Census Transportation Planning Products Data Access Software

Request for Proposals
for the
Development of Software for
Access to Census Data Special Tabulations
for CTPP

Issued: June 11, 2009

Proposals Due: July 24, 2009

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General Requirements

Introduction and Background

AASHTO

AASHTO is a non-profit, non-partisan association representing the member highway and transportation departments in the 50 states, the District of Columbia and Puerto Rico, and is essentially an instrument of these agencies, serving to unite states in the mission of providing a nationwide transportation system, promoting uniformity, and strengthening the voice of the states on transportation issues. The Association provides a forum in which member departments can jointly consider and act on issues of mutual concern. One of AASHTO's primary objectives is to develop and continually improve methods of administration, planning, research, design, construction, maintenance and operation of transportation facilities.

Census Transportation Planning Products (CTPP) Program

The CTPP Program is a partnership among AASHTO, FHWA, State DOTs, MPOs, and the U.S. Census Bureau.

CTPP are developed from a special tabulation of responses to the American Community Survey (ACS). The special tabulation is intended to provide data to support a range of transportation planning activities. The CTPP include tabulation for three kinds of geography: **residence**, **workplace** and the **flow** between home and work.

Examples of CTPP2000 data and the CD based Data Access Tool developed for that data are shown in this RFP for reference only.

Statement of Purpose

This Request for Proposals (RFP) has been prepared to solicit competitive proposals for professional services for the development of the CTPP Data Access software for ACS three-year data. AASHTO will provide the contractor with United States Census Bureau American Community Survey three-year longitudinal data for years 2005 – 2007 and 2006 – 2008. Each data set will be approximately 250 GB and will be provided in CSV flat file or SAS format (or a similar standard format specified in the work program). The tables contain estimates of frequencies, aggregate totals, interpolated medians and means along with corresponding 90% margins of error (MOEs) and standard errors (SE). The CTPP list of custom tabulations from the three-year American Community Survey that will be generated by the US Census Bureau is available in the RFP Supplemental Materials at: http://ctpp.transportation.org/home/rfp.html.

AASHTO shall choose a contractor to develop a Data Access Software Tool that will return selected tables to the user. For examples of the types of tables of interest to the CTPP user please see US Census Bureau American Fact Finder – http://factfinder.census.gov/. For an example of a product developed for a similar purpose, see examples of CTPP2000, downloadable from the RFP Supplemental Materials at: http://ctpp.transportation.org/home/rfp.html

Based upon the qualified responses received as a result of this RFP, AASHTO intends to select a contractor to perform the services described in the Technical Requirements section of this RFP.

The objectives of this RFP are:

1. To obtain the best expertise at a favorable cost to AASHTO and its member departments to perform the work described herein;

2. To provide, as much as possible, a comprehensive and objective basis for contractor selection;

3. To use the selected proposal as the basis for developing the final work plan, agreement, and costs for the services to perform the specified work.

The realization of these objectives, including the selection of the preferred proposal and contractor, will be determined solely by AASHTO. In no event shall this Request for Proposals be construed as an obligation on the part of the Association or any of its member departments to award a contract for the services described herein.

Scope

The services sought in this RFP are specifically related to the CTPP Data Access Software Development Project for ACS three-year data. Based on the outcome of this project, AASHTO may choose to negotiate an agreement for a portion or all of future CTPP data products, updates, or other materials, elect to issue a separate RFP for a portion or all of the next phases, or elect to do nothing at that time.

Planned Calendar of Events

June 11, 2009	Request for Proposals is issued.
June 29, 2009	Deadline for submission of written questions by Proposers
July 10, 2009	Express mail AASHTO written response to Proposer's questions
July 24, 2009	Proposals are due.
July 27 – August 24, 2009	Review period
August 26, 2009	Invitations for web presentations sent. If requested, proposer should be prepared to present an internet based presentation or web meeting week of September 14
September 21	Recommendation to CTPP Oversight Board
October 2009	Make offer to selected contractor
November 2009	Execute Contract

Period of Performance

AASHTO expects prototype data (2005–2007 three-year data) to be delivered from the U.S. Census Bureau between February and May 2010. Table shells should be available between November 2009 and March 2010, and final 2006–2008 three-year data is expected between April and June 2010. The software should be finished in time to accommodate the final data, but in any case, development must be finished by sixty (60) days from receipt of final data

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Written Questions and Answers

Written questions are encouraged, may be submitted, and will be accepted until 4:00 p.m. (Eastern Time) on June 29, 2009. Answers to all written questions will be express mailed on July 10, 2009. The anonymity of the source of the questions will be protected in the presentation of the questions and answers. Questions and all responses shall be provided by AASHTO to all contractors.

Written questions should be directed to:

American Association of State Highway and Transportation Officials
Questions: CTPP Data Access Software RFP
ATTENTION: Penelope Weinberger, Program Manager
444 N. Capitol Street, N. W., Suite 249
Washington, D. C. 20001
Fax: 202 624-5806
e-mail: pweinberger@aashto.org

Modifications or updates to the RFP:

To receive emailed notice of modifications and updates to this RFP please send a message with the subject "RFP Updates" **from** the email address to which notice should be sent, to: ctppinfo@aashto.org. It is strongly recommended that interested parties register in this manner, to be kept up to date.

Receipt of Proposal at AASHTO

Proposals must be received in the Association office not later than 4:00 p.m. (Eastern Time) on *July 24, 2009*. One printed copy of the proposal shall be mailed to:

American Association of State Highway
and Transportation Officials
AASHTO CTPP Data Access Software Development Project
ATTENTION: Penelope Weinberger, Program Manager
444 N. Capitol Street, N.W., Suite 249
Washington, DC 20001

One electronic copy in Microsoft Word and one electronic copy in PDF file format shall be e-mailed to: pweinberger@aashto.org.

Each proposal package must contain a complete return address of the sender and shall be organized, packaged, and marked as follows:

Proposal Submission Requirements

The response to this RFP shall consist of a technical proposal and a cost proposal. The response to technical requirements may be no more than ten (10) double-sided pages. Qualifications and resumes may be an additional five (5) double sided pages. All remaining parts must together be ten (10) double sided pages or fewer. Please do not use a font size smaller than Arial 10 or similar. The cost proposal has no page limit. The following items must be included and labeled:

▪ The name, title, mailing address, and telephone number of the proposer must be clearly stated in the proposal.

- All proposals shall be signed by an individual authorized to legally represent and bind the firm to the proposal.
- The organization of the proposal document shall include two distinct clearly labeled sections.

The AASHTO CTPP Data Access Software Development Cost Proposal, Package A, and the Technical Proposal, Package B, must be submitted in separate sealed envelopes and as separate attachments to the email of the electronic versions. For the hardcopies, the separate packages may be combined in a single container for delivery to AASHTO. **Proposal packages received after 4:00 p.m. (Eastern Time) on July 24, 2009,** will be returned unopened to the sender and will indicate the time and date of receipt.

CTPP Data Access Software Proposal

Cost Proposal (Package A)

This section must contain the requested cost and price information for the services described in the Technical Requirements section of this Request for Proposals. The CTPP Data Access Software Development – Cost Proposal shall be submitted in a separate sealed envelope marked as "AASHTO CTPP Data Access Software Development - Cost Proposal". The costs submitted in the cost proposal shall remain valid for a minimum period of six (6) months from the date of the submission deadline of the proposal, and apply to all work to be done if an agreement is executed to perform the work.

Proposers shall submit all costs for performing the work. Payments will be made when specific milestones/deliverables are approved. The build milestones shown in the table below correspond with design and testing phases that AASHTO expects the selected contractor to conduct. Cost proposals should include a minimum of seven (7) milestones: DEV (development/prototype version), Alpha candidate, Alpha acceptance, Beta candidate, Beta acceptance, Final candidate, and Final acceptance. The cost proposal must include a milestone-based deliverables schedule with associated costs for each milestone/deliverable, and the total cost, as shown in the following table:

Milestones/Deliverables	Delivery Date	Percentage of Total Cost	Cost
Acceptance of Project Plan	xx/xx/2009	x%	
Acceptance of User Requirements Document	Estimated Date	x%	
Acceptance of Delivered Data Model and Data Dictionary	Estimated Date	x%	
Delivery of Prototype	Estimated Date	x%	
Delivery of Alpha version	Estimated Date	x%	
Acceptance of Alpha version	Estimated Date	x%	
Delivery of Beta version	Estimated Date	x%	

Acceptance of Beta version	Estimated Date	x%	
Delivery of Final version	Estimated Date	x%	
Acceptance of Final version	Estimated Date	x%	
Total Cost		**100%**	

Technical Proposal (Package B)

This portion of the contractor's submittal should provide detailed responses to each section of the Technical Requirements and should include descriptions of how the Proposer's services will provide solutions to the needs expressed in the requirements. The Technical Proposal must include the following sections:

1. *Executive Summary*—This section should provide a concise summary of the Proposer's proposal minus any specific cost figures. Highlight the unique nature of the proposal and describe any perceived advantages that the proposal offers.

2. *Qualifications of the Proposer*—This section should identify and describe the qualifications of the proposing firm in terms of the objectives of this Request for Proposals. The Proposer must provide references, preferably current or past customers, including, but not limited to, **up-to-date** addresses and telephone numbers of the customer's Project Managers who can attest to the Proposer's qualifications to provide the type of services contained in this Request for Proposals. These references may be contacted by AASHTO as part of the proposal evaluation process. This section must be limited to less than five double-sided pages.

   Further, the Proposer must submit references and qualifications statements for any key personnel specified in the proposal.

3. *Response to Technical Requirements*—This section should provide detailed responses to each section of the Technical Requirements and include descriptions of how the Proposer's services will provide solutions to the needs expressed in the requirements. Proposers must explicitly state that no proprietary software requiring individual state licensing is included in their proposed solution with the exception of standard infrastructure (for example database, server operating system, and web browser).

4. *Project Team/Organization*—This section must include a detailed description of the organizational structure, contractor and subcontractor key personnel and labor categories assigned to this project. The individual time commitments assigned to this project must be identified.

   For the firm selected, any changes concerning assignment of project team key personnel must be submitted to AASHTO in writing for approval prior to action. These changes are subject to approval by AASHTO, which will also be provided in writing.

5. *Work Plan*—This section should provide a description of the step-by-step proposed tasks to accomplish the Technical Requirements, and schedule of deliverable items or services by expected availability date. The schedule should

use a "non-specific" starting date, tasks that follow should be expressed in relative time duration (e.g., weeks) from start of work, and should show any dependencies Any and all anticipated subcontractors' activities should be identified. The completion of this project is anticipated on or before April 2010 when the CTPP expects the release of ACS 2006–2008 data in the format requested.

It should be noted that this section of the proposal will form the basis for the development of a "Final Work Plan" by AASHTO which may involve the proposer and which will become part of the subsequent contractual documents. In addition, this section of the proposal will constitute a substantial portion of the comparison of technical solutions proposed between Proposers.

6. *Terms & Conditions Exceptions*—This section should describe any exceptions to the sample terms and conditions contained elsewhere in this Request for Proposal. This section will also be considered during the proposal evaluation process.

Cost of Proposal Preparation

The cost of developing and submitting a proposal, including proposal presentation and associated travel, is entirely the responsibility of the Proposer, and no reimbursement will be made by the Association or any of its member departments.

Proposal Review

The CTPP Data Access Software Sub-committee has been designated to guide this overall effort including the evaluation of the proposals and the development of a recommendation for action. All available members of the Sub-committee will participate in the evaluation and recommendation process.

Web Presentations

After the initial evaluation of all proposals that are received in the manner described above, the selected proposers may be invited to make web presentations to the CTPP Data Access Software Sub-committee. If selected, a contractor will be notified August 26, and should be prepared to make a web based presentation in the week of September 14, 2009. These Internet based presentations or web meetings will be given to clarify the Proposer's proposal, answer the Sub-committee's questions, and to ensure mutual understanding.

Evaluation of Proposals

Proposal evaluations will be based on the professional judgment of the CTPP Data Access Software Sub-committee members from their review of the materials provided in the proposals and the oral presentations. The evaluations of the proposals will constitute part of an overall consensus recommendation by the Sub-committee, which will be forwarded to the CTPP Oversight Board for their review and recommendation to the AASHTO staff. Determination of the preferred proposal and selected Contractor will be made in the best interest of the Association considering cost and technical merit, and will be solely the prerogative of the Association.

Clarification of Proposals

After its initial or subsequent review of the proposals received, the Association reserves the right to submit, in writing, questions to the proposers to clarify proposal details, and will expect written responses that will be considered by AASHTO as if provided in the original proposal.

Award

This Request for Proposals shall not be construed as a guarantee of an award. While an award is intended, doing so is dependent upon the evaluation of proposals and the resultant recommendation by the CTPP Data Access Software Sub-committee, their recommendation to the CTPP Oversight Board and subsequent approval. If called for by the CTPP Oversight Board, an Agreement may be negotiated and executed by the AASHTO Executive Director on behalf of the Association. The Executive Director is the only person authorized to negotiate, offer and execute a contract for the Association.

Rejection of Proposals

The Association reserves the right to reject any or all proposals solely based upon its best judgment.

Technical Requirements

General System Description

CTPP Data Access Software is to be developed as an interactive software product that will test and create a data access, analysis, reporting, and export system for the CTPP three-year data from ACS 2006–2008 that will:

▪ Load data delivered to AASHTO from the U.S. Census Bureau

▪ Load the U.S. Census Bureau's Topologically Integrated Geographic Encoding and Referencing system (TIGER) files delivered to AASHTO from the Census Bureau

▪ Produce tables of interest and as specified by the CTPP user community

The tables contain cells with estimates of frequencies, aggregate totals, interpolated medians and means along with corresponding 90% margins of error (MOEs) and standard errors (SE). All cells need to be seen and used. The CTPP list of custom tabulations from the three-year American Community Survey that will be generated by the US Census Bureau is available at: http://ctpp.transportation.org/home/rfp.html.

The software should be intuitive, and easy for the user to understand and operate. A point-and-click approach, with guided step-by-step procedures, feedback, search options, and help should be used where possible and appropriate. A "help" menu, and software "tutorial" should be provided in a commonly used platform.

The Software will have appropriate solutions to any licensing issues (e.g., ArcIMS, Microsoft SQL Server, Oracle, etc.,), on-line training materials and help, and maintenance.

System Scope

The scope of CTPP Data Access Software includes the following main areas of functionality:

▪ The general application framework, being the foundation of the application upon which all functionality is built;

▪ The CTPP Data Access Software desktop, the basic data management and review workspace for users; and

▪ The reporting subsystem, a generic capability for producing reports and exportable data from CTPP Data Access Software, including selection and display of predefined user reports.

System Context

Networked

CTPP Data Access Software shall be designed to ensure minimal user workstation footprint to facilitate deployment and maintenance. The system shall use a web browser to run the application on a central web server over a network such as the world wide web or an intranet.

Standalone

CTPP Data Access Software must also function without access to the internet in a standalone mode or run locally (i.e., not connected to the internet) using a local web server on the end user's workstation. It is expected that most users will run it over a network. It should also be identical in operation for both network and local standalone contexts. Portions of the help feature will be required on the standalone version of the software.

Future RFPs and Considerations

AASHTO may issue a separate competitive RFP for a new software access tool or major modification to the software when the CTPP five-year data (2006–2010 ACS) become available. The five-year data includes significantly more and more complex levels of geography than the three-year data.

Key Stakeholders

The expected data users include transportation planners from Metropolitan Planning Organizations (MPOs) and state DOTs. Their experience will range from novice to expert. However, even the expert user will want an easy way to take a quick look at the data. Other data users are likely to be media community groups, students and faculty in universities, and market analysts. As part of the public participation process in transportation planning, AASHTO, U.S. DOT, and Census Bureau have an obligation to make the data accessible. The general public wants to know about general commuting flows, means of transportation, and other journey to work data. The software should provide an easy way to access the data, without requiring much knowledge about transportation planning.

The demand for journey-to-work data has increased over time, especially as data access has improved. Historically, the data has been used by transportation planners and air quality analysts, but the market for this data now extends to the fields of labor force development, economic and community development, emergency preparedness and disaster planning, and other applications.

CTPP Data Access Software Process Flow Diagram

Figure 1 shows the process flow logic for CTPP Data Access Software

OVERVIEW

1.0 USER REGISTRATION and LOGIN

HELP
TRAINING

2. SELECT DATASET
- Year, and

- Residence, or
- place of work, or
- flows

3. SELECT GEOGRAPHY
- Text –based
- Map-based

3. SELECT the TABLE
- by Keyword
- List all tables

4.0 BROWSE/Analyze/Examine the Data
- add a calculated field
- Aggregate categories
- Aggregate geography
- Map the data
- Create charts, graphs, etc.

5.0 PRINT

5.0 EXPORT the data to other formats
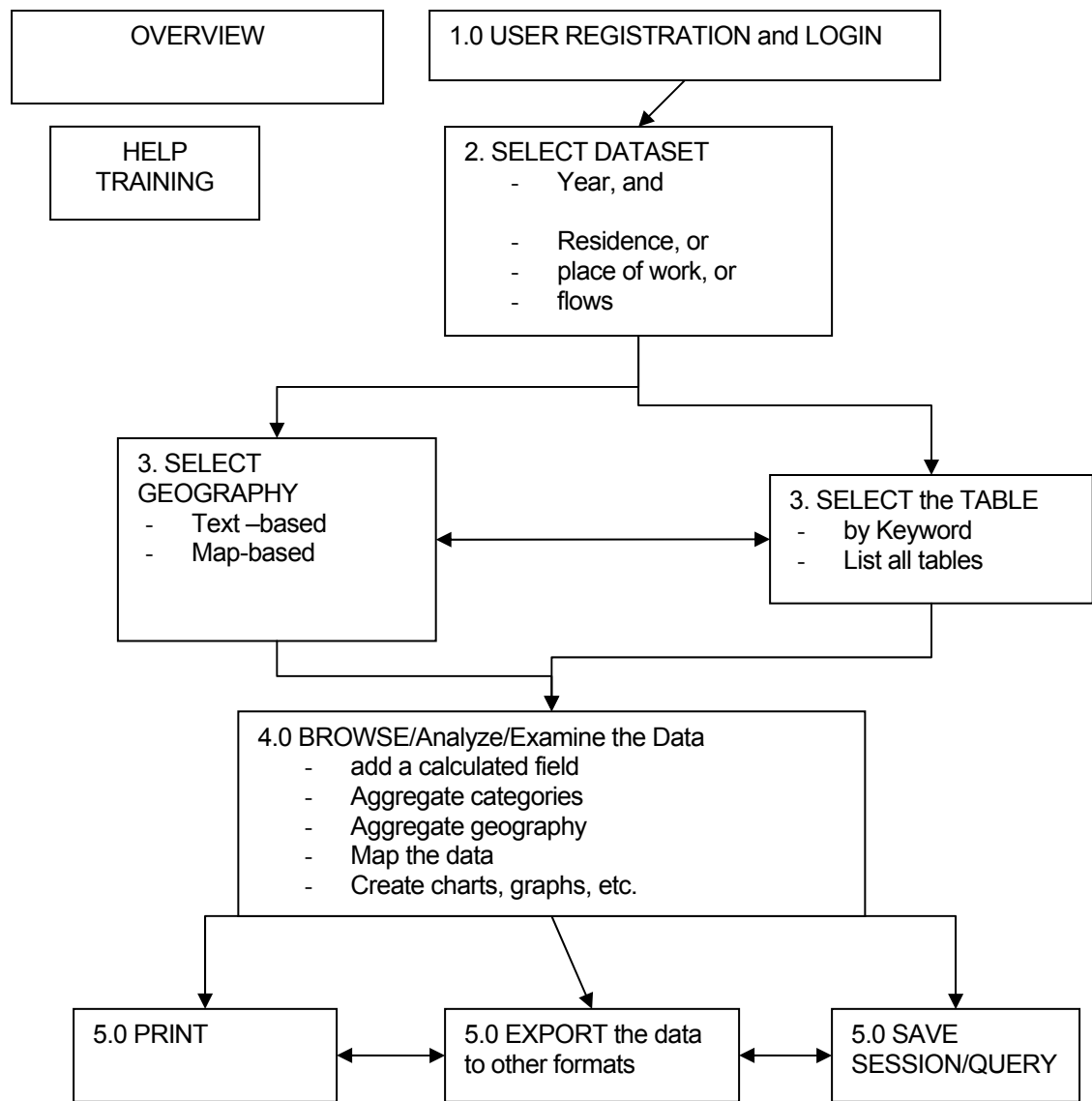
5.0 SAVE SESSION/QUERY

Figure 1. CTPP Data Access Software Process Flow Diagram

CTPP Data Access Software Architectural Overview

Introduction

This section provides general guidelines of the architecture for the proposed CTPP Data Access Software product.

NB. It is strongly advised that the proposer review **CTPP2000 Access Tool**, available at: http://ctpp.transportation.org/home/rfp.html for illustration and examples of functions listed below.

System Overview

CTPP Data Access Software will be a web enabled application using a web browser to run the application on a central web server (to be housed at AASHTO) over a network such as the World Wide Web, with additional standalone functionality as discussed above.

Database Architecture

The database architecture is an important technical consideration for CTPP Data Access Software. The system should contain an ODBC-compliant database in which to store and retrieve data and documentation. The application must support the use of commonly used software platforms across MPOs and State DOTs

Functional Requirements

This section provides the desired requirements of the CTPP Data Access Software application for the navigational interface and major screens of the software and their functionality.

Navigational Interface

All pages in the CTPP Data Access Software web application will share a common navigational layout, which will provide access to the different functional areas of the application. The common navigational schedule for all screens within the system is described in the table below.

Table 1. General Navigation Links

Link Name
User Registration
Find a table for the selected survey year(s)
Browse Examine Analyze
Export data to other formats
Save Session
Help Training

1.0 User Registration

The chief function of registration is to save sessions and or queries. A secondary function would be to track users. Registration should be immediate and collect basic user information such as user type (practitioner, student, etc.) and user's agency.

2.0 Select Data Set

NB. Data is not always available at the all levels of geography.

The Process Flow Diagram, above, and the Flowcharts in Appendix A, provide an overview of the table selection process. The table selection process should be comprised of three phases. A user should be able to:

- Select Data Set, and then either
  - Select Geography, then Tables, or
  - Select Tables, then Geography

For each year, the CTPP consists of three data sets: residence-based or home end tables, workplace-based or work end tables, and residency by workplace or commuter flow tables. The user should be prompted to select the data set by means of a pre-defined list, including the year for which data are desired.

3.1. Select geography

Flowchart 3 (Appendix A,) illustrates a general scheme for the two-step process of selecting geography.

Step 1. Select the **summary level** for which information is desired. Summary levels available in CTPP include State, County, MCD, Place, Census 2000 PUMA, and MSA/CMSA, and MSA Principal City. A pre-defined menu could be used to select the summary level. *See "Future Functionality" in General Requirements for a discussion of additional geographies available with ACS five-year data.

Step 2. Select the **specific geographic area** for which the data should be displayed. Two approaches should be made available for selecting specific geographic area: a) list-based selection and b) map-based selection.

List-based selection of specific geographic areas: The user should be shown a list of geographic areas. The user should select geographic areas (a state name, county name, etc.) using a list.

The software should keep track of user selections, and display them. The user should be allowed the option of saving the selections, and using a previously saved selection.

Map-based selection of specific geographic areas: The user should be able to select a list of geographic areas (e.g. counties) by pointing and clicking. Standard controls (zoom in, zoom out, select by lassoing, select by pointing, select by rectangular polygon) should be available in the selection process. Labels should be scalable displays. There should be a list of map features that can be selected to be "on" or "off". There should be a scalable map showing the user-selected areas.

Summary: at the end of the Select Geography phase, the user should have selected the summary level and a specific set of geographic units for that summary level.

3.2 Select Tables

Tables can be selected by means of a keyword search, or from a list of all the table titles.

Select by Keyword

The user should be able to find a table based on a variable name. Many users may not be aware of all the tables in CTPP, but may be looking for a specific variable (e.g., means of transportation). A list of variables and "alias" keywords for each of the variables will be provided to the vendor.

A user should be able to select a variable and be advised by the software what other variables are cross referenced with their selection.

Selecting a keyword should result in a screen display of tables from which the user can select those of interest. The CTPP tables are arranged in different universes for different classes of information (for example, a set of tables with data for all persons, a set of tables for workers, etc). The list of tables should be displayed by a scheme to represent different universes. The user should be allowed to point and click to select one or more tables.

Table Selection from a List of All Available Tables for the Data Set Selected

In this approach, the software should display all available tables, and allow the user to choose by pointing and clicking.

Summary: at the end of Date Set selection, the user should have specified:

1) The year (e.g., ACS 2006 thru 2008),
2) A data set (e.g., residence-based tables), and
3) A summary level for one or more geographic areas (e.g., counties in CA)
4) A list of tables

4.0 Browse/Examine the data

The user should be able to **look at the data from a specific table and a specific geographic area on the screen,** without having to export the data into another software package.

The software should have the capability to:

4.1 Add a calculated field
4.2 Aggregate categories
4.3 Aggregate geography
4.4 Map the data
4.5 Create charts, graphs, etc

Response time for all functions shall not exceed 59: seconds for computers meeting current operating standards and connection speeds for both the web-based and stand-alone versions of the application.

4.1 Add a calculated field

The user may want to create a new field and summarize the data. The software should contain tools to create a new field based on fields in one selected table. The software should prompt the user to perform operations in a step-by-step approach. For example, when the user clicks "Add a Calculated Field" they should be prompted with Step 1 which might say, "What field or fields do you want to use," and provide a list of available fields. Step 2 might prompt the user for a description of the operation e.g., "Percent of total workers," "Number of carpools," "Ratio of carpools to single occupancy vehicles," etc. The new field should be available for use in other calculations.

The CTPP contains some "derived" or "computed" tables. In order to perform any calculations on these variables, the software will have to use aggregate values provided in the corresponding CTTP tables.

There must be a provision for saving such operations. The procedure could take the form of "cutting and pasting" formulas. The software should also be able to create a history of user-defined operations, accessible from the main view.

4.2 Aggregate categories

People will often want to **reduce the number of cells** for evaluating the data. Also, reducing the number of cells before outputting into a spreadsheet format will help spreadsheet users, who otherwise may run into maximum table sizes.

Any **customization (e.g., re-categorization of cells) should be stored and be easily retrievable** by the software. The software should have the ability **to save the operation performed** as a 'macro' for future use.

The user should be allowed to

a.   Define the new classes, and
b.   By using the mouse, point-and-click to assign the old classes to the new classification.

Example: The user may want to aggregate categories to examine a table (e.g., reduce "Mode" from 10 categories to four—Drive alone, Carpool, Transit, and Other). The software needs to provide tools to re-categorize easily. The user could be shown the current categorization, and be asked for a new category scheme to aggregate the categories. The new categories and the resultant table should be added as a new table view for the user or as a newly categorized variable.

In CTPP, there are multivariate tables. The software must allow all the variables in a table to be re-categorized. These recodes must be able to be saved, and the ability to "copy and paste" is also a desired feature. Maintaining a data dictionary of new tables or fields created by the user would also be a useful feature.

4.3 Aggregate Geography

The software should enable the user to aggregate detailed geographic units to a summary unit. This could be using a list-based approach, and/or a GIS-based approach. If a list-based approach is used, the feature provided can be identical to 3.1 (Add a calculated field), except that instead of adding a field, the user will be adding a new record and calculating values based on other selected records in a table.

The software may provide a list-based procedure to customizing geography.

Example 1: Create Summary Areas by aggregating Counties
Summary Area 1 = County A, County B, and County F
Summary Area 2 = County C, County D, and County E

**   Note on Aggregation Categories and Geography Regarding Estimates, 90 Percent
       Margins of Error (MOEs) and Standard Errors (SEs)

When aggregating categories and geographies, both the estimate and the MOE need to be recalculated. Furthermore, MOEs need to be recalculated for summary totals and proportions as well. The MOEs are context specific, they cannot simply be combined, summed or averaged. When a table is requested for export, the MOE tables should automatically be exported simultaneously. The Contractor will work with U.S. Census Bureau personnel to ensure proper recalculation of MOEs..

4.4 Map the data

The software must have a

a. Reference mapping element
b. Thematic mapping element

Reference Mapping

The software will show a map of Counties. This should include major roads and some general labels (e.g., city names, highway names, etc). The layers that should be displayed on the map should include the following themes from TIGER:

1. U.S. Highways and Interstate Highways
2. Water/River Polygons
3. State Boundaries
4. County Boundaries
5. MCDs (in 12 States)
6. Place Boundaries 2008
7. Metropolitan Statistical Areas
8. MSA Principal Cities
9. PUMA 2000—five-year data geography
10. TAZ Boundaries 2000—Five-year data geography
11. Census Tracts—Five-year data geography

The user should have the option of viewing all or some of the layers listed above. A method, for example, check boxes, to turn each layer "on" or "off" should be available.

Thematic Mapping

The software should be able to do simple mapping, such as selecting a single variable and mapping quartiles/quintiles of actual values, or calculating percentages from multiple variables, e.g., calculate the percent of workers using transit for the journey-to-work trip and map this calculated value.

Customizing the Map Display. After a map is displayed, the user can change the field that is being mapped or go back to the "table view" and calculate some additional fields in the table and re-map using a calculated field. For example, if the user chooses a field, and then clicks "Map" the software should make a map classifying the values in the selected field into a set of default categories. The user must then be allowed the option of changing the legend categories, colors, or number of classifications, or to change the type of map desired (e.g., dot density maps, pie chart distributions, etc.). The user should be provided the ability to print and save the map

The software should be able to export a map image as a .tif, .jpg, .pdf, and .png file

Spider Diagrams or GIS based line density diagrams for Home-to-Work Flows. The software must be able to take Part 3 flow tabulations and output spider diagrams as .shp files, as well as allow the user to export the data for use in other applications. Examples of Spider or

Line Density Diagrams are shown at
ftp://ftp.abag.ca.gov/pub/mtc/census2000/CTPP/Workshop_JAN2703/Skowronek-CensusMapping-JAN2703.pdf (See page 3)

Note on Flow Data

The initial display of commuter flow data needs to be tabular. Options may be provided to allow the user to aggregate the geographic areas presented in the tables, similar to the procedures described in Section 4.

When the user chooses one or more flow tables, the geographic origin-destination pairs will appear as the rows of the tables, with the characteristics data in the column. When the number of geographic units in an area is large, the number of resulting origin-destination combinations in a flow table may pose some special problems due to:

a. The maximum number of rows handled by standard spreadsheet software.
b. It is difficult to examine large volumes of data in on table.

Options are needed for the handling of flow data. These might include the ability to:

a. Select a particular geographic unit and map all the flows originating or ending in that area to or out of all other areas.
b. Custom-build or aggregate the geography at either the origin or destination end.
    The software could adopt a step-by-step approach for creating a subset of fields/records from the main flow table, and then map a field from the subset table. For example, if a user has a flow table selected and clicks on "map the data," step 1 could prompt the user to select one geographic unit (or an aggregate of geographic areas) for which the data should be mapped.

This selection should create a one-to-many or many-to-one relationship table containing just one area (or an optional aggregate of areas combined into one geographic unit) crossed with all other areas. The fields in the table would be the same as in the originally specified table.

The user could then click on a field and make a map as described.The options for making a map would remain the same.

Concentric ring analysis: (option)
Define a distance from a point and accumulate record values from a specified distance, e.g. within 5 miles, or within 10 miles.

4.5 Create charts and graphs.

The user should be able to create charts and graphs to illustrate analysis.

4A. ANALYTIC FUNCTIONS: Flowchart 4A (Appendix)

4A.1 Trend Analysis (aka; Comparing Across Years): For a selected number of data tables, for which comparable data tables from other years will be supplied, the user should be able to conduct a trend analysis. That is, the user should be able to select two or more time points for the same geography, and the same value, and compare them.

FOR EXAMPLE: Total number of workers in COUNTY B who use transit to go to work, in 1990, 2000, and 2005–2007

4A.2 "Automatic" data analysis: When a table is viewed, we would like a feature that "automatically" compares all the cells to determine which cells are statistically different than other cells and then codes each cell to those that are very high, and those that are very low

4A.3 Import other sources of data (option): The users could benefit from the capability to bring in other data and map features, such as overlaying a street centerline file over the existing geography, or other themes developed by the local agency. There could be an "add your own layer" function during initial mapping to allow external data sources to be added.

5.0 Exporting, Printing, and Saving the Data

Flowchart 5 (Appendix A) illustrates the export function.

The software should create a meta-data file for each table that is exported.

The software should create an export table with fields for different Summary Levels; including a field for the type of detailed geography.

Any geographic features should include both the Federal Information Processing Standards (FIPS) codes as well as text descriptions, as provided by the Census Bureau. For example for the State of Washington, the text "Washington" should be saved, in addition to State FIPS code "53".

The export formats shall include ASCII, .dbf, .xls, .csv , .shp, .mdb, xml, .html and .pdf. The software must provide the user options to export the tabular data at the table view stage and at the table selection stage.

The software must also provide the ability to export maps and charts as Windows Bitmaps or Windows Meta Files, .tif, and .jpg and .pdf.

5A. Saving Sessions and Other Files

The software should have the ability to do different categories of "save." The levels of save described in this document are summarized here.

a. *Saving the session.* The software should have the ability to save a session and provide options for the user to either begin a new session or retrieve a "saved" session. Options should be provided to allow a session to be saved. A session would include the geographical level and selection, the tables selected, any variable created, and any maps created.
b. *Save summary levels and geography selected.* The software must be able to save user selections of geography and summary level. These can be saved than the user can "recall" for use later so the user can use the same geography with different table selections.
c. *Save table selections*: The software must be able to save user selections of tables for future use with other geographical selections.
d. *Save calculations.* The software must be able to save user calculations when a new field is added. This field can then be used with other geographical selections.
e. *Save aggregations of variables.* The software must be able to save user-defined categorizations of variables for use with other tables or geographical sections.

5B. Print

The software must provide the user the ability to print tables, a subset of a table, maps, and charts from the displayed data.

6.0 TRAINING

The website should have a dedicated "training" area. There should also be a HELP function available during the data access process. The training materials may be in .wav or .avi or other similar files. The training at the most basic would show examples of using the software for the functions listed below. The training could be as complex as interactive training modules to reinforce learning.

6.1. Training videos: which includes one or more digital videos showing users

a.   How to find and save data;
b.   How to use the thematic mapping functions;
c.   How to use the chart functions
d.   How to export files

Other Requirements

User Manual

The development of a software user's manual will be part of the CTPP Data Access Software development. This manual will be available in hardcopy and electronically through the Help feature of the system.

Section 508 Regulations

We are committed to ensuring that our products are accessible to customers with disabilities. For guidance, we look to the accessibility best practices and standards defined by Section 508 of the U.S. Rehabilitation Act and the Web Content Accessibility Guidelines (WCAG) of the World Wide Web Consortium Web Accessibility Initiative (W3C WAI).

Future Functionality

It is expected that with the release of the ACS five-year data—2006–2010, which will have significantly more complex geography, such as Tracts, Block Groups and TAZs, and much more data (estimated at 875 GB with many more flow geographies), the CTPP data access tool will need to be redeveloped or enhanced. A separate competitive RFP is expected for that task.

Maintenance and Enhancements

Describe how maintenance and enhancements will be provided to the centralized application servers.

Sample Contract Requirements

General

The purpose of this section is to indicate the type of contract terms and conditions contemplated and to set forth clauses that may be contained in any resultant contract. Depending upon the specific Contractor's response to this Request for Proposals, the following sample contract terms and conditions may be modified or extended, as appropriate. A firm, fixed-price negotiated procurement is requested.

Contract Documents

The Agreement between the Association and the Contractor shall consist of:

- The terms and conditions set forth in this section of the Request for Proposals and any amendments thereto.

- The Contractor's proposal submitted in response to the Request for Proposals, as appropriate.

- The final work plan for delivery of specific services including rates.

The Association reserves the right to clarify any contractual relationship in writing with the concurrence of the Contractor, and such written clarification shall govern in case of conflict with the applicable requirements stated in the Request for Proposals or the Contractor's proposal. In all other matters related to the services required, and not affected by the written clarification, the Request for Proposals shall govern.

Contract Modifications

The Association reserves the right to modify, increase or decrease the scope of work and the maximum total cost contained herein, upon execution of an amendment signed by both parties to the Agreement.

The Contractor reserves the right to accept or decline additional work beyond the scope defined in the Request for Proposals, due to acceptability or capability to perform said work.

Compliance with Laws

The Contractor shall comply with all applicable State, Federal, and local statutes, ordinances, and regulations and obtain all permits that are applicable to the entry into and the performance of this Agreement.

Equal Employment Opportunity

In connection with the performance of the Services under this Agreement, the Contractor covenants that it will comply with all applicable federal and state laws prohibiting discrimination on the basis of race, color, religion, age, sex, marital status, national origin, ancestry, disability, sexual preference, personal appearance, family responsibilities, genetic information, gender

identity or expression, matriculation, or political affiliation and will require a similar covenant on the part of any contractor or subcontractor employed in the performance of this Agreement.

Worker's Compensation Insurance

Maintain general and professional liability insurance in the amount of at least one million dollars ($1,000,000) which names the Association as an additional insured, and provide the Association with a certificate of insurance evidencing coverage.

Provide for Workers' Compensation Insurance as required by law.

Governing Laws

This Agreement shall be construed in accordance with and governed by the laws of the District of Columbia.

Indemnification in Performance of Services

Indemnify and save harmless the Association and its Member Departments, and all officers, agents and employees thereof, from any and all claims and losses occurring or resulting to any and all persons, firms or corporations furnishing or supplying work, services, materials or supplies in connection with the performance of this Agreement, and from any and all claims and losses occurring or resulting to any person, firm, corporation, agency or department that may be injured or damaged by the Contractor in the performance of this Agreement.

Warranty Against Contingent Fees

The Contractor warrants that it has not employed or retained any company or person, other than bona fide employees working solely for the Contractor, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person, other than bona fide employees working solely for the Contractor, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the Association shall have the right to annul this Agreement without liability or, at its discretion to deduct from the fees due the Contractor or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

The Contractor shall not engage, on a full time, part time or other basis during the period of this Agreement, any professional or technical personnel who are in the employ of the Association or its member departments, except regularly retired employees, without the knowledge and consent of the employer of such person.

Consent to sublet, assign or otherwise dispose of any portion of the Services shall not be construed to relieve the Contractor of any responsibility for the fulfillment of this Agreement.

Acceptability of Services

All questions that may arise as to the quality and acceptability of the Services, the manner of performance and rate of progress of the Services, and as to the satisfactory and acceptable fulfillment of the terms of this Agreement, shall be decided by the Association.

Patents, Copyrights and Trademarks

It is agreed that the Contractor shall not copyright any paper, report, form, or other material that is a part of its work under this Agreement without written approval of the Association. It is agreed that all copyright and patent rights relating to papers, reports, forms, new or enhanced software, and the like, paid for under this Agreement are vested with the Association, and the Contractor agrees to execute any legal documents necessary to perfect title to such rights in the Association.

The Contractor further warrants that it has the full legal authority to use any and all software that may be designated as public domain, or any program code or products that the Contractor has previously developed and chooses to use in providing the Services defined in the Work Plan, and that the use of such shall not impair AASHTO from licensing or copyrighting the product(s) developed under this Agreement. The Contractor shall save the Association and its future licensees harmless from any claims and/or liability from its use of such software/program code.

The Contractor shall incorporate all copyright, trademark and patent identification and notices as may be prescribed in writing by the Association to protect its proprietary rights and property, including but not limited to such items as product system and user manuals/documentation, internal and external labeling of computer magnetic media, computer printer/plotter/terminal output displays, etc. The Contractor shall not use or display any Association trademark for its own purposes without the written consent of the Association.

Ownership of Materials

All data collected under this Agreement, together with audio/video tapes, summaries, charts, and all computer readable magnetic media generated and/or derived there from, shall become the property of the Association and cannot be furnished to any party other than the Association or members of the Contractor's firm without written permission of the Association.

Upon completion or termination of this Agreement, all reports prepared by the Contractor, including all audio/video tapes, graphics and texts, and all computer readable magnetic media generated and/or derived there from, shall become the property of the Association. The Contractor may, however, retain one copy of such material for their historical file, which is not to be used for any purpose other than the execution of this Agreement, unless approved in writing by the Association.

Approval of Publications

Submit for review and prior approval of the Association any publication by the Contractor or its subcontractor relating to Services performed under this Agreement. Said publication shall give proper credit to the Association in respect to this Agreement, as approved in writing by the Association.

Inspection and Audit

To meet Association standards, an accounting system must separate and accumulate direct and indirect costs; and must be adequate to support billings to the Association and other clients. The system should include a set of records (journals, ledgers, trial balances and reports) including policies and procedures used to process business transactions. As a general rule, a job cost accounting system is also required that accumulates the costs of doing a specific job.

An acceptable job-cost accounting system would meet the following minimum requirements:

1. A general ledger in which direct and indirect costs are separated and accumulated.

2. A payroll system supported by time sheets that clearly accounts for 100% of a person's time and identifies project and account numbers charged (direct and indirect costs accounts).

3. Agreement between employee time sheets, hours recorded on labor distribution reports, and the hours and dollars summarized in the payroll register.

4. A job cost ledger or cost report in which costs directly related to specific jobs or projects are recorded.

5. A job cost ledger or job cost report, which supports and agrees with the direct costs contained in the general ledger. Periodic reconciliation of job cost ledgers to the cost reports within the general ledger should be conducted.

The accounting system requirements described in this section are also applicable to subcontractors if the subcontracted work exceeds 30 percent of the contract value.

If requested, the Contractor will permit the Association to perform, or have performed, an audit of all records and other evidence of the Contractor, and any or all subcontractors, to support the costs incurred and compensation received, directly or indirectly, by the Contractor. The Association, or a designated representative, shall have the right to audit, copy, and inspect said records and accounts at all reasonable times during the course of such work and for a retention period of three years after the final payment, termination settlement, or until the conclusion of any claim, litigation or appeal, whichever is longer; or for such longer period, if any, required by Applicable Law or regulation.

In the event the Association, because of accounting errors or invoiced changes not in conformity with this Agreement, subsequently properly disallows funds paid to the Contractor under this Agreement, the Contractor agrees that such disallowed costs are due to the Association upon demand. Further, the Association will have the right to deduct from any payment due the Contractor under any other contract between the Association and Contractor an amount sufficient to satisfy any amount due the Association by the Contractor under this Agreement. Final payment to the Contractor may be adjusted for audit results.

Payment—Incentives—Disincentives

On or before the end of each month, submit a billing to the Association for Services performed under this agreement during the prior month at the rates hereinafter set forth in the Work Plan or the Service Units portion. If no work is performed during a month, no billing need be submitted, except that a notice to that effect shall be provided. The billing or no-work statement shall be sent to the CTPP Program Manager, who shall review it on behalf of the Association with a recommendation on payment, where payment has been requested. Final judgment on approval of progress assessments and payment of invoices rests with the Association. The Association shall pay the Contractor within 30 (thirty) calendar days of receipt of billings approved for payment.

Billings for the Services for delivery of milestone based deliverables portions of this Agreement shall be for the fixed fee payment specified in the Work Plan and shall be invoiced after Subcommittee approval of the Release Deliverables and/or Development Test Results milestone deliverables specified in the Work Plan, subject to the total maximum amount limits described herein.

Each monthly billing shall also include a statement that itemizes the labor charges to each billable activity or item by listing the names of the individuals charging against each activity or item and the respective hours charged by each individual.

AASHTO has the prerogative to authorize the shifting or reallocating of amounts within a budget portion, if requested to do so by the Contractor, so long as the total or total maximum amount specified for the budget portion is not exceeded, and all maintenance and enhancement work products identified are completed and delivered within the contract period, or as otherwise agreed upon between the parties.

The Work Plan, attached hereto, may list as "Estimated" the hours and various cost items associated with the defined tasks. Not withstanding any stated condition contained therein to the contrary, the "Estimated Total Cost" figures listed for each deliverable; sub-item or task shall be the actual fixed budget amount for that product/deliverable, sub-item or task.

Fixed Price Services resulting in milestone-based deliverables will be submitted, reviewed, and accepted according to the following procedure:

a. *Submittal and Initial Review.* Upon written notification by Contractor that a milestone deliverable is completed and available for review and approval, the AASHTO Project Manager will use best efforts to ensure that the review is conducted within ten (10) business days after the Deliverable is presented to the Task Force, but in no event later than thirty (30) business days after the milestone deliverable is presented to the Task Force.

b. *Review Process.* Within the applicable period, the AASHTO Project Manager will direct the appropriate review process and coordinate any review outside the Subcommittee, as needed. The initial review process will be aimed at identifying all items which must be modified or added to enable a milestone deliverable to be approved. A failure to deliver all or any essential part of a milestone deliverable shall be cause for non-acceptance.

c. Notification of Acceptance or Rejection. If no notification is delivered to the Contractor within the applicable period, the milestone deliverable will be considered approved. If the Subcommittee disapproves a milestone deliverable, the AASHTO Project Manager will notify the Contractor in writing of such disapproval, and will specify those items which, if modified or added, will cause the milestone deliverable to be approved.

d. *Resubmitting Materials for Review.* The Contractor will resubmit the milestone deliverable with the requested modifications and the AASHTO Project Manager will direct the appropriate review process and coordinate any review outside the Subcommittee as needed, within a reasonably expedited timeframe. The parties agree to repeat this process as required until all such identified deficiencies are corrected, or AASHTO declares the milestone in default. The payment for each activity is contingent upon correction of all such deficiencies and final acceptance by the Association.

Delays

No charges or claims for damages shall be made by the Contractor for any delays or hindrances from any cause whatsoever during the progress of any portion of the Services specified in this Agreement. Such delays or hindrances, if any, caused by circumstances beyond the control of the Contractor shall be compensated for by an extension of time for such reasonable period as may be mutually agreed upon between the parties as provided by supplemental agreement hereto, it being understood, however, that the permitting of the Contractor to proceed to complete any of the Services, or any part of them, after the date to which the time of completion may have been extended, shall in no way operate as a waiver on the part of the Association of any of its rights herein set forth.

Notification of Extra Compensation

In case the Contractor deems extra compensation is due it for services or materials not clearly covered in this Agreement, or not ordered by the Association as a change, or due to changed conditions, the Contractor shall notify the Association in writing of its intention to make claim for such extra compensation before beginning such services or billing for such materials. Failure on the part of the Contractor to give such notification will constitute a waiver of the claim for such extra compensation. The filing of such notice by the Contractor shall not in any way be construed to establish the validity of the claim against the Association.

Contractor Certification

Contractor certifies that neither it nor its principals are presently disbarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from providing the services under this Agreement by any Federal department or agency, and will require a similar covenant on the part of any contractor or subcontractor employed in the performance of this Agreement.

Contractor certifies, to the best of its knowledge and belief, that:

a. No Federal appropriated funds or other funds have been paid or will be paid, by or on behalf of the Contractor, 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.

b. 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 any employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Contractor shall complete and submit any applicable lobbying disclosure forms.

c.   Contractor will require a similar covenant on the part of any contractor or subcontractor employed in the performance of this Agreement.

Termination

Termination for the Association's convenience:

The Association reserves the right to terminate this contract, or any part thereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges the Contractor can demonstrate to the satisfaction of the Association using its standard record keeping system, that have resulted from the termination. The Contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided.

Termination for cause:

The Association may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Association, upon request, with adequate assurances of future performance. In the event of termination for cause, the Association shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Association for any and all rights and remedies provided by law. If it is determined that the Association improperly terminated this contract for default, such termination shall be deemed a termination for the Association's convenience.

Severance

If any provision of this Agreement is determined to be unenforceable or invalid under any applicable statute or rule of law, the remaining provision of this Agreement shall not be affected and shall remain in full force and effect.

Entire Agreement

This Agreement is the complete and exclusive statement of the arrangement between the parties, and supersedes all proposals, oral or written, and all other communications between the parties relating to the subject matter thereof. It may be amended from time to time by mutual consent of the parties hereto, by writing executed in due form by both parties.

Assignment of Rights

Neither party may assign its rights or obligation under this Agreement, without the prior written consent of the other party.

Appendix A

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┌─────────────────────────────────┐
│          Flowchart 3            │
│       3.1 Geography Selection    │
└─────────────────────────────────┘
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Select **Summary Level**
- State
- County
  - County Subdivisions
  - Place (year vintage)
  - Metropolitan Areas (year vintage).
- PUMA
- POW PUMA
- MSA Principal City

- Select **Specific Geographic Area**(s)

Select from text list

Select using a map (GIS interface)

Flowchart 4
4.0 Browsing/Examining the DATA

Add Calculated Fields
Aggregate categories
Aggregate geography
Map the data
Create Charts, graphs.

Add a Calculated Field
Create new field using
existing variables. Add,
subtract, multiply, divide.
Calc %.

Aggregate Geography
If geography is a row, or
column, add similar to
adding categories.

Create charts, graphs.
Bar, line, pie charts

Aggregate categories
e.g., Add "bus" and "rail"
to create "total transit"

Map the data
Thematic maps:
quartiles, quintiles
Concentric rings
Spider diagrams for
flows

4.A DATA ANALYSIS
- − Trend analysis (analyze multiple years)
- − "Colorview"™

4.1 Trend Analysis

4.2 "Colorview"™

4.3 Import other data

5.0 EXPORT, PRINT, SAVE the Data
- Spreadsheets
- Databases
- GIS formats

Spreadsheets
- XLS
- CSV
- TXT
- ASCII

GIS
- SHP

Database
- DBF
- MDB

Images:
- BMP
- WMF
- JPG
- PDF