam County using the inputs described in Table 9. Travel characteristics in Putnam County were considered to be similar to the 7-county outer-portion of the Atlanta Nonattainment Area. These characteristics were mixed with data from GDOT's 445 VMT reports and state data to generate the necessary inputs to produce a MOVES run for the entirety of Putnam County.

Table 9 – Putnam County MOVES County Data Manager Inputs

MOVES Input	Data Source
Age Distribution	Derived from the 139 county average of R.L. Polk Data
Source Type Population	Grown from the 2002 R.L. Polk data based on human population estimates from the Georgia Office of Planning and Budget
Fuel	Annualized MOVES Defaults for Putnam County
Meteorology	Annualized 20-county meteorology for 2008
Vehicle Type VMT	• HPMSvTypeYr – derived from the GDOT 445 workbooks with MOVES default source type fraction break outs and converted using the EPA provided AADVMT calculator • Month and Daily Fractions – MOVES defaults • Hourly Fractions – Taken from 7-county portion of travel model post-processing
Road Type Distribution	Taken from the 7-county portion of the travel model post-processing
Average Speed Distribution	Taken from the 7-county portion of the travel model post-processing
Ramp Fraction	Taken from the 7-county portion of the travel model post-processing

After total emissions for Putnam County were calculated using MOVES, the value was scaled back to match the percent of human population in the $PM_{2.5}$ nonattainment area. 2010 Census TIGER files were imported into GIS and an analysis was performed to determine the nonattainment area's share of Putnam County's population (Figure 1). 3,484 of Putnam County's 21,218 citizens reside inside the boundary. Therefore, total Putnam County MOVES emission's results are multiplied by 16.4% to account for the ratio of population inside the nonattainment area to the total county's population.

Figure 1 – Putnam County Nonattainment Area



Appendix A – Vehicle Classification Counts

Weekday vehicle classification counts from GDOT were obtained for the years 2008 through 2010 for the entire state of Georgia. The counts were stratified by two areas, the counts within the 13-county portion of the Atlanta MPO area, and the remaining statewide counts. In order to provide a reasonable sample, the remaining statewide counts were used to factor the outer 7-county portion of the nonattainment area. The vehicle classification counts collected were stratified based on the FHWA vehicle classifications. The counts were then summarized into the 6 HPMS vehicle type categories. This result was then summarized for the three years. The percent by vehicle type by road type based on functional classification was calculated. The counts by the area type (urban versus rural) were combined since FHWA eliminated the urban/rural area type distinction from HPMS functional classifications beginning with the 2009 data, reported in 2010[14].

Table 1, below, lists the counts by year for the 13-county area. Table 2 lists the final factors which were applied to the 13-county area VMT by vehicle type by road type based on the counts. Table 3 lists the counts by year for the 7-county area. Table 4 lists the final factors which were applied to the 7-county area VMT by vehicle type by road type based on the counts. These values were used to weight the VMT from the travel demand model by road type by vehicle type for input into AADVMT worksheet importer.

[14] *Guidance for the Functional Classification of Highways (updated), Federal Highway Administration*, October 14, 2008

Table 1 – GDOT Vehicle Classification Counts
13-County Atlanta MPO

2008 13 County Atlanta MPO Area

			Weekday Counts				Percent by Road Type			
Code	HPMS Vehicle Type	FHWA Veh Class	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	16,858	184,014	1,321,610	154,567	0.2%	0.4%	0.2%	0.2%
20	Passenger Cars	Class 2	5,033,881	33,440,176	441,682,775	62,560,573	63.1%	70.0%	74.6%	79.0%
30	Other 2 axle-4 tire vehicles	Class 3	1,589,435	8,589,583	94,611,416	12,979,814	19.9%	18.0%	16.0%	16.4%
40	Buses	Class 4	61,002	347,125	4,273,934	596,264	0.8%	0.7%	0.7%	0.8%
50	Single Unit Trucks	Class 5-7	323,988	1,948,590	18,577,894	2,159,833	4.1%	4.1%	3.1%	2.7%
60	Combination Trucks	Class 8-13	952,385	3,242,388	31,896,705	759,298	11.9%	6.8%	5.4%	1.0%
	Total		7,977,549	47,751,876	592,364,334	79,210,349	100%	100%	100%	100%

2009 13 County Atlanta MPO Area

			Weekday Counts				Percent by Road Type			
Code	HPMS Vehicle Type	FHWA Veh Class	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	51,352	101,595	1,540,072	240,506	0.2%	0.2%	0.2%	0.2%
20	Passenger Cars	Class 2	15,065,261	40,708,739	573,832,909	98,353,063	65.0%	74.0%	75.7%	79.7%
30	Other 2 axle-4 tire vehicles	Class 3	4,297,018	9,664,212	119,721,238	20,115,480	18.5%	17.6%	15.8%	16.3%
40	Buses	Class 4	162,864	365,145	4,755,365	733,635	0.7%	0.7%	0.6%	0.6%
50	Single Unit Trucks	Class 5-7	778,609	1,744,325	21,464,577	3,043,483	3.4%	3.2%	2.8%	2.5%
60	Combination Trucks	Class 8-13	2,831,994	2,402,216	36,457,015	957,240	12.2%	4.4%	4.8%	0.8%
			23,187,098	54,986,232	757,771,176	123,443,407	100%	100%	100%	100%

Table 1 (continued) – GDOT Vehicle Classification Counts
13-County Atlanta MPO

2010 13 County Atlanta MPO Area

Code	HPMS Vehicle Type	FHWA Veh Class	Weekday Counts: Rural Restricted Access (FC=1)	Weekday Counts: Rural Unrestricted Access (FC=2-7)	Weekday Counts: Urban Restricted Access (FC=11-12)	Weekday Counts: Urban Unrestricted Access (FC=14-19)	Percent by Road Type: Rural Restricted Access (FC=1)	Percent by Road Type: Rural Unrestricted Access (FC=2-7)	Percent by Road Type: Urban Restricted Access (FC=11-12)	Percent by Road Type: Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	12,376	36,254	710,183	121,758	0.3%	0.2%	0.2%	0.3%
20	Passenger Cars	Class 2	3,072,873	14,347,044	232,240,678	36,234,722	76.0%	81.9%	80.8%	84.0%
30	Other 2 axle-4 tire vehicles	Class 3	702,918	2,691,501	40,925,619	6,029,282	17.4%	15.4%	14.2%	14.0%
40	Buses	Class 4	11,738	45,390	790,705	115,939	0.3%	0.3%	0.3%	0.3%
50	Single Unit Trucks	Class 5-7	71,303	251,025	4,313,075	499,692	1.8%	1.4%	1.5%	1.2%
60	Combination Trucks	Class 8-13	170,081	157,197	8,296,213	131,598	4.2%	0.9%	2.9%	0.3%
	Total		4,041,289	17,528,411	287,276,473	43,132,991	100%	100%	100%	100%

