

BEFORE THE METRO CONTRACT REVIEW BOARD

FOR THE PURPOSE OF APPROVING	)	RESOLUTION NO. 98-2622
SOLE SOURCE AGREEMENTS FOR	)	
MARK BRADLEY RESEARCH & CONSULT-	)	Introduced by
ING, CAMBRIDGE SYSTEMATICS AND	)	Mike Burton,
JOHN BOWMAN & ASSOCIATES	)	Executive Officer

WHEREAS, Metro has been asked by the U.S. Department of Transportation (USDOT) to help complete a demonstration model improvement for travel forecasting; and

WHEREAS, USDOT and the Los Alamos National Laboratories have chosen to use Metro's new travel demand model as one of the bases for their travel demand and module in Transims; and

WHEREAS, Metro has received a grant for \$1,600,000 federal (100%) funds for this demonstration project; and

WHEREAS, The major amount of development of the model was through our Traffic Relief Options (TRO) Study; and

WHEREAS, The model development and computer program application was developed for the Traffic Relief Options Study by Mark Bradley Research and Consulting with advisory services provided by Dr. Moshe Ben-Akiva through a contract with Cambridge Systematics and John Bowman and Associates also contracted through Cambridge Systematics Incorporated; and

WHEREAS, The new Metro model is unique in the United States; and

WHEREAS, Los Alamos needs to make significant modifications to our model before incorporating it into their simulation system; and

WHEREAS, USDOT and Los Alamos have requested that part of

the grant funds be used to contract with the developers; and

WHEREAS, Los Alamos Laboratories and USDOT specifically requested that Metro make available to them the services of the consultant that developed the latest rigorously defined and highly complex Metro model; now, therefore,

BE IT RESOLVED,

That the Metro Contract Review Board hereby accepts the findings in the attached Staff Report and waives the competitive bidding requirement in accordance with Metro Code 2.04:

The Executive Officer is authorized to enter into three sole source agreements:

Mark Bradley Research & Consulting . . . . .	\$140,000
Cambridge Systematics -- services of Dr. Moshe Ben-Akiva . . . . .	20,000
John Bowman & Associates . . . . .	30,000

ADOPTED by the Metro Contract Review Board this 9<sup>th</sup> day of April, 1998.

  
Jon Kvistad, Presiding Officer

Approved as to Form:

  
Daniel B. Cooper, General Counsel

EXHIBIT

**PERSONAL SERVICES AGREEMENT**

THIS AGREEMENT is between Metro, a metropolitan service district organized under the laws of the State of Oregon and the 1992 Metro Charter, located at 600 N.E. Grand Avenue, Portland, Oregon 97232-2736, and Mark Bradley Research & Consulting, referred to herein as "Contractor," located at 93 Scenic Road, Fairfax, CA 94930, Federal ID number \_\_\_\_\_.

In exchange for the promises and other consideration set forth below, the parties agree as follows:

1. Duration. This Personal Services Agreement shall be effective April 1, 1998, and shall remain in effect until and including March 31, 2000, unless terminated or extended as provided in this Agreement.
2. Scope of Work. Contractor shall provide all services and materials specified in the attached "Exhibit A -- Scope of Work," which is incorporated into this Agreement by reference. All services and materials shall be provided by Contractor in accordance with the Scope of Work, in a competent and professional manner. The Contractor shall perform such additional work as may be necessary to correct errors in the work required under this Agreement without undue delays and without additional cost. To the extent that the Scope of Work contains additional contract provisions or waives any provision in the body of this Agreement, the Scope of Work shall control.
3. Payment. Metro shall pay Contractor for services performed and materials delivered in the amount(s), manner and at the time(s) specified in the Scope of Work for a maximum sum not to exceed One Hundred Thousand Dollars AND 00/100THS DOLLARS (\$140,000.00).
4. Insurance.
  - a. Contractor shall purchase and maintain at the Contractor's expense, the following types of insurances, covering the Contractor, its employees and agents:
    - (1) Broad form comprehensive general liability insurance covering bodily injury and property damage, with automatic coverage for premises, operations and product liability. The policy must be endorsed with contractual liability coverage; and
    - (2) Automobile bodily injury and property damage liability insurance.
  - b. Insurance coverage shall be a minimum of \$500,000 per occurrence. If coverage is written with an annual aggregate limit, the aggregate limit shall not be less than \$1,000,000.
  - c. *Metro, its elected officials, departments, employees and agents shall be named as **ADDITIONAL INSURED**.* Notice of any material change or policy cancellation shall be provided to Metro thirty (30) days prior to the change or cancellation.

- d. Contractor, its subcontractors, if any, and all employers working under this Agreement that are subject employers under the Oregon Workers' Compensation Law shall comply with ORS 656.017, which requires them to provide Workers' Compensation coverage for all their subject workers. Contractor shall provide Metro with certification of Workers' Compensation insurance including employer's liability. If Contractor has no employees and will perform the work without the assistance of others, a certificate to that effect may be attached, as "Exhibit B," in lieu of the certificate showing current Workers' Compensation.
  - e. If required by the Scope of Work, Contractor shall maintain, for the duration of this Agreement, professional liability insurance covering personal injury and property damage arising from errors, omissions or malpractice. Coverage shall be in the minimum amount of \$500,000.
  - f. Contractor shall provide to Metro a certificate of this insurance and thirty (30) days advance notice of material change or cancellation. The Contractor shall furnish acceptable insurance certificates to Metro at the time Contractor returns signed contracts. The certificate will specify all of the parties who are Additional Insured and will include the 30-day cancellation clause. Insuring companies or entities are subject to Metro acceptance. If requested, complete policy copies shall be provided to Metro. The Contractor shall be financially responsible for all-pertinent deductibles, self-insured retention, and/or self-insurance.
5. Indemnification. Contractor shall indemnify and hold Metro, its agents, employees and elected officials harmless from any and all claims, demands, damages, actions, losses and expenses including attorney's fees, arising out of or in any way connected with is performance of this Agreement, or with any patent infringement or copyright claims arising out of the use of Contractor's designs or other materials by Metro and for any claims or disputes involving subcontractors.
6. Maintenance of Records. Contractor shall maintain all of its records relating to the Scope of Work on a generally recognized accounting basis and allow Metro the opportunity to inspect and/or copy such records at a convenient place during normal business hours. All required records shall be maintained by Contractor for three years after Metro makes final payment and all other pending matters are closed.
7. Ownership of Documents. All documents of any nature including, but not limited to, reports, drawings, works of art and photographs, produced by Contractor pursuant to this Agreement are the property of Metro, and it is agreed by the parties that such documents are works made for hire. Contractor hereby conveys, transfers and grants to Metro all rights of reproduction and the copyright to all such documents.
8. Project Information. Contractor shall share all project information and fully cooperate with Metro, informing Metro of all aspects of the project including actual or potential problems or defects. Contractor shall abstain from releasing any information or project news without the prior and specific written approval of Metro.
9. Independent Contractor Status. Contractor shall be an independent contractor for all purposes and shall be entitled only to the compensation provided for in this Agreement. Under no circumstances shall Contractor be considered an employee of Metro. Contractor shall

provide all tools or equipment necessary to carry out this Agreement, and shall exercise complete control in achieving the results specified in the Scope of Work. Contractor is solely responsible for its performance under this Agreement and the quality of its work; for obtaining and maintaining all licenses and certifications necessary to carry out this Agreement; for payment of any fees, taxes, royalties or other expenses necessary to complete the work except as otherwise specified in the Scope of Work; and, for meeting all other requirements of law in carrying out this Agreement. Contractor shall identify and certify tax status and identification number through execution of IRS Form W-9 prior to submitting any request for payment to Metro.

10. Right to Withhold Payments. Metro shall have the right to withhold from payments due to Contractor such sums as necessary, in Metro's sole opinion, to protect Metro against any loss, damage or claim which may result from Contractor's performance or failure to perform under this Agreement or the failure of Contractor to make proper payment to any suppliers or subcontractors.

11. State and Federal Law Constraints. Both parties shall comply with the public contracting provision of ORS Chapter 279, and the recycling provisions of ORS 279.545 - 279.650, to the extent those provisions apply to this Agreement. All such provisions required to be included in this Agreement are incorporated herein by reference. Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations including those of the Americans with Disabilities Act.

12. Federal Funds Provisions.

- a. If this payment is to be charged against federal funds, the Contractor certifies that it is not currently employed by the federal government. Contractor further certifies that it is not currently employed by the State of Oregon.
- b. If federal funds are involved in this Agreement, Exhibit "B," Certificate of Consultant, and Exhibit "C" Federal Provisions, including Certification of Involvement In Any Debarment and Suspension, are incorporated into this Agreement by reference.
- c. Contractor shall not be compensated for work performed under this Agreement by any other federal, state or local agency.
- d. This Agreement may be terminated by Metro upon 30 days notice, in writing and delivered by certified mail or in person, if funding from federal, state or other sources is not obtained and continued at levels sufficient to allow for the purchase of the indicated quantity of services. The Agreement may be modified to accommodate a reduction in funds.

13. Situs. The situs of this Agreement is Portland, Oregon. Any litigation over this Agreement shall be governed by the laws of the State of Oregon and shall be conducted in the Circuit Court of the State of Oregon, for Multnomah County, or, if jurisdiction is proper, in the U.S. District Court for the District of Oregon.

14. Assignment. This Agreement is binding on each party, its successors, assigns and legal representatives, and may not, under any circumstance, be assigned or transferred by either party.

15. Termination. This Agreement may be terminated by mutual consent of the parties. In addition, Metro may terminate this Agreement by giving Contractor ten days prior written notice of intent to terminate, without waiving any claims or remedies it may have against Contractor. Termination shall not excuse payment for expenses properly incurred prior to notice of termination, but neither party shall be liable for indirect or consequential damages arising from termination under this section.

16. No Waiver of Claims. The failure to enforce any provision of this Agreement shall not constitute a waiver by Metro of that or any other provision.

17. Severability. The parties agree that if any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular term or provision held to be invalid.

18. Modification. Notwithstanding and succeeding any and all prior agreement(s) or practice(s), this Agreement constitutes the entire Agreement between the parties, and may only be expressly modified in writing(s), signed by both parties.

MARK BRADLEY RESEARCH & CONSULTING

METRO

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

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## Scope of Work: Model Modification for TRANSIMS Input (IOC-2)

### Phase 1: Generation of a base set of activities for testing

To be completed by end of July, 1998.

Overview: For this phase, the objective is to create sets of households, people and their activities that are at the level of detail required by TRANSIMS. We will need to move to a more detailed level of disaggregation for:

- households - using a full synthetic sample instead of a partial one.
- locations: using street arcs or grid cells instead of zones
- times of day: using short time slices instead of a few periods across the day.
- activity types: separating out school from work, and pick up/drop off from maintenance, at least in some of the models.

In generating the base set of activities, it is proposed that we stick with TAZ-based level of service for now- maybe augmented with some location-specific access/egress information. In the next phase, the more detailed road and transit networks will be ready and we can interface with the TRANSIMS Router.

#### Task 1.1 Generate location data for base year

- Agree on level of detail - street segments? (Consultant, METRO, LANL)
- Agree on relevant location types (Consultant, METRO, LANL)
- Agree on variables to be included for each type of location, including walk time to transit services (Consultant, METRO, LANL)
- Generate the data as specified (METRO, LANL)

#### Task 1.2: Generate synthetic household sample for base year

- Get and install sampling software from Los Alamos (Consultant, LANL)
- Get and install relevant PUMS household data (Consultant, METRO)
- Agree on spatial detail for marginal targets-census tract, Block Group or TAZ? (Consultant, METRO, LANL)
- Get marginal target distributions from METRO (Consultant, METRO)
- Agree on method for using sample to populate specific street segments.
- Generate the sample and assign to locations. (Consultant)

#### Task 1.3: Estimate a new structure for time of day models (Consultant)

- For primary activities, re-estimate models using activity starting and ending times in 15 minute time slices as the dependent variables, with sampling of alternatives.
- For secondary out-of-home activities, estimate models using 15 minute time slices and sampling of alternatives, but conditional on the times for the primary activity.
- Create a model or rules to use for start and end times of activities done as intermediate stops on tours.

#### Task 1.4: Model more activity types (Consultant)

- Create models to distinguish school from work and pick up/drop off from other maintenance activities.
- In phase 1, these models can be "post processors" that take predicted activities and

assign them to a more detailed activity type as a function of person and household characteristics. This would not require any changes to the existing models.

Task 1.5: Agree on data format and definitions for the activity set (Consultant and LANL)

- Is a single file passed to the Route Planner or multiple file types?
- What pieces of information are passed for each activity?
- What is the precise definition of each piece of information?
- What rules should be used to translate from one model to the other when this is not obvious (e.g. for activity priorities and ranges on start and end times)?
- What is the file format?

Task 1.6: Adapt the existing activity forecasting software (Consultant)

- Interface with the new household sample.
- Interface with the new location data.
- Switch to a Monte Carlo framework with a flexible number of "chosen" alternatives.
- Integrate the new time of day models and structure.
- Integrate the new activity type models.
- Integrate the existing intermediate stop location models and work-based tour mode and destination models into the sample enumeration framework. (These will have no logsum "connection" to the other models in this phase, meaning that they can also be run in "post processor" mode and will not increase run time considerably).
- Generate output in the exact format and content required by TRANSIMS.

Task 1.7: Generate, validate and document the base activity sets (Consultant)

- Run the software to create a base activity set.
- Compare the results to the household activity survey data along key distributions (activity type, time of day, duration, trip chain complexity, etc.)
- Adjust the models if necessary until the base activity set is satisfactory.
- Document the activity set files and content.

Task 1.8: Deliver the base activity sets to Los Alamos (Consultant, LANL)

Visit Los Alamos for a period of about 1 week, in order to:

- Present the activity set and documentation to TRANSIMS team.
- Deal with initial questions during the use of the activity set.
- Get hands-on experience with the Router and other modules.
- Agree on a work plan and schedule for the next phase.

## **Phase 2: Integrating the Activity Generator into the TRANSIMS structure**

To be completed by the end of October 1998

Overview: This phase has the following objectives:

- Build in feedback via level of service from the Microsimulator via the Router module.
- Build in options for testing additional feedback from the Route Planner.
- Install and test the software at Los Alamos.

It is more difficult to provide exact tasks or timing on this phase, since it depends on the progress of the network development and the testing of the other TRANSIMS modules.



The consultant will probably need to visit Los Alamos at least twice during this phase, for a week or so each time.

**Task 2.1: Recode software into C++ or C (Consultant)**

At some point during the development, switch from Pascal (Delphi) to either C++ or C, depending on the preferences of Los Alamos and METRO.

**Task 2.2: Integrate calls to the Router Module into the software (Consultant, Los Al)**

Instead of using TAZ-based level of service files, the code will be adapted to call the TRANSIMS Router in order to get network times, costs and distances. Some testing will be done to see what effect this has on the predicted activity sets. (Note: The models themselves will not be re-estimated using the more detailed level of service at this stage, although that is certainly something we will want to do in a later phase.)

**Task 2.3: Integrate short-term feedback from the Route Planner (Consultant)**

For each household/person, the Route Planner can tell the Activity Generator whether or not the predicted set of activities is feasible given current network conditions. The Monte Carlo procedure can be adapted to use this information in order to select a different set of activities based on the probabilities that have already been calculated. This type of immediate feedback between the modules does not appear too difficult to implement, and can be tested in this phase. Longer-term types of feedback, such as how households might change their home or work locations or decision rules over time to adapt to changing network or land use conditions, will be an important subject for later phases of research.

**Task 2.4: Document the software (Consultant)**

This involves documentation to the point where key areas of code can be changed and adjusted by others who will be using it.

**Task 2.5: Install and test the software at Los Alamos (Consultant, Los Al)**

A visit of about one week to Los Alamos to answer questions during initial installation and testing, and to discuss priorities and schedules for the next phase of research.

Total Estimated Cost of Phases 1 and 2 is \$100,000.00

There is a need to estimate costs for a more uncertain (in terms of definition) part of the work in the out years (1999-2000). This may need amending later, depending on the actual work progress and needs.

**Phase 3: Improving the models**

**Task 3.1: More spatial detail in mode and destination choice models**

**Task 3.2: Different sets of models for more types of activities**

**Task 3.3: Further improvement of the time of day structure and models**

**Task 3.4: A more elaborate structure for the activity pattern model**

Phase 4: Changing the software

Task 4.1: Implementing the new models from phase 3

Task 4.2: Changes to run a forecast year instead of base year

Task 4.3: Further improvement and testing of feedback structures

Task 4.4: Further documentation, installation and visits

Total Estimated Cost of Phases 3 and 4: \$40,000.00

EXHIBIT B

CERTIFICATION OF CONSULTANT (GRANTEE)

I hereby certify that I, \_\_\_\_\_ (name), am the duly authorized representative the firm of \_\_\_\_\_ whose address is \_\_\_\_\_, and that neither I nor the above firm (Grantee) has:

- a. Employed or retained for a commission, percentage, brokerage, contingency fee or other consideration, any firm or person (other than a bona fide employee working solely for me or the above consultant) to solicit or secure this contract;
- b. Agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract; or
- c. Paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above consultant), any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out the contract.

I acknowledge that this certificate is to be furnished to the Federal Highway Administration, and is subject to applicable State and Federal laws, both criminal and civil.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

CERTIFICATION OF AGENCY OFFICIAL

I hereby certify that I am the Agency Official of \_\_\_\_\_, and that the above consulting firm or his representative has not been required directly or indirectly as an expression of implied condition in connection with obtaining or carrying out this contract to:

- a. Employ, retain or agree to employ or retain, any firm or person, or
- b. Pay, or agree to pay, to any firm, person or organization, any fee, contribution, donation or consideration of any kind.

I acknowledge that this certificate is to be furnished to the Federal Highway Administration, and is subject to applicable State and Federal laws, both criminal and civil.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

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EXHIBIT C  
FEDERAL PROVISIONS  
METRO

**I. Certification of Noninvolvement in Any Debarment and Suspension**

As a supplement to this proposal, the Contractor on this project shall complete the following certification with regard to current involvement in any debarments, suspensions, indictments, convictions and civil judgment indicating a lack of business integrity.

(Name and Title of Authorized Representative of Contractor)

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(Signature)

being duly sworn and under penalty of perjury under the laws of the State of Oregon, certifies that, except as noted below,

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(Name of Firm)

certifies to the best of its knowledge and belief that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntary excluded from covered transactions by any Federal Department or agency;
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (federal, state or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (federal, state or local) terminated for cause or default.

Where the Contractor is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

List exceptions. For each exception noted, indicate to whom the exception applies, initiating

agency and dates of action. If additional space is required, attach another page with the following heading: ***Certification Exceptions continued, Contract Insert.***

**Exceptions:**

Exceptions will not necessarily result in denial of award, but will be considered in determining Contractor responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The Contractor is advised that by signing this contract, the Contractor is deemed to have signed this certification.

**II. Instructions for Certification Regarding Debarment, Suspension and Other Responsibility Matters -- Primary Covered Transactions**

1. By signing this contract, the Contractor is providing the certification set out below.
2. The inability to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The Contractor shall explain why he/she cannot provide the certification set out below. This explanation will be considered in connection with Metro determination to enter into this transaction. Failure to furnish an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when Metro determined to enter into this transaction. If it is later determined that the Contractor knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government or Metro may terminate this transaction for cause of default.
4. The Contractor shall provide immediate written notice to Metro to whom this proposal is submitted if at any time the Contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal" and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the Oregon Department of Transportation's Program Section (telephone: 503/986-3400) to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The Contractor agrees by submitting this proposal that, should the proposed covered

transaction be entered into, it shall not knowingly enter into any lower tier covered transactions with a person who is debarred, suspended, declared ineligible or voluntarily excluded from participation in this covered transaction, unless authorized by Metro entering into this transaction.

7. The Contractor further agrees by submitting this proposal that it will include the Addendum to Form FHWA-1273 titled "Appendix B -- Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Covered Transactions," provided by Metro entering into this covered transaction without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List published by the U.S. General Services Administration.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Exception for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government or Metro may terminate this transaction for cause or default.

### III. Addendum to Form FHWA-1273, Required Contract Provisions

This certification applies to subcontractors, material suppliers, vendors and other lower tier participants.

Appendix B of 49 CFR Part 29

#### **Appendix B -- Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Covered Transactions**

##### Instructions for Certification

1. By signing and submitting this Contract, the prospective lower tier participant is providing the certification set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, Metro with which this transaction originated may pursue available remedies, including suspension and/or disbarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this Contract is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal" and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this Contract that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible or voluntarily excluded from participation in this covered transaction, unless authorized by Metro with which this transaction originated.
6. The prospective lower tier participant further agreed by submitting this Contract that it will include this clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement list.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government or Metro with which this transaction originated may pursue available remedies, including suspension and/or debarment.

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Covered Transactions**

- a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal department or agency.

- b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

#### **IV. Employment**

1. Contractor warrants that he has not employed or retained any company or person, other than a bona fide employee working solely for Contractor, to solicit or secure this Contract and that he has not paid or agreed to pay any company or person, other than a bona fide employee working solely for Contractors, any fee, commission, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the award or making of this Contract. For breach or violation of this warranting, Metro shall have the right to annul this Contract without liability, or in its discretion to deduct from the contract price or consideration or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.
2. Contractor shall not engage, on a full or part-time basis, or other basis, during the period of the Contract, any professional or technical personnel who are, or have been at any time during the period of this Contract, in the employ of Metro, except regularly retired employees, without written consent of the public employer of such person.
3. Contractor agrees to perform consulting services with that standard of care, skill and diligence normally provided by a professional in the performance of such consulting services on work similar to that hereunder. Metro shall be entitled to rely on the accuracy, competence and completeness of Contractor's services.

#### **V. Nondiscrimination**

During the performance of this Contract, Contractor, for himself, his assignees and successors in interest, hereinafter referred to as Contractor, agrees as follows:

1. **Compliance with Regulations.** Contractor agrees to comply with Title VI of the Civil Rights Act of 1964, and Section 162(a) of the Federal-Aid Highway Act of 1973 and the Civil Rights Restoration Act of 1987. Contractor shall comply with the regulations of the Department of Transportation relative to nondiscrimination in Federally assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are incorporated by reference and made a part of this Contract. Contractor, with regard to the work performed after award and prior to completion of the contract work, shall not discriminate on grounds of race, creed, color, sex or national origin in the selection and retention of subcontractors, including procurement of materials and leases of equipment. Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices, when the contract covers a program set forth in Appendix B of the Regulations.
2. **Solicitation for Subcontractors, including Procurement of Materials and Equipment.** In all solicitations, either by competitive bidding or negotiations made by Contractor for work to be performed under a subcontract, including procurement of materials and equipment, each potential subcontractor or supplier shall be notified by Contractor of Contractor's



obligations under this Contract and regulations relative to nondiscrimination on the grounds of race, creed, color, sex or national origin.

3. Nondiscrimination in Employment (title VII of the 1964 Civil Rights Act). During the performance of this Contract, Contractor agrees as follows:
  - a. Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notice setting forth the provisions of this nondiscrimination clause.
  - b. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex or national origin.
4. Information and Reports. Contractor will provide all information and reports required by the Regulations, or orders and instructions issued pursuant thereto, and will permit access to his books, records, accounts, other sources of information and his facilities as may be determined by Metro, Oregon Department of Transportation or FHWA as appropriate, and shall set forth what efforts he has made to obtain the information.
5. Sanctions for Noncompliance. In the event of Contractor's noncompliance with the nondiscrimination provisions of the Contract, Metro shall impose such agreement sanctions as it or the FHWA may determine to be appropriate, including but not limited to:
  - a. Withholding of payments to Contractor under the agreement until Contractor complies; and/or
  - b. Cancellation, termination or suspension of the agreement in whole or in part.
6. Incorporation of Provisions. Contractor will include the provisions of paragraphs 1 through 6 of this section in every subcontract, including procurement of materials and leases of equipment unless exempt from Regulations, orders or instructions issued pursuant thereto. Contractor shall take such action with respect to any subcontractor or procurement as Metro or FHWA may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event Contractor becomes involved in, or is threatened with litigation with a subcontractor or supplier as a result of such direction, Metro may, at its option, enter into such litigation to protect the interests of Metro, and, in addition, Contractor may request Metro to enter into such litigation to protect the interests of the State of Oregon.

## VI. Disadvantaged Business Enterprise (DBE) Policy

In accordance with Title 49, Code of Federal Regulations, Part 23, or as may be amended (49 CFR 23), Contractor shall agree to abide by and take all necessary and reasonable steps to comply with the following statement:

### DBE Policy Statement

**DBE Policy.** It is the policy of the Oregon Department of Transportation that Disadvantaged Business Enterprises as defined in 49 CFR 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds. Consequently, the DBE requirements of 49 CFR 23 apply to this Contract.

**DBE Obligations.** Contractor agrees to ensure that Disadvantaged Business Enterprises as defined in 49 CFR 23 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. In this regard, Contractor shall take all necessary and reasonable steps in accordance with 49 CFR 23 to ensure that Disadvantaged Business Enterprises have the maximum opportunity to compete for and perform contracts. Contractors shall not discriminate on the basis of race, color, national origin or sex in the award and performance of federally-assisted contracts.

The DBE Policy Statement shall be included in all subcontracts entered into under this Contract.

**Records and Reports.** Contractor shall provide monthly documentation to Metro that it is subcontracting with or purchasing materials from the DBEs identified to meet contract goals. Contractor shall notify Metro and obtain its written approval before replacing a DBE or making any change in the DBE participation listed. If a DBE is unable to fulfill the original obligation to the contract, Contractor must demonstrate to Metro the Affirmative Action steps taken to replace the DBE with another DBE. Failure to do so will result in withholding payment on those items. The monthly documentation will not be required after the DBE goal commitment is satisfactory to Metro.

Any DBE participation attained after the DBE goal has been satisfied should be reported to Metro.

**DBE Definition.** Only firms certified by the Executive Department, State of Oregon may be utilized to satisfy this obligation.

**Contractor's DBE Contract Goal**  
**DBE Goal   0   Percent**

By signing this Contract, Contractor assures that good faith efforts have been made to meet the goal for the DBE participation specified in the Request for Proposal/Qualification for this project for this project as required by ORS 200.045.

## VII. Lobbying

The Contractor certifies, by signing this agreement to the best of his/her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress in connection with this agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor also agrees by signing this agreement that he/she shall require that the language of this certification be included in all lower tier subagreements, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

## STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 98-2622 FOR THE PURPOSE OF APPROVING SOLE SOURCE AGREEMENTS FOR MARK BRADLEY RESEARCH & CONSULTING, CAMBRIDGE SYSTEMATICS AND JOHN BOWMAN & ASSOCIATES

Date: March 4, 1998

Presented by: Andrew Cotugno

### PROPOSED ACTION

This resolution would approve entering into three sole source agreements with the firms and individuals who developed Metro's new model, to enhance and reprogram that model to fit in with the more demanding specifications required by the Los Alamos Transims system.

### FACTUAL BACKGROUND AND ANALYSIS

The U.S. Department of Transportation (USDOT) has a Travel Model Improvement Program to significantly improve travel forecasting models for use in the USA. As a part of this, Los Alamos National Laboratories is carrying out a demonstration model improvement in Portland with the cooperation of Metro modeling staff. The Metro Council approved receipt of the grants for this purpose. USDOT made available to Metro \$1.6 million in special grants to cover its costs and employ needed consultants for specific tasks. These grants do not require a Metro match.

A decision was made by Los Alamos and USDOT to use Metro's newly built travel demand model as one of the bases for their travel demand module in Transims (their transportation micro-simulation modeling system). As a part of the project, they have requested that we make available to them the services of the consultant(s) that developed the model for us. They need to make significant modifications to our model before using it in their simulation system. The model development for us was carried out, in part, through an FHWA task order contract with Cambridge Systematics, with Mark Bradley Research and Consulting as a major subcontractor and, in part, through our Traffic Relief Options Study contract with ECO Northwest. The model development work and computer program application on the latter project was carried out by a subcontractor, Mark Bradley Research and Consulting. A major contributor with the Cambridge Systematics team was John Bowman, who is no longer with them (his MIT thesis formed the basis for the model structure).

