



### **NOTICE OF WORK SESSION**

In accordance with Section 38-431.01 of the Arizona Revised Statutes of the State of Arizona, notice is hereby given to the Members of City Council and to the general public that the Mayor and Council of the City of San Luis, Arizona, will hold a Work Session meeting at 6:30 p.m., Wednesday, January 18, 2017. The Work Session will take place at the City Council Chambers, located at 1090 E. Union Street, San Luis, Arizona, 85349. Everyone from the public is invited to attend the open meeting.

In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, the City of San Luis does not discriminate on the basis of disability in the admission of or access to, or treatment of employment in its programs, activities, or services. For information regarding rights and provisions of the ADA or Section 504, or to request reasonable accommodations for participation in City programs, activities or services contact: ADA/Section 504 Coordinator, City of San Luis Human Resources Department, 1090 E. Union Street, San Luis, Arizona, 85349; (928) 341-8520.

Notice is hereby given that pursuant to A.R.S. §1-602.A.9, subject to certain specified statutory exceptions, parents have a right to consent before the State or any of its political subdivisions make a video or audio recording of a minor child. Meetings of the City Council are audio and/or video recorded, and, as a result, proceedings in which children are present may be subject to such recordings. Parents in order to exercise their rights may either file written consent with the City Clerk to such recordings, or take personal action to ensure that their child or children are not present when a recording may be made. If a child is present at the time a recording is made, the City will assume that the rights afforded parents pursuant to A.R.S. §1-602.A.9 have been waived.

THIS NOTICE IS GIVEN BY:

/s/ Sonia Cornelio, City Clerk

### **AVISO DE SESION DE TRABAJO**

De acuerdo con los Estatutos del Estado de Arizona A.R.S. §38-431.01, se le informa a los miembros del Cabildo y al público en general que el Alcalde y el Cabildo, tendrán una Sesión de Trabajo a las 6:30 p.m., el día Miércoles, 18 de Enero del 2017. La junta se llevará a cabo en la Sala del Cabildo, ubicada en el 1090 E. Union Street, San Luis, Arizona, 85349. El público está cordialmente invitado a la junta.

De acuerdo con el Acta de Americanos con Discapacidades y la Sección 504 del Acta de Rehabilitación del 1973, la Ciudad de San Luis, Arizona no discrimina por causa de discapacidad la admisión y acceso a sus programas, actividades, servicios o en el trato en cuanto a empleo. Para más información referente a derechos y provisiones del Acta de Americanos con Discapacidades o Sección 504, o para solicitar adaptaciones que sean razonables para la participación en programas, actividades o servicios de la Ciudad, contactar al: Coordinador del Acta de Americanos con Discapacidades/Sección 504, Departamento de Recursos Humanos de la Ciudad de San Luis, Arizona, ubicado en el 1090 E. Union Street, San Luis, Arizona, 85349; (928) 341-8520.

Por medio de este aviso y de acuerdo con los Estatutos del Estado de Arizona A.R.S §1-602.A.9, sujeto a ciertas excepciones reglamentarias, los padres de familia tienen el derecho de dar el consentimiento ante el Estado o cualquiera de sus subdivisiones políticas para hacer una grabación de audio o video de su hijo menor de edad. Las juntas del Cabildo se graban en audio y/o video y como resultado, el hecho de que haya menores presentes puede ser sujeto a que sean grabados. Para que los padres de familia puedan ejercer sus derechos pueden dar el consentimiento por escrito con la Secretaria de la Ciudad a tal grabación, o tomar acción personal para asegurarse que su hijo menor no esté presente cuando la grabación se lleve a cabo. Si un menor de edad está presente en el momento de la grabación, la Ciudad asumirá que los padres de familia están cediendo los derechos sobre una posible grabación de acuerdo con los Estatutos del Estado de Arizona A.R.S. §1-602.A.9.

ESTE AVISO ES DADO POR:

/f/ Sonia Cornelio, Actuaría de la Ciudad



**AGENDA**  
**Work Session**  
**San Luis City Council**  
**San Luis Council**  
**Chambers**  
**1090 E. Union Street**  
**San Luis, AZ 85349**  
**January 18, 2017**  
**6:30 p.m.**

**MEMBERS OF THE CITY COUNCIL WILL ATTEND EITHER IN PERSON, TELEPHONE, OR VIDEO CONFERENCE COMMUNICATION**

- 1. CALL TO ORDER/ROLL CALL**
- 2. AGENDA ITEM(S):**
  - 2. A.** Discussion on any and all matters regarding the Price Center parking lot projects and request to ratify and to waive formal purchase procedures as authorized by San Luis City Code-Purchasing, Section 36.01 (H). **(Jenny Torres, Community Development Director)**
  - 2. B.** Discussion on any and all matters regarding authorization to approve Shuck Drilling Company, Invoice #8017 for Well #9 rehabilitation and ratification of the same. **(Manuel Rojas, Assistant Public Works Director)**
  - 2. C.** Discussion on any and all matters regarding approval of final proposal from Synovia Solutions for the purchase of a Global Positioning System (GPS) software and hardware for Public Works Fleet. **(Manuel Rojas, Assistant Public Works Director)**
- 3. DISCUSSION ITEM(S):**
  - 3. A.** Discussion on any and all matters regarding Water Division, Back-Flow Program and bringing all commercial and multi-residential property owners in compliance with Ordinance No. 125. **(Manuel Rojas, Assistant Public Works Director)**
- 4. ADJOURNMENT**

**IN THE EVENT A MAJORITY OF THE COUNCIL IS NOT PRESENT, AN INFORMAL WORK SESSION MAY BE HELD.**



## AGENDA ITEM REVIEW FORM

### Work Session

2. A.

**Meeting Date:** 01/18/2017

**Department Head:** Jenny Torres, Community Development Director, Community Development Department

**Submitted By:** Dania Castillo, Economic Development Assistant, Community Development Department

**Action Requested:** Discussion Item - No Action to be Taken

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### ITEM:

Discussion on any and all matters regarding the Price Center parking lot projects and request to ratify and to waive formal purchase procedures as authorized by San Luis City Code-Purchasing, Section 36.01 (H). (**Jenny Torres, Community Development Director**)

### SUMMARY:

The Price Center parking lot was in need of repairs. Staff evaluated the parking lot and resulted in establishing two (2) different repair projects.

#### **1. The Front Parking Area Repair Project**

The first repair project was located at the front parking lot. The process for repair involved crack seal and preserving it with slurry seal and re-striping.

The crack seal repairs and re-striping was done by Marco Seal Coating and Paving in a combined amount of \$6,370.00.

The slurry seal was done by American Pavement Preservation in the amount of \$12,402.71. The City piggy-backed with the City of Yuma Slurry Seal Service Bid #2016-2000004 which complies with the San Luis City Code-Purchasing, Section 36.09, Cooperative Purchasing.

#### **2. The Second Parking Area Repair Project**

The second repair project was located at the back and side parking areas. The process for repair for the second project involved setting a one-inch (1") asphaltic overlay.

Per San Luis City Code-Purchasing, Section 36.01 (D), staff requested three (3) quotes from contractors on October 26th for a 1" asphaltic overlay. Only two (2) contractors responded and submitted price quotations. Marco Seal Coating and Paving was the lowest quote in the amount of \$32,800.00.

### **Reason for bringing this item to City Council**

Although the two projects are distinct and separate projects, from a finance prospective, it may be confusing because the contractor for part of the first project submitted a quote for the second project and both projects involve the price center. Looking at the total amount paid to Marco Seal Coating and Paving for both projects it is \$4,170.00 above the \$35,000.00 limit pursuant to San Luis City Code-Purchasing, Section 36.01 (D) which allows for 3 verbal quotes. Combing both would require a formal bidding process under San Luis City Code-Purchasing, Section 36.01 (D).

A formal bid process was not undertaken as staff appropriately categorized the work being done as two (2) separate projects. The time constraints to undertake the project in this matter allowed the City to have substantial cost savings. A formal bid process would have taken more time and would have resulted in a higher expense.

**RECOMMENDATION / SUGGESTED MOTION:**

Discussion item only, no action.