2008-2010 13 County Atlanta MPO Area Summary

Code	HPMS Vehicle Type	FHWA Veh Class	Weekday Counts: Rural Restricted Access (FC=1)	Weekday Counts: Rural Unrestricted Access (FC=2-7)	Weekday Counts: Urban Restricted Access (FC=11-12)	Weekday Counts: Urban Unrestricted Access (FC=14-19)	Percent by Road Type: Rural Restricted Access (FC=1)	Percent by Road Type: Rural Unrestricted Access (FC=2-7)	Percent by Road Type: Urban Restricted Access (FC=11-12)	Percent by Road Type: Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	80,586	321,863	3,571,865	516,831	0.2%	0.3%	0.2%	0.2%
20	Passenger Cars	Class 2	23,172,015	88,495,959	1,247,756,362	197,148,358	65.8%	73.6%	76.2%	80.2%
30	Other 2 axle-4 tire vehicles	Class 3	6,589,371	20,945,296	255,258,273	39,124,576	18.7%	17.4%	15.6%	15.9%
40	Buses	Class 4	235,604	757,660	9,820,004	1,445,838	0.7%	0.6%	0.6%	0.6%
50	Single Unit Trucks	Class 5-7	1,173,900	3,943,940	44,355,546	5,703,008	3.3%	3.3%	2.7%	2.3%
60	Combination Trucks	Class 8-13	3,954,460	5,801,801	76,649,933	1,848,136	11.2%	4.8%	4.7%	0.8%
	Total		35,205,936	120,266,519	1,637,411,983	245,786,747	100%	100%	100%	100%

Table 2 – Final Factor of VMT by Vehicle Type by Road Type
13-County Atlanta MPO

Code	HPMS Vehicle Type	FHWA Veh Class	Restricted Access	Unrestricted Access	Restricted Access Factor	Unrestricted Access Factor
10	Motorcycles	Class 1	3,652,451	838,694	0.002184	0.002291
20	Passenger Cars	Class 2	1,270,928,377	285,644,317	0.759844	0.780335
30	Other 2 axle-4 tire vehicles	Class 3	261,847,644	60,069,872	0.156550	0.164101
40	Buses	Class 4	10,055,608	2,203,498	0.006012	0.006020
50	Single Unit Trucks	Class 5-7	45,529,446	9,646,948	0.027220	0.026354
60	Combination Trucks	Class 8-13	80,604,393	7,649,937	0.048191	0.020898
	Total		1,672,617,919	366,053,266	1.000000	1.000000

Table 3 – GDOT Vehicle Classification Counts
Statewide minus 13-County Atlanta MPO

2008 Statewide minus ARC 13 County MPO Area

			Weekday Counts				Percent by Road Type			
Code	HPMS Vehicle Type	FHWA Veh Class	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	415,477	276,557	703,762	273,810	0.3%	0.4%	0.3%	0.3%
20	Passenger Cars	Class 2	78,146,859	45,813,738	134,370,835	70,721,022	55.0%	64.5%	65.4%	74.5%
30	Other 2 axle-4 tire vehicles	Class 3	23,048,320	16,181,222	37,536,241	19,040,830	16.2%	22.8%	18.3%	20.1%
40	Buses	Class 4	1,348,962	412,115	1,464,298	372,563	0.9%	0.6%	0.7%	0.4%
50	Single Unit Trucks	Class 5-7	5,177,758	3,054,596	6,643,091	2,735,728	3.6%	4.3%	3.2%	2.9%
60	Combination Trucks	Class 8-13	33,983,937	5,320,479	24,746,197	1,724,995	23.9%	7.5%	12.0%	1.8%
			142,121,313	71,058,707	205,464,424	94,868,948	100%	100%	100%	100%

2009 Statewide minus ARC 13 County MPO Area

			Weekday Counts				Percent by Road Type			
Code	HPMS Vehicle Type	FHWA Veh Class	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	543,569	380,461	552,296	334,712	0.3%	0.3%	0.3%	0.3%
20	Passenger Cars	Class 2	99,860,922	74,033,369	123,617,071	92,974,090	57.6%	65.0%	66.5%	73.4%
30	Other 2 axle-4 tire vehicles	Class 3	29,013,174	25,257,242	35,153,989	26,580,997	16.7%	22.2%	18.9%	21.0%
40	Buses	Class 4	1,445,231	636,498	1,260,763	480,718	0.8%	0.6%	0.7%	0.4%
50	Single Unit Trucks	Class 5-7	5,931,816	4,577,695	5,977,298	3,774,967	3.4%	4.0%	3.2%	3.0%
60	Combination Trucks	Class 8-13	36,572,792	9,058,107	19,363,526	2,566,080	21.1%	7.9%	10.4%	2.0%
			173,367,504	113,943,372	185,924,943	126,711,564	100%	100%	100%	100%

Table 3 (continued) – GDOT Vehicle Classification Counts
Statewide minus 13-County Atlanta MPO

2010 Statewide minus ARC 13 County MPO Area

			Weekday Counts				Percent by Road Type			
Code	HPMS Vehicle Type	FHWA Veh Class	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	531,781	465,637	767,240	413,477	0.3%	0.3%	0.3%	0.3%
20	Passenger Cars	Class 2	115,785,383	90,783,273	163,511,794	103,655,999	58.1%	64.4%	68.1%	73.3%
30	Other 2 axle-4 tire vehicles	Class 3	33,029,619	31,077,060	45,607,435	29,985,205	16.6%	22.1%	19.0%	21.2%
40	Buses	Class 4	1,648,242	837,435	1,403,597	520,635	0.8%	0.6%	0.6%	0.4%
50	Single Unit Trucks	Class 5-7	6,527,272	5,527,587	7,477,099	4,162,187	3.3%	3.9%	3.1%	2.9%
60	Combination Trucks	Class 8-13	41,728,831	12,222,357	21,492,738	2,746,397	20.9%	8.7%	8.9%	1.9%
	Total		199,251,128	140,913,349	240,259,903	141,483,900	100%	100%	100%	100%

