



TRAVEL DEMAND MODELING POLICIES AND PROCEDURES

APPENDICES

VDOT Project Number: 30681-03-02

Prepared for

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By



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APPENDIX A. CODE OF VIRGINIA § 60.2-113 AND § 60.2-208

Title 60.2 – UNEMPLOYMENT COMPENSATION

§ 60.2-113. Employment stabilization.

The Commission shall take all necessary steps through its appropriate divisions and with the advice of such advisory boards and committees as it may have to:

1. Establish a viable labor exchange system to promote maximum employment for the Commonwealth of Virginia with priority given to those workers drawing unemployment benefits;
2. Provide Virginia State Job Service services, as described in this title, according to the provisions of the Wagner-Peyser Act (29 U.S.C. 49f), as amended by the Workforce Investment Act;
3. Maintain a solvent trust fund financed through equitable employer taxes that provide temporary partial income replacement to involuntarily unemployed covered workers;
4. Coordinate and conduct labor market information research studies, programs and operations, including the development, storage, retrieval and dissemination of information on the social and economic aspects of the Commonwealth and publish data needed by employers, economic development, education and training entities, government and other users in the public and private sectors;
5. Determine and publish a list of jobs, trades, and professions for which a high demand of qualified workers exists or is projected by the Commission. The Commission shall consult with the Virginia Workforce Council in making such determination. Such information shall be published biennially and disseminated to employers; education and training entities, including public two-year and four-year institutions of higher education; government agencies, including the Department of Education and public libraries; and other users in the public and private sectors;
6. Prepare official short and long-range population projections for the Commonwealth for use by the General Assembly and state agencies with programs which involve or necessitate population projections;
7. Encourage and assist in the adoption of practical methods of vocational guidance, training and retraining; and
8. Establish the Interagency Migrant Worker Policy Committee, comprised of representatives from appropriate state agencies, including the Virginia Workers' Compensation Commission, whose services and jurisdictions involve migrant and seasonal farmworkers and their employees. All agencies of the Commonwealth shall be required to cooperate with the Committee upon request.

(Code 1950, § 60-34; 1968, c. 738, § 60.1-39; 1986, c. 480; 1989, c. 108; 1999, c. 357; 2004, cc. 14, 154, 592; 2008, cc. 98, 222; 2011, cc. 594, 681.)

§ 60.2-208. Commission.

“Commission” means the Virginia Employment Commission. Wherever in this Code, or any act of the General Assembly the term “Unemployment Compensation Commission” is used, it shall mean the Virginia Employment Commission.

(Code 1950, § 60-10; 1960, c. 136; 1968, c. 738, § 60.1-10; 1986, c. 480.)

APPENDIX B. CODE OF VIRGINIA § 15.2-4208

Title 15.2 – COUNTIES, CITIES AND TOWNS.

Chapter 42 – Regional Cooperation Act

§ 15.2-4208. General duties of planning district commissions.

Planning district commissions shall have the following duties and authority:

1. To conduct studies on issues and problems of regional significance;
2. To identify and study potential opportunities for state and local cost savings and staffing efficiencies through coordinated governmental efforts;
3. To identify mechanisms for the coordination of state and local interests on a regional basis;
4. To implement services upon request of member localities;
5. To provide technical assistance to state government and member localities;
6. To serve as a liaison between localities and state agencies as requested;
7. To review local government aid applications as required by § 15.2-4213 and other state or Federal law or regulation;
8. To conduct strategic planning for the region as required by §§ 15.2-4209 through 15.2-4212;
9. To develop regional functional area plans as deemed necessary by the commission or as requested by member localities;
10. To assist state agencies, as requested, in the development of substate plans;
11. To participate in a statewide geographic information system, the Virginia Geographic Information Network, as directed by the Department of Planning and Budget; and
12. To collect and maintain demographic, economic and other data concerning the region and member localities, and act as a state data center affiliate in cooperation with the Virginia Employment Commission.

(1995, cc. 732, 796, § 15.1-1405.1; 1997, c. 587; 1998, cc. 668, 686.)

APPENDIX C. VIRGINIA EMPLOYMENT COMMISSION FORMS

Data Request Form

Data Request Form

VEC Confidential Unemployment Compensation Data



My VEC Data Sharing Agreement Number is: _____

In accordance with the data sharing agreement referenced above, I agree that the Unemployment Compensation micro-level employer information I receive will be limited only to authorized employees.