**Supporting information not attached to the Agenda Item Review Form:**

N/A

Document to be Recorded?: No

N/A

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**Fiscal Impact**

<b>IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:</b>	Yes
<b>CITY/STATE/FEDERAL FUNDS:</b>	City
<b>TOTAL:</b>	\$39,170.00
<b>BUDGETED:</b>	\$400,000.00
<b>AVAILABLE TO TRANSFER:</b>	N/A
<b>GL ACCT # &amp; NAME/REMAINING BALANCE BEFORE PURCHASE:</b>	802-820-90005 Improv Build/ \$348,123.00 Remaining Balance

**FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):**

Repairs were paid from Capital Outlay- Improvement Building

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**Attachments**

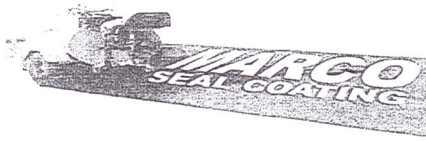
Invoices

City of Yuma Slurry Seal Service Bid #2016-2000004

Overlay Quotes

Price Center Parking Lot

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## Invoice

### Marco Seal Coating & Paving LLC

Phone Number: (928) 287-2239

Email: mpaving7@gmail.com

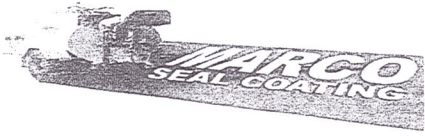
<b>BILL TO:</b>
Price Center 580 San Luis Plaza Dr San Luis, AZ

Account #	Invoice Date	Due Date	Sales Rep	Terms	Tax ID
	11/02/2016	11/7/2016	Marco Venegas		20-5534634

Description of Service	Total
<u>Crack Repair</u> Removed dirt and debris from cracks and input new asphalt crack filler using Deery 200 Hot Rubberized Asphalt Crack Seal material.	\$4675.00

<i>Thank You</i>	Sale Amount	\$4675.00
	Sales Tax	
	<b>Total</b>	<b>\$4675.00</b>

*Marco Venegas* 11/2/16



# Invoice

## Marco Seal Coating & Paving LLC

Phone Number: (928) 287-2239  
 Email: mpaving7@gmail.com

<b>BILL TO:</b>
Price Center 580 San Luis Plaza Dr San Luis, AZ

Account #	Invoice Date	Due Date	Sales Rep	Terms	Tax ID
	11/08/2016	11/11/2016	Marco Venegas		20-5534634

Description of Service	Total
<u>Striping</u> Restriped all lines, arrows and handicap symbols existing using reflective traffic paint.	\$1,695.00

<i>Thank You</i>	Sale Amount	\$1695.00
	Sales Tax	
	Total	1695.00

*Marco Venegas*  
 11/16/16

## Progress Billing Invoice

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From: American Pavement Preservation LLC  
 4725 E. Cartier Ave.  
 Las Vegas, NV 89115

Invoice #: 9369

Date: 11/23/16

Application #: 2

To: CITY OF SAN LUIS  
 1090 EAST UNION STREET  
 SAN LUIS, AZ 85349

Invoice Due Date: 12/23/16

Payment Terms: Net 30 days

Contract: 61646- 1 SAN LUIS - FALL SLURRY SEAL

Cont Item	Description	Contract Amount	Contract Quantity	Quantity This Period	Quantity JTD	U/M	Unit Price	Amount This Period	Amount To-Date	% Compl
4	TYPE 2 SLURRY SEAL - PARING LOT	12,402.71	10,757.00	10,757.00	10,757.00	SY	1.15299	12,402.71	12,402.71	100.00%

Total Billed To Date:	89,321.00
Less Retainage:	0.00
Less Previous Applications:	76,918.29
Total Due This Invoice:	<u>12,402.71</u>

**CITY OF YUMA  
PURCHASING DIVISION  
NOTICE OF INVITATION FOR FORMAL BID**



**BID NUMBER: 2016-20000024**

**BID TITLE: Slurry Seal Services**

**BID DUE DATE AND TIME:**

**Tuesday, September 15, 2015 @ 2:00 pm Arizona Time**

**SCOPE OF WORK: Purchase and Delivery of Slurry Seal Services. This will be a one-year contract with the option to renew for four additional one-year periods, one period at a time based on performance and availability of funds.**

**BID OPENING AND SUBMITTAL LOCATION:**

Please submit your bid to:

City of Yuma  
Purchasing Division  
One City Plaza  
Yuma, AZ 85364-1436

Vendor shall return the Bid Form in a sealed envelope that clearly identifies the bid number, vendor's name and address. Bids must be received in the office of Purchasing Division, One City Plaza, Yuma, Arizona 85364 no later than the time stated in the bid. The time/date recorder located in the Purchasing Division Office will be used to record the official time of receipt.

**SPECIAL NOTE:** All Bidders must register with [www.AZPurchasing.org](http://www.AZPurchasing.org). Please be advised if this solicitation is received by other than downloading the solicitation directly from [www.AZPurchasing.org](http://www.AZPurchasing.org), you may not receive all the required documents. The City of Yuma will not accept any bids that are not on a City of Yuma Bid Form, which accompanies this solicitation.

**VENDORS ARE STRONGLY ENCOURAGED TO  
CAREFULLY READ THE ENTIRE BID.**

**CITY OF YUMA  
Slurry Seal Services  
Bid #2010000419**

**2/3/2016**

**American Pavement Preservation, LLC  
Las Vegas, NV**

**Vendor Contact:  
ericr@americanpave.com**

**Eric Reimschiessel @ (702) 249-5811 or**

**Delivery: 45 Days ARO**

**Payment: Net 30 Days**

- |  |          |
|--|----------|
| 1. Emulsified Asphalt to be CQS-1H   |          |
| 2. Type II Slurry Seal with CQS-1H TR (Tire Rubber Modified) or LMCQS                                      |          |
| 12 lbs   | \$1.1530 |
| 13 lbs   | \$1.2490 |
| 14 lbs   | \$1.3450 |
| 15 lbs   | \$1.4400 |
| 16 lbs   | \$1.5300 |
| 3. Type III Slurry Seal CQS-1H (TR) (Tire Rubber Modified)   | \$1.9200 |
| 18 to 20 lbs   |          |
| 4. Any additional lbs per sq yd of aggregate would be \$.0961 per lb per sq yd over the 12 lb agreed price |          |

016012



**City of YUMA**

Purchase Order Number Must Appear  
On All Invoices, Bill of Lading and Any  
Correspondence.

**Bill To**  
City of Yuma - Accounting  
One City Plaza  
YUMA, AZ 85364  
[Payables@YumaAZ.Gov](mailto:Payables@YumaAZ.Gov)

**Ship To**  
Street Division  
155 W 14th St  
Yuma, AZ 85364

**Purchase Order**  
No. 2016-40000388  
  
11/22/15

**Vendor** 112143 AMERICAN PAVEMENT PRESERVATION  
LLC

**Deliver by** 10/20/16

**Contact**  
AMERICAN PAVEMENT PRESERVATION LLC  
4725 E CARTIER AVENUE  
LAS VEGAS, NV 89115

**Bid #** 2016-20000024 1 of 5  
**Freight Terms**  
**Buyer** MARY E ROMAN  
**Contract #**  
**Purchasing** (928) 373-5114

Quantity	U/M	Description	Unit Cost	Total Cost
250000.0000	DL	Reseal	\$1.0000	\$250,000.00
<b>Item Description</b> TYPE 2 AND TYPE 3 SLURRY SEAL				
<b>Detail Description</b> To be ordered as needed:				
		1. Emulsified Asphalt CQS -1H -	\$1.017	
		2. Type II Slurry Seal with CQS-1H TR -	\$1.153	
		(TR - Tire Rubber Modified)		
<b>G/L Account</b>		<b>Project</b>	<b>Amount</b>	<b>Percent</b>
101-40-31-STPM.6501 (Maintenance of Facilities)				100.00%

**Total** \$250,000.00

Authorized Signature

**Special Instructions**

Approved by Council - October 21, 2015  
Vendor Contact: Eric Reimschuessel @ (702)507-5444; [ericr@americanpave.com](mailto:ericr@americanpave.com)  
City of Yuma Contact Martin Agundez @ (928) 373-4548

The City's Standard Terms and Conditions can be found at [www.YumaAz.gov](http://www.YumaAz.gov)

**SLURRY SEAL SERVICES  
BID FORM**

**COPY**

**INSTRUCTIONS: COMPLETE THE SHADED AREAS ONLY.** Return this completed document in a sealed envelope by mail to: City of Yuma, Purchasing Division, One City Plaza, Yuma, Arizona 85364-1436, with the bid number, vendor's name and address. Return no later than the time and date as stated in the bid. For best results, please complete this as a fill form and do not hand write your data. No other price pages or format acceptable.

The Vendor hereby offers and agrees to furnish, deliver and install materials, labor and all costs associated and in compliance with all terms, conditions, specifications, and any addenda to this bid. Failure to comply with the aforementioned may result in disqualification of the bid.

Prices quoted must remain firm - fixed prices for the first TWELVE (12) months, renewable for four (4) additional one year terms, one year at a time. It will be the vendor's responsibility to notify City of any price change thirty (30) days prior to the anniversary date of contract renewal. Failure to do so may result in the denial of any increase requested. The contract will automatically be renewed annually at the same price (s) if no request has been received.

In the event of an unpredictable change in the market that affects the then current contract price, the Vendor may submit justification for a price adjustment. The Contract Administrator and Purchasing Agent will review the justification and determine applicable price adjustment. Upon return to normal market conditions, the price will be adjusted to the price established by the original contract terms. The Purchasing Agent will be the final authority on any price adjustment due to unpredictable market change. If the Vendor, Manufacturer or Supplier at anytime during the course of this contract, makes a general price decrease to the Vendor, the Vendor must promptly notify the City in writing and extend such decrease to the City effective on the date of such general price decrease.

**SPECIAL NOTE:** All Bidders must register with [www.AZPurchasing.org](http://www.AZPurchasing.org). Please be advised if the solicitation accompanying this Bid Form is received by other than downloading the solicitation directly from [www.AZPurchasing.org](http://www.AZPurchasing.org), you may not receive all the required documents. The City of Yuma will not accept any bids that are not on this Bid Form.