2008-2010 Statewide minus ARC 13 County MPO Area Summary

			Weekday Counts				Percent by Road Type			
Code	HPMS Vehicle Type	FHWA Veh Class	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)	Rural Restricted Access (FC=1)	Rural Unrestricted Access (FC=2-7)	Urban Restricted Access (FC=11-12)	Urban Unrestricted Access (FC=14-19)
10	Motorcycles	Class 1	1,490,827	1,122,655	2,023,298	1,021,999	0.3%	0.3%	0.2%	0.2%
20	Passenger Cars	Class 2	293,793,164	210,630,380	421,499,700	267,351,111	57.7%	67.7%	73.5%	76.6%
30	Other 2 axle-4 tire vehicles	Class 3	85,091,113	72,515,524	118,297,665	75,607,032	16.7%	20.7%	16.5%	18.6%
40	Buses	Class 4	4,442,435	1,886,048	4,128,658	1,373,916	0.9%	0.6%	0.7%	0.5%
50	Single Unit Trucks	Class 5-7	17,636,846	13,159,878	20,097,488	10,672,882	3.4%	3.8%	3.0%	2.7%
60	Combination Trucks	Class 8-13	112,285,560	26,600,943	65,602,461	7,037,472	21.0%	6.9%	6.2%	1.4%
	Total		514,739,945	325,915,428	631,649,270	363,064,412	100%	100%	100%	100%

Table 4 – Final Factor of VMT by Vehicle Type by Road Type
7-County Area

Code	HPMS Vehicle Type	FHWA Veh Class	Restricted Access	Unrestricted Access	Restricted Access Factor	Unrestricted Access Factor
10	Motorcycles	Class 1	3,514,125	2,144,654	0.003065	0.003113
20	Passenger Cars	Class 2	715,292,864	477,981,491	0.623953	0.693753
30	Other 2 axle-4 tire vehicles	Class 3	203,388,778	148,122,556	0.177417	0.214988
40	Buses	Class 4	8,571,093	3,259,964	0.007477	0.004732
50	Single Unit Trucks	Class 5-7	37,734,334	23,832,760	0.032916	0.034591
60	Combination Trucks	Class 8-13	177,888,021	33,638,415	0.155172	0.048824
	Total		1,146,389,215	688,979,840	1.000000	1.000000

Since the vehicle classification counts are collected using counters that do not adequately distinguish between passenger cars and SUVs, the MOVES defaults for vehicle types 20 and 30 by road type were used to redistribute the VMT. The MOVES Defaults are listed in Table 5.

Table 5 – MOVES Default Percent VMT by Vehicle Type

	Vehicle Type					
Year	**10**	**20**	**30**	**40**	**50**	**60**
1999	0.00390	0.58310	0.33480	0.00280	0.02610	0.04920
2000	0.00380	0.58250	0.33600	0.00280	0.02570	0.04920
2001	0.00340	0.58240	0.33740	0.00250	0.02590	0.04850
2002	0.00330	0.58110	0.33850	0.00240	0.02660	0.04820
2003	0.00330	0.57880	0.34060	0.00230	0.02690	0.04810
2004	0.00340	0.57260	0.34600	0.00220	0.02730	0.04850
2005	0.00360	0.57060	0.34770	0.00220	0.02710	0.04870
2006	0.00400	0.55990	0.35850	0.00220	0.02750	0.04780
2007	0.00450	0.55070	0.36630	0.00220	0.02790	0.04840
2008	0.00510	0.54610	0.36980	0.00230	0.02870	0.04800
2009	0.00530	0.54760	0.37480	0.00210	0.02660	0.04370
2010	0.00530	0.54360	0.37770	0.00220	0.02770	0.04350
2011	0.00530	0.53940	0.37830	0.00240	0.02970	0.04500
2012	0.00530	0.53700	0.37740	0.00250	0.03140	0.04640
2013	0.00520	0.53640	0.37610	0.00260	0.03240	0.04730
2014	0.00520	0.53780	0.37370	0.00260	0.03310	0.04760
2015	0.00511	0.54185	0.36926	0.00266	0.03358	0.04754
2016	0.00505	0.54655	0.36414	0.00270	0.03413	0.04743
2017	0.00500	0.55148	0.35868	0.00274	0.03465	0.04744

	Vehicle Type					
Year	**10**	**20**	**30**	**40**	**50**	**60**
2018	0.00495	0.55719	0.35240	0.00278	0.03509	0.04759
2019	0.00490	0.56346	0.34559	0.00281	0.03548	0.04777
2020	0.00484	0.57033	0.33840	0.00283	0.03581	0.04779
2021	0.00479	0.57743	0.33138	0.00285	0.03599	0.04755
2022	0.00475	0.58459	0.32444	0.00286	0.03613	0.04723
2023	0.00471	0.59142	0.31755	0.00288	0.03639	0.04705
2024	0.00466	0.59782	0.31089	0.00291	0.03674	0.04698
2025	0.00462	0.60374	0.30470	0.00294	0.03709	0.04692
2026	0.00458	0.60921	0.29896	0.00296	0.03745	0.04684
2027	0.00455	0.61410	0.29377	0.00300	0.03784	0.04674
2028	0.00452	0.61852	0.28903	0.00303	0.03828	0.04662
2029	0.00450	0.62265	0.28449	0.00307	0.03876	0.04652
2030	0.00448	0.62625	0.28038	0.00311	0.03930	0.04648
2031	0.00444	0.62984	0.27688	0.00313	0.03959	0.04611
2032	0.00440	0.63303	0.27380	0.00316	0.03987	0.04574
2033	0.00436	0.63573	0.27104	0.00319	0.04023	0.04545
2034	0.00432	0.63812	0.26857	0.00321	0.04058	0.04519
2035	0.00429	0.64015	0.26636	0.00324	0.04096	0.04501
2036	0.00425	0.64184	0.26447	0.00327	0.04134	0.04483
2037	0.00421	0.64323	0.26287	0.00330	0.04173	0.04465
2038	0.00418	0.64417	0.26173	0.00333	0.04211	0.04447
2039	0.00414	0.64476	0.26096	0.00336	0.04249	0.04428

