

# City of Las Cruces®

PEOPLE HELPING PEOPLE

## Council Action and Executive Summary

Item # 19 Ordinance/Resolution# 10-11-421A Council District:     

For Meeting of January 3, 2011  
(Adoption Date)

**TITLE:** A RESOLUTION AWARDING AN ENGINEERING SERVICES CONTRACT FOR THE PURCHASE OF PAVEMENT MAINTENANCE SOFTWARE AND ASSOCIATED DATA COLLECTION FROM TERRACON CONSULTING, INC. OF LAS CRUCES, NEW MEXICO IN THE AMOUNT OF \$222,228.30 PLUS \$16,806.02 FOR NEW MEXICO GROSS RECEIPTS TAX. THE CITY MANAGER IS AUTHORIZED TO APPROVE CHANGE ORDERS IN AN AMOUNT NOT TO EXCEED \$11,111.42 FOR A TOTAL PROJECT AUTHORIZATION AMOUNT OF \$250,145.74.

**PURPOSE(S) OF ACTION:** To award a contract for pavement maintenance services.

<b>Drafter and Staff Contact:</b> Amber Vaughn <i>AV</i>		<b>Department:</b> Public Works/Street Systems		<b>Phone:</b> 528-3228	
<b>Department</b>	<b>Signature</b>	<b>Phone</b>	<b>Department</b>	<b>Signature</b>	<b>Phone</b>
Public Works/ Mike Johnson	<i>[Signature]</i>	528-3333	Budget	<i>[Signature]</i>	541-2107
			Assistant City Manager	<i>[Signature]</i>	541-2271
Legal	<i>[Signature]</i>	541-2128	City Manager	<i>[Signature]</i>	541-2076

**BACKGROUND / KEY ISSUES / CONTRIBUTING FACTORS:**

The City of Las Cruces has approximately 575 lane miles of paved roadway within the city limits. It is therefore vitally important that the Public Works Department have a means to objectively measure and analyze the condition of all street pavements within the city limits.

The purchase of the pavement maintenance software will allow the City to evaluate the existing condition of streets; determine the pavement maintenance needs; and create a forecast of future maintenance projects and the requisite funding requirements to established goals for maintaining the condition of its street pavements. Without having an understanding of the current pavements conditions, the City may not focus maintenance projects on the streets with the greatest needs or may identify insufficient funding needed to maintain or improve the road conditions throughout the City of Las Cruces.

The existing funding source for street maintenance is the GRT Street Maintenance Fund 4202. The budget for the current fiscal year is \$2,500,000.00 for Overlay, Micro surfacing, chip seal and crack sealing.

The scope of the work undertaken by Terracon Consultants, Inc. will be to survey all streets within the City of Las Cruces using a vehicle equipped with a laser road surface

(Continue on additional sheets as required)

tester to scan and measure the road surfaces, cameras mounted on the vehicle will take digital photographs of the surrounding Right of Way and ground penetrating radar will assess the thickness and density of pavement surface and underlying sub-grade. On completion of the roadway survey, Terracon Consultants, Inc. will review the collected data through a Quality Assurance/Quality Control process in cooperation with personnel from the City of Las Cruces in order to ensure that only useful and quality data will pass through to the analysis. Once the database is finalized, Terracon Consultants, Inc. will analyze the data and propose various recommendations for future road maintenance programs. Additionally, all data collected by Terracon Consultants, Inc. will be imported into the GBA Master Series pavement maintenance software to be utilized by the Public Works department for its future pavement maintenance analysis and evaluation.

Terracon Consultants, Inc. of Las Cruces, New Mexico has issued a proposal utilizing Infrastructure Management Services (IMS) of Phoenix, Arizona as the subcontractor that will provide roadway condition assessment, data collection and software implementation for the pavement maintenance program for the streets of the City of Las Cruces. The Public Works Department has reviewed the proposal and has requested to utilize this submittal.

The Public Works Department recommends that the Council award the Pavement Maintenance Services project to Terracon Consultants, Inc. in the amount of \$222,228.30 plus \$16,806.02 for New Mexico Gross Receipts Tax and a contingency of \$11,111.42 for a total of \$250,145.74.

Strategic Plan Goal/ Objective/ Strategy Addressed: 3.4.4 Pavement management program.

**SUPPORT INFORMATION:**

1. Resolution No. 10-11-421A
2. Terracon Proposal for Pavement Management Services, Attachment "A"
3. Purchasing Manager's Request to Contract, Exhibit "A"

**SOURCE OF FUNDING:**

<b>Is this action already budgeted?</b>	Yes	<input checked="" type="checkbox"/>	See fund summary below
	No	<input type="checkbox"/>	If No, then check one below:
	<i>Budget Adjustment Attached</i>	<input type="checkbox"/>	Expense reallocated from: _____
		<input type="checkbox"/>	Proposed funding is from a new revenue source (i.e. grant; see details below)
	<input type="checkbox"/>	Proposed funding is from fund balance in the _____ Fund.	
<b>Does this action create any revenue?</b>	Yes	<input type="checkbox"/>	Funds will be deposited into this fund: _____ in the amount of \$ _____.

(Continue on additional sheets as required)

	No	<input checked="" type="checkbox"/>	There is no new revenue generated by this action.
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**FUND EXPENDITURE SUMMARY:**

Fund Name(s)	Account Number(s)	Expenditure Proposed	Available Budgeted Funds in Current FY	Remaining Funds	Purpose for Remaining Funds
GRT Street Maintenance (420)	42806090-851200	\$250,146	\$250,146	\$0.00	N/A

**OPTIONS / ALTERNATIVES:**

1. Vote "Yes"; this will approve the Resolution awarding a contract for the Pavement Maintenance Services project to Terracon Consultants, Inc. of Las Cruces, New Mexico in the amount of \$222,228.30 plus \$16,806.02 for New Mexico Gross Receipts Tax. The City manager is authorized to approve change order in an amount not to exceed \$11,111.42 for a total project authorization in the amount of \$250,145.74.
2. Vote "No"; this will not approve the Resolution awarding a contract for the Pavement Maintenance Services project to Terracon Consultants, Inc. of Las Cruces, New Mexico and no pavement maintenance services will be provided.
3. Vote to "Amend"; this would modify the Resolution and advise staff of necessary adjustments as deemed necessary.
4. Vote to "Table"; this could cause the quote to expire and cost the City extra funds for the pavement maintenance services.

**REFERENCE INFORMATION**

N/A

**RESOLUTION NO. 10-11-421A**

**A RESOLUTION AWARDING AN ENGINEERING SERVICES CONTRACT FOR THE PURCHASE OF PAVEMENT MAINTENANCE SOFTWARE AND ASSOCIATED DATA COLLECTION FROM TERRACON CONSULTING, INC. OF LAS CRUCES, NEW MEXICO IN THE AMOUNT OF \$222,228.30 PLUS \$16,806.02 FOR NEW MEXICO GROSS RECEIPTS TAX. THE CITY MANAGER IS AUTHORIZED TO APPROVE CHANGE ORDERS IN AN AMOUNT NOT TO EXCEED \$11,111.42 FOR A TOTAL PROJECT AUTHORIZATION AMOUNT OF \$250,145.74.**

The City Council of the City of Las Cruces is informed that:

**WHEREAS**, the City of Las Cruces Public Works Department needs the ability to objectively measure and analyze the condition of all street pavements within the city limits; and

**WHEREAS**, the analysis of the streets within the City will support the evaluation of the existing condition of streets; determine the pavement maintenance needs; and create a forecast of future maintenance projects and the requisite funding requirements to established goals for maintaining the condition of its street pavements; and

**WHEREAS**, Terracon Consultants, Inc. of Las Cruces, New Mexico has issued a proposal utilizing Infrastructure Management Services (IMS) of Phoenix, Arizona as the subcontractor that will provide the pavement management services and software; and

**WHEREAS**, the Public Works Department has reviewed the proposal and has requested to utilize the agreement to perform the data collection, analysis and software implementation of the pavement maintenance program for the streets of the City of Las Cruces; and

**WHEREAS**, the Public Works Department recommends an award to Terracon Consultants, Inc. of Las Cruces, New Mexico in the amount \$222,228.30; and

**WHEREAS**, the project will consist of an objective roadway performance data collection and analysis, Right-of-Way asset data collection, digital image and GPS coordinate data collection, and pavement management software implementation and training for all City streets within the City limits.

**NOW, THEREFORE**, Be it resolved by the governing body of the City of Las Cruces:

(I)

THAT the Pavement Maintenance Services Project is hereby awarded to Terracon Consultants, Inc. of Las Cruces, New Mexico in the amount of \$222,228.30 plus \$16,806.02 for New Mexico Gross Receipts Tax.

(II)

THAT the City Manager is authorized to approve change orders in an amount not to exceed \$11,111.42 for a total award in the amount of \$250,145.74.

(III)

THAT the Purchasing Manager is authorized to contract with Terracon Consultants, Inc. of Las Cruces, New Mexico as outlined in the Exhibit A, Purchasing Manager's Request to Contract Form.

(IV)

THAT the City staff is hereby authorized to do all deeds necessary in the accomplishment of the herein above.

DONE AND APPROVED this \_\_\_\_\_ day of January, 2011.

(SEAL)

APPROVED:

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

Moved by: \_\_\_\_\_

Seconded by: \_\_\_\_\_

VOTE:

Mayor Miyagishima: \_\_\_\_\_  
Councillor Silva: \_\_\_\_\_  
Councillor Connor: \_\_\_\_\_  
Councillor Pedroza: \_\_\_\_\_  
Councillor Small: \_\_\_\_\_  
Councillor Sorg: \_\_\_\_\_  
Councillor Thomas: \_\_\_\_\_

Approved as to Form:

  
\_\_\_\_\_  
City Attorney



November 15, 2010

City of Las Cruces  
P.O. Box 20000  
Las Cruces, New Mexico 88004

Attn: Gary Skelton  
Engineering Technician  
[575] 528.3527 Phone  
[575] 528.3619 Fax

Re: Proposal for Pavement Management Services  
City of Las Cruces  
Las Cruces, New Mexico  
Proposal No. P6810-261E

Dear Mr. Skelton:

Terracon Consultants, Inc. (Terracon) is pleased to submit this proposal to provide pavement management consulting services for the City of Las Cruces (City) using a subcontractor that specializes in providing these services—IMS Infrastructure Management Services (IMS). This proposal presents an understanding of the project along with the proposed scope of services, schedule to complete the tasks and the associated fees.

## A. PROJECT OVERVIEW, IMS TECHNOLOGY AND APPROACH

### Project Overview

Based on the information provided by the City and IMS' Project Overview, the City currently maintains approximately 550 centerline miles of roadway and intends to utilize the GBA Master Series pavement management and GIS software. IMS has created an estimated number of test miles based on two pass test arterials and major collectors. The IMS team will collect pavement distress data on approximately 690 test miles. IMS' approach, and key service differentiator, is based on three time proven fundamentals:

**Answer the questions that are being asked – don't over-engineer the system or make it needlessly complicated.** Databases and the application of technology are meant to simplify asset management, not make it more difficult.

**Service and quality are paramount to success – the right blend of technically correct data, condition rating, and reporting will provide the City with a long-term, stable solution.** Service to the client remains their top priority.

Terracon Consultants, Inc. 1640 Hickory Loop, Ste. 105 Las Cruces, New Mexico 88005  
P [575] 527 1700 F [575] 527 1092 terracon.com

**Local control and communications are key** – it is important that stakeholders understand the impacts of their decisions and have the system outputs react accordingly. IMS excels in making themselves readily available.

**Services that IMS can offer the City of Las Cruces include:**

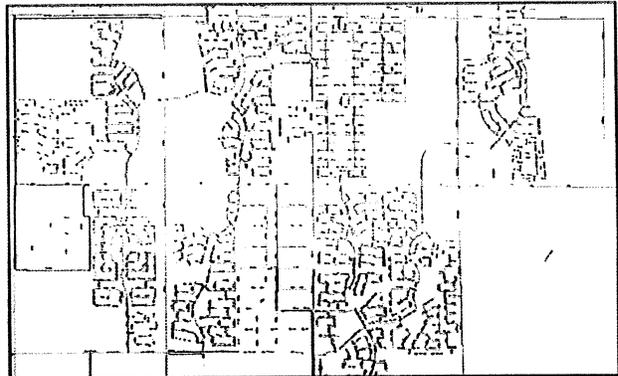
- Objective roadway performance data collection including a full suite of surface distresses.
- Right of Way asset data collection
- Digital image and GPS coordinate data collection
- Provision of robust software solutions and an advanced knowledge of the GBA Master Series software solutions.

**IMS Technology and Approach**

**Data Collection** - IMS is unique to the industry and an objective and repeatable data collection effort will be completed. The Laser RST will be used to perform a surface condition assessment of City streets. Instead of using the subjective feet on ground or windshield sampling method, the data will be collected continuously and recorded in 100-foot intervals in the form of a detailed database complete with GPS coordinates. The data will also be aggregated to the section level, following the sectioning and referencing methodology determined after IMS and City review.

**GIS and Pavement Management Linkage** -

The role of GIS in pavement management cannot be understated. It is a powerful tool that provides the ability to handle and present vast amounts of data in an efficient manner. IMS can provide a link between the City's GIS program and the pavement management data to enable the City to display and generate color-coded maps based upon existing pavement conditions,



street rehabilitation plans or most of the data in the pavement management program. An output of such a plot is illustrated in the image above.

**Digital Images** - In conjunction with the surface condition survey, each test section is recorded on digital video with a forward-facing digital camera and used as part of IMS' Quality Control and Quality Assurance procedures. Additional cameras can be mounted to expand the viewing area or to include right-of-way asset features of special interest to the City. IMS can provide digital images at specified intervals (e.g. 10-foot, 25-foot or 50-foot) for viewing in selected third party software, and/or through the City's GIS.

## B. ANTICIPATED PROJECT SCHEDULE

Currently IMS has a total capacity to complete 1,750 miles/month based on urban surveys, so completing the City of Las Cruces surveys in a timely fashion is not an issue. IMS operates two full time Laser RST's as their mainline data collection equipment and they keep a third unit on standby for overflow.

The field surveys are expected to progress at a conservative rate of 25 to 35 miles per day in urban areas (and can increase to 75 miles per day in rural environments). Surveys are usually performed 5 1/2 to 6 days per week depending on weather, congestion and statutory holidays. Elapsed time for the City of Las Cruces field surveys is estimated at 4 to 6 weeks.

There are three predominant rate determining functions on projects that are critical to maintaining the proposed project schedule. In general, it is not the surveys that take the longest time, but rather, it is the data handling that often is the cause of sliding the project schedules. So they can be addressed by the City, these three steps are described below:

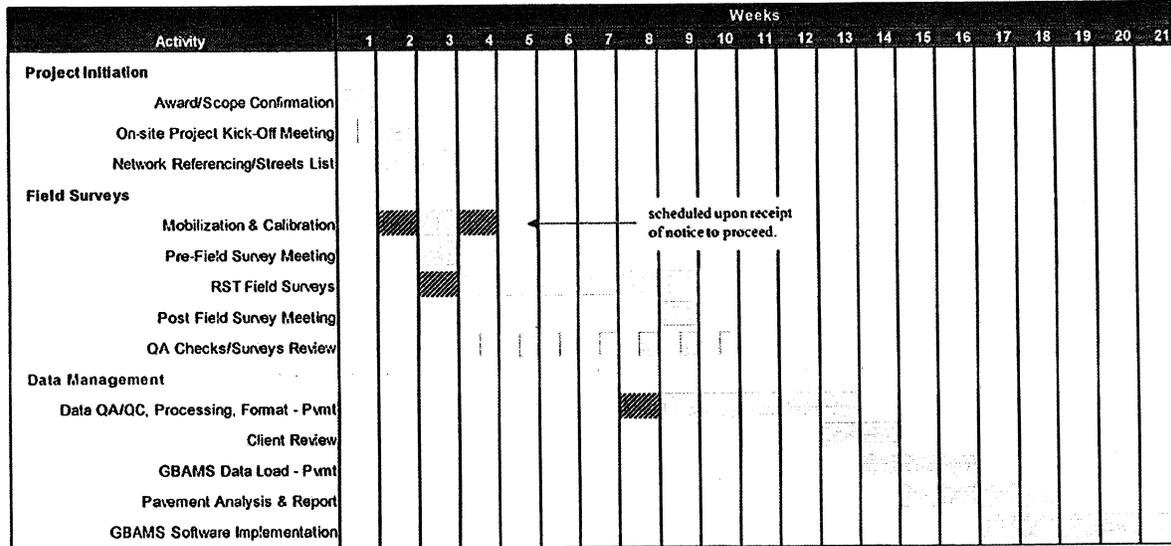
- Finalizing the inventory and maps to be used for the field surveys-The delay usually occurs in this step during maps or GIS topology acquisition, confirming the streets list and/or validating the limits of the surveys. The best defense against schedule slippage is to have a single point of contact that is familiar with the project, GIS, and the survey limits, and the person that can make critical decisions in a timely fashion.
- Reviewing field data and exceptions reports delivered to the clients-As part of the Quality Assurance/Quality Control (QA/QC) process, only quality data can pass through to the analysis. Thus it is critical that once the data passes through the IMS QA/QC process, it is accepted and signed off by the City. For this stage of the work, we propose having our QA/QC Manager work closely with the City's designated point of contact to keep the flow of data moving to and through the City.
- Obtaining feedback and acceptance of the final format and load-No matter how much planning work goes into a schedule, the bottom line is that the City Council operates on their own timetable and the project must be able to conform to their schedules.

The schedule presented on the following page has a total of three additional weeks of float built into the work plan. If these are not required, the schedule would advance accordingly. Within the schedule, allowances have been provided for the following:

- Production rates of 25 miles per day in urban areas (50 miles per day in rural area).
- 10 percent downtime due to mechanical delays, holidays and congestion.
- 1.0 day per week for inclement weather.
- Sunlight hour restrictions and client meetings.



**City of Las Cruces Project Schedule<sup>1</sup>**



<sup>1</sup> The key factor in this work is setting aside sufficient time and resources for the timely exchange of information and data review. IMS has developed a real world plan that recognizes where delays in schedules occur, and have a realistic approach to meet scheduling challenges.

**C. FEES**

The project will be completed using a combination of unit rate and lump sum based activities. The spreadsheet presented on the following page is based on the IMS work plan and deliverables. Terracon understands that the City will authorize Tasks 1 thru 17 at this time. Included in the IMS quotation is the supply and implementation of pavement management and GIS software by GBAMS.

For the scope of services described above (Tasks 1 thru 17), the total estimated fee including a 5% markup is \$222,228.30 (not including New Mexico Gross Receipts Tax).

Proposal for Pavement Engineering Services  
 Various Roadways in Las Cruces, New Mexico  
 November 15, 2010 in Terracon Proposal No. P6810-261E

# Terracon

Task	Activity	Quant	Units	Unit Rate	Total
<b>Project Initiation</b>					
1	Project Initiation	1	LS	\$2,500.00	\$2,500.00
2	Network Referencing	690	MI	\$10.00	\$6,900.00
3	Distress Protocols	1	LS	\$500.00	\$500.00
4	GIS Linkage	690	MI	\$15.00	\$10,350.00
<b>Field Surveys</b>					
5	Mobilization/Calibration	1	LS	\$3,000.00	\$3,000.00
6	RST Field Data Collection	690	MI	\$100.00	\$69,000.00
<b>Data Management</b>					
7	Data QA/QC, Processing, Format	690	MI	\$15.00	\$10,350.00
8	ROW Imagery Storage - 1 year	1	LS	\$1,750.00	\$1,750.00
9	GBAMS Data Load - Pavements	1	LS	\$2,500.00	\$2,500.00
10	Pavement Analysis, Budget Development, & Report	1	LS	\$7,500.00	\$7,500.00
11	Project Management	1	LS	\$8,576.00	\$8,576.00
<b>Software Supply &amp; Implementation - GBAMS</b>					
12	Pavement Management Software & GIS Modules	1	LS	\$9,600.00	\$9,600.00
13	Software Implementation & Training (inclusive of expenses)	1	LS	\$6,470.00	\$6,470.00
<b>Pavement Management Total:</b>					<b>\$138,996.00</b>

<b>Optional Service Items and Activities</b>					
14	Deflection Testing - Dynaflect	275	MI	\$120.00	\$33,000.00
15	Ground Penetrating Radar (GPR)	275	MI	\$110.00	\$30,250.00
16	City Council Presentation	1	LS	\$2,500.00	\$2,500.00
17	Collection of digital images @ 25-foot intervals	690	MI	\$10.00	\$6,900.00
18	Collection of GPS, crossfall, radius of curvature, and grade	690	MI	\$15.00	\$10,350.00
19	Right of way asset data collection (GPS and Images)	690	MI	\$20.00	\$13,800.00
20	Sidewalk database development*	690	MI	\$55.00	\$37,950.00
21	Curb & gutter database development*	690	MI	\$50.00	\$34,500.00
22	Sign database development*	690	MI	\$90.00	\$62,100.00
23	ADA Ramp & Compliance Survey	690	MI	\$55.00	\$37,950.00
24	Sidewalk Obstruction Survey for ADA Compliance*	690	MI	\$25.00	\$17,250.00

\*Actual Price may vary depending upon number of assets present

## D. GENERAL COMMENTS

Thank you for considering Terracon and IMS as a viable solution to your pavement management and we will strive to become an asset and extension of the City of Las Cruces staff and team. If any questions arise please do not hesitate to call Zac Thomason with IMS at [480] 839-4347 or Mary E. Wells with Terracon at [575] 527.1700.

Sincerely,  
**TERRACON CONSULTANTS, INC.**



Mary E. Wells, P.E.  
 Principal

**Proposal for Pavement Engineering Services  
Various Roadways in Las Cruces, New Mexico  
November 15, 2010 in Terracon Proposal No. P6810-261E**



**NOTICE TO PROCEED**

**Pavement Management Services  
Various Roadways  
Las Cruces, New Mexico  
Terracon Proposal Number P6810-261E**

BY: \_\_\_\_\_ FOR: \_\_\_\_\_  
(Signature) (City of Las Cruces)

DATE: \_\_\_\_\_

# CITY OF LAS CRUCES

## PURCHASING MANAGER'S REQUEST TO CONTRACT

For Meeting of: January 3, 2011

Resolution No.: 10-11-421A

**Existing Contract Purchase For  
Environmental Engineering Services  
(Purchase of Pavement Maintenance Software and Associated Data Collection)**

The Las Cruces City Council is provided the following information concerning this request:

**RFP SOLICITATION INFORMATION:**

- |    |   |  |
|----|---|--|
| 1. | Original RFP & Due Date:                              | RFP #08-09-322/ November 18, 2008            |
| 2. | Description of RFP:                                   | Environmental Engineering Services           |
| 3. | Number of Original Responses Accepted:                | Five (5)                                     |
| 4. | Existing Contract Expiration Date:                    | January 19, 2011                             |
| 5. | Last Contract Renewal by Council:                     | Resolution No. 09-10-436/December 21, 2009   |
| 6. | Using Department:                                     | Public Works                                 |
| 7. | Current Award Recommendation To:                      | Terracon Consultants, Inc. of Las Cruces, NM |
| 8. | Total Award Amount (includes any tax and contingency) | \$250,145.74                                 |
| 9. | Contract Duration:                                    | 180 days                                     |

**PROCUREMENT CODE COMPLIANCE:**

The City of Las Cruces Procurement Code was administered in the conduct of this procurement and approval to purchase is hereby requested pursuant to **Section 24-316**.

  
Purchasing Manager

1/12/10  
Date

**CONFIRMATION OF FUND ENCUMBRANCE:**

REQUISITION OR PURCHASE ORDER NUMBER:	TBD
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