**Delivery is guaranteed within: 15 days, after Receipt of Order (ARO)?**

Date **September 15, 2015**

To: City of Yuma, Yuma, Arizona

From: Vendor (Business Name)	Owner's Name
<b>American Pavment Preservation</b>	<b>APP Holdings</b>

Physical Business Address (No PO Box)

**4725 East Cartier Avenue**

Mark if City or Town

City  Town

County

**Clark County Nevada**

City

**Las Vegas**

State & ZIP

**Nevada 89115**

Telephone Number

**702-507-5444**

Cellular Telephone Number

**702-249-5811**

Fax

**702-644-0128**

E-mail Address

**ericr@americanpave.com**

## SLURRY SEAL SERVICES BID FORM

ITEM NO.	DESCRIPTION	EST QTY	UOM	UNIT COST	TOTAL COST
1.	Emulsified Asphalt to be CQS-1H	200,000	Sq Yds	\$1.017	\$203,400.00
2.	Type II Slurry Seal with CQS-1H TR (Tire Rubber Modified)	200,000	Sq Yds	\$1.153	\$230,600.00
PROMPT PAYMENT DISCOUNT: As stated in the "Standard Terms & Conditions", "Discounts" the price(s) quoted herein can be discounted by:		0	%, if payment is made within	30	<u>days.</u>
NOTE: Unless Prompt Payment Discount is specified above, A NET/30 will be considered in determining the bid award.					
Federal Taxpayer ID # 88-0453460					
This number will be in the format of XX-XXXXXXX or XXX-XX-XXXX, meaning that a taxpayer ID number is nine numbers only, no letters, and the format is for an employer ID number or a social security number. Do not list your State tax license number here.					
Name of your City Las Vegas Nevada					
Your City's Sales Tax % 8.10%					
City of Yuma Business License # CNTR 006718 01 2015					
Is your Business located in the City Limits of Yuma?					
YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>					
By signing this document, Vendor agrees that the offered products complies with all specifications and additional requirements as stated in this bid. If there are any specifications or requirements, which you cannot comply with, please name and describe the nonconformance in the area provided below.					
I hereby state the products I am offering complies with all specifications and requirements as stated in this bid, and any nonconformance issued have been recorded below:					
Item No.	Found on Page #				
If additional space is needed, please attach another sheet.					

# SLURRY SEAL SERVICES BID FORM

### Arizona Revised Statutes Compliance - Verification of Employment Eligibility

**Verification of Employment Eligibility:** Pursuant to A.R.S. § 41-4401, "After September 30, 2008, a government entity shall not award a contract to any Company or subcontractor that fails to comply with" the requirements of A.R.S. § 23-214. Section 23-214 imposes requirements upon employers to verify the employment eligibility of all its employees as set forth in that statute and its related definitions.

The City of Yuma will not enter into a contract with any Company or its providers or subcontractors that is/are not in compliance with the requirements of A.R.S. § 23-214. All bidders and proposers agree and acknowledge that the City of Yuma is relying on the representations set forth in this Verification of Employment Eligibility form and would not consider a bid or proposal without the completion of this form by the bidder or proposer.

By signing below, Company, as named below, represents and warrants that this company is in full compliance with all federal, state, and local laws, rules, and regulations regarding employment eligibility of all its employees, including use of the requirements of A.R.S. § 23-214, and Company shall remain in compliance during the term of any (Contract)(Agreement) that it is awarded by the City of Yuma.

Company further represents and warrants that all providers or subcontractors providing goods or services under this (Contract)(Agreement) are in compliance with all federal, state, and local laws, rules and regulations regarding employment eligibility of all employees, including A.R.S. § 23-214, and that Company shall require all providers and subcontractors to remain in compliance during the term of any (Contract)(Agreement) that Company has with the City of Yuma.

Company shall defend, indemnify and hold the City of Yuma harmless from any loss, damage, expense, liability, penalty, claim, or fee (including reasonable attorneys fees) caused by or arising from, directly or indirectly, in whole or in part, any false or inaccurate representation set forth above, breach of any warranties set forth above, and/or any other failure to comply with A.R.S. § 23-214 or any other requirements of this Verification of Employment Eligibility form.

Under the provisions of A.R.S. § 41-4401, Company hereby warrants to the City that the Company and each of its subcontractors ("Subcontractors") will comply with, and are contractually obligated to comply with, all Federal Immigration laws and regulations that relate to their employees and AIR'S. § 23-214(A) (hereinafter "Company Immigration Warranty").

A breach of the Company Immigration Warranty shall constitute a material breach of this Contract and shall subject the Company to penalties up to and including termination of this Contract at the sole discretion of the City.

The City retains the legal right to inspect the papers of any Company or Subcontractors employee who works on this Contract to ensure that the Company or Subcontractor is complying with the Company Immigration warranty. Company agrees to assist the City in regard to any such inspections.

The City may, at its sole discretion, conduct random verification of the employment records of the Company and any of subcontractors to ensure compliance with Company's Immigration Warranty. Company agrees to assist the City in regard to any random verification performed.

Neither the Company nor any Subcontractor shall be deemed to have materially breached the Company Immigration Warranty if the Company or Subcontractor establishes that it has complied with the employment verification provisions prescribed by section 274A and 274B of the Federal Immigration and Nationality Act and the E-Verify requirements prescribed by A.R.S. § 23-214, Subsection A.

The provision of this Article must be included in any contract the Company enters into with any and all of its subcontractors who provide services under this Contract or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a Company or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

Respectfully Submitted (Physical Signature required below by Person Authorized to sign)



Vendor (Business Name)

**AMERICAN PAVEMENT PRESERVATION LLC**

Contact Name & Title

**Eric M. Reimschiessel**

Date **September 15, 2015**

**CITY OF YUMA  
 BID #2016-20000024  
 SLURRY SEAL SERVICES**

		<b>American Pavement Preservation Las Vegas, NV</b>	<b>Southwest Slurry Seal, Inc. Phoenix, AZ</b>	<b>VSS International Chandler, AZ</b>
	Est Qty - Sq Yds			
1.	Emulsified Asphalt to be CQS-1H	\$1.017 \$203,400.00	\$1.210 \$242,000.00	\$1.480 \$296,000.00
2.	Type II Slurry Seal with CQS-1H TR (Tire Rubber)	\$1.15 \$230,600.00	\$1.28 \$256,000.00	\$1.56 \$312,000.00

This information is not the official results but is for informational purposes only.  
 Please contact the Purchasing Division for further information.

**Recommended Performance  
Guideline  
For  
Emulsified Asphalt Slurry Seal  
A105  
(Revised February 2010)**



**NOTICE**

It is not intended or recommended that this guideline be used as a verbatim specification. It should be used as an outline, helping user agencies establish their particular project specification. Users should understand that almost all geographical areas vary as to the availability of materials. An effort should be made to determine what materials are reasonably available, keeping in mind system compatibility and specific job requirements. Contact ISSA for answers to questions and for a list of ISSA member contractors and companies.

**International Slurry Surfacing Association  
#3 Church Circle, PMB 250  
Annapolis, MD 21401  
(410) 267-0023  
[www.slurry.org](http://www.slurry.org)**

## RECOMMENDED PERFORMANCE GUIDELINE FOR EMULSIFIED ASPHALT SLURRY SEAL

### 1. SCOPE

The intent of this guideline is to aid in the design, testing, quality control, measurement and payment procedures for the application of Emulsified Asphalt Slurry Seal Surfacing.

### 2. DESCRIPTION

Slurry seal shall consist of a mixture of an emulsified asphalt, mineral aggregate, water, and additives, proportioned, mixed and uniformly spread over a properly prepared surface as directed by the Buyer's Authorized Representative (B.A.R.). The slurry seal shall be applied as a homogeneous mat, adhere firmly to the prepared surface, and have a skid-resistant texture throughout its service life.

### 3. SPECIFICATIONS

It is not normally required to run all tests on every project. A compilation of results from the listed tests should be indicative of system performance. Failure to meet specification for an individual test does not necessarily disqualify the system. If, for example, the system to be used on the project has a record of good performance, individual requirements for testing may be waived. Agency and testing methods are listed in the appendix (see Appendix A) and form a part of this guideline.

### 4. MATERIALS

#### 4.1 EMULSIFIED ASPHALT

The emulsified asphalt, and emulsified asphalt residue, shall meet the requirements of AASHTO M 140 or ASTM D 977 for SS-1 or SS-1h. For CSS-1, CSS-1h, or CQS-1h, it shall meet the requirements of AASHTO M 208 or ASTM D 2397.

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to indicate that the emulsion meets the specifications.

#### 4.2 AGGREGATE

##### 4.2.1 GENERAL

The mineral aggregate used shall be the type specified for the particular application requirements of the slurry seal. The aggregate shall be crushed stone such as granite, slag, limestone, chat, or other high-quality aggregate, or combination thereof. To assure the material is 100 percent crushed, the parent aggregate will be larger than the largest stone in the gradation to be used.

#### 4.2.2 QUALITY TESTS

The aggregate should meet agency specified polishing values and these minimum requirements:

TEST	TEST METHOD		SPECIFICATION
	AASHTO	ASTM	
Sand Equivalent Value of Soils and Fine Aggregate	T 176	D 2419	45 Minimum
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	T 104	C 88	15% Maximum w/Na <sub>2</sub> SO <sub>4</sub> 25% Maximum w/MgSO <sub>4</sub>
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine <sup>1</sup>	T 96	C 131	35% Maximum

<sup>1</sup>The abrasion test is run on the parent aggregate.