	Vehicle Type					
Year	**10**	**20**	**30**	**40**	**50**	**60**
2040	0.00411	0.64532	0.26017	0.00340	0.04289	0.04411
2041	0.00407	0.64586	0.25937	0.00343	0.04331	0.04396
2042	0.00404	0.64630	0.25864	0.00346	0.04374	0.04381
2043	0.00401	0.64666	0.25799	0.00350	0.04418	0.04366
2044	0.00398	0.64693	0.25741	0.00353	0.04462	0.04352
2045	0.00395	0.64711	0.25692	0.00357	0.04507	0.04338
2046	0.00392	0.64719	0.25653	0.00360	0.04552	0.04324
2047	0.00389	0.64720	0.25620	0.00364	0.04598	0.04310
2048	0.00386	0.64715	0.25593	0.00368	0.04643	0.04295
2049	0.00383	0.64704	0.25572	0.00371	0.04690	0.04281
2050	0.00380	0.64689	0.25554	0.00375	0.04736	0.04266

Appendix B – Senior I/M Program Details

Mobile6-based I/M emissions were retained for this off-model exercise because they were considered to still be conservatively high. In the future, GA EPD and ARC will evaluate the development of MOVES-based senior I/M credits.

Effect of Senior Exemption on 2002 Highway Mobile Source Emissions

During their 1996 session the Georgia General Assembly amended the Georgia Motor Vehicle Emission Inspection and Maintenance Act (O.C.G.A. Section 12-9, *et seq*), to exempt from emission testing those otherwise subject vehicles ten years old or older driven fewer than 5,000 miles per year and owned by persons 65 years old or older.

The actual numbers of vehicles that received senior citizen exemptions from Georgia's inspection and maintenance (I/M) program waiver centers in 2002 are shown in the table below (source: Appendix I, Detailed List of Waivers Processed, from 2002 Annual Operations Report for Georgia's Enhanced Inspection and Maintenance Program, July 30, 2003):

Table 1 – Vehicles with Waivers by Year

Age (years)	Vehicles
10	1,629
11	2,120
12	2,239
13	2,630
14	2,496
15	2,350
16	2,369
17	2,227
18	1,708
19	1,111
20	669
21	586
22	496
23	833
24	794
25	44

2002 NO_x Credit Loss

MOBILE6.2 emission factors for calculating the 2002 NOx credit loss from these exempted vehicles were determined in the following manner. Six combined highway mobile source control strategies were modeled:

- Enhanced I/M in all 13 Atlanta ozone nonattainment area counties
- The Federal Motor Vehicle Control Program, including Tier 1 and Tier 2 tailpipe standards
- Stage II vapor recovery

- Low-sulfur (150 parts per million, or ppm) and low Reid Vapor Pressure (7.0 pounds per square inch, or psi) gasoline
- The National Low Emission Vehicle (NLEV) program
- Technician training and certification

The enhanced I/M program is a decentralized annual hybrid with onboard diagnostics (OBD-II) system checks on 1996 and newer model year vehicles; and two-mode ASM tests on 25-year-old through 1995 model year vehicles. Anti-tampering inspections (checking for catalyst removal) are performed on 25-year-old through 1995 model year vehicles, and gas cap pressure tests are performed on all vehicles subject to inspection.

- An overall 2002 highway mobile source NO inventory based on July 1, 2002, MOBILE6.2 emission factors with all controls in place (310,382,142 grams per day) was divided by the total summer-adjusted 2002 VMT (122,754,275 miles) with a resulting overall grams-per-mile NO emission factor of 2.528.
- MOBILE6.2 runs with all subject vehicles receiving their appropriate test were performed to determine the speed that would result in a July 1, 2002, NO emission factor of 2.528 grams per mile: 38.58 miles per hour.
- Two separate July 1, 2002, MOBILE6.2 runs, at 38.58 mph and with emissions calculated by model year, were made: one with hybrid I/M on 25-year-old and newer subject vehicles; the other with OBD-II system checks on 1996 and newer vehicles, with 1995 and older vehicles exempted.
- Next, both sets (covered and exempt) of emission factors were separately multiplied by the VMT fractions[15], normalized to total 1.000, for the appropriate vehicle types (LDGV, LDGT12, LDGT34), and the three products were then added together to produce a single passenger vehicle emission factor for each exempted vehicle age.
- The differences in the covered and exempt emission factors were then determined for each exempted vehicle age, these differences were multiplied by 4999, the maximum allowable yearly miles traveled by exempt vehicles, and that product was then multiplied by the number of vehicles of that age to determine grams per year. Grams per year were converted to tons per day (907,180 grams per ton, 365 days per year) and the resulting **NO_x reduction credit loss for 2002 was determined to be 0.03 tons per day.**

2002 VOC Credit Loss

MOBILE6.2 emission factors for calculating the 2002 VOC credit loss from these exempted vehicles were determined in the following manner:

- An overall 2002 highway mobile source VOC inventory based on July 1, 2002, MOBILE6.2 emission factors with all controls in place (158,026,372 grams per day) was divided by the total 2002 VMT (122,754,275 miles) with a resulting overall grams-per-mile VOC emission factor of 1.287.
- MOBILE6.2 runs with all subject vehicles receiving their appropriate test were performed to determine the speed that would result in a July 1, 2002, VOC emission factor of 1.287 grams per mile: 30.6 miles per hour.

[15] An output of MOBILE6.2, the VMT (vehicle miles traveled) fraction is the fraction of total VMT traveled by each vehicle type

- Two separate July 1, 2002, MOBILE6.2 runs, at 30.6 mph and with emissions calculated by model year, were made: one with hybrid I/M on 25-year-old and newer subject vehicles; the other with OBD-II system checks on 1996 and newer vehicles, with 1995 and older vehicles exempted.
- Next, both sets (covered and exempt) of emission factors were separately multiplied by the VMT fractions, normalized to total 1.000, for the appropriate vehicle types (LDGV, LDGT12, LDGT34), and the three products were then added together to produce a single passenger vehicle emission factor for each exempted vehicle age.
- The differences in the covered and exempt emission factors were then determined for each exempted vehicle age, these differences were multiplied by 4999, the maximum allowable yearly miles traveled by exempt vehicles, and that product was then multiplied by the number of vehicles of that age to determine grams per year. Grams per year were converted to tons per day (907,180 grams per ton, 365 days per year) and the resulting **VOC reduction credit loss for 2002 was determined to be 0.05 tons per day.**