The new model developed at Metro is unique in U.S. practice (there are somewhat similar models in Holland and in Sweden).

The primary contract request is for the firm that did all of the model estimation for the Metro model and also wrote the software for application of the model. This is Mark Bradley Research and

Consulting. In preliminary evaluation of need by Los Alamos and Metro, the estimated cost of work by this firm was \$140,000. The initial scope of work is attached.

The two secondary contracts are for technical help and advice to the primary contractor, Metro and Los Alamos, on the theoretical considerations in the development of a more disaggregate version of the model.

1. One contract is for Cambridge Systematics Inc., primarily to obtain the services of Dr. Moshe Ben-Akiva (also of MIT) who is one of the world's leading theorists in this area. This contract is expected to be \$20,000.
2. The third contract is for services of John Bowman & Associates to advise and assist in model estimation as needed. This contract is expected to be \$30,000.

Note that this work is, in part, of a research nature and discoveries made by Los Alamos, Metro and their consultants in the course of the project may lead to a redefinition of work scope and resource allocation.

#### FINDINGS

The Clean Air Act Amendment, the Intermodal Surface Transportation Efficiency Act, and policies specific to Metro and Oregon all dictate that Metro and USDOT conduct transportation analyses to assess performance and environmental impacts. The current analyses are using tools that have recognized shortcomings. The Transims project is part of a multi-year program (in its fourth year) to improve these models. With these improvements, we will more accurately be able to forecast the travel effects of the land use and transportation policies we propose to implement.

For Metro, it gives us the opportunity to carry out the objectives of our model improvement, with a wealth of consultant help we could not otherwise afford. It also pays us for significant staff time to carry out, in large part, many of the tasks already in our program for which we would have had to find other funds, including match. There is a coincidence between the goals of this USDOT project and our own needs.

#### **Not Substantially Diminish Competition**

This is a continuation of a unique body of work already started at Metro. The consultants being sought started this work when it was new (and hence not yet unique) under a normal competitive process. They have made significant progress and have gained experience which is currently unique. It would not be practical to engage in an open proposal process because other consultants do not have the necessary experience of the initial work completed for Metro.

## **Provides Cost Savings**

The Transims project saves Metro money in a number of ways.

Metro and the Transims project share the same vision with regard to model improvement areas. Metro would normally fund model development work through the use of federal funds. Since the Transims funds are dedicated to this purpose and do not affect the normal amount of federal funds dedicated to this region, Metro is able to reallocate current federal funds for other work in the Transportation Department.

The Transims funds do not require local match. Hence, research can be carried out without any draw-down required from Metro revenue sources.

## **Unique Characteristics and Technical Complexities**

The primary objective of the new models is to be able to carry out a micro-simulation of the transportation system on a second-by-second basis. For the highways, it is important to be able to simulate vehicle accelerations, braking, idling, etc. in order to get a realistic modeling of emissions. Current models do not micro-simulate vehicle operations; they just get hourly average traffic flows and average speeds.

Geographic micro-simulation is needed to accurately model pedestrian activities and transit use. The traffic zone-based aggregate model is adequate for calculating the approximate auto flows needed for highway design, but walking is slow and the acuity of detail needs to be at the level of street segment (block) or below. The tools required for this level of analysis are very different than those currently employed for "aggregate area" examination. The technique being developed creates a landscape of individual households and jobs, using complex sample enumeration methods, and considers daily activity and travel patterns explicitly. Current models forecast daily trips (one-way legs of the real travel itinerary; e.g., home to work). The new models consider the way these trips are linked into tours (e.g., home to work to lunch to shop to home) and the specific time schedule for each activity and each travel leg. This new approach is very much more complex than the old and is only possible in light of the computing power now becoming available.

## **EXECUTIVE OFFICER'S RECOMMENDATION**

The Executive Officer recommends approval of Resolution No. 98-2622.