#### 4.2.3 GRADATION

When tested in accordance with AASHTO T 27 (ASTM C 136) and AASHTO T 11 (ASTM C 117), the mix design aggregate gradation shall be within one of the following bands (or one recognized by the local paving authority):

SIEVE SIZE	TYPE I PERCENT PASSING	TYPE II PERCENT PASSING	TYPE III PERCENT PASSING	STOCKPILE TOLERANCE FROM THE MIX DESIGN GRADATION
3/8 (9.5 mm)	100	100	100	
# 4 (4.75 mm)	100	90 - 100	70 - 90	± 5%
# 8 (2.36 mm)	90 - 100	65 - 90	45 - 70	± 5%
# 16 (1.18 mm)	65 - 90	45 - 70	28 - 50	± 5%
# 30 (600 um)	40 - 65	30 - 50	19 - 34	± 5%
# 50 (330 um)	25 - 42	18 - 30	12 - 25	± 4%
#100 (150 um)	15 - 30	10 - 21	7 - 18	± 3%
#200 (75 um)	10 - 20	5 - 15	5 - 15	± 2%

The gradation of the aggregate stockpile shall not vary by more than the stockpile tolerance from the mix design gradation (indicated in the table above) while also remaining within the specification gradation band. The percentage of aggregate passing any two successive sieves shall not change from one end of the specified range to the other end.

The aggregate will be accepted at the job location or stockpile based on five gradation tests sampled according to AASHTO T 2 (ASTM D 75). If the average of the five tests is within the stockpile tolerance from the mix design gradation, the material will be

accepted. If the average of those test results is out of specification or tolerance, the contractor will be given the choice to either remove the material or blend additional aggregate with the stockpile material to bring it into compliance. Materials used in blending must meet the required aggregate quality test specifications in Section 4.2.2 before blending and must be blended in a manner to produce a consistent gradation. Aggregate blending may require a new mix design.

Screening shall be required at the stockpile if there are any problems created by oversized materials in the mix.

**Type I.** This aggregate gradation is used to fill surface voids, address moderate surface distresses, and provide protection from the elements. The fineness of this mixture provides the ability for some crack penetration.

**Type II.** This aggregate gradation is used to fill surface voids, address more severe surface distresses, seal, and provide a durable wearing surface.

**Type III.** This aggregate gradation provides maximum skid resistance and an improved wearing surface.

#### 4.3 MINERAL FILLER

Mineral filler may be used to improve mixture consistency and to adjust mixture breaking and curing properties. Portland cement, hydrated lime, limestone dust, fly ash, or other approved filler meeting the requirements of ASTM D 242 shall be used if required by the mix design. Typical use levels are normally 0.0 - 3.0 percent and may be considered part of the aggregate gradation.

#### 4.4 WATER

The water shall be free of harmful salts and contaminants. If the quality of the water is in question, it should be submitted to the laboratory with the other raw materials for the mix design.

#### 4.5 ADDITIVES

Additives may be used to accelerate or retard the break/set of the slurry seal. Appropriate additives, and their applicable use range, should be approved by the laboratory as part of the mix design.

### 5. LABORATORY EVALUATION

#### 5.1 GENERAL

Before work begins, the contractor shall submit a signed mix design covering the specific materials to be used on the project. This design will be performed by a laboratory which has experience in designing Emulsified Asphalt Slurry Seal Surfacing. After the mix design has been approved, no material substitution will be permitted unless approved by the B.A.R.

ISSA can provide a list of laboratories experienced in slurry seal design.

5.2 MIX DESIGN

Compatibility of the aggregate, emulsified asphalt, water, mineral filler and other additives shall be evaluated in the mix design. The mix design shall be completed using materials consistent with those supplied by the contractor for the project. Recommended tests and values are as follows:

TEST	ISSA TB NO.	SPECIFICATION
Mix Time @ 77°F (25°C)	TB 113	Controllable to 180 Seconds Minimum
Slurry Seal Consistency	TB 106	0.79 – 1.18 inches (2.0 – 3.0 cm)
Wet Cohesion @ 30 Minutes Minimum (Set) @ 60 Minutes Minimum (Traffic)	TB 139 (For quick-traffic systems)	12 kg-cm Minimum 20 kg-cm or Near Spin Minimum
Wet Stripping	TB 114	Pass (90% Minimum)
Wet-Track Abrasion Loss One-hour Soak	TB 100	75 g/ft <sup>2</sup> (807 g/m <sup>2</sup> ) Maximum
Excess Asphalt by LWT Sand Adhesion	TB 109 (Critical in heavy-traffic areas)	50 g/ft <sup>2</sup> (538 g/m <sup>2</sup> ) Maximum

The Wet Track Abrasion Test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content required in a slurry seal system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test. ISSA TB 136 describes potential causes for inconsistent results of the Wet Track Abrasion Test.

The mixing test is used to predict the time the material can be mixed before it begins to break. It can be a good reference check to verify consistent sources of material. The laboratory should verify that mix and set times are appropriate for the climatic conditions expected during the project.

The laboratory shall also report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect) according to AASHTO T19 (ASTM C29). The report must clearly show the proportions of aggregate, mineral filler (if used) and emulsified asphalt based on the dry weight of the aggregate.

The percentages of each individual material required shall be shown in the laboratory report. Based on field conditions, adjustments within the specific ranges of the mix design may be required.

The component materials shall be designed within the following limits:

COMPONENT MATERIALS	SUGGESTED LIMITS
Residual Asphalt	Type I: 10 - 16% Type II: 7.5 - 13.5% Type III: 6.5 - 12% (Based on dry weight of aggregate)
Mineral Filler	0.0 - 3.0% (Based on dry weight of aggregate)
Additives	As needed
Water	As required to produce proper mix consistency

### 5.3 MIX TOLERANCES

Tolerances for the slurry seal mixture are as follows:

- a. After the residual asphalt content is determined, a variation  $\pm 1\%$  by weight of dry aggregate will be permitted.
- b. The slurry consistency, as determined according to ISSA TB No. 106, shall not vary more than  $\pm 0.2"$  ( $\pm 0.5$  cm) from the job mix formula after field adjustments.
- c. The rate of application shall not vary more than  $\pm 2$  lb/yd<sup>2</sup> ( $\pm 1.1$  kg/m<sup>2</sup>) when the surface texture does not vary significantly.

## 6. EQUIPMENT

### 6.1 GENERAL

All equipment, tools, and machines used in the application of slurry seal shall be maintained in satisfactory working condition at all times.

### 6.2 MIXING EQUIPMENT

The machine shall be specifically designed and manufactured to apply slurry seal. The material shall be mixed by an automatic-sequenced, self-propelled, slurry seal mixing machine of either truck-mounted or continuous-run design. Continuous-run machines are those that are equipped to self-load materials while continuing to apply slurry seal. Either type machine shall be able to accurately deliver and proportion the mix components through a mixer and to discharge the mixed product on a continuous-flow basis. Sufficient storage capacity for all mix components is required to maintain an adequate supply to the proportioning controls.

The B.A.R. should decide which type of equipment best suits the specific project. In some cases, truck-mounted machines may be more suited, i.e. cul-de-sacs, small narrow roadways, parking lots, etc. On some projects, continuous-run equipment may be chosen due to the continuity of mix and the reduction of start-up joints. Generally, truck-mounted machines or continuous-run machines may be used on similar projects.

If continuous-run equipment is used, the machine shall provide the operator with full control of the forward and reverse speeds during application of the slurry seal. It shall be equipped with a self-loading device and opposite-side driver stations. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be of original-equipment-manufacturer design.

### 6.3 PROPORTIONING DEVICES

Individual volume or weight controls for proportioning mix components shall be provided and properly labeled. These proportioning devices are used in material calibration to determine the material output at any time.

### 6.4 SPREADING EQUIPMENT

The mixture shall be placed uniformly by means of a spreader box attached to the paver and mechanically equipped, if necessary, to agitate and spread the material evenly throughout the box. With some quick-set systems, mechanical agitation may extend mix time. The slurry seal mixture shall have the proper consistency as it enters the spreader box. Spraying of additional water into the spreader box will not be permitted.

A front seal shall be utilized to ensure no loss of the mixture at the road contact point. The rear seal shall act as final strike-off and shall be adjustable. The spreader box and rear seal shall be designed and operated to provide uniform mix consistency behind the box. The spreader box shall have suitable means to side shift to compensate for variations in the pavement width. A burlap drag or other approved screed may be attached to the rear of the spreader box to provide a highly textured uniform surface. A drag stiffened by hardened slurry is ineffective and should be replaced immediately.

### 6.5 AUXILIARY EQUIPMENT

Suitable surface preparation equipment, traffic control equipment, hand tools, and other support and safety equipment necessary to perform the work shall be provided by the contractor.

## 7. CALIBRATION

Each mixing unit to be used in performance of the work shall be calibrated in the presence of the B.A.R. prior to the start of the project. Previous calibration documentation covering the exact materials to be used may be acceptable, provided the calibration was performed during the previous 60 days. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine's metering devices. Any equipment replacement affecting material proportioning requires that the machine be recalibrated. No machine will be allowed to work on the project until the calibration has been accepted. ISSA Inspector's Manual describes a method of machine calibration. ISSA contractors and/or machine manufacturers may also provide methods of machine calibration.

## 8. WEATHER LIMITATIONS

The slurry seal shall not be applied if either the pavement or air temperature is below 50°F (10°C) and falling, but may be applied when both pavement and air temperatures are above 45°F (7°C) and rising. No slurry seal shall be applied when there is the possibility of freezing temperatures at the project location within 24 hours after application. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time.

## 9. NOTIFICATION AND TRAFFIC CONTROL

### 9.1 NOTIFICATION

Homeowners and businesses affected by the paving shall be notified at least one day in advance of the surfacing. Should work not occur on the specified day, a new notification will be distributed. The notification shall be posted in written form, stating the time and date that the surfacing will take place. If necessary, signage alerting traffic to the intended project should be posted.