Detailed List of Waivers Processed

Wednesday, February 26, 2003

Report Datafrom 1/1/02 to 12/31/02 11:59:59 PM

Model Year	Grand Total	Repair	Senior Exemptions	Extentions				Canadian (non-OBD compliant)	Grandfathered		Reciprocal
				Military	Student	Business	Manager Authorized		W/O Cat	With Cat	
1975	5		5								
1976	6		6								
1977	46		44			2					
1978	829	6	794	1	4	20	2		1		1
1979	879	14	833	1	1	20			4		2
1980	523	5	496		1	8	1		3	7	1
1981	623	6	586	2	3	19	3		2	2	
1982	712	14	669			22	2		5		
1983	1,189	22	1,111	4	6	30	1		7	5	1
1984	1,824	34	1,708	3	7	53	4		1	10	4
1985	2,392	44	2,227	5	11	76	9		4	8	7
1986	2,517	46	2,369	5	23	61	6			1	5
1987	2,536	52	2,350	12	25	85	4		1		5
1988	2,713	68	2,496	7	39	85	5		1		9
1989	2,871	56	2,630	12	56	100	8		2		4
1990	2,493	39	2,239	18	91	96	3				6
1991	2,487	78	2,120	23	109	133	15				7
1992	2,024	65	1,629	31	129	148	11				8
1993	478	61	36	30	133	193	11				12
1994	555	55	4	58	201	216	9				9
1995	630	47	4	62	254	245	10				6
1996	1,471	216	2	51	243	588	366				2
1997	1,236	135	1	68	260	551	217				4
1998	1,046	59	5	59	236	486	199				
1999	1,163	15	5	67	240	566	265			2	3
2000	32				3	4	25				
2001	2		1				1				
2002	1					1					
Totals:	**33,283**	**1,137**	**24,370**	**519**	**2,075**	**3,808**	**1,177**		**31**	**35**	**96**

CDR EXHIBIT 4

Sample MOVES Input Files

March 2014 Update

Exhibit 4 – Sample MOVES Input Files

This exhibit provides a partial recreation of locally derived MOVES County Data Manager inputs utilized by ARC to evaluate emissions inventories for both the eight-hour ozone and the annual PM2.5 nonattainment area conformity tests. Runs are broken into 13-county and 7-county portions for ozone runs. For PM2.5 runs are broken into Putnam county, 13-county and 7-county portions. Only 13-county 2015 ozone data is demonstrated in this exhibit and the tables are abbreviated where noted. A full set of inputs for all combinations of counties and pollutants are available, by request.

Table 1 – Age Distribution (abbreviated from 404 rows)

sourceTypeID	yearID	ageID	ageFraction
21	2015	0	0.023802
21	2015	1	0.071207
21	2015	2	0.068707
21	2015	3	0.077108
21	2015	4	0.072907
21	2015	5	0.067107
21	2015	6	0.068907
21	2015	7	0.065607
21	2015	8	0.076308
21	2015	9	0.061806
21	2015	10	0.055906
21	2015	11	0.046105
21	2015	12	0.039904
21	2015	13	0.037004
21	2015	14	0.032503
21	2015	15	0.026703
21	2015	16	0.021402
21	2015	17	0.016602
21	2015	18	0.012601
21	2015	19	0.008901
21	2015	20	0.005401
21	2015	21	0.0032
21	2015	22	0.0026
21	2015	23	0.0023
21	2015	24	0.002035
21	2015	25	0.0018
21	2015	26	0.001592
21	2015	27	0.001409
21	2015	28	0.001246

Table 2 – Average Speed Distribution (abbreviated from 19,969 rows)

sourceTypeID	roadTypeID	hourDayID	avgSpeedBinID	avgSpeedFraction
11	2	15	6	0.00174
21	2	15	6	0.00174
31	2	15	6	0.00174
32	2	15	6	0.00174
41	2	15	6	0.00174
42	2	15	6	0.00174
43	2	15	6	0.00174
51	2	15	6	0.00174
52	2	15	6	0.00174
53	2	15	6	0.00174
54	2	15	6	0.00174
61	2	15	6	0.00174
62	2	15	6	0.00174
11	2	15	7	0.00093
21	2	15	7	0.00093
31	2	15	7	0.00093
32	2	15	7	0.00093
41	2	15	7	0.00093
42	2	15	7	0.00093
43	2	15	7	0.00093
51	2	15	7	0.00093
52	2	15	7	0.00093
53	2	15	7	0.00093
54	2	15	7	0.00093
61	2	15	7	0.00093
62	2	15	7	0.00093
11	2	15	8	0
21	2	15	8	0
31	2	15	8	0
32	2	15	8	0
41	2	15	8	0
42	2	15	8	0
43	2	15	8	0
51	2	15	8	0
52	2	15	8	0
53	2	15	8	0
54	2	15	8	0
61	2	15	8	0
62	2	15	8	0

Table 3 – Fuel Supply

countyID	fuelYearID	monthGroupID	fuelFormulationID	marketShare	marketShareCV
13121	2012	7	20011	1	0.5
13121	2012	7	3847	1	0.5

Table 4 – Meteorology

monthID	zoneID	HourID	temperature	relHumidity
7	131210	1	76.7	66.7
7	131210	2	75.3	70.2
7	131210	3	74.5	71.4
7	131210	4	73.5	73.8
7	131210	5	73.2	74.5
7	131210	6	72.9	75.5
7	131210	7	74.8	73.2
7	131210	8	77.8	67
7	131210	9	81.2	60.5
7	131210	10	84.3	55.2
7	131210	11	86.2	49.2
7	131210	12	88	45.1
7	131210	13	88.8	42.3
7	131210	14	90.2	39.2
7	131210	15	90.7	38.5
7	131210	16	90.5	38.2
7	131210	17	90.1	38.3
7	131210	18	90.2	38.4
7	131210	19	88.3	41.2
7	131210	20	85.8	46.5
7	131210	21	84	52.3
7	131210	22	82.4	55.8
7	131210	23	80.8	58.8
7	131210	24	79.8	60.9

