



Baltimore Metropolitan Council

REQUEST FOR PROPOSAL

Incorporation of Express Toll Lanes into Baltimore Region Travel Demand Model

Due Date:

Friday, November 20, 2009

Submit Proposals to:

Baltimore Metropolitan Council
ATTN: Brian W. Ryder
2700 Lighthouse Point East, Suite 310
Baltimore, MD 21224
E-mail: bryder@balometro.org
Fax: 410-732-8248

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I. INTRODUCTION

The Baltimore Metropolitan Council (BMC) is a private nonprofit organization committed to identifying regional interests and developing collaborative strategies through plans and programs which will improve the quality of life and economic vitality throughout the region. Its Board of Directors includes the Mayor of Baltimore City, the County Executives of Anne Arundel, Baltimore, Harford and Howard counties, and a Carroll County Commissioner.

The work of BMC staff includes transportation forecasting and analysis, economic and demographic research, computer mapping applications, air and water quality programs, cooperative purchasing, and rideshare coordination. In addition, BMC staff provides technical support to the Baltimore Regional Transportation Board (BRTB).

The BRTB is the designated Metropolitan Planning Organization (MPO) for the Baltimore region. It consists of designated representatives from Baltimore City, Anne Arundel County, Baltimore County, Carroll County, Harford County, and Howard County, plus the City of Annapolis, the Maryland Department of Transportation, the Maryland Department of the Environment, and the Maryland Department of Planning.

II. PURPOSE

The BMC maintains the Baltimore Region Travel Demand Model, utilizing a four-step process of trip generation, trip distribution, mode choice and trip assignment. This model runs under TP+ software, published by Citilabs. The model simulates travel by persons, vehicles, and transit users in the Baltimore region as well as portions of adjoining jurisdictions in the Washington region.

As part of its model, BMC does some toll modeling by converting tolls to travel times to influence the assignment of highway trips. It also incorporates tolls into a composite impedance (with highway and transit travel times) in order to influence the distribution of trips.

However, tolls are becoming more a strategy for traffic management, not just a means of raising funds for construction and maintenance of highway facilities. The Maryland Transportation Authority is currently developing Express Toll Lanes (ETL) for I-95 north of Baltimore City. Once complete, there will be two ETLs and four general-purpose lanes in each direction. Motorists will have the option of using the general-purpose lanes at no cost or paying a toll to use the ETLs. The tolls will be managed to maintain relatively congestion-free traffic flow on the toll portion. The toll for using the ETLs will vary depending on the time of day and amount of traffic on the road.

In addition, Maryland is constructing the Intercounty Connector (Maryland Route 200) in the Washington region and will use variable tolling to manage traffic flow on all lanes. This road appears in future year scenarios of the BMC model.

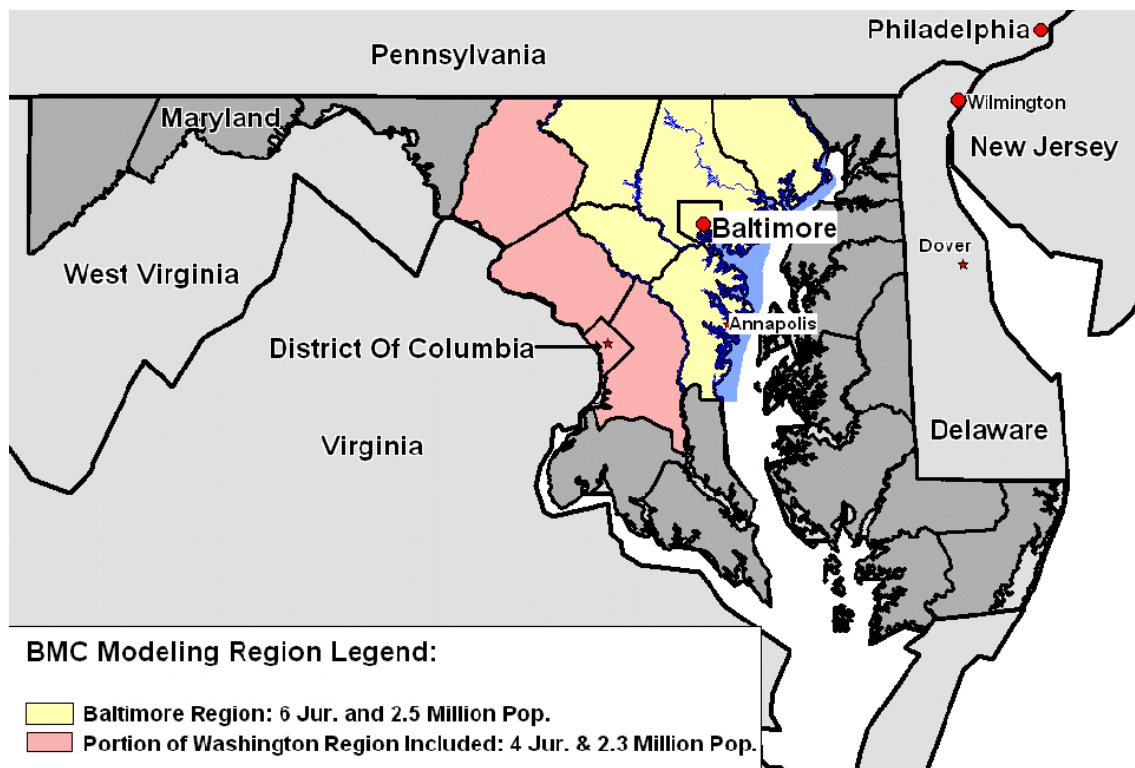
The BMC would like to incorporate advanced modeling techniques to evaluate ETLs and other toll strategies. The model should potentially be responsive to the effects tolls have on trip distribution, mode choice and trip assignment.

III. BACKGROUND

The Baltimore Region Travel Demand Model is a computerized system to project travel demand for highway and transit facilities. The BMC models the six member jurisdictions in the state of Maryland: Baltimore City, Anne Arundel County, Baltimore County, Carroll County, Harford County and Howard County.

Additionally, four jurisdictions outside, but adjacent to the region are modeled because of significant interaction with the Baltimore region. They include: Washington, DC, Montgomery County, Prince George's County and Frederick County in Maryland (see Exhibit 1).

**Exhibit 1
Modeled Region**



Socio-economic and transportation facility data are inputs, and the model produces travel demand for persons, vehicles and transit using a traditional four-step modeling process of trip generation, trip distribution, mode choice and trip assignment for long and short range regional planning in a model designed specifically for the Baltimore region. This model underwent a major overhaul in 2006, and is designated Version 3.3.

The Version 3.3 model utilizes the software package TP+ and is based on 1,463 Transportation Analysis Zones (TAZs), of which 1,151 are within the Baltimore region, 270 in the Washington region, and 42 at external stations. The highway network has 15,600 nodes and 22,700 directional links. The base modeled year is 2000, but BMC staff is currently working on

a 2008 validation base year.

Toll Facilities

Currently, three toll facilities are modeled: the three harbor crossings operated by the Maryland Transportation Authority.

- Ft. McHenry Tunnel (I-95)
- Baltimore Harbor Tunnel (I-895)
- Francis Scott Key Bridge (I-695)

These facilities have a toll of \$2 for passenger cars, although regular commuters can pay 40¢ per trip using EZ Pass with a commuter plan. However, BMC has found that the current \$2 toll, which was raised from \$1 in 2003 and used with the current model, causes a major underestimation of traffic on these three facilities. A short term solution was to reduce the toll until traffic volumes matched counts.

It is expected that this project, which will model the effect of ETLs, will also address this underlying problem with fixed tolls at the three harbor crossings.

IV. SCOPE OF WORK

General Requirements

It is anticipated that the selected consultant will be experienced in Travel Demand Modeling and familiar with the TP+/Cube Voyager modeling software package. The BMC wishes to maintain its model in this format and will strongly disfavor any proposal which will introduce proprietary (“black box”) or other software procedures instead of open-source TP+ code.

Goals

The goal of this project is to produce a model that is in keeping with current practice which can gauge the influence of tolls on trip distribution, mode choice, and trip assignment. Different levels of tolling and policies should be able to be tested.

Specifically, the consultant should investigate the functionality of existing express tolled facilities and incorporate such a traffic management strategy into BMC’s travel demand modeling process. Since these facilities’ physical characteristics and operations will vary and the method of Maryland’s I-95 ETLs is not set; it is expected the consultant will provide a wide-ranging module able to adapt various types of ETL facilities. Operational changes could include: variable toll rates, SOV versus HOV tolling and level of service performance. To achieve this, the following list of major tasks is recommended (not limited to these).