### 9.2 TRAFFIC CONTROL

Traffic control devices shall be in accordance with agency requirements and, if necessary, conform to the requirements of the Manual on Uniform Traffic Control Devices. Opening to traffic does not constitute acceptance of the work.

In areas that are subject to an increased rate of sharp-turning vehicles, additional time may be required for a more complete cure of the slurry seal mat to prevent damage. Tire marks may be evident in these areas after opening but typically diminish over time with rolling traffic.

## 10. SURFACE PREPARATION

### 10.1 GENERAL

Prior to applying the slurry seal, loose material, oil spots, vegetation, and other objectionable material shall be removed. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before slurry surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the slurry seal by a suitable method. The B.A.R. shall approve the surface preparation prior to surfacing.

### 10.2 TACK COAT

Normally, tack coat is not required unless the surface to be covered is extremely dry and raveled or is concrete or brick. If required, the emulsified asphalt should be SS, CSS, or the slurry seal emulsion. Consult with the slurry seal emulsion supplier to determine dilution stability. The tack coat may consist of one part emulsified asphalt/three parts water and should be applied with a standard distributor. The distributor shall be capable of applying the dilution evenly at a rate of 0.05-0.15 gal/yd<sup>2</sup> (0.23-0.68 l/m<sup>2</sup>). The tack coat shall be allowed to cure sufficiently before the application of slurry seal. If a tack coat is to be required, it must be noted in the project plans.

### 10.3 CRACKS

It is recommended to treat cracks wider than 0.25" (0.64cm) in the pavement surface with an approved crack sealer prior to application of the slurry seal.

## 11. APPLICATION

### 11.1 GENERAL

If required, it is recommended that a test strip be placed in conditions similar to those expected to be encountered during the project.

The surface may be wetted with water ahead of the spreader box. The rate of application of the water spray shall be adjusted during the day to suit temperature, surface texture, humidity, and dryness of the pavement. Pooling or standing water shall be avoided.

The slurry seal shall be of the desired consistency upon exiting the mixer. A sufficient amount of material shall be carried in all parts of the spreader box at all times so that complete coverage is achieved. Overloading of the spreader shall be avoided.

No lumping, balling, or unmixed aggregate shall be permitted.

Significant streaks, such as those caused by oversized aggregate or broken mix, shall not be left in the finished surface. If excessive streaking occurs, the job will be stopped until the cause of the problem has been corrected. Some situations may require screening the aggregate prior to loading it into the units going from the stockpile area to the jobsite.

### 11.2 RATE OF APPLICATION

The slurry seal mixture shall be of the proper consistency at all times so as to provide the application rate required by the surface condition. The average application rate shall be in accordance with the following table:

AGGREGATE TYPE	LOCATION	SUGGESTED APPLICATION RATE
Type I	Parking Areas Urban and Residential Streets Airport Runways	8 - 12 lb/yd <sup>2</sup> (4.3 - 6.5 kg/m <sup>2</sup> )
Type II	Urban and Residential Streets Airport Runways	10 - 18 lb/yd <sup>2</sup> (5.4 - 9.8 kg/m <sup>2</sup> )
Type III	Primary and Interstate Routes	15 - 22 lb/yd <sup>2</sup> (8.1 - 12.0 kg/m <sup>2</sup> )

Suggested application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight and gradation of the aggregate and the demand of the surface to which the slurry seal is being applied.

### 11.3 JOINTS

No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable equipment to produce a minimum number of longitudinal joints throughout the project. When possible, a longitudinal joint shall not be placed in a wheel path. Less than full box width passes will be used only as required. If less than full box width passes are used, they shall not be the last pass of any paved area. A maximum of 6" (15.2 cm) shall be allowed for overlap of longitudinal joints.

### 11.4 MIXTURE

The slurry seal shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess liquids which create segregation of the aggregate. Spraying of additional water into the spreader box will not be permitted.

### 11.5 HANDWORK

Areas which cannot be accessed by the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. If necessary, the area to be handworked shall be lightly dampened prior to mix placement. Handwork shall exhibit the same finish as that applied by the spreader box and shall be completed prior to final surfacing.

### 11.6 LINES

Care shall be taken to apply straight lines along curbs, shoulders, and intersections. No run-off on these areas will be permitted. Roofing felt or heavy plastic may be used to begin or end a pull cleanly. This also provides for easy removal of excess slurry.

### 11.7 ROLLING

Rolling is usually not necessary for slurry seal on roadways. Airports and parking areas should be rolled by a self-propelled, 10-ton (maximum) pneumatic tire roller equipped with a water spray system. All tires should be inflated per manufacturer's specifications. Rolling shall not start until the slurry has cured sufficiently to avoid damage by the roller. Areas which require rolling shall receive a minimum of two (2) full coverage passes.

### 11.8 CLEAN UP

All utility access areas, gutters and intersections, shall have the slurry seal removed as specified by the B.A.R. The contractor shall remove any debris associated with the performance of the work on a daily basis.

## 12. QUALITY CONTROL

### 12.1 INSPECTION

Inspectors assigned to projects must be familiar with the materials, equipment and application of slurry seal. Local conditions and specific project requirements should be considered when determining the parameters of field inspection.

Proper mix consistency should be one of the major areas of inspector concern. If mixes are too dry, streaking, lumping and roughness will be present in the mat surface. Mixes applied too wet will flow excessively and not hold straight lane lines. Excessive liquids may also cause an asphalt-rich surface with segregation.

## 12.2 MATERIALS

To account for aggregate bulking, it is the responsibility of the contractor to check stockpile moisture content and to set the machine accordingly. At the B.A.R.'s discretion, material tests may be run on representative samples of the aggregate and emulsion. Tests will be run at the expense of the buyer. The buyer must notify the contractor immediately if any test fails to meet the specifications.

## 12.3 SLURRY SEAL

If required, representative samples of the slurry seal may be taken directly from the slurry unit(s). Consistency (ISSA TB No. 106) and residual asphalt content (ASTM D2172) tests may be run on the samples. Please note that the consistency test may not be applicable to certain Quick-Set and Quick-Traffic systems because of erratic results due to setting characteristics. If this test is run, it must be performed immediately after the sample is taken. Tests will be run at the expense of the buyer. The buyer must notify the contractor immediately if any test fails to meet specifications.

Data obtained from the proportioning devices on the slurry seal unit may be used to determine individual material quantities and application rate.

## 12.4 NON-COMPLIANCE

If any two successive tests fail on the stockpile aggregate, the job shall be stopped. If any two successive tests on the mix from the same machine fail, the use of the machine shall be suspended. It will be the responsibility of the contractor, at his expense, to prove to the B.A.R. that the problems have been corrected.

## 13. PAYMENT

The slurry seal shall be measured and paid for by the unit area or weight of aggregate and the weight of emulsion used on the work completed and accepted by the buyer. If paid by the weight of the aggregate and emulsified asphalt, the contractor shall submit to the B.A.R. certified delivery tickets which show quantities of each material delivered to the job site and used on the project. Payment shall be full compensation for all preparation, mixing and application of materials, and for all labor, equipment, tools, testing, cleaning, and incidentals necessary to complete the job as specified herein.

## APPENDIX A

### AGENCIES

AASHTO: American Association of State Highway and Transportation Officials  
 ASTM: American Society for Testing and Materials  
 ISSA: International Slurry Surfacing Association

### TEST METHODS

#### EMULSIFIED ASPHALT

AASHTO TEST NO.	ASTM TEST NO.	TEST
M 140	D 977	Standard Specification for Emulsified Asphalt
M 208	D 2397	Specification for Cationic Emulsified Asphalt
T 40	D 140	Sampling Bituminous Materials
T 59	D 244	Test Methods and Practices for Emulsified Asphalts
T 59	D 6997	Distillation of Emulsified Asphalt

#### AGGREGATE AND MINERAL FILLER

AASHTO TEST NO.	ASTM TEST NO.	TEST
T 176	D 2419	Sand Equivalent Value of Soils and Fine Aggregate
T 104	C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
96	C 131	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine (This test should be performed on the parent rock that is used for crushing the finer gradation Micro Surfacing material.)
T 27	C 136	Sieve Analysis of Fine and Coarse Aggregates
T 11	C 117	Test Method for Materials Finer than 75µm (No. 200) Sieve in Mineral Aggregates by Washing
T 2	D 75	Sampling Aggregates
M 17	D 242	Mineral Filler for Bituminous Paving Mixtures
T 19	C 29	Bulk Density ("Unit Weight") and Voids In Aggregate

**APPENDIX A**  
**TEST METHODS (CONTINUED)**

**SLURRY SEAL SYSTEM**

ISSA TEST NO.	Test
TB 100	Test Method for Wet Track Abrasion of Slurry Surfaces
TB 101	Guide for Sampling Slurry Mix for Extraction Test
TB 106	Measurement of Slurry Seal Consistency
TB 109	Test Method for Measurement of Excess Asphalt in Bituminous Mixtures by Use of a Loaded-Wheel Tester
TB 111	Outline Guide Design Procedure for Slurry Seal
TB 112	Method of Estimate Slurry Seal Spread Rates and To Measure Pavement Macrotecture
TB 113	Trial Mix Procedure for Slurry Seal Design
TB 114	Wet Stripping Test for Cured Slurry Seal Mixes
TB 115	Determination of Slurry Seal Compatibility
TB 139	Method of Classified Emulsified Asphalt, Aggregate Mixtures by Modified Cohesion Test Measurement of Set and Cure Characteristics
A105	Design, Testing, and Construction of Slurry Seal

**NOTES:**

ASTM D 3910, Standard Practice for Design, Testing, and Construction of Slurry Seal, is a combined reference of the ISSA Test Bulletins listed above.