Table 5 – Ramp Fraction

roadTypeID	rampFraction
2	0.0017
4	0.1187

Table 6 – Road Type Distribution (abbreviated from 66 rows)

sourceTypeID	roadTypeID	roadTypeVMTFraction
11	1	0
11	2	0.0632
11	3	0.188616
11	4	0.305535
11	5	0.44265
21	1	0
21	2	0.0632
21	3	0.188616
21	4	0.305535
21	5	0.44265
31	1	0
31	2	0.0632
31	3	0.188616
31	4	0.305535
31	5	0.44265
32	1	0
32	2	0.0632
32	3	0.188616
32	4	0.305535
32	5	0.44265
41	1	0
41	2	0.0632
41	3	0.188616
41	4	0.305535
41	5	0.44265
42	1	0
42	2	0.0632
42	3	0.188616
42	4	0.305535
42	5	0.44265
43	1	0
43	2	0.0632
43	3	0.188616
43	4	0.305535
43	5	0.44265
51	1	0
51	2	0.0632
51	3	0.188616
51	4	0.305535
51	5	0.44265
52	1	0
52	2	0.0632
52	3	0.188616

Table 7 – Source Type Population

yearID	sourceTypeID	sourceTypePopulation
2015	11	81,861
2015	21	2,173,365
2015	31	1,229,481
2015	32	401,972
2015	41	1,296
2015	42	794
2015	43	13,372
2015	51	1,593
2015	52	51,065
2015	53	3,609
2015	54	5,082
2015	61	25,856
2015	62	14,837

Table 8 – HPMSvTypeYear

HPMSVtypeID	yearID	HPMSBaseYearVMT	baseYearOffNetVMT
10	2015	115253497.3	0
20	2015	28436399523	0
30	2015	19378840801	0
40	2015	307990839.8	0
50	2015	1365381450	0
60	2015	1584899086	0

Table 9 – Month VMT Fraction (abbreviated from 157 rows)

sourceTypeID	isLeapYear	monthID	monthVMTFraction
11	N	1	0.072904
11	N	2	0.072023
11	N	3	0.081529
11	N	4	0.082098
11	N	5	0.087285
11	N	6	0.088052
11	N	7	0.092096
11	N	8	0.093198
11	N	9	0.08447
11	N	10	0.086301
11	N	11	0.080029
11	N	12	0.080015

Table 10 – Day VMT Fraction (abbreviated from 1561 rows)

sourceTypeID	monthID	roadTypeID	dayID	dayVMTFraction
11	1	1	2	0.237635
11	1	1	5	0.762365
11	1	2	2	0.237635
11	1	2	5	0.762365
11	1	3	2	0.237635
11	1	3	5	0.762365
11	1	4	2	0.237635
11	1	4	5	0.762365
11	1	5	2	0.237635
11	1	5	5	0.762365
11	2	1	2	0.237635
11	2	1	5	0.762365
11	2	2	2	0.237635
11	2	2	5	0.762365
11	2	3	2	0.237635
11	2	3	5	0.762365
11	2	4	2	0.237635
11	2	4	5	0.762365
11	2	5	2	0.237635
11	2	5	5	0.762365

Table 11 – Hour VMT Fraction (abbreviated from 1561 rows)

sourceTypeID	roadTypeID	dayID	hourID	hourVMTFraction
11	1	5	1	0.00986
11	1	5	2	0.00627
11	1	5	3	0.00506
11	1	5	4	0.00467
11	1	5	5	0.00699
11	1	5	6	0.01849
11	1	5	7	0.04596
11	1	5	8	0.06964
11	1	5	9	0.06083
11	1	5	10	0.05029
11	1	5	11	0.04994
11	1	5	12	0.05437
11	1	5	13	0.05765
11	1	5	14	0.05803
11	1	5	15	0.06226
11	1	5	16	0.071
11	1	5	17	0.07697
11	1	5	18	0.07743
11	1	5	19	0.05978
11	1	5	20	0.04439
11	1	5	21	0.03545
11	1	5	22	0.03182
11	1	5	23	0.02494
11	1	5	24	0.01791

Table 12 – Fueltype Tech (abbreviated from 3,390 rows)

sourceTypeID	modelYearID	fuelTypeID	engTechID	fuelEngFraction
21	2000	1	1	1
21	2000	2	1	0
21	2000	5	1	0
21	2000	9	30	0
21	2001	1	1	0.996155556
21	2001	2	1	0.003844444
21	2001	5	1	0
21	2001	9	30	0
21	2002	1	1	0.996155556
21	2002	2	1	0.003844444
21	2002	5	1	0
21	2002	9	30	0
21	2003	1	1	0.996155556
21	2003	2	1	0.003844444
21	2003	5	1	0
21	2003	9	30	0
21	2004	1	1	0.996155556
21	2004	2	1	0.003844444
21	2004	5	1	0
21	2004	9	30	0
21	2005	1	1	0.996155556
21	2005	2	1	0.003844444
21	2005	5	1	0
21	2005	9	30	0

Table 13 – Fuel Formulation (abbreviated from 8,930 rows)

Fuel Formulation ID	fuelSubtypeID	RVP	sulfurLevel	ETOH Volume	MTBE Volume	ETBE Volume	TAME Volume	Aromatic Content	Olefin Content	Benzene Content	e200	e300	BioDiesel EsterVolume	Cetane Index	PAH Content
10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	10	8.7	338	0	0	0	0	26.4	11.9	1.64	50	83	0	0	0
97	10	6.6	150	0	11.7581	0	0	24	11	0.8	52	84	0	0	0
98	10	6.9	30	0	0	0	0	26.1	5.6	1	41.09	83.09	0	0	0
99	10	6.9	90	0	0	0	0	26.1	5.6	1	41.09	83.09	0	0	0
4045	10	12.5	290.1	0	0.8	0	0	27.1	10.7	0.9	50.1	81.2	0	0	0
4046	10	10.3286	261.24	0	1.6	0	0	29.6	10.7	1	45.7	79.8	0	0	0
4047	10	8.7	261.24	0	1.6	0	0	29.6	10.7	1	45.7	79.8	0	0	0
4048	10	8.7	239.6	0	2.1	0	0	31.5	10.7	1	42.3	78.8	0	0	0
4049	10	12.5	307.5	0	0.6	0	0	26.7	11.3	0.9	50.7	81.2	0	0	0
4050	10	10.3286	275.67	0	1.5	0	0	29.4	11.2	1	46.1	79.7	0	0	0
4051	10	8.7	275.67	0	1.5	0	0	29.4	11.2	1	46.1	79.7	0	0	0
4052	10	8.7	251.8	0	2.1	0	0	31.3	11.2	1.1	42.6	78.6	0	0	0
4053	10	12	150.32	0	0.1	0	0	19.4	6.8	1.2	55.3	85.1	0	0	0
4054	10	10.5333	187.56	0	0.3	0	0	23.1	9	1.3	50.6	83.8	0	0	0
4055	10	9.43333	215.48	0	0.4	0	0	25.9	10.7	1.4	47	82.8	0	0	0
4056	10	8.7	215.48	0	0.4	0	0	25.9	10.7	1.4	47	82.8	0	0	0
4057	10	8.7	234.1	0	0.4	0	0	27.7	11.8	1.5	44.6	82.2	0	0	0
4058	10	8.71834	215.48	0	0.4	0	0	25.9	10.7	1.4	47	82.8	0	0	0
4080	10	12.3	337.4	0	1	0	0	24.9	11.1	0.8	50.3	81.3	0	0	0
4081	10	8.7	356.4	0	1.7	0	0	30.6	10.2	1	43.5	79.2	0	0	0
4082	10	12.5	291.2	0	0.8	0	0	27	10.8	0.9	50.2	81.3	0	0	0
4083	10	10.3286	262.11	0	1.6	0	0	29.6	10.7	1	45.7	79.8	0	0	0

Table 14 – I/M Program (abbreviated from 49 rows)

Pol Process ID	State ID	county ID	year ID	Source TypeID	Fuel Type ID	IMProgram ID	begModel YearID	endModel YearID	Inspect Freq	Test Standards ID	Use IMyn	Compliance Factor
101	13	13121	2015	21	1	3	1991	1995	1	23	Y	94.09
101	13	13121	2015	31	1	3	1991	1995	1	23	Y	88.44
101	13	13121	2015	32	1	3	1991	1995	1	23	Y	82.8
101	13	13121	2015	21	1	1	1996	2012	1	51	Y	94.09
101	13	13121	2015	31	1	1	1996	2012	1	51	Y	88.44
101	13	13121	2015	32	1	1	1996	2012	1	51	Y	82.8
102	13	13121	2015	21	1	3	1991	1995	1	23	Y	94.09
102	13	13121	2015	31	1	3	1991	1995	1	23	Y	88.44
102	13	13121	2015	32	1	3	1991	1995	1	23	Y	82.8
102	13	13121	2015	21	1	1	1996	2012	1	51	Y	94.09
102	13	13121	2015	31	1	1	1996	2012	1	51	Y	88.44
102	13	13121	2015	32	1	1	1996	2012	1	51	Y	82.8
112	13	13121	2015	21	1	4	1991	1995	1	41	Y	97
112	13	13121	2015	31	1	4	1991	1995	1	41	Y	91.18
112	13	13121	2015	32	1	4	1991	1995	1	41	Y	85.36
112	13	13121	2015	21	1	2	1996	2012	1	45	Y	97
112	13	13121	2015	31	1	2	1996	2012	1	45	Y	91.18
112	13	13121	2015	32	1	2	1996	2012	1	45	Y	85.36
113	13	13121	2015	21	1	4	1991	1995	1	41	Y	97
113	13	13121	2015	31	1	4	1991	1995	1	41	Y	91.18
113	13	13121	2015	32	1	4	1991	1995	1	41	Y	85.36
113	13	13121	2015	21	1	2	1996	2012	1	45	Y	97
113	13	13121	2015	31	1	2	1996	2012	1	45	Y	91.18
113	13	13121	2015	32	1	2	1996	2012	1	45	Y	85.36

CDR EXHIBIT 5

Summary of Interagency Consultation Group Meetings

March 2014 Update

Exhibit 5 – Summary of Interagency Consultation Group Meetings[1]

November 27, 2012

ARC staff updated the committee on the PLAN 2040 update scheduled for 2013. Staff plans on having a draft plan by May with final adoptions in the fall and hopeful CDR approval by the end of the calendar year. Haynes explained that the main reason for this plan update is to meet requirements outlined in federal transportation reauthorization (MAP-21) from the summer of 2012. Additionally, the update will consider new information relating to fiscal constraint and reprioritization of needs after the failure of the Transportation Referendum in July.

The issue of the possible creation of a new MPO in Bartow County was then discussed. Final designations of MPO status will occur in March, 2013. Interagency members will need to stay aware of the decisions in Bartow County, as they can affect the scheduling of future conformity determinations and analyses. Should Bartow County become an MPO, they will be required to produce a plan in 2016. Until that time, ARC will continue to plan for the southeastern corner of Bartow County, which remains in ARC's MPO boundary.

February 26, 2013

ARC provided committee members with an update on the PLAN 2040 RTP/TIP update. There are currently 4 subcommittees meeting at ARC to work on planning issues for the update. These committees are evaluating regional needs as it relates to roadway and operational expansion, maintenance and managed lanes.

In the spring, ARC will undergo a detailed project evaluation and policy framework determination. These activities should be completed by May. These efforts will focus on evaluating regional priorities for a shrinking pot of federal money for transportation investments. Orr pointed out that these efforts are aligned with the GHMPO plans to update their plan later this year.

The ARC board is expected to take up the final plan update next February with conformity modeling in a mid-November to mid-December timeframe. This work is all being done ahead of another expected plan update to address the adjusted MPO boundary, which is required by March of 2016. The bulk of the work for that plan update will be in calendar year 2015.

ARC provided the committee with an updated graphic illustrating expected model conformity years and tests for the PLAN 2040 update later this year. With the expected adequacy finding of the Ozone Maintenance Plan MOVES-based budgets in March, ARC will be required to use those budgets for future

[1] These documents are representative of Interagency Consultation meeting summaries. Actual meeting summaries are available upon request.

conformity runs for the years 2024 and later. Conformity test years prior to 2024 are still required to adhere to the RFP SIP MOBILE6-based budgets.

For PM2.5, there is still some uncertainty if the Maintenance Plan budgets will be approved prior to the emissions analysis this fall. ARC staff presented the two possible scenarios, with and without the approved budgets.

April 23, 2013

ARC provided committee members with an update on the PLAN 2040 RTP/TIP update. The plan is currently moving on schedule with anticipated approval from the ARC board on February, 2014. TCC subcommittees have met monthly since January to discuss planning issues related to the update. A major change in this update is the use of real-world data from INRIX to supplement the data from ARC's travel model in project evaluation and decision-making. ARC staff is working hard to ensure that the update is MAP-21 compliant, exceeding the planning expectations that currently exist.

In the fall, ARC will hold some stakeholder meetings and community engagement before major decisions are made about transportation projects. Staff expects that around $1.5 billion will need to be cut from the plan. ARC is working closely with the Gainesville-Hall MPO to ensure our schedules are aligned for the conformity update.

May 28, 2013

ARC provided committee members with information on the PLAN 2040 RTP/TIP update. The plan is currently on schedule with anticipated approval from the ARC board in February, 2014. Jurisdictional outreach meetings will begin soon to help ARC understand project needs. ARC will hold another round of TCC subcommittee meetings in June. These meetings will be followed by technical analysis of projects in the summer. In addition, ARC is preparing a call for CMAQ projects this summer to be associated with the PLAN 2040 update.

While the bigger schedule of the PLAN 2040 update is ongoing, there was a time sensitive Amendment to the existing plan that went through the agency in May, TIP Amendment #2. This amendment was necessary to move some funds for the I-75 South managed lanes project through ARC's committees and Board before it headed to GRTA in June. There will be another TIP update, TIP Amendment #3, in the upcoming months as well.

Currently, the city of Gainesville is updating their transportation plan. The city has held the first of three planned public outreach meetings. They are anticipating completion by August 2013. The recommendations from the Gainesville plan will be incorporated into the GHMPO long-range plan in sync with when ARC will need to run conformity for the PLAN 2040 Update.

June 25, 2013

ARC updated the committee members with information on the PLAN 2040 RTP/TIP update. Over the past month, staff has been participating in subregional meetings with TCC representatives and GDOT to get feedback on needs and priorities in reference to the planning framework adopted in April. Now ARC staff is working on technical evaluations for some projects that had negative B/C ratios in the initial PLAN 2040 work. These evaluations are targeted for completion by the end of July. The bulk of the work for project prioritization will occur in October, and ARC will provide more information on that process at a later meeting, including updated planning assumptions.

Currently, ARC staff anticipates board adoption of the plan update in February, with 30 days of public comment in the December/January timeframe. Staff anticipates having a draft of the plan in October to share with Interagency.

ARC outlined a potential change to the way ARC provides information to Interagency about plan amendments in the future. To better document planning decisions, ARC is proposing that a new form be created. The document would outline the proposed changes to the plan and whether they are planning level or conformity triggering. In addition, this document would show a list of dates for approvals by TCC, TAQC, the ARC board, etc. This information could help Interagency members better track the planning process. In addition, the form would provide an opportunity for feedback on the status of individual projects. The document would be emailed out to Interagency and a 5 day review period would be requested.

ARC is currently working on another amendment to PLAN 2040. This amendment is expected to go to public comment by the end of July. ARC would prepare the proposed documentation for this amendment for Interagency review. Both EPA and FHWA agreed that this extra document would be a good addition to the process. In addition, EPA stated that for all future amendments, EPA/FHWA would be determining conformity on the plan. The document that ARC is preparing would be used as the main document to review. In the event that an amendment does not require emissions modeling, the document could just reference the date of the last positive conformity determination.

July 23, 2013

ARC provided committee members with information on the PLAN 2040 RTP/TIP update. Recent planning work has focused on financial constraint for the TIP and long-range portions of the PLAN 2040 update. Staff, in collaboration with GDOT, has determined there is a deficit in 2014 STP Urban funding, but other categories are in good shape.

ARC will be opening up a CMAQ call in the coming weeks to fill a budget surplus. Information on the CMAQ call was presented earlier this month to TCC. Tomorrow, ARC staff will be meeting with TAQC subcommittee members to prepare to open the CMAQ call. ARC staff will be working closely with Interagency to ensure that projects received in the call are CMAQ eligible.

Over the coming months ARC staff will be bringing planning assumptions and data to Interagency for review and eventually concurrence prior to the PLAN 2040 Update. Today, Research and Analytics staff will present on the population and employment forecasts and next month ARC staff will present information on fiscal constraint.

ARC updated the committee on the status of TIP Amendment #3. The TIP is currently open to public comment until August 2. Afterwards, TCC will take up the amendment on August 9. Prior to public comment, ARC sent out the new CDR short form for Interagency approval. The short form is still a work in progress, and ARC staff has identified a few possible changes to the form for future amendments. ARC proposes only using the CDR short form for planning level changes, not for administrative modifications or emissions analysis-inducing amendments or plan updates.

GHMPO is currently updating their public participation plan. The main change to the plan is a reduction in the number of days for a minimum public comment period (from 30 down to 15). This change will help GHMPO be more responsive to necessary last minute TIP modifications.

GHMPO will be updating their TIP with an amendment in September. This update will capture some changes GDOT has requested. The update will go through the GHMPO TCC in October and to the policy committee on November 6.

The city of Gainesville is working on updating their transportation plan. The plan is currently seeking public comment and feedback. Draft documentation is expected by the end of August and will be incorporated into the GHMPO TIP amendment in September.

Finally, in late fall, GHMPO will solicit consultants for assistance in updating their LRTP. They anticipate the work to be done in the middle of 2015 and are under the assumption that portions of urbanized Jackson County will join with the GHMPO.

August 27, 2013

ARC provided committee members with information on the PLAN 2040 RTP/TIP update. ARC is working on updating fiscal information for the upcoming plan update after the Federal Reserve in Philadelphia recently lowered the expected interest rate. In addition, the governor signed into law a bill that allows GDOT to relax Congressional District balancing for projects on the freight and interstate networks.

Over the past couple months ARC has spent time with GDOT staff updating project status. ARC will share that information with Interagency as soon as possible to show how projects have shifted since the last plan update. Over the long-range, the plan update will need to tighten spending, particular in STP-Urban funding. There is extra CMAQ funding available in the region that ARC will be programming later this year.

In the coming month, ARC staff will be assessing which projects may need to be rescaled or pushed back into the long-range or aspirational portions of the plan update. At the next meeting, ARC expects to provide committee members with more details on the results of that process.

TIP Amendment #3 has gone through the public comment process, TCC and TAQC. The Board will take up the amendment on August 29, with GRTA approvals to follow in September. The amendment includes new information on Interagency concurrence and a request for a federal conformity determination via the conformity short form process established in the previous few Interagency meetings.