Tasks

1. Conduct research on existing ETL facilities and their operation

Consultant shall research what other Metropolitan Planning Organizations and other transportation planning agencies are doing in regard to modeling variable tolling in locations where such facilities are in use or planned.

2. Obtain information on Maryland's ETL plans and operations with Maryland Transportation Authority (MdTA) and the Maryland State Highway Administration (SHA)

Consultant shall meet with MdTA and SHA to determine the latest status and procedures relative to the proposed toll facilities and ways they can be modeled.

3. Review BMC Travel Demand Model and identify improvements needed for ETL analysis

Consultant shall review and become familiar with BMC's current Travel Demand Model, particularly with how tolls and other travel costs influence model results. BMC shall provide model-related data, control files, and documentation so that the consultant can become familiar with the procedures and algorithms used within the travel demand model.

4. Adjust the BMC Travel Demand Model for ETL testing and analysis

Consultant shall develop appropriate algorithms to make the BMC model more responsive to toll issues based on current practice and make adjustments in BMC model code to incorporate these algorithms.

5. Develop a comprehensive process to test ETL facilities (variable tolling, HOT lanes and mixed traffic facilities – toll and free lanes)

Consultant shall develop a comprehensive set of tests to determine that the new toll model responds to different toll scenarios while not degrading overall model performance.

Questions to consider:

- How many travelers will use toll lanes?
- How will travelers respond to variable pricing of the toll lanes?
- How many travelers switch to carpooling to take advantage of the relatively free-flow toll lanes?
- How will toll lanes affect travelers' destinations by market or purpose?
- How many travelers divert to other roads or transit that uses the toll lanes?
- How do changes in tolls affect toll lanes use, other road use, carpooling and transit choices?

6. Provide Training and Technical Support

The consultant shall train BMC staff on the use of the newly incorporated toll modeling capabilities, particularly in regard to testing alternate scenarios. Written or electronic documentation of the process shall also be provided. Consultant shall remain available for technical support for a period of six months following final delivery of the product.

V. CONSULTANT QUALIFICATIONS

The BMC is seeking consultant(s) who have experience and familiarity with the following:

- TP+ and Cube Software
- Travel demand modeling

- Baltimore region transportation system
- Current practices in travel demand modeling relating to toll facilities

VI. PROPOSAL CONTENT

The proposal should consist of two separate parts: (1) a Technical Proposal; and, (2) a Cost Proposal (in a sealed envelope). It shall meet, at a minimum, the following requirements; proposals not meeting these requirements will be rejected. Elaborate covers and binders are strongly discouraged.

Technical Proposal

The Technical Proposal should contain the following:

- *Cover Letter* – signed by an executive with authority to commit the proposing firm and stating the period for which the proposal is valid.
- *Work Program* – A discussion of each task to be undertaken, how it will be performed and the products to be produced. Proposers may add or subdivide the tasks as necessary to fully describe their approach to the work. An overall schedule of work should be developed.
- *Experience and Qualification* – Please list your qualifications with regard to the selection criteria identified in this RFP. Your summary should contain: (a) the information on projects of similar nature that you or your firm has completed, including brief descriptions, dates, and names of contact persons. Please include links to relevant work if possible, and (b) the resumes of proposed project manager and key team personnel.
- *Project Management* – Designation of a project manager and the responsibilities of the manager. Note that the resulting contract will require commitment of the specified staff. An outline showing estimated hours by each staff member by task shall be provided.
- *DBE Participation* – The program for assuring the maximum opportunity for participation by Disadvantaged Business Enterprises (DBEs) in accord with BMC's goals shall be presented. See the section of MANDATORY STATEMENTS for statement of DBE participation goals.
- *Other Information* – Any other material that the proposer wishes to provide.

Cost Proposal

The Cost Proposal should be composed of two parts: Project Budget and Affidavits and Certifications.

- *Project Budget*: The proposed amount of funding available is \$50,000. Regarding this budgeted amount, the following questions should be answered:
 - Is this amount sufficient to complete the tasks outlined in this RFP?
 - If the answer to question #1 is yes, what will be the cost for you to complete this project?

- If the answer to question #1 is no, state your proposed total cost, and also identify those tasks which you will be able to complete for the above-mentioned sum which will produce a useable product.
- Provide your price quote as a fixed price in United States dollars. The price quote shall include the number of labor hours and cost by staff member and total hours and cost estimated for each task. Direct costs shall be itemized by category (*e.g.*, travel, per diem, printing and reproduction, etc.) for the entire project. The contract type is anticipated as fixed price with partial payments paid based on task completion.
- *Affidavits and Certifications* – An original signed copy of Proposal Affidavit attached at the end of this RFP shall be included in the Cost Proposal.

VII. SUBMISSION OF PROPOSAL

All respondents shall submit **3 copies** of their technical proposal and one copy of their cost proposal, the latter being in a sealed envelope, to:

Baltimore Metropolitan Council
Attn: Brian W. Ryder
2700 Lighthouse Point, Suite 310
Baltimore, MD 21224-4774

The proposal must be received by BMC no later than 2:00 p.m. Eastern Standard Time on **Friday, November 20, 2009**. Allow adequate time for mail or other carrier delivery. Proposals arriving after the deadline will not be accepted. Please direct any questions to Brian Ryder by e-mail: bryder@baltometro.org before October 30, 2009. Official answers to questions will be posted to the BMC web site (www.baltometro.org) by November 9, 2009.

The BMC will not pay for the development and submission of proposals in response to this RFP. The BMC reserves the right to reject any proposals without cost or detriment to the BMC. The Consultant shall not make changes in the specifics put forth in a proposal, including staff participation, without the prior written consent of the BMC.

VIII. TENTATIVE SCHEDULE

RFP Issued:	Wednesday, September 9, 2009
Proposals Due:	Friday, November 20, 2009 @ 2:00 p.m.
Consultant Selection:	December 2009-January 2010
Start of Work:	January 2010
Completion of Work:	May 2010

IX. CONSULTANT SELECTION CRITERIA

All proposals will be evaluated on the basis of technical merit and proposed cost. This is not a low-bid procurement. BMC staff will conduct the evaluation of proposals. Technical merit

includes work program and approach, as well as staff experience and qualifications. The proposed amount for the contract is estimated to be **\$50,000** in value, but the BMC is willing to consider bids greater than this amount if proposals can document the need for a higher price. Teaming is permissible but the contract will be with a single prime contractor.

The BMC reserves the right to negotiate with one or more respondents selected on the basis of the initial technical merit and proposed cost. Respondents may be asked to make personal appearances to provide additional information on proposals.

X. MANDATORY STATEMENTS

Public Information Act Notice

Respondents should give specific attention to the identification of those portions of their proposals they deem to be confidential, proprietary information or trade secrets and provide any justification why such materials, upon request, should not be disclosed.

Disadvantaged Business Enterprise Notice

Disadvantaged business enterprises (DBEs) are encouraged to respond to this solicitation. It is the intent of the BMC that certified minority business enterprises and sub-contractors be given the opportunity to submit proposals to this RFP and will not be subject to discrimination on the basis of race, color, sex, or national origin in consideration for an award.

Disadvantaged Business Enterprise Subcontract Participation Goal

The Baltimore Metropolitan Council hereby notifies all respondents that in regard to any contracts entered into pursuant to this advertisement; MBEs and WBEs will be afforded full opportunity to submit expressions of interest in response to this notice and will not be subject to discrimination on the basis of race, color, sex or national origin, in consideration for an award.

It is the goal of the BMC that certified businesses participate in all federal-aid contracts. A DBE subcontract participation goal of twenty percent (20%) of the total contract amount has been established for this procurement. Proposers must make a good faith effort to meet this goal. All offers submitted in response to this RFP must include a statement specifying the Maryland Department of Transportation (MDOT) has certified the DBE or DBEs utilized to meet this requirement. If the DBE has not been certified by MDOT but has been certified by other state transportation agencies receiving federal funding, the name of the agency should be included in the proposal. The BMC reserves the option to accept this certification in lieu of MDOT certification.

Required Terms and Conditions

The following terms and conditions are required in contracts executed by the BMC.

- 1) Parties to the Contract
- 2) Scope of the Contract
- 3) Compensation and Method of Payment
- 4) Non-Hiring of Employees
- 5) Disputes
- 6) Maryland Law Prevails
- 7) Non-Discrimination in Employment

- 8) Contingent Fee Prohibition
- 9) Multi-Year Contracts Contingent Upon Appropriations
- 10) Termination for Default
- 11) Termination for Convenience
- 12) Delays and Extensions of Time
- 13) Liquidated Damages
- 14) Suspension of Work
- 15) Retention of Records
- 16) Compliance with Laws
- 17) Truth in Negotiation Certification
- 18) Contract Affidavit
- 19) Insurance Coverage

XI. PROPOSAL AFFIDAVIT

A. (ANTI-BRIBERY AFFIRMATION) I HEREBY CERTIFY THAT

(1) I am the (title) _____ and the duly authorized representative of (vendor) _____ and that I possess the legal authority to make this Affidavit on behalf of myself and the vendor for which I am acting.

(2) Except as described in paragraph 3 below, neither I, nor to the best of my knowledge, information, and belief, the above vendor, nor any of its officers, directors, or partners, nor any of its employees directly involved in obtaining contracts with the State or any county, bi-county, multicounty agency or subdivision of the State has been convicted of, or has pleaded nolo contendere to a charge of, or has during the course of an official investigation or other proceeding, admitted in writing or under oath acts or omissions committed after July 1, 1977, which constitute bribery, attempted bribery, or conspiracy to bribe under the provisions of Article 27 of the Annotated Code of Maryland or under the laws of any state or federal government.

(3) State "none" or, as appropriate, list any conviction, plea or admission described in paragraph 2 above, with the date; court official, or administrative body; and the sentence or disposition, if any: _____.

(4) I ACKNOWLEDGE THAT this Affidavit is to be furnished to the Procurement Officer, and may be furnished to the Attorney General pursuant to Sections 16-201, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland. I acknowledge that if the representations set forth in this Affidavit are not true and correct, the Council may terminate any contract awarded and take any other appropriate action.

B. (NON-COLLUSION AFFIRMATION) I HEREBY FURTHER AFFIRM THAT neither I nor, to the best of my knowledge, information and belief, the above firm nor any of its other representatives I here represent have:

(1) Agreed, conspired, connived or colluded to produce a deceptive show of competition in the compilation of the bid or offer being submitted herewith;

(2) In any manner, directly, or indirectly, entered into any agreement, participated in any collusion to fix the bid price or price proposal of the bidder or respondent herein or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the within bid or offer is submitted.

C. (PROCUREMENT AFFIRMATION) I HEREBY FURTHER AFFIRM THAT

(1) Neither the above business nor, to the best of my knowledge, information, and belief, any officer, controlling stockholders, partner, principal, or other person substantially involved in the contracting activities of the business has in the past five (5) years: (a) been convicted under state or federal statute of a criminal offense incident to obtaining or attempting to obtain or performing a public or private contract, fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property; (b) been found civilly liable under state or federal antitrust statutes for acts or omissions in connection with the submission of bids or proposals for a public or private contract; (c) been convicted of any violation of a state or federal antitrust statute; (d) been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organizations Act, 18 USC Section 1961 et seq.; or (e) the Mail Fraud Act, 18 USC Section 1341 et seq., for acts arising out of the submissions that would constitute grounds for conviction or liability under any statute described above. Also, the undersigned vendor was not founded or established or is not operated in a manner designed to evade the application or defeat the purpose of the Debarment Regulations, COMAR 21.08; is not currently suspended or debarred pursuant to COMAR 21.08 or by the action of any other public entity; and is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business.

(2)

(a) If the affirmation described in subsection (1) cannot be given and debarment proceedings have not been instituted against the business pursuant to COMAR 21.08, indicate the reasons why the affirmation cannot be given, including any conviction or admission described in subsection (1), above, with the date, court and sentence or disposition, if any; the name(s) of the person(s) involved, and their current positions and responsibilities with the business; the activity specified in COMAR 21.08 in which each person was involved; and the details of the person's participation in the activity, including the name(s) of an entity involved and the person's positions and responsibilities with the entity. (Attach additional sheets as necessary.)

(b) If the affirmation described in subsection (1) cannot be given, and debarment proceedings have been instituted against the business pursuant to COMAR 21.08, indicate the status of such proceedings.

I ACKNOWLEDGE THAT this Affidavit is to be furnished to the Procurement Officer and may be distributed to units of: (1) the State of Maryland; (2) counties or other subdivisions of the State of Maryland; (3) other states; and (4) the federal government. I further acknowledge that this Affidavit is subject to applicable laws of the United States and the State of Maryland, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of this bid or proposal shall be construed to supersede, amend, modify or waive, on behalf of the State of Maryland or any unit of the State of Maryland having jurisdiction, the exercise of any statutory right or remedy conferred by the Constitution and the laws of Maryland in respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the above firm in respect to (1) this Affidavit, (2) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

(Date)

(Affidavit)