ASTM D 2172, Standard Test Methods for Quantitative Extraction of Bitumen From Bituminous Paving Mixtures, is referenced in Section 12.3.

ISSA A105  
Revised February 2010



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## SECTION 715

## SLURRY SEAL MATERIALS

## 715.1 GENERAL:

Slurry seal shall consist of a properly proportioned mixture of emulsified asphalt, mineral aggregate, mineral fillers, additives (if necessary), and water.

All material sources must be approved prior to their use. The Contractor will submit a job mix formula and if requested prequalifications for materials at least seven days prior to start of construction. When requested, additional samples will be furnished during the construction period at no cost to the Contracting Agency. This is a non-pay item.

## 715.2 AGGREGATE:

**715.2.1 Mineral Filler:** Mineral filler shall consist of finely divided matter, such as hydrated lime, Portland cement, limestone dust or fly ash, conforming to the requirements of ASTM D4318. Mineral filler shall be used only when needed to reduce the setting time, to improve the workability or to reduce the stripping characteristics of the aggregate emulsion mixture. The minimum amount of the required filler will be used and it will be considered as part of the blended aggregate. The expected range shall be between .25% and 2.0% by weight of aggregate.

**715.2.2 Mineral Aggregate:** Coarse and fine aggregates or approved mineral filler shall be per Section 701. The mineral filler will be considered as part of the blended aggregate. The material shall be non-plastic (ASTM D4318) with a sand equivalent (ASTM D2419) of at least 50. The abrasion loss (ASTM C131) shall not exceed 35 percent. Historical test data from source aggregate may be used that was run within the past two years. Mineral aggregates used shall be 100% crushed. No natural sand shall be allowed. The gradation of mineral aggregate without mineral filler shall conform to Table 715-1.

TABLE 715-1			
SLURRY SEAL AGGREGATE			
SIEVE SIZE	Type I % PASSING	Type II % PASSING	Type III % PASSING
3/8	100	100	100
No. 4	100	85/100	70/90
No. 8	90/100	65/90	45/70
No. 16	65/90	45/70	28/50
No. 30	40/60	30/50	19/34
No. 50	25/42	18/30	12/25
No. 100	15/30	10/21	7/18
No. 200	10/20	5/15	5/15
Emulsified Asphalt content as a % of Dry Wt. Of Aggregate (approx.) ASTM D3910 (W.T.A.T. TEST)	18	16	14
Residual Asphalt Range requirements % of Dry Wt. of Aggregate ASTM D3910 (W.T.A.T. TEST)	10-16	7.5-13	6.5-12
Pounds of Aggregate per Square Yard (approx.)	8-10	12-18	18-25

## 715.3 BITUMINOUS MATERIAL:

The emulsified asphalt used for seal coating shall be quick setting or slow setting as per Section 713.

## SECTION 715

Polymer modified cationic quick setting emulsion (PMCQS-1h) may be used when approved by the Engineer.

The quick setting emulsified asphalt shall be of the anionic or cationic quick set type such as QSH, CQSH, or PMCQS-1h that will react to chemically active mineral fillers such as Portland cement in such a way that the applied slurry mixture can support controlled traffic in 45-60 minutes after application. The amount of chemically active filler shall be determined by job mix formula and field performance.

Polymer modified cationic quick setting emulsion (PMCQS-1h) shall be homogeneous and the polymer used shall consist of either a solid polymer milled / blended into the asphalt or latex blended into the emulsifier solution prior to the emulsification process. The PMCQS-1h shall contain a minimum of three percent polymer and shall conform to Section 713.

Slow setting emulsion may be used when traffic control is not a critical item.

Quick Set Emulsion Mix Properties	
Slurry Seal Mixing, 70-85 degree F., Sec.	120 Sec. Min.
Slurry Seal Setting test, 70-85 degree F., 1 hour cure	No Brown Stain
Slurry Seal Water Resistance Test, 70-85 degree F., 30 minute cure	No More Than Slight Discoloration

Placement of slurry seal is temperature dependent and should be tested under field conditions.

### 715.4 WATER:

Water shall be potable and be compatible with the slurry ingredients used.

### 715.5 DETERMINATION OF JOB MIX FORMULA:

The job mixture shall be designed to provide a suitable surface for traffic conditions, climate and curing. All materials shall be pre-tested in a qualified laboratory to determine their suitability for use in the slurry seal. The Wet Track Abrasion Test (W.T.A.T.) will be used for design purposes to establish the mix design to be used in the specified slurry seal.

The test will show a maximum wear loss of 75 grams per square foot. Samples of materials to be used on the job shall be used to run the W.T.A.T. The test will be performed in accordance with ASTM D3910 Design Testing and Construction of Slurry Seal.

**715.5.1 Composition of Slurry Seal Mixtures:** The job mixture shall conform to the requirements of the contract documents. The mixture shall attain an initial set in not less than 5 minutes not more than one hour. In cases where the surface is not critical to be open to traffic, a longer set time may be allowed, however not to exceed 12 hours. The setting time may be adjusted by the addition or removal of approved mineral fillers or chemical agents. The mixture shall be one of three types whose combined aggregates conform to the graduation requirements of Table 715-1. The mixture shall be sufficiently free flowing to fill cracks in the pavement. The mixture shall not segregate during or after laydown. The mixture shall produce a skid-resistant surface.

**715.5.2 Trial Applications:** The Contractor shall place a test strip of 60 square yards in the area designated by the Engineer. The test section shall be placed using the same equipment and methods as will be used on the job. The slurry mixture placed in a test strip shall conform to the design mix as determined by the W.T.A.T. with minor variations to obtain crack filling, set time, pavement bond and a skid resistant texture. If the materials do not meet the requirements for fluidity, non-segregation, or surface texture, a new job mix shall be formulated and tested. Work shall not proceed before approval of design mix and acceptance following the placing of a test strip.

### 715.6 TEST CERTIFICATES & REPORTS:

Test certificates and reports for the bituminous material shall be furnished in accordance with Section 711.

SECTION 715

715.7 CONVERSION OF QUANTITIES:

Volumetric conversions shall be accomplished in accordance with Section 713.

- *End of Section* -





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## ADDENDUM

DATE: Monday, September 14, 2015  
TO: BID NO. 2016-20000024 – Slurry Seal Services  
FROM: PURCHASING – Mary E. Roman, Buyer  
SUBJECT: ADDENDUM NO. 1

NOTE: The balance of the specifications and instructions remain the same. Bidder must acknowledge receipt and acceptance of this addendum by signing and returning the entire addendum with the bid or proposal submittal.

### CLARIFICATION:

Question #1 I understand we are responsible for providing written notice to all residents, apartment managers, and business, but will we also be responsible for posting the signage for 'No Parking' or will the city be handling?

**Answer #1** *This is the contractors responsibility.*

Question #2 In protecting the pavement markers, does this include the center lines and striping or do we include the replacement costs for any Striping Replacement?

**Answer #2** *This does not include centerlines or striping.*

### ATTACHMENT:

***Formal2016-20000024 – Slurry Seal Services pdf file – pages 1 - 15***

Thank you  
Mary E. Roman, Buyer

***Company Name:*** \_\_\_\_\_

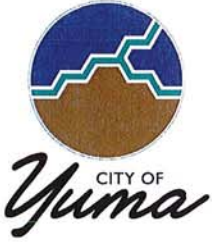
***Contact Person:*** \_\_\_\_\_

***Signature*** \_\_\_\_\_

***Phone Number:*** (       ) \_\_\_\_\_

***Fax Number:*** (       ) \_\_\_\_\_

***E-mail Address:*** \_\_\_\_\_



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## ADDENDUM

DATE: Monday, September 14, 2015  
TO: BID NO. 2016-20000024 – Slurry Seal Services  
FROM: PURCHASING – Mary E. Roman, Buyer  
SUBJECT: ADDENDUM NO. 2

NOTE: The balance of the specifications and instructions remain the same. Bidder must acknowledge receipt and acceptance of this addendum by signing and returning the entire addendum with the bid or proposal submittal.

### CLARIFICATION:

Question #1 The answer to question #2 in the addendum (Addendum NO. 1) confuses me. So just for clarification, do we have to “cover and protect ALL pavement markings such as crosswalks, stop bars and left/right turn arrows from the slurry” as it says in paragraph A on page 14 of 15 of the bid documents?

**Answer #1** Yes.

Question #2 The answer to question #2 says protection is not necessary for centerlines and striping. I usually think of stop bars and crosswalks as “striping”. Also, if we protect pavement markings is there any concern of creating puddle areas?

**Answer #2** *Stop bars and crosswalks are pavement markings. The City has practice these efforts for the last 15 years.*

Thank you  
Mary E. Roman, Buyer

**Company Name:** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_

**Signature** \_\_\_\_\_

**Phone Number:** (       ) \_\_\_\_\_

**Fax Number:** (       ) \_\_\_\_\_

**E-mail Address:** \_\_\_\_\_



**City of San Luis  
1" Overlay  
Bid Tabulation**

**General Items**

<b>No.</b>	<b>Description</b>	<b>Estimated Quantities</b>	<b>Unit</b>	<b>CEMEX</b>		<b>Marco Paving</b>	
				<b>Unit Cost</b>	<b>Total Cost</b>	<b>Unit Cost</b>	<b>Total Cost</b>
1	Mobilization	1	EA	\$ 1,500.00	\$ 1,500.00	\$ -	\$ -
2	Tack Oil and 1" Overlay	6100	SY	\$ 6.50	\$ 39,650.00	\$ 5.38	\$ 32,800.00
3	Taxes	1		\$ 2,865.00	\$ 2,865.00	Included	In Item Costs
				<b>Total</b>	<b>\$ 44,015.00</b>	<b>Total</b>	<b>\$ 32,800.00</b>

# PROPOSAL

## CEMEX Construction Materials South LLC

PO Box 1449 • Yuma AZ • 85366-1449 • (928)343-4111 • Fax (928) 343-4190  
ROC 249364

Eulogio Vera

Proposal Submitted To: City of San Luis	Phone: 341-8577	Fax: 341-8599	Date: October 28 <sup>th</sup> , 2016
Street: 1090 E. Union Street PO Box 3750	Job Name: Overlay Streets "Lakin Dr" & "back side of call center"		
City, State, Zip San Luis, AZ 85349	Job Location: San Luis, Arizona		

We hereby submit specifications and estimates for:

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
Prepare Streets by the City	6,100	SY	-	By Owner
Install & maintain barricades & traffic control by the City	1	LS	-	By Owner
Tack streets prior to overlay	6,100	SY	0.50 \$	3,050.00
Furnish & Install 1" AC Overlay	6,100	SY	6.00 \$	36,600.00
Mobilization of Paver	1	EA	1,500.00 \$	1,500.00
			Total \$	41,150.00
			Sales Tax \$	2,865.00
			Total Proposal \$	44,015.00

### BID QUALIFICATIONS:

1. Bid excludes: permits, fees, testing, engineering, traffic control, utility locations & adjustments, dust control, grinding, crack filling, striping, any sweeping, bond.
2. Customer is responsible for locating all utilities & obstructions and make adjustments accordingly in the area where the work under this agreement will be performed and will compensate Cemex Construction Materials South LLC for
3. Cemex Construction Materials South LLC must be listed as a party to all blue staking for above stated project.

Payment to be made as follows: Within 30 days of date of invoice

NOTE: This Proposal may be withdrawn by us if not accepted within 30 days Mike Thompson — Mike Thompson, Construction Estimator

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance. This Proposal is governed by Seller's Standard Terms and Conditions of Sale.

Seller reserves the right to (i) increase prices on any quotes or accepted orders without notice to reflect any raw material cost increases or surcharges incurred by Seller and (ii) defer or cancel any quotes or accepted orders in the event Seller becomes delayed or prevented from performing due to shortages or allocations of raw materials. In the event of a delay or cancellation resulting from shortages or allocations of raw materials, Seller shall not be liable to Buyer for any damages incurred by Buyer as a result of any such delay or cancellation.

Interest will accrue at a rate of 2% on all amounts unpaid after 30 days. In the event of litigation arising out of this contract, the prevailing party shall be entitled to recover reasonable attorney's fees and costs incurred by it in the enforcement of this contract. This contract is performable in accordance with the laws of the State of Arizona.

**Acceptance of Proposal** - The above prices, specifications and Standard Terms and Conditions of Credit Application are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature: \_\_\_\_\_

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

Print Name: \_\_\_\_\_

Contractor's License Number: \_\_\_\_\_



## Marco Seal Coating & Paving LLC

Phone Number: (928) 287-2239

Email: mpaving7@gmail.com

---

### Project Estimate

October 28, 2016

Price Center  
580 San Luis Plaza Dr  
San Luis, AZ

Atten: Eulogio Vera

#### Scope of Work:

Remove all remaining dirt and debris using blowers.

Furnish project area in order to place new layer of asphalt over existing asphalt surface.

Overlay 6,100 square yards at 1" thickness.

Total Estimated Price for Project: \$32,800.00

Total Estimated SQF for Project: 6,100 yards

---

**ACCEPTANCE OF PROPOSAL** - The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified

\_\_\_\_\_  
Contractee

\_\_\_\_\_  
Contractor



San Luis Plaza Dr

San Luis Plaza Dr

San Luis Plaza Dr



## AGENDA ITEM REVIEW FORM

**Work Session****2. B.****Meeting Date:** 01/18/2017**Department Head:** Eulogio Vera, Public Works Director, Public Works Department**Submitted By:** Manuel Rojas, Assistant Public Works Director, Public Works Department**Action Requested:** Discussion Item - No Action to be Taken

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**ITEM:**

Discussion on any and all matters regarding authorization to approve Shuck Drilling Company, Invoice #8017 for Well #9 rehabilitation and ratification of the same. **(Manuel Rojas, Assistant Public Works Director)**

**SUMMARY:**

Staff called Shuck Drilling Company on a pump issue, which consisted of well yielding much less flow than normal. After water well was removed and camera inspected, we found the well casing was plugged. Due to well pump and piping already removed and vendor on site, we continued with work. Staff recently worked with Shuck Drilling at Well Site #7 Project with good results. The unexpected higher maintenance repair costs were due to sonar jet shots that were performed to clean the well casing and well pump trimming. Public Works Department, recommends waiving formal procurement procedures as allowed under San Luis City Code-Purchasing, Section 36.01 (H) and is justified due to vendor already being on site working on the well. Work performed is at fair market value, and the urgency for a timely repair as Well Site #6 is the largest well site in West San Luis (second largest in the City) and when its down for repairs, its treated as "urgent" due to customer demand and fire liability.

Currently, we are also seeing the same issue with Well #10, until we remove the well it is unclear what repairs will need to be done. Well #10 will be removed and inspected in February 2017, in efforts to be ready for the summer demand.

**RECOMMENDATION / SUGGESTED MOTION:**

Discussion item only, no action.

**Supporting information not attached to the Agenda Item Review Form:**

N/A

**Document to be Recorded?:** No

N/A

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**Fiscal Impact****IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:**

Yes

**CITY/STATE/FEDERAL FUNDS:**Enterprise Funds - Water  
Division**TOTAL:**

\$18,519.73

**BUDGETED:** \$230,050.00  
**AVAILABLE TO TRANSFER:** N/A  
**GL ACCT # & NAME/REMAINING BALANCE BEFORE PURCHASE:** 300-302-70025  
Maintenance/Other \$70,207.73

**FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):**

Staff called Shuck Drilling Company on a pump issue, not pumping appropriate water flow. After water well was removed and camera inspected, we found the well casing was plugged. The cost of maintenance repairs increased due to sonar jet shots used to clean the well casing and well pump trimming.

**Water Division 300-302-70025 Maintenance/Other \$18,519.73**

---

**Attachments**

Well #9 - Invoice  
Well #9 Screen

---

# Shuck Drilling AZ LLC

18927 South Ave 3E  
 Yuma, AZ 85365  
 USA

# INVOICE

Invoice Number: 8017  
 Invoice Date: Dec 12, 2016  
 Page: 1

*Duplicate*

Voice: 928-726-5153  
 Fax: 928-726-6411

Bill To:
CITY OF SAN LUIS P.O.BOX 1170 SAN LUIS, AZ 85349

Ship to:
CITY OF SAN LUIS WELL #9

Customer ID	Customer PO	Payment Terms	
CITY OF SAN LUIS		Net 10th of Next Month	
Sales Rep ID	Shipping Method	Ship Date	Due Date
NAS		12/12/16	1/10/17

Quantity	Item	Description	Unit Price	Amount
8.00		HOURS TO PULL SUBMERSIBLE PUMP BECAUSE WATER OUTPUT WAS LOW.	95.00	760.00
3.00		8" X 20' COLUMN PIPE	450.00	1,350.00
1.00		CAMERA WELL AND FOUND PERFORATIONS PLUGGED.	900.00	900.00
2.00		150FT SONAR JET SHOTS	2,500.00	5,000.00
8.00		ROLLS OF 10 MIL TAPE.	7.00	56.00
6.00		HOURS LABOR TO REINSTALL PUMP WITH USED BOWL FROM WELL #11.	95.00	570.00
4.00		HOURS LABOR TO REMOVE PUMP BECAUSE OUTPUT WAS STILL LOW	95.00	380.00
1.00		CAMERA WELL AGAIN AND FOUND PERF PARTIALLY PLUGGED	1.00	1.00
2.00		150FT SONAR JET SHOTS AS REQUESTED BY MANNY.	2,500.00	5,000.00
1.00		HOUR SHOP LABOR TO DISASSEMBLE BOWL FROM WELL #11 IT WAS FOUND THAT IT WAS ONLY A 60HP UNIT CAUSING THE LOW WATER OUTPUT	75.00	75.00
1.00		GOULDS 10 RJLC2 STAGE BOWL ASSEMBLY 9.3" TRIM 75 HP	2,975.00	2,975.00

Subtotal	Continued
Sales Tax	Continued
Total Invoice Amount	Continued
Payment/Credit Applied	
<b>TOTAL</b>	<b>Continued</b>

Check/Credit Memo No:

1.5 % Int. Charged on accounts over 30 days

**Shuck Drilling AZ LLC**

18927 South Ave 3E  
 Yuma, AZ 85365  
 USA

**INVOICE**

Invoice Number: 8017  
 Invoice Date: Dec 12, 2016  
 Page: 2

*Duplicate*

Voice: 928-726-5153  
 Fax: 928-726-6411

Bill To:
CITY OF SAN LUIS P.O.BOX 1170 SAN LUIS, AZ 85349

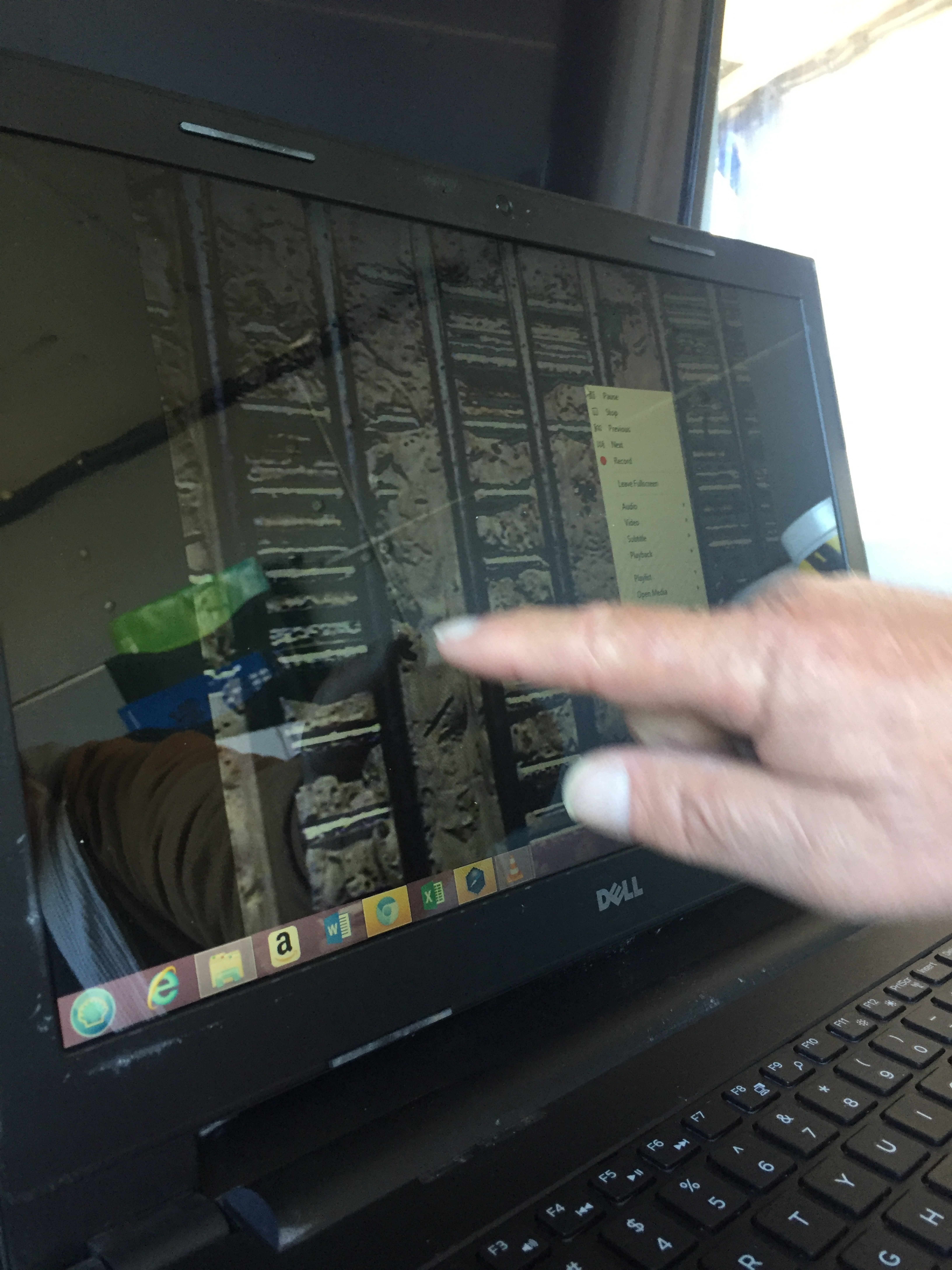
Ship to:
CITY OF SAN LUIS WELL #9

Customer ID	Customer PO	Payment Terms	
CITY OF SAN LUIS		Net 10th of Next Month	
Sales Rep ID	Shipping Method	Ship Date	Due Date
NAS		12/12/16	1/10/17

Quantity	Item	Description	Unit Price	Amount
6.00		HOURS LABOR TO REINSTALL PUMP. NOTE: WELL IS NOW PUMPING CORRECTLY	95.00	570.00
Subtotal				17,637.00
Sales Tax				882.73
Total Invoice Amount				18,519.73
Payment/Credit Applied				
<b>TOTAL</b>				<b>18,519.73</b>

Check/Credit Memo No:

1.5 % Int. Charged on accounts over 30 days



- Pause
- Stop
- Previous
- Next
- Record
- Leave Fullscreen
- Audio
- Video
- Subtitle
- Playback
- Playlist
- Open Media

- Edge
- File Explorer
- Amazon
- Word
- OneDrive
- Excel
- Task View
- Search

DELL





## AGENDA ITEM REVIEW FORM

**Work Session****2. C.****Meeting Date:** 01/18/2017**Department Head:** Eulogio Vera, Public Works Director, Public Works Department**Submitted By:** Manuel Rojas, Assistant Public Works Director, Public Works Department**Action Requested:** Discussion Item - No Action to be Taken**ITEM:**

Discussion on any and all matters regarding approval of final proposal from Synovia Solutions for the purchase of a Global Positioning System (GPS) software and hardware for Public Works Fleet. **(Manuel Rojas, Assistant Public Works Director)**

**SUMMARY:**

Staff contacted three (3) companies offering GPS solution for the Public Works fleet. After research, staff recommends Synovia Solutions for our GPS tracking needs in the amount of **\$4,224.00**. The intent of the GPS system is to assist Public Works and to optimize the Solid Waste collection and street sweeper routes. As the City grows, GPS tracking and monitoring can become a powerful tool to assist analyze current and new Solid Waste routes. The incorporation of GPS software will help improve our customer service to our community, savings in fleet maintenance and fuel consumption costs.

Staff recommends the approval of Synovia Solutions, GPS system on Solid Waste trucks, Street Sweepers, Inmate Crew Unit, On-Call vehicles and other spare vehicles as a one year trial.

**RECOMMENDATION / SUGGESTED MOTION:**

Discussion item only, no action.

**Supporting information not attached to the Agenda Item Review Form:**

N/A

**Document to be Recorded?:** No

N/A

**Fiscal Impact**

<b>IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:</b>	yes
<b>CITY/STATE/FEDERAL FUNDS:</b>	Enterprise Fund and HW Users Fund
<b>TOTAL:</b>	\$4,224.00
<b>BUDGETED:</b>	\$15,300.00
<b>AVAILABLE TO TRANSFER:</b>	N/A
<b>GL ACCT # &amp; NAME/REMAINING BALANCE BEFORE PURCHASE:</b>	Contractual services 80000
<b>FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):</b>	

Staff will be itemizing the bill, for all 4 Divisions(Water-Wastewater-Solid Waste-HW Users). Here are the balances before purchase for the 4 Divisions:

<b>HW Users Division - Capital Outlay Equipment - 200-210-80000</b>	<b>\$13,108.54</b>
<b>Solid Waste Division - Capital Outlay Equipment - 320-321-80000</b>	<b>\$5,643.14</b>
<b>Water Division - Contractual Services - 300-302-80000</b>	<b>\$106,411.67</b>
<b>Wastewater Division - Contractual Services - 310-311-80000</b>	<b>\$32,493.69</b>

---

### **Attachments**

Synovia Solutions Proposal

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## **Final Proposal**

**FOR:**



**Date Proposed:  
12/29/2016**

### **Index**

- Page 1: Cover Page
- Page 2: Pricing Details
- Page 3 & 4: Hardware Details
- Page 5: Synsurance Details
- Page 6: Contact Information

## Pricing for City of San Luis

Solution Options	Includes/other functions	Cost Per Vehicle per month	Total Cost Per Month
<b><u>Core GPS Hardwired Unit</u></b>	Core Track and Trace GPS hardwired, 7 tap points available	\$29.00	<b><u>8 Vehicles</u></b> <b>\$232.00</b>
<b><u>White Fleet GPS:</u></b> Vans, Cars, F-150, 250 350 Trucks	Plug-N-Play Unit for core GPS tracking	\$20.00	<b><u>6 Vehicles</u></b> <b>\$120.00</b>
Total Number of Vehicles: 14 vehicles <b><u>Total Monthly Investment</u></b> <b>\$352.00</b>  <b><u>Total Year Investment</u></b> <b>\$4,224.00</b>			

<b>12 Month Agreement - NO UPFRONT COSTS</b>
--

### **Included in EVERY package w/ Synovia**

Hardware- GPS Hardwire Units- Antenna- Harness- Input Tracking- Integration (routing software)	Core Real Time GPS, Maintenance Module, Tracking with Reports and Alerts	Driver Behavior Data Reporting/Harsh Braking, Acceleration, Unsafe Turns
Software- Cloud based hosting (Silverlining)	Wireless Connectivity with Verizon Wireless (No data overages)	Installation
Lifetime Hardware Warranty	Software updates & Training	Project Manager
Synsurance	Built in Guarantees	No hidden costs

## Hardware Breakdown

### Hardwired: In-Vehicle Units

➤ LMU-4220



### LMU 4220

- **Synovia Solution Installs Units**
- **External Antenna (Windshield Mount)**
- **Recommended Unit for Large Heavy Duty Trucks & Buses (Larger than a F-350)**
- **7 Tapping points available (Event Monitoring)**
- **Ability to Connