

CITY OF EL PASO, TEXAS
AGENDA ITEM DEPARTMENT HEAD'S SUMMARY FORM

DEPARTMENT: Street Department
AGENDA DATE: October 7, 2008
CONTACT PERSON/PHONE: Daryl W. Cole 621-6750
DISTRICT(S) AFFECTED: Citywide

SUBJECT:

Approval for the City Manager to sign Task Order No. 004 to the Master Purchase Agreement between the City of El Paso, Texas and Environmental Systems Research Institute, Inc., (ESRI) (agreement No. 2006MPA316).

BACKGROUND / DISCUSSION:

Task Order No. 004 will include the pavement condition survey, pavement image processing, and pavement distress recording of approximately 500 centerline miles of pavement within the City of El Paso as part of the City's pavement management program and of agreement No. 2006MPA316.

PRIOR COUNCIL ACTION:

Agreement No. 2006MPA316 was approved by City Council on July 5, 2006

AMOUNT AND SOURCE OF FUNDING:

\$322,032.00, funded by 2006 Certificates of Obligation; DeptID 99331117, fund 27263, Project PST07003, account 508027.

BOARD / COMMISSION ACTION:

N/A

*****REQUIRED AUTHORIZATION*****

LEGAL: (if required) _____ **FINANCE:** (if required) _____

DEPARTMENT HEAD: _____
Du Cole
9/23

CC: Jane Shang, Deputy City Manager, Mobility Services
Pat Aauto, Deputy City Manager, Development and Infrastructure Services

APPROVED FOR AGENDA:

CITY MANAGER: _____ **DATE:** _____

JOHN COOK
MAYOR



CITY COUNCIL

ANN MORGAN LILLY, DISTRICT 1
SUSANNAH M. BYRD, DISTRICT 2
EMMA ACOSTA, DISTRICT 3
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CITY MANAGER

JANE SHANG
DEPUTY CITY MANAGER

DARYL W. COLE
STREETS DIRECTOR

STREET DEPARTMENT

Oct 2, 2008

To: The Honorable Mayor & City Council
Joyce Wilson, City Manager
Jane Shang, Deputy City Manager, Mobility Services
Pat Adatao, Deputy City Manager, Development and Infrastructure Services

Fm: Daryl W. Cole, Streets Director

A handwritten signature in black ink, appearing to read "Daryl W. Cole", with the date "10/2/08" written below it.

Subj: Task Order No. 004 to the Master Purchase Agreement between the City of El Paso, Texas and Environmental Systems Research Institute, Inc., (ESRI) (agreement No. 2006MPA316).

The approval of this task order allows the City to update the pavement condition inventory of 500 centerline miles of collector and arterial streets within the City network. The pavement condition of these particular streets were last collected in 2004; a critical requirement of the City's pavement management program is to survey pavement conditions on a frequent year cycle in order to effectively monitor distresses and deteriorations over time.

Through this task order the, the Environmental Systems Research Institute will deploy an onsite mapping van to survey 500 centerline miles of pavement sections. The pavement images will be collected, processed, mapped, and delivered to the Street Department to provide an updated baseline for the City's Micro Paver system to produce pavement condition indexes for these collector and arterial streets. The updated pavement condition indexes are the primary tool utilized to identify candidate streets for the City's street resurfacing program.

In addition, this task order will produce the first benchmark of the deterioration of the City's network of collector and arterial streets over a five year period.

CITY CLERK DEPT.

08 SEP 24 PM 1:31

Agreement No. 2006MPA316
Task Order No. 004

In accordance with the terms and conditions of the above-referenced contract between Environmental Systems Research Institute, Inc. (ESRI), and the City of El Paso (Licensee), this Task Order authorizes delivery of the Deliverables described and in accordance with the terms, schedule, and start/end date(s) specified below.

1. Scope of Work: See Exhibit 1, which is attached hereto and incorporated herein by this reference.

In addition to the foregoing, Licensee agrees that its employees, representatives, and subcontractors will cooperate and communicate with ESRI during performance of this Task Order. Without cost to ESRI, Licensee shall provide, allow access to, or assist ESRI in obtaining all data ESRI requests for performance of this Task Order, including, but not limited to, (1) copies of previously prepared reports, maps, plans, surveys, records, and other documents in the control or possession of Licensee and (2) copies of ordinances, codes, regulations, or other governmental documents.

2. Contract Type: The Deliverables provided under Task 1 through 4 will be provided on a firm fixed price basis. Optional Task 5 will be provided on a time and materials basis in accordance with Exhibit 2, Time and Materials Rate Schedule.

3. Total Task Order Value: The total firm fixed price to provide the Deliverables defined in Exhibit 1 for Task 1 through Task 4 is \$322,032. The not to exceed price for optional Task 5 described in Exhibit 1 is \$50,000.

4. Delivery Schedule: Deliverables under this Task Order will be provided in accordance with the schedule in Exhibit 1.

5. Special Considerations: Transmap Corporation and Azteca Systems Inc. will be subcontractors to ESRI under this Task Order.

6. ESRI Project Manager: Eric Floss (678) 417-1883 ext. 8708
ESRI Senior Contract Administrator: Susan M. Keith (909) 793-2853 ext. 2798

ACCEPTED AND AGREED:

CITY OF EL PASO

(Licensee)

Signature: _____

Printed Name: _____

Title: _____

Date: _____

ENVIRONMENTAL SYSTEMS RESEARCH
INSTITUTE INC.