Requestor Information

Name: _____ Phone: _____
 Title: _____ Fax: _____
 Agency: _____ Mailing Address: _____
 E-mail: _____

Selection Criteria

Employer Type: _____ Employment Range: _____ to _____

- All Employer Types
- Federal Government
- State Government
- Local Government
- Private Industry

Time Period:
 Most recent quarter
 Only these quarters:

Geographies:
 All cities and counties
 Only these areas:

Data Request Form

Data Request Form

VEC Confidential Unemployment Compensation Data



NAICS Codes / Industries:

- 00 All industries
- 11 Agriculture, Forestry, Fishing and Hunting
- 21 Mining, Quarrying, and Oil and Gas Extraction
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)
- 92 Public Administration

Next Steps

Please return this form to the Virginia Employment Commission using any of the following options:

Email: veclmi@vec.virginia.gov

Fax: (804) 786-7844

Mail: Employer Data Requests
 Labor Market Information, Room 324
 Virginia Employment Commission
 P.O. Box 1358
 Richmond, VA 23218-1358

APPENDIX D. CITATIONS OF FEDERAL LAW APPLICABLE TO VIRGINIA MODELING

Federal 23 CFR 450.322 (pages 4-6) [Dated 2012-04-01]

Title 23 – Highways

CHAPTER I – FEDERAL HIGHWAY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION. SUBCHAPTER E – PLANNING AND RESEARCH.

PART 450 – PLANNING ASSISTANCE AND STANDARDS.

Subpart C – Metropolitan Transportation Planning and Programming.

Development and content of the metropolitan transportation plan.

- (a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In nonattainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and the FTA. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO.
- (b) The transportation plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.
- (c) The MPO shall review and update the transportation plan at least every four years in air quality nonattainment and maintenance areas and at least every five years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The transportation plan (and any revisions) shall be approved by the MPO and submitted for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.
- (d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCM) in a State Implementation Plan (SIP).
- (e) The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment,

congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

- (f) The metropolitan transportation plan shall, at a minimum, include:
- (1) The projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan.
 - (2) Existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan. In addition, the locally preferred alternative selected from an Alternatives Analysis under the FTA’s Capital Investment Grant program (49 U.S.C. 5309 and 49 CFR part 611) needs to be adopted as part of the metropolitan transportation plan as a condition for funding under 49 U.S.C. 5309.
 - (3) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods.
 - (4) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide.
 - (5) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area’s transportation system.
 - (6) Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity determinations under the EPA’s transportation conformity rule (40 CFR part 93). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates.
 - (7) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation.
 - (8) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).

- (9) Transportation and transit enhancement activities, as appropriate.
- (10) A financial plan that demonstrates how the adopted transportation plan can be implemented.
 - (i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).
 - (ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.
 - (iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified.
 - (iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Starting December 11, 2007, revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect “year of expenditure dollars,” based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).
 - (v) For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.
 - (vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.
 - (vii) For illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.
 - (viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or

amended metropolitan transportation plan that does not reflect the changed revenue situation.

- (g) The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate:
 - (1) Comparison of transportation plans with State conservation plans or maps, if available; or
 - (2) Comparison of transportation plans to inventories of natural or historic resources, if available.
- (h) The metropolitan transportation plan should include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA contained in the Strategic Highway Safety Plan required under 23 U.S.C. 148, as well as (as appropriate) emergency relief and disaster preparedness plans and strategies and policies that support homeland security (as appropriate) and safeguard the personal security of all motorized and nonmotorized users.
- (i) The MPO shall provide citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under § 450.316(a).
- (j) The metropolitan transportation plan shall be published or otherwise made readily available by the MPO for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web.
- (k) A State or MPO shall not be required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(10) of this section.
- (l) In nonattainment and maintenance areas for transportation-related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93). During a conformity lapse, MPOs can prepare an interim metropolitan transportation plan as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim metropolitan transportation plan consisting of eligible projects from, or consistent with, the most recent conforming transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93. An interim metropolitan transportation plan containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section.

Federal 40 CFR §93.122

62 FR 43801, August 15, 1997, as amended at 69 FR 40080, July 1, 2004

Title 40: Protection of Environment

PART 93 – Determining Conformity of Federal Actions to State or Federal Implementation Plans

Subpart A – Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded, or Approved Under Title 23 U.S.C. or the Federal Transit Laws

§ 93.122 – Procedures for determining regional transportation-related emissions.

(a) General requirements.

- (1) The regional emissions analysis required by § 93.118 and § 93.119 for the transportation plan, TIP, or project not from a conforming plan and TIP must include all regionally significant projects expected in the nonattainment or maintenance area. The analysis shall include FHWA/FTA projects proposed in the transportation plan and TIP and all other regionally significant projects which are disclosed to the MPO as required by § 93.105. Projects which are not regionally significant are not required to be explicitly modeled, but vehicle miles traveled (VMT) from such projects must be estimated in accordance with reasonable professional practice. The effects of TCMs and similar projects that are not regionally significant may also be estimated in accordance with reasonable professional practice.
- (2) The emissions analysis may not include for emissions reduction credit any TCMs or other measures in the applicable implementation plan which have been delayed beyond the scheduled date(s) until such time as their implementation has been assured. If the measure has been partially implemented and it can be demonstrated that it is providing quantifiable emission reduction benefits, the emissions analysis may include that emissions reduction credit.
- (3) Emissions reduction credit from projects, programs, or activities which require a regulatory action in order to be implemented may not be included in the emissions analysis unless:
 - (i) The regulatory action is adopted by the enforcing jurisdiction;
 - (ii) The project, program, or activity is included in the applicable implementation plan;
 - (iii) The control strategy implementation plan submission or maintenance plan submission that establishes the motor vehicle emissions budget(s) for the purposes of § 93.118 contains a written commitment to the project, program, or activity by the agency with authority to implement it; or

- (iv) EPA has approved an opt-in to a Federally enforced program, EPA has promulgated the program (if the control program is a Federal responsibility, such as vehicle tailpipe standards), or the Clean Air Act requires the program without need for individual State action and without any discretionary authority for EPA to set its stringency, delay its effective date, or not implement the program.
- (4) Emissions reduction credit from control measures that are not included in the transportation plan and TIP and that do not require a regulatory action in order to be implemented may not be included in the emissions analysis unless the conformity determination includes written commitments to implementation from the appropriate entities.
 - (i) Persons or entities voluntarily committing to control measures must comply with the obligations of such commitments.
 - (ii) The conformity implementation plan revision required in § 51.390 of this chapter must provide that written commitments to control measures that are not included in the transportation plan and TIP must be obtained prior to a conformity determination and that such commitments must be fulfilled.
- (5) A regional emissions analysis for the purpose of satisfying the requirements of § 93.119 must make the same assumptions in both the “Baseline” and “Action” scenarios regarding control measures that are external to the transportation system itself, such as vehicle tailpipe or evaporative emission standards, limits on gasoline volatility, vehicle inspection and maintenance programs, and oxygenated or reformulated gasoline or diesel fuel.
- (6) The ambient temperatures used for the regional emissions analysis shall be consistent with those used to establish the emissions budget in the applicable implementation plan. All other factors, for example the fraction of travel in a hot stabilized engine mode, must be consistent with the applicable implementation plan, unless modified after interagency consultation according to § 93.105(c)(1)(i) to incorporate additional or more geographically specific information or represent a logically estimated trend in such factors beyond the period considered in the applicable implementation plan.
- (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.
- (b) Regional emissions analysis in serious, severe, and extreme ozone nonattainment areas and serious CO nonattainment areas must meet the requirements of paragraphs b) 1) through 3) of this section if their metropolitan planning area contains an urbanized area population over 200,000.
 - (1) By January 1, 1997, estimates of regional transportation-related emissions used to support conformity determinations must be made at a minimum using network-based travel models according to procedures and methods that are available and in practice and supported by current and available documentation. These procedures, methods, and practices are available from DOT and will be updated periodically.

Agencies must discuss these modeling procedures and practices through the interagency consultation process, as required by § 93.105(c)(1)(i). Network-based travel models must at a minimum satisfy the following requirements:

- (i) Network-based travel models must be validated against observed counts (peak and off-peak, if possible) for a base year that is not more than 10 years prior to the date of the conformity determination. Model forecasts must be analyzed for reasonableness and compared to historical trends and other factors, and the results must be documented.
 - (ii) Land use, population, employment, and other network-based travel model assumptions must be documented and based on the best available information.
 - (iii) Scenarios of land development and use must be consistent with the future transportation system alternatives for which emissions are being estimated. The distribution of employment and residences for different transportation options must be reasonable.
 - (iv) A capacity-sensitive assignment methodology must be used, and emissions estimates must be based on a methodology which differentiates between peak and off-peak link volumes and speeds and uses speeds based on final assigned volumes.
 - (v) Zone-to-zone travel impedances used to distribute trips between origin and destination pairs must be in reasonable agreement with the travel times that are estimated from final assigned traffic volumes. Where use of transit currently is anticipated to be a significant factor in satisfying transportation demand, these times should also be used for modeling mode splits.
 - (vi) Network-based travel models must be reasonably sensitive to changes in the time(s), cost(s), and other factors affecting travel choices.
- (2) Reasonable methods in accordance with good practice must be used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network-based travel model.
 - (3) Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) shall be considered the primary measure of VMT within the portion of the nonattainment or maintenance area and for the functional classes of roadways included in HPMS, for urban areas which are sampled on a separate urban area basis. For areas with network-based travel models, a factor (or factors) may be developed to reconcile and calibrate the network-based travel model estimates of VMT in the base year of its validation to the HPMS estimates for the same period. These factors may then be applied to model estimates of future VMT. In this factoring process, consideration will be given to differences between HPMS and network-based travel models, such as differences in the facility coverage of the HPMS and the modeled network description. Locally developed count-based programs and other departures from these procedures are permitted subject to the interagency consultation procedures of § 93.105(c)(1)(i).

- (c) Two-year grace period for regional emissions analysis requirements in certain ozone and CO areas. The requirements of paragraph b) of this section apply to such areas or portions of such areas that have not previously been required to meet these requirements for any existing NAAQS two years from the following:
- (1) The effective date of EPA’s reclassification of an ozone or CO nonattainment area that has an urbanized area population greater than 200,000 to serious or above;
 - (2) The official notice by the Census Bureau that determines the urbanized area population of a serious or above ozone or CO nonattainment area to be greater than 200,000; or,
 - (3) The effective date of EPA’s action that classifies a newly designated ozone or CO nonattainment area that has an urbanized area population greater than 200,000 as serious or above.
- (d) In all areas not otherwise subject to paragraph b) of this section, regional emissions analyses must use those procedures described in paragraph b) of this section if the use of those procedures has been the previous practice of the MPO. Otherwise, areas not subject to paragraph b) of this section may estimate regional emissions using any appropriate methods that account for VMT growth by, for example, extrapolating historical VMT or projecting future VMT by considering growth in population and historical growth trends for VMT per person. These methods must also consider future economic activity, transit alternatives, and transportation system policies.
- (e) PM_{10} from construction-related fugitive dust.
- (1) For areas in which the implementation plan does not identify construction-related fugitive PM_{10} as a contributor to the nonattainment problem, the fugitive PM_{10} emissions associated with highway and transit project construction are not required to be considered in the regional emissions analysis.
 - (2) In PM_{10} nonattainment and maintenance areas with implementation plans which identify construction-related fugitive PM_{10} as a contributor to the nonattainment problem, the regional PM_{10} emissions analysis shall consider construction-related fugitive PM_{10} and shall account for the level of construction activity, the fugitive PM_{10} control measures in the applicable implementation plan, and the dust-producing capacity of the proposed activities.
- (f) $PM_{2.5}$ from construction-related fugitive dust.
- (1) For $PM_{2.5}$ areas in which the implementation plan does not identify construction-related fugitive $PM_{2.5}$ as a significant contributor to the nonattainment problem, the fugitive $PM_{2.5}$ emissions associated with highway and transit project construction are not required to be considered in the regional emissions analysis.
 - (2) In $PM_{2.5}$ nonattainment and maintenance areas with implementation plans which identify construction-related fugitive $PM_{2.5}$ as a significant contributor to the nonattainment problem, the regional $PM_{2.5}$ emissions analysis shall consider construction-related fugitive $PM_{2.5}$ and shall account for the level of construction activity, the fugitive $PM_{2.5}$ control measures in the applicable implementation plan, and the dust-producing capacity of the proposed activities.

- (g) Reliance on previous regional emissions analysis.
- (1) Conformity determinations for a new transportation plan and/or TIP may be demonstrated to satisfy the requirements of § 93.118 (“Motor vehicle emissions budget”) or § 93.119 (“Interim emissions in areas without motor vehicle emissions budgets”) without new regional emissions analysis if the previous regional emissions analysis also applies to the new plan and/or TIP. This requires a demonstration that:
 - (i) The new plan and/or TIP contain all projects which must be started in the plan and TIP’s timeframes in order to achieve the highway and transit system envisioned by the transportation plan;
 - (ii) All plan and TIP projects which are regionally significant are included in the transportation plan with design concept and scope adequate to determine their contribution to the transportation plan’s and/or TIP’s regional emissions at the time of the previous conformity determination;
 - (iii) The design concept and scope of each regionally significant project in the new plan and/or TIP are not significantly different from that described in the previous transportation plan; and
 - (iv) The previous regional emissions analysis is consistent with the requirements of § 93.118 (including that conformity to all currently applicable budgets is demonstrated) and/or § 93.119, as applicable.
 - (2) A project which is not from a conforming transportation plan and a conforming TIP may be demonstrated to satisfy the requirements of § 93.118 or § 93.119 without additional regional emissions analysis if allocating funds to the project will not delay the implementation of projects in the transportation plan or TIP which are necessary to achieve the highway and transit system envisioned by the transportation plan, the previous regional emissions analysis is still consistent with the requirements of § 93.118 (including that conformity to all currently applicable budgets is demonstrated) and/or § 93.119, as applicable, and if the project is either:
 - (i) Not regionally significant; or
 - (ii) Included in the conforming transportation plan (even if it is not specifically included in the latest conforming TIP) with design concept and scope adequate to determine its contribution to the transportation plan’s regional emissions at the time of the transportation plan’s conformity determination, and the design concept and scope of the project is not significantly different from that described in the transportation plan.
 - (3) A conformity determination that relies on paragraph g) of this section does not satisfy the frequency requirements of § 93.104(b) or (c).

Federal 49 CFR 611, Appendix

Title 49 – Transportation.

Subtitle B – Other Regulations Relating to Transportation (continued).

Chapter VI – Federal Transit Administration, Department of Transportation. Part 611 – Major Capital Investment Projects.

Part 611, Appendix A

Appendix A to Part 611 – Description of Measures Used for Project Evaluation.

Project Justification

FTA will use several measures to evaluate candidate New Starts projects according to the criteria established by 49 U.S.C. 5309(e)(1)(B). These measures have been developed according to the considerations identified at 49 U.S.C. 5309(e)(3) (“Project Justification”), consistent with Executive Order 12893. From time to time, FTA has published technical guidance on the application of these measures, and the agency expects it will continue to do so. Moreover, FTA may well choose to amend these measures, pending the results of ongoing studies regarding transit benefit evaluation methods. The first four criteria listed below assess the benefits of a proposed New Starts project by comparing the project to the baseline alternative. Therefore, the baseline alternative must be defined so that comparisons with the New Starts project isolate the costs and benefits of the major transit investment. At a minimum, the baseline alternative must include in the project corridor all reasonable cost-effective transit improvements short of investment in the New Starts project. Depending on the circumstances and through prior agreement with FTA, the baseline alternative can be defined appropriately in one of three ways. First, where the adopted financially constrained regional transportation plan includes within the corridor all reasonable cost-effective transit improvements short of the New Starts project, a no-build alternative that includes those improvements may serve as the baseline. Second, where additional cost-effective transit improvements can be made beyond those provided by the adopted plan, the baseline will add those cost-effective transit improvements. Third, where the proposed New Starts project is part of a multimodal alternative that includes major highway components, the baseline alternative will be the preferred multimodal alternative without the New Starts project and associated transit services. Prior to submittal of a request to enter preliminary engineering for the New Starts project, grantees must obtain FTA approval of the definition of the baseline alternative. Consistent with the requirement that differences between the New Starts project and the baseline alternative measure only the benefits and costs of the project itself, planning factors external to the New Starts project and its supporting bus service must be the same for both the baseline and New Starts project alternatives. Consequently, the highway and transit networks defined for the analysis must be the same outside the corridor for which the New Starts project is proposed. Further, policies affecting travel demand and travel costs, such as land use, transit fares, and parking costs, must be applied consistently to both the baseline alternative and the New Starts project alternative. The fifth criterion, “existing land use, transit-supportive land use policies, and

future patterns,” reflects the importance of transit-supportive local land use and related conditions and policies as an indicator of ultimate project success.

(a) Mobility Improvements.

- (1) The aggregate travel-time savings in the forecast year anticipated from the New Starts project compared to the baseline alternative. This measure sums the travel-time savings accruing to travelers projected to use transit in the baseline alternative, travelers projected to shift to transit because of the New Starts project, and nontransit users in the New Starts project who would benefit from reduced traffic congestion.
 - (i) After September 1, 2001, FTA will employ a revised measure of travel benefits accruing to travelers; and
 - (ii) The revised measure will be based on a multimodal measure of perceived travel times faced by all users of the transportation system.
- (2) The absolute number of existing low-income households located within half-mile of boarding points associated with the proposed system increment.
- (3) The absolute number of existing jobs within half-mile of boarding points associated with the proposed system increment.

(b) Environmental Benefits.

- (1) The forecast change in criteria pollutant emissions and in greenhouse gas emissions, ascribable to the proposed new investment, calculated in terms of annual tons for each criteria pollutant or gas (forecast year), compared to the baseline alternative;
- (2) The forecast net change per year (forecast year) in the regional consumption of energy, ascribable to the proposed new investment, expressed in British Thermal Units (BTU), compared to the baseline alternative; and
- (3) Current Environmental Protection Agency designations for the region’s compliance with National Ambient Air Quality Standards.

(c) Operating Efficiencies. The forecast change in operating cost per passenger-mile (forecast year), for the entire transit system. The New Starts will be compared to the baseline alternative.

(d) Transportation System User Benefits (Cost Effectiveness).

- (1) The cost effectiveness of a proposed project shall be evaluated according to a measure of transportation system user benefits, based on a multimodal measure of perceived travel times faced by all users of the transportation system, for the forecast year, divided by the incremental cost of the proposed project. Incremental costs and benefits will be calculated as the differences between the proposed New Starts and the baseline alternative.
- (2) Until the effective date of the transportation system user benefits measure of cost effectiveness, cost effectiveness will be computed as the incremental costs of the proposed project divided by its incremental transit ridership, as compared to the baseline alternative.

- (i) Costs include the forecast annualized capital and annual operating costs of the entire transit system.
 - (ii) Ridership includes forecast total annual ridership on the entire transit system, excluding transfers.
- (e) Existing land use, transit-supportive land use policies, and future patterns. Existing land use, transit-supportive land use policies, and future patterns shall be rated by evaluating existing conditions in the corridor and the degree to which local land use policies are likely to foster transit-supportive land use, measured in terms of the kinds of policies in place, and the commitment to these policies. The following factors will form the basis for this evaluation:
- (1) Existing land use;
 - (2) Impact of proposed New Starts project on land use;
 - (3) Growth management policies;
 - (4) Transit-supportive corridor policies;
 - (5) Supportive zoning regulations near transit stations;
 - (6) Tools to implement land use policies;
 - (7) The performance of land use policies; and
 - (8) Existing and planned pedestrian facilities, including access for persons with disabilities.
- (f) Other factors. Other factors that will be considered when evaluating projects for funding commitments include, but are not limited to:
- (1) Multimodal emphasis of the locally preferred investment strategy, including the proposed New Starts as one element;
 - (2) Environmental justice considerations and equity issues;
 - (3) Opportunities for increased access to employment for low-income persons, and Welfare-to-Work initiatives;
 - (4) Livable Communities initiatives and local economic activities;
 - (5) Consideration of alternative land use development scenarios in local evaluation and decision-making for the locally preferred transit investment decision;
 - (6) Consideration of innovative financing, procurement, and construction techniques, including design-build turnkey applications; and
 - (7) Additional factors relevant to local and national priorities and to the success of the project, such as Empowerment Zones, Brownfields, and FTA’s Bus Rapid Transit Demonstration Program.

Local Financial Commitment

FTA will use the following measures to evaluate the local financial commitment to a proposed project:

- (a) The proposed share of project capital costs to be met using funds from sources other than the 49 U.S.C. 5309 New Starts program, including both the local match required by Federal law and any additional capital funding (“overmatch”). Consideration will be given to:
 - (i) The use of innovative financing techniques, as described in the May 9, 1995, Federal Register notice on FTA’s Innovative Financing Initiative (60 FR 24682);
 - (ii) The use of “flexible funds” as provided under the CMAQ and STP programs;
 - (iii) The degree to which alternatives analysis and preliminary engineering activities were carried out without funding from the § 5309 New Starts program; and
 - (iv) The actual percentage of the cost of recently completed or simultaneously undertaken fixed-guideway systems and extensions that are related to the proposed project under review, from sources other than the section 5309 New Starts program (FTA’s intent is to recognize that a region’s local financial commitment to fixed guideway systems and extensions may not be limited to a single project).
- (b) The stability and reliability of the proposed capital financing plan, according to:
 - (i) The stability, reliability, and level of commitment of each proposed source of local match, including intergovernmental grants, tax sources, and debt obligations, with an emphasis on availability within the project development timetable;
 - (ii) Whether adequate provisions have been made to cover unanticipated cost overruns and funding shortfalls; and
 - (iii) Whether adequate provisions have been made to fund the capital needs of the entire transit system as planned, including key station plans as required under 49 CFR 37.47 and 37.51, over a 20-year planning horizon period.
- (c) The stability and reliability of the proposed operating financing plan to fund operation of the entire transit system as planned over a 20-year planning horizon.

APPENDIX E. EPA DESIGNATIONS FOR THE WASHINGTON REGION (1.2.3)

Ozone Season Volatile Organic Compounds (VOC) and Nitrogen Oxides (NO_x). On May 21, 2012, EPA designated the Washington, D.C.-Maryland-Virginia region as ‘marginal’ nonattainment for the 2008 ozone National Ambient Air Quality Standards (NAAQS). Until new mobile budgets are developed, the region must adhere to those currently approved by EPA under the old 1997 standard. The currently approved budgets for VOC and NO_x were submitted to the EPA by the Metropolitan Washington Air Quality Committee (MWAQC) in 2007, as part of an 8-hour ozone SIP, responding to the 1997 Ozone Standard. On February 7, 2013 EPA found adequate the 2009 Attainment and 2010 Contingency budgets included in this SIP. The budgets are 66.5 tons/day of Volatile Organic Compounds (VOC) and 146.1 tons/day of Nitrogen Oxides (NO_x) for the 2009 Attainment Plan and 144.3 tons/day of NO_x for the 2010 Contingency Plan.

Fine Particles (PM_{2.5}). On December 17, 2004 EPA designated the Washington, D.C.-Maryland-Virginia region as nonattainment for the 1997 Fine Particles Standard. On January 12, 2009, EPA determined that the region had attained the 1997 PM_{2.5} NAAQS and issued a clean data determination for the area. On May 22, 2013, MWAQC approved a PM_{2.5} Resignation Request and Maintenance Plan for the Washington region. This Maintenance Plan includes forecast year mobile budgets for direct PM_{2.5} and Precursor NO_x. Until these mobile budgets are found adequate or are approved by EPA, the region will assess conformity based on a test that shows emissions in forecast year scenarios are no greater than those in a 2002 base.

Wintertime Carbon Monoxide (CO). The region is in maintenance for mobile source wintertime CO, and is required to show that pollutants do not exceed the approved budget of 1,671.5 tons/day.

Source: National Capital Region Transportation Planning Board/Metropolitan Washington Council of Governments. *Air Quality Conformity Update of the 2012 Constrained Long-Range Plan and the FY 2013-2018 Transportation Improvement Program for the Washington Metropolitan Region.* <http://www.mwcog.org/uploads/pub-documents/v15dV1k20130401160659.pdf>, accessed July 15, 2014.

APPENDIX F. GLOSSARY OF TRAVEL DEMAND MODELING TERMS AND ACRONYMS

Model Inputs, Outputs, and Performance Measures

ADT	Average Daily Traffic
AWDT	Average Weekday Daily Traffic
IVTT	In-Vehicle Travel Time
LOS	Level of Service
LUD	Land Use Density
OVTT	Out-of-Vehicle Travel Time
V/C	Volume-to-Capacity Ratio
VHT	Vehicle Hours of Travel
VMT	Vehicle Miles of Travel

Steps in the Modeling Process

Trip Generation	The first step in the four-step travel demand modeling process, which estimates the number of trips generated by trip purpose in each TAZ.
Trip Distribution	The second step in the four-step travel demand modeling process, which creates origin-destination trip tables by purpose.
Mode Choice	The third step in the four-step travel demand modeling process, which estimates how many of the trips from the trip distribution step use each travel mode (e.g., SOV, HOV, transit with walk access, transit with auto access, etc.).
Trip Assignment	The fourth step in the four-step travel demand modeling process, which loads the trips onto the routes that will be used for travel by highway or transit.

Trip Purposes

HBW	Home-Based Work
HBO	Home-Based Other
HBSc	Home-Based School
HBSh	Home-Based Shopping
HBU	Home-Based University
NHB	Nonhome-Based