(ESRI)

Signature: _____

Printed Name: _____

Title: _____

Date: _____

APPROVED AS TO FORM:



Bertha A. Ontiveros
Assistant City Attorney

APPROVED AS TO CONTENT:

Joyce Wilson
City Manager

Exhibit I
Task Order No. 004
Agreement No. 2006MPA316

Scope of Work

Section 1.0 Overview

ESRI and its subcontractors, TransMap Corporation and Azteca Systems Inc. (“ESRI Team”) will provide the scope of work below to assist the City with updating the City’s pavement condition and asset survey.

The scope of services described in this scope of work is similar in nature to the services performed during Phase I - III of the TMIS project. However, the pavement condition survey described below will cover approximately 500 centerline miles of pavement within the City of El Paso as part of the city’s pavement management cyclical program. ESRI will deploy TransMap’s ON-SIGHT mapping van in the City to survey the 500 centerline miles of pavement sections. ESRI will then process the images and record pavement distress information for up to 6 distresses on the entire 500 miles of newly collected images. The asset survey will cover approximately 17 centerline miles of linear lane assets.

During previous phases that have been completed, 483 out-of 500 miles were driven by Transmap, resulting in the creation of a centerline, LRS, and pavement network. The City has updated the centerline basemap to include the 17 miles of new roadway. Therefore, ESRI will only create an LRS, and pavement network for 17 miles of road. The remaining 483 miles will reference data related to the existing centerline, LRS, and pavement network in the TMIS system. ESRI will also provide data loading and implementation services under this scope of work.

The following is a summary of the scope of work as more fully defined in section 2.0 below.

Task 1.0 Kickoff and Project Initiation

- Task 1.1 – Project Kickoff Meeting
- Task 1.2 – Operations Manual Review and Update
- Task 1.3 – Legacy Data Load
- Task 1.4 – Mobilization

Task 2.0 ON-SIGHT Imaging and GIS Development

- Task 2.1 – ON-SIGHT Imaging
- Task 2.2 – LRS Creation
- Task 2.3 – LRS Integration

Task 3.0 Pavement Condition Survey

- Task 3.1 – Pavement Network Creation and Integration
- Task 3.2 – Pavement Condition Survey
- Task 3.3 – Pavement Data Loading and Testing
- Task 3.4 – Asset Data Collection
- Task 3.5 – Asset Data Loading and Testing
- Task 3.6 – Onsite Pavement and Asset Review Meeting

Task 4.0 Onsite Implementation and Configuration

Task 5.0 Optional Training, User Conferences and Ad-Hoc Support

Section 2.0 Scope of Work

Task 1.0 Kickoff and Project Initiation

Task 1.1 – Project Kickoff Meeting

To initiate the project, ESRI will hold a two-day kickoff meeting at City offices. On the first day of the kickoff meeting, the ESRI Team will meet with the City project manager and appropriate City staff to review the kickoff meeting agenda for no longer than three hours. Prior to the project kickoff meeting, ESRI will submit a draft kickoff meeting agenda for the City's review and comments. ESRI will incorporate mutually-agreed upon changes into a final kickoff meeting agenda. The City will provide ESRI with the requested supporting documentation related to its pavement management and asset management programs prior to the start of the kickoff meeting. This information, along with the operations and feature definition manuals produced during the Phases I - III TMIS projects, will be reviewed and discussed by the meeting participants. Questions related to implementation approach, project deliverables, and the project schedule will also be discussed, and any agreed-upon action items will be documented by ESRI in a follow-up kickoff meeting memorandum.

During the afternoon session of the kickoff meeting, ESRI and TransMap will introduce the City's project stakeholders to ESRI's data collection approach for this scope of work. ESRI will present its field data collection plan to help facilitate the proper level of discussion between SRI, Transmap and the City stakeholders. The pavement condition survey approach will closely match ESRI's pavement condition survey completed under the TMIS Phases I - III projects, allowing integration with the data already developed. New techniques and new pavement survey distresses will be discussed to determine how such methods and new distress values will be included in the pavement condition survey and subsequently incorporated into the TMIS system. The asset survey procedures will also be discussed.

During the second day of project kickoff meeting, ESRI and TransMap will meet with City project staff to review the operations manual from Phase III. The operations manual will be used as a starting point during this meeting to add mutually agreed-upon new assets to the master asset list.

Two weeks after completion of the two-day kickoff meeting, ESRI will deliver a draft kickoff meeting memorandum to the City for review. The memorandum will document action items resulting from the kickoff meeting. The City will have 10 business days to review the memorandum and provide its written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the final memorandum for acceptance. The City will provide its written acceptance within 2 business days after receiving the final memorandum.

City of El Paso Responsibilities

- Ensure participation of appropriate staff during the two-day project kickoff meeting.
- Provide appropriate meeting facilities and equipment.
- Provide written acceptance within 2 business days after receiving the final memorandum.

ESRI Deliverables

- Attend two-day kickoff meeting.
- Draft and final versions of kickoff meeting agenda.
- Draft and final versions of the kickoff meeting memorandum.

Task 1.2 – Operations Manual Review and Update

The TMIS project operations manual previously prepared by ESRI and TransMap will be updated by ESRI to include the expanded pavement condition survey details. ESRI will also update the manual to include the specifications for producing the pavement condition database, acceptance criteria, and quality control (QC) procedures. The City will have 10 business days to review the operations manual and provide its written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the final

operations manual for acceptance. The City will provide its written acceptance within 2 business days after receiving the final operations manual.

Prior to the kickoff meeting, the City will provide ESRI with any existing maps (digital and paper), orthophotographs, and other records requested by ESRI that detail the road network to be surveyed/inventoried. These City-provided materials will be used as a reference for planning and conducting the work in subsequent tasks. The City and ESRI will work together to specifically identify the roads to be driven by TransMap (i.e., maximum of 500 centerline miles of roads) during the asset and pavement condition survey. Prior to the image collection in Task 2.1 below, the City and ESRI will mutually agree on the route naming conventions to be used for the project and document in the operations manual.

Prior to and following the kickoff meeting, the City should anticipate supporting ESRI during this subtask by responding to ESRI questions and requests for clarification in a timely manner. It is anticipated that frequent e-mail and telephone exchanges between ESRI, Transmap and the City project manager, GIS Manager, Assistant Street Director and Pavement Manager will be required.

City of El Paso Responsibilities

- Provide ESRI with existing maps (digital and paper), orthophotographs, and other records that detail the road network to be surveyed/inventoried, as requested by ESRI.
- Define route naming conventions prior to the start of image collection.
- Ensure appropriate staff members are available to answer questions and provide clarification in a timely manner.
- Provide written acceptance within 2 business days after receiving the final operations manual.

ESRI Deliverable

- Prepare draft and final versions of the updated operations manual

Assumptions

- The final TMIS data model delivered by ESRI during Phase III will be used as the basis for the pavement and asset survey under this scope of work.
- The existing TMIS UML delivered by ESRI during Phase III will be used as the database design for this project.

Task 1.3 – Legacy Data Load

Via its subcontractor, TransMap, ESRI will load Phases I - III ON-SIGHT imagery, orthophotography, and asset and pavement features taken from archived disks stored by TransMap into the TransMap production environment. This data will serve as a starting point for data collection and integration under this scope of work.

ESRI Deliverable

- Load legacy data into production environment at TransMap.

Task 1.4 – Mobilization

Via its subcontractor, TransMap, ESRI will mobilize field crew and necessary gear and equipment to prepare the ON-SIGHT mapping van for the pavement condition survey specified in this scope of work.

TransMap will coordinate with the City so that the City may notify appropriate local authorities and citizens of the ongoing ON-SIGHT survey. This may require the City to post a public notification on the City web site, distribute letters to citizens, and contact local police agencies or provide other types of notifications. The City will appoint a point of contact that will remain available during the time TransMap staff and equipment are mobilized in the City

of El Paso to answer questions and provide clarification when needed. The City point of contact must be available via telephone after normal business hours.

City of El Paso Responsibilities

- Provide notification to appropriate agencies and citizens of upcoming survey work.
- Provide a City point of contact to respond to ESRI questions and requests for information and provide clarification on driving routes and data collection.

ESRI Deliverable

- Mobilize the ON-SIGHT mapping van, crew, and equipment.

Assumptions

- Prior to ESRI mobilizing for this task, the City will advise all required agencies and citizens of upcoming survey work.

Task 2.0 ON-SIGHT Imaging and GIS Development

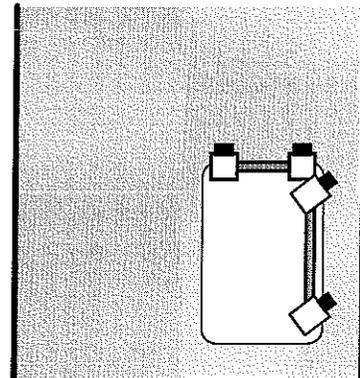
Task 2.1 – ON-SIGHT Imaging

Via its subcontractor, TransMap, ESRI will drive the ON-SIGHT mapping van along approximately 500 centerline miles of roads, in accordance with the operations manual defined during Task 1.2, and capture right-of-way (ROW) images in a single travel direction on both sides of each street. For this task, TransMap will employ the following equipment installed in the mapping van:

A dual-frequency, survey-grade global positioning system (GPS) receiver

An inertial navigation system

Four digital, progressive scan, color cameras



Roads will be driven in both directions with four cameras, two pointing in the driving direction and two pointing 45 degrees to the right. The spacing between images will be 35 to 40 feet. The images are geolocated with GPS and the ON-SIGHT van's inertial navigation system.

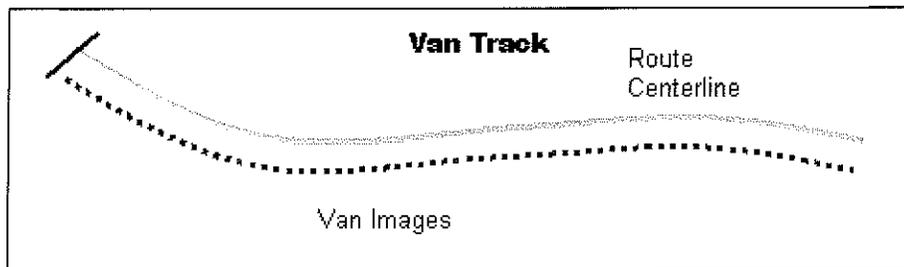
ESRI will provide the City with imaging products as follows:

Digital Stereo Images: images compressed in the JPEG format. ESRI will deliver the digital stereo images to the City on a removable USB hard drive. It will be the City's responsibility to ensure the appropriate storage space is available on its hard drive for transferring the images from the removable hard drive. The City will return the removable hard drive to ESRI via FedEx or UPS within 30 calendar days after receipt.

Van Track: The van track is the collection of positions and related orientations at which images are taken. This track becomes the link between geographic locations and the images that users of the data will employ.

ESRI will deliver the van track as an ESRI geodatabase feature class to the City. The van track will then be loaded into the TMIS geodatabase by ESRI during Task 4.0.

Example of ON-SIGHT Van Track



City of El Paso Responsibilities

- Transfer digital stereo images onto a permanent storage device owned by the City.

ESRI Deliverables

- Deliver digital stereo images for the 500 centerline miles driven in compressed JPEG format in a removable USB drive.
- Deliver van track coordinates for the 500 centerline miles in a point geodatabase feature class via CD-ROM or secured FTP data transfer.

Task 2.2 – LRS Creation

Prior to commencement of this task, the City must supply ESRI with the most current City GIS digital centerline basemap and orthographic photography of the City with specified coordinate information (including the 17 miles of new roads to-be driven by Transmap).

On receipt of the City's basemap, ESRI, in conjunction with TransMap, will provide a linear reference system (LRS) for the 17 centerline miles (i.e., only new roads surveyed with the ON-SIGHT van). The methodology used in this task will be similar to the previous work performed by ESRI during the TMIS Phase I - III projects.

TransMap will create an LRS from the network route centerline basemap. TransMap will use ESRI's ArcInfo to link the segments by route using the following rules:

- For each route, the increasing milepost direction must be established by TransMap. Route direction (increasing milepost direction) for network routes will be determined by using Federal Highway Administration Guidelines.
- The common rule for milepost direction is the Federal Function Class (FFC). The FFC denotes milepost values increasing from the southwest to northeast. Rule, specific assignment, or a combination of both will solve special circumstance situations. Specific examples of special circumstances are mentioned in the following paragraphs. TransMap will work with the City and ESRI to determine the appropriate assignments.
- Routes that exhibit the following circumstances will have milepost values assigned in the manner described:
 - *Overlaps.* In cases where a route jogs, then resumes at another location on the intersecting route, milepost values will not accrue through the overlap area.

- *Gaps.* Milepost values will not accrue through a permanent physical discontinuity. The milepost value at the start of a gap will be the same value referenced when the route resumes.
- *Divided routes.* Divided routes will be treated as one route with the basemap containing only one line within the divided segment.
- *Cul-de-sacs.* Centerlines for cul-de-sacs will be adjusted to represent straight lines that extend to the middle of the court, regardless of whether an island exists.
- *Inlets (Eyebrows) & Turn Lanes.* Centerlines not considered as a divided route, but existing to represent inlets to housing groups, entrances to building complexes, or turn lanes, will not be used as part of the LRS. The main thoroughfare with which they share Route Name and/or Route ID will be the line segments used to assign milepost and offset values.

The LRS that TransMap will be constructed from the centerline basemap of network routes will allow for map display using milepost, offset, and route number as a reference, without the need for coordinate locations.

TransMap will create the LRS using the arc attributes' route number and surface length values. Individual segments will be grouped into routes and surface length values will be added to give a total length to each route. TransMap will then edit the route system to define the travel direction of each route by identifying the beginning segment.

Each route will be identified by Street Name and/or Street ID. The nodes at intersections along the roadway will serve as reference points (anchor or log nodes) for the linear reference system.

TransMap and ESRI will not be responsible for inaccuracies or enhancements to the centerline alignment and address range data during LRS creation process. The City is best equipped to verify and correct alignments and address range data in accordance with citywide standards. If any inaccuracies are discovered or enhancements required, the City will modify or enhance the GIS centerline prior to and during this task, as requested by ESRI.

Upon completion of Task 2.2, ESRI and TransMap will develop an LRS for 17 centerline miles that were surveyed with the ON-SIGHT van. The City will have 5 business days to review the LRS and provide its written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the final LRS for acceptance. The City will provide its written acceptance within 2 business days after receiving the final LRS.

City of El Paso Responsibilities

- Provide appropriate GIS staff to ESRI and TransMap to answer questions and provide clarification.
- Provide ESRI and TransMap with a current street centerline basemap prior to commencement of this task (including 17 miles of new roads to-be driven by Transmap).
- Modify or enhance the GIS centerline 2 weeks prior to the start and during this task, as requested by ESRI.
- Provide written acceptance within 2 business days after receiving the final LRS.

ESRI Deliverable

- Deliver LRS for the 17 centerline miles surveyed by Transmap. The data will be delivered in geodatabase feature class via CD-ROM or a secure FTP data transfer.

Assumptions

- TransMap and ESRI will not be responsible for inaccuracies or enhancements to the centerline basemap and address range data during the LRS creation process.
- The City will review and provide written acceptance of the LRS prior to commencement of Task 2.3.

Task 2.3 – LRS Integration

Upon completion of Task 2.2, TransMap will integrate the LRS for the newly collected 17 centerline miles with the Citywide LRS collected during the Phase I - III projects. Once integrated, ESRI will deliver a LRS with approximately 2417 centerlines miles to the City for review and acceptance. The City will have 5 business days to review the Integrated LRS and provide its written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the final Integrated LRS for acceptance. The City will provide its written acceptance within 2 business days after receiving the final Integrated LRS. The methodology used in this task will be similar to the methodology used by ESRI in previous work performed during the TMIS Phase I - III projects.

ESRI will not be responsible for inaccuracies or enhancements to the centerline basemap and address range data during the integration process.

City of El Paso Responsibilities

- Provide appropriate GIS staff to ESRI and TransMap to answer questions and provide clarification.
- Modify or enhance the GIS centerline prior to and during this task, as requested by ESRI.
- Provide written acceptance within 2 business days after receiving the final Integrated LRS

ESRI Deliverable

- Integrated LRS for up to 2417 centerline miles in geodatabase feature class via CD-ROM or a secure FTP data transfer.

Assumptions

- Task 2.2 must be completed and by the City prior to commencement of this task.
- ESRI will not be responsible for inaccuracies or enhancements to the centerline basemap and address range data during the LRS integration process.
- The City will review and provide written acceptance of Integrated LRS prior to commencement of Task 3.1

Task 3.0 Pavement Condition Survey

Task 3.1 – Pavement Network Creation and Integration

During this task, ESRI will create a pavement network for only the 17 centerline miles of new roads required for the MicroPAVER software. The pavement network creation process defines the road network as a pavement network. From the integrated LRS delivered in Task 2.3, ESRI will create the network, branch, section, and inspection system in MicroPAVER that will be used as the foundation for the road pavement condition survey. The same methodology used during the TMIS Phase I - III projects will be used for this road pavement condition survey. The City will provide appropriate staff to provide clarification and answer questions from ESRI and TransMap pertaining to the pavement network creation.

Upon completion of the pavement network creation for the newly collected 17 miles of roadway, TransMap will integrate the pavement network for the newly collected 17 centerline miles with the citywide pavement network collected during the Phase I - III projects. Once integrated, ESRI will deliver a pavement network with approximately 2417 centerlines miles to the City for review and acceptance. The City will have 5 business days to review the pavement network and provide its written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the final pavement network for acceptance. The City will provide its written acceptance within 2 business days after receiving the final pavement network. The methodology used in this task will be similar to the methodology used by ESRI in previous work performed during the TMIS Phase I - III projects.

ESRI will not be responsible for inaccuracies or enhancements to the pavement network data during the integration process.

City of El Paso Responsibilities

- Provide clarification and answer questions from ESRI and TransMap pertaining to the pavement network creation.
- Provide ESRI and TransMap with access to appropriate GIS staff for clarification.
- Modify or enhance the existing pavement network data prior to and during this task, as requested by ESRI.
- Provide written acceptance within 2 business days after receiving the final pavement network

ESRI Deliverables

- Geodatabase feature class of a pavement network for the 17 centerline miles surveyed during Phase III.
- Integrated pavement network for up to 2417 centerline miles in geodatabase feature class via CD-ROM or a secure FTP data transfer.

Assumptions

- Task 2.3 must be completed and by the City prior to commencement of this task.
- ESRI will not be responsible for inaccuracies or enhancements to the pavement network data during the integration process.
- The City will review and provide written acceptance of pavement network prior to commencement of Task 3.2.

Task 3.2 – Pavement Condition Survey

ESRI will collect pavement condition distress information along 500 miles of roadway identified in Task 1.2. The distress data listed in Table 3.2.1 below will be collected using the same methodology used by ESRI in Phase I and II of the TMIS projects. On asphalt, six surface distress data items will be captured and interpreted from digital imagery for designated centerline miles of roadway imaged by the ON-SIGHT van. For concrete sections, slab count slab width and length, corner breaks, patching and divided slab will be collected.

Upon completion of this task, the City will have approximately 2417 miles of pavement sections data with 6 distresses and an overall PCI Index. This approximation includes the original 2400 miles pavement section data that were collected by ESRI during the TMIS Phases I - III projects.

*Table 1 Pavement Surface Distress Data for MicroPAVER
Asphalt – Flexible Pavements*

Distress	Description
Alligator Cracking	Surface cracking shaped like alligator skin
Pothole	Asphalt missing from surface layer
Longitudinal/Transverse Cracking	Cracking that is longitudinal to the roadway or transverse to the roadway
Patch/Utility Cut	Section of roadway removed and replaced
Slippage Cracking	Cracking denoting slipping of surface layer and under layers
Block Cracking	Cracking that has formed a block pattern

Concrete – Rigid Pavements

Distress	Description
Slab Count	Number of Slabs Present within section
Slab Width	Width of concrete slabs
Slab Length	Length of concrete slabs
Corner Breaks	Edges of slabs broken
Patching	Patching present in concrete
Divided Slab	Slab fully divided

Once the pavement distresses data have been collected, they will be combined to form an index rating on a scale of 0 (failed) - 100 (excellent).

ESRI and TransMap will prepare a MicroPAVER database loader file in accordance with specifications and format predefined in the operations manual updated during Task 1.2. This database loader file will be used by ESRI to populate the MicroPAVER software.

City of El Paso Responsibility

- Provide ESRI and TransMap with access to appropriate City pavement and engineering staff for providing clarification.

ESRI Deliverables

- Geodatabase line feature class with pavement distress quantities for 500 miles of new centerlines.
- Loader file with PCI index calculated ready for data import in the MicroPAVER software

Task 3.3 – Pavement Data Loading and Testing

ESRI will begin this task by updating the City's existing TMIS geodatabase from Phase III to support the newly created pavement distress data and feature class modifications, if any. ESRI will then load the following data sets into an ArcSDE SQL Server geodatabase located at its corporate headquarters in Redlands, California. This file will be a copy of the TMIS database in production at the City and will include the following data:

- 500 miles of newly collected pavement distresses
- Street centerline basemap, integrated with the newly collected 17 miles of geometry
- Pavement network feature classes for the 500 miles of pavement sections

The City will not make any modification or perform any transactions on the above files until ESRI notifies the City that Task 3.3 is complete.

Prior to loading and testing the TMIS geodatabase, ESRI will produce a source data layer and attribute matrix that will indicate how the data is to be loaded into the geodatabase data structure. This will be used by ESRI for its internal data loading and testing purposes.

ESRI will conduct quality assurance tests during this entire data loading task; these will include testing the data from within ArcMap, Cityworks and MicroPAVER. ESRI will not be responsible for any software inconsistencies and bugs that impact the QA tests performed during this task, only data validation issues will be addressed.

City of El Paso Responsibility

- Provide ESRI with existing TMIS database in production

ESRI Deliverable

- Load and test geodatabase with newly collected pavement condition survey data.

Assumptions

- ESRI will only collect pavement information that is visible from the ON-SIGHT Van images.

Task 3.4 – Asset Data Collection

TransMap’s stereo measurement software will be used by Transmap production staff to locate assets visible in the stereo images and convert that picture location to a geographic coordinate along 17 centerline miles of roadway.

An LRS will be established to represent linear assets in TMIS. The beginning and ending points of linear assets are established by *x,y,z* coordinates. Those coordinates are then translated into milepost and offset values. Linear assets will be represented by their beginning and ending mileposts according to their location within a route.

The following linear assets will be inventoried by TransMap during this task:

**Table 2
Linear Assets**

Features	Standard Attributes
Lanes	Count, Location
Pavement Width	Value, Location
Pavement Type	Asphalt/Concrete/Other, Location

Task 3.5 – Asset Data Loading and Testing

ESRI will begin this task by updating the existing TMIS geodatabase from Phase III to support the newly created asset data and feature class modifications, if any. ESRI will then load the following data sets into an ArcSDE SQL Server geodatabase located at its corporate headquarters in Redlands, California. This file will be a copy of the TMIS database in production at the City and will include the following data:

- 17 miles of newly collected asset features described in Task 3.4.

The City will not make any modification or perform any transactions on the above files until ESRI notifies the City that Task 3.5 is complete.

Prior to loading and testing the TMIS geodatabase, ESRI will produce a source data layer and attribute matrix that will indicate how the data is to be loaded into the geodatabase data structure. This will be used by ESRI for its internal data loading and testing purposes

ESRI will conduct quality assurance tests during this entire data loading task; these will include testing the data from within Cityworks and ArcGIS. ESRI will not be responsible for any software inconsistencies and bugs that impact the QA tests performed during this task, only data validation issues will be addressed

City of El Paso Responsibility

- Provide ESRI with existing TMIS database in production

ESRI Deliverable

- Load and test geodatabase with newly collected asset data for 17 centerline miles of roadway

Assumptions

- ESRI will only collect assets that are visible from the ON-SIGHT Van images.

Task 3.6 – On-site Pavement and Asset Review Meeting

When the pavement condition survey and asset inventory have been accepted in Tasks 3.4 and 3.5, a representative set of the data and images will be delivered to the City. ESRI will then schedule and attend a two-day on-site pavement and asset review meeting with the City to determine whether the data and images were collected in accordance with the operations manual and are ready to be loaded into the City's TMIS system. If inconsistencies are discovered, they will be noted in the subsequent memorandum developed during this task. Any data inconsistencies that are within this scope of work and agreed upon by all parties will be corrected by Transmap prior the start of Task 4.0. During this meeting, ESRI will accompany the City to conduct field verification of pavement conditions and assets at various sample sites throughout the City. ESRI and the City will mutually agree on as many as 3 sample sites spanning no more than 2 miles in all.

The City shall provide transportation for the entire team to and from the sample sites.

Within one week after the on-site pavement and asset review meeting ESRI will deliver a draft on-site pavement and asset review meeting memorandum including agreed-upon action items. The City will have 10 days to review the memorandum and provide written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the final memorandum. The City will have 5 business days to review the memorandum and provide its written consolidated comments to ESRI. ESRI will incorporate the City's comments, as appropriate, and resubmit the memorandum for acceptance. The City will provide its written acceptance within 2 business days after receiving the final memorandum.

City of El Paso Responsibilities

- Provide appropriate meeting room and equipment
- Mutually agree with ESRI on the 3 sample site locations and extent prior to the three-day on-site review meeting.
- Ensure appropriate City staff participate in the pavement and asset review meeting
- The City shall provide transportation for the entire team to/from the sample sites
- Review memo and provide consolidated comments within 5 days
- Provide ESRI with written acceptance of the pavement and asset review meeting memorandum within 2 days after receipt of the memorandum

ESRI Deliverables

- Onsite review meeting agenda (prior to meeting).
- Participation in the two (2) day onsite pavement and asset review meeting.
- Draft and final on-site pavement and asset review meeting memorandum.

Assumptions

- The sampling sites shall be no more than 3 in number and not more than 2 miles in total.

Task 4.0 Onsite Implementation and Configuration

Once the pavement and asset data loading has been completed and tested at ESRI facilities in Redlands, California, (Tasks 3.3 and 3.5) ESRI will travel to the City and spend up to three consecutive business days loading the data prepared and tested during Tasks 3.3 and 3.5 into the City's TMIS system production environment. The on-site visit will include the preparation, configuration, and loading of pavement and asset data by ESRI into the ArcSDE TMIS

geodatabase. ESRI and the City will verify that the data can be accessed and functions in accordance with operations manual from within Cityworks, ArcGIS and MicroPAVER.

The city will ensure its technical staff is available during the entire duration of the on-site visit to support ESRI and its subcontractors with the implementation and configuration.

On completion of the on-site visit and verification of the pavement and asset data loading, the City will provide ESRI with written acceptance of this entire scope of work (final acceptance).

City of El Paso Responsibilities

- Written acceptance to ESRI on completion of the Onsite implementation and configuration Task 4.0.
- Ensure that technical support staff (Database Administrator and GIS Manager) is available during the entire week to support the on-site implementation and configuration.

ESRI Deliverables

- Configure MicroPAVER, Cityworks, and the ArcSDE geodatabase to support the new pavement and asset inventory.
- Load the new pavement condition inventory and asset data into the TMIS system on-site at the City.
- Three (3) days of on-site implementation and configuration.

Task 5.0 Training, User Conferences and Ad-Hoc Support (Optional)

The not-to-exceed price for this task can be used to support ESRI and Azteca-related training and Azteca user conference attendance. In addition to product training and user conference attendance, ESRI can provide ad-hoc support on an as-needed basis under this task up to the remaining budget. Upon request, ESRI can provide the City with a quote or proposal for additional services under this task up to the budgeted amount.

City of El Paso Responsibilities

- Ensure funds are available prior to requesting work to be performed under this task.
- Assume all other direct costs such as travel (airfare, hotel and per diem) arrangements and expenses.

ESRI Deliverable

- Provide up to \$50,000 of support for User Conference, Training and Ad-Hoc Support

General Assumptions

- All centerline basemap source data will be provided by the City to ESRI prior to the commencement of the project (including 17 miles of new roads to-be driven by Transmap).
- The approximation used for the purposes of this scope of work includes the original 2400 miles pavement section data that were collected by ESRI during the TMIS Phases I - III projects. The city will be responsible for furnishing this data at the project start-up.
- ESRI will not be responsible for the correction of any centerline basemap features or characteristics of these features. ESRI will communicate any inconsistencies found in the centerline basemap to the City GIS Manager for review and correction.

- The City will ensure the participation of the appropriate staff throughout the project, including a designated project manager, the City's GIS Manager, Database Administrator, Lead Pavement Engineer and any other staff necessary to support the project tasks in a timely manner.
- City personnel will be available as needed to answer questions during the project.
- It is understood that under this scope of work, ESRI will be employing the same data collection procedures it used during the previous City TMIS projects.
- Unless otherwise specified, all references to "day" means one business day.
- Where meetings or workshops span multiple days ESRI assumes meetings are conducted over the course of consecutive business days.
- City has signed the appropriate software licenses with the applicable vendor, prior to the start of Task 1.1.

Section 3.0 Schedule

The scope of work has been assembled for a project lasting between 5-6 months from initiation to final acceptance.

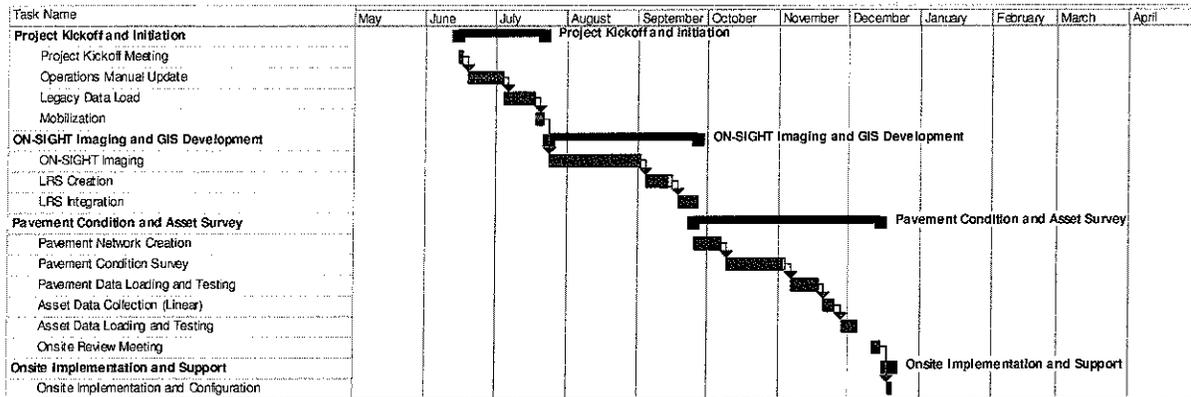


Exhibit 2
Task Order No. 004
Agreement No. 2006MPA316

Time and Materials Rate Schedule

Effective January 1, 2008

Hourly time and materials labor rates have been provided for each labor category for calendar year 2008. The hourly labor rates for services that are performed after 2008 may be escalated in an amount not to exceed seven and one-half percent (7.5%) each year. Other direct costs, such as travel, reproduction, subcontractor, telecommunication/freight, or materials, will be charged a material handling fee and invoiced.

Principal

Hourly Rate: \$332/Hour

These staff members work as program directors or project advisors providing project vision, strategic consulting, and program management for all types of geographic information system (GIS) projects. They apply market/application domain expertise and have extensive experience in GIS and related technologies. Consulting activities may include strategic planning, review and oversight of requirements definition, application and database design, and system integration consulting. Management activities may include defining program requirements, establishing budgets and schedules, allocating staff and other resources, and managing and overseeing subcontractor activities. These staff members work with senior client staff and have the support of senior ESRI corporate staff to ensure successful project completion.

Senior Consultant

Hourly Rate: \$251/Hour

These staff members work as project managers or project advisors providing strategic consulting and program management for all types of GIS projects. They apply market/application domain expertise and have extensive experience in GIS and related technologies. Consulting activities may include strategic planning, GIS workshops and seminars, requirements definition, application and database design and development, and system integration consulting. Management activities may include defining program requirements, establishing budgets and schedules, allocating staff and other resources, and managing and overseeing subcontractor activities. They design comprehensive work plans that employ structured systems methodologies, which define project deliverables, milestones, and realistic schedules.

Consultant

Hourly Rate: \$200/Hour

These staff members provide day-to-day consulting and management of contracted projects within ESRI. They work under the guidance of senior ESRI consulting staff and support the design and implementation of defined work plans. They provide traditional consulting services and design and management support to application development projects and database conversion projects. They conduct detailed requirements interviews, document application requirements, develop logical and physical database designs using computer-aided software engineering (CASE) tools and entity-relationship (E-R) diagramming methodologies, design and develop software and database quality assurance/quality control (QA/QC) programs, and provide management oversight of daily technical activities. They work with senior consulting and technical staff to design comprehensive work plans that employ structured systems methodologies, which define project deliverables, milestones, and realistic schedules. These staff members also work with ESRI administrative staff to ensure that progress and financial reporting is provided according to contract requirements.

Senior Technical Designer

Hourly Rate: \$259/Hour

These staff members are the senior technical staff at ESRI. They provide the overall technical vision and system architecture for large complex systems. They apply sound software engineering principles and life cycle methodologies to projects. They are actively involved in systems architecture design, application software design, database process design, and all phases of coding including conducting design and code reviews. They may serve as the principal investigator in focused studies or research and development (R&D) projects. While staff members in this category have broad technical knowledge of GIS applications and related technologies, they also provide

specific expertise in areas such as Internet applications, data warehousing, spatial analysis, and modeling. They are proficient in ESRI software languages as well as third-generation programming languages, Internet markup languages, and other technologies.

Technical Designer

Hourly Rate: \$210/Hour

GIS system/software developers design technical project plans for the implementation of application software projects and database development projects. They oversee the day-to-day technical activities of the project team and ensure that appropriate systems methodologies are employed. They design and develop QA/QC programs and oversee design and code reviews, database reviews, and other QA/QC activities throughout the project life cycle. They perform detailed software design and detailed database conversion design and are directly involved in the coding and implementation of the more complex and strategic portions of application software and database conversion projects. They are proficient in ESRI software languages as well as third-generation programming languages, Internet markup languages, and other technologies.

Technical Analyst

Hourly Rate: \$163/Hour

Staff members in this category work independently to perform software coding and write software documentation to design specifications developed by senior staff. They also design and implement data conversion procedures. These staff members also perform software and database quality control and are proficient in the coding of software and processing of digital databases. They are also proficient in ESRI software languages as well as third-generation programming languages, Internet markup languages, and other technologies.

Database Analyst

Hourly Rate: \$138/Hour

These staff members provide database development support in creating cartographic and digital data products. Areas of expertise include performing data conversion, migration, and translation activities utilizing advanced processing techniques in ArcGIS software. In addition, these staff members design and implement efficient production tools and coordinate workflow with project personnel.



May 12, 2008

Mr. Daryl Cole
Streets Director
Street Department
City of El Paso
7969 San Paulo Drive
El Paso, TX 79907

Dear Mr. Cole:

ESRI has learned through Traffic Management Information System (TMIS) progress meetings and follow-up on-site meetings that the City of El Paso (City) would like to issue another task order for extension of the TMIS project. The ESRI team is excited about the opportunity to work with the City on another project. We have been particularly impressed by the City's effective use of the pavement condition survey data and tools delivered during the TMIS project.

In the proposed task order (attached), ESRI has teamed with TransMap and Azteca again to offer support to the City for its ongoing initiative to update the pavement condition and asset survey in the City. The scope of services described in the proposed task order is similar in nature to the services performed during Phase I - III of the TMIS project. This task order's pavement condition survey will cover approximately 500 centerline miles of pavement within the City of El Paso as part of the city's pavement management cyclical program. The ESRI team will deploy TransMap's ON-SIGHT mapping van in the City to survey the 500 centerline miles of pavement sections. The ESRI team will then process the images and record pavement distress information for up to 6 types of distresses on the entire 500 miles of newly collected images. The proposed asset survey will cover approximately 17 centerline miles of linear lane assets.

During previously completed phases, 483 of 500 miles were driven by Transmap, resulting in the creation of a centerline, LRS, and pavement network. The City has updated the centerline basemap to include 17 miles of new roadway. Therefore, ESRI will only create an LRS and pavement network for 17 miles of road. The remaining 483 miles will reference data related to the existing centerline, LRS, and pavement network in the TMIS system. ESRI will also provide data loading and implementation services under this task order.

Under the proposed task order, the City will be invoiced on a monthly basis, according to the percentage of work completed during the previous 30-day period. The price in the proposed task order is exclusive of applicable state and local taxes, for which the purchasing party shall remain liable. This proposal and associated schedule are valid for 60 days after ESRI's submittal of this proposed task order.

ESRI has included Task Order No. 004 for your review. If it meets with your approval, please contact me to discuss the next steps.

We look forward to working with you and your staff on this endeavor. If I can be of further assistance do not hesitate to contact me at (678) 417-1883 x 8708 or efloss@esri.com. For contractual questions please feel free to contact Susan Keith, Senior Contract Administrator, directly at (909) 793-2853 x 2798 or skeith@esri.com.

Sincerely,

Eric Floss
Group Lead, Professional Services
ESRI

cc: Susan Keith
Christopher Diersen,
Richard Bristol,
Daniel Kitka

Report ID: GLS8020
 Bus. Unit: COFEP--CITY OF EL PASO
 Ledger Grp: DETAIL_CC -- Detail For CC
 Currency : USD
 Chartfields Criteria
 Project: PST07003

PeopleSoft GL
 BUDGET STATUS REPORT

Page No. 1
 Run Date 09/23/2008
 Run Time 09:07:46

Account: 501000 to 508099

Budget Period: ALLYEARS

Fund: All values

Department: All values

<u>Project</u>	<u>Account</u>	<u>Budget Period</u>	<u>Fund</u>	<u>Department</u>	<u>Budget</u>	<u>Asso Revenue</u>	<u>PreEncumbrance</u>	<u>Encumbrance</u>	<u>Expense</u>	<u>Remaining</u>
PST07003	508022	ALLYEARS	27263	99331117	2,000.00	0.00	0.00	0.00	1,983.85	16.15
	508024	ALLYEARS	27263	99331117	6,000.00	0.00	0.00	12,073.52	2,691.48	-8,765.00
	508027	ALLYEARS	27263	99331117	992,000.00	0.00	0.00	0.00	323,235.50	668,764.50
Subtotal for Project PST07003 :					1,000,000.00	0.00	0.00	12,073.52	327,910.83	660,015.65
Grand Total :					1,000,000.00	0.00	0.00	12,073.52	327,910.83	660,015.65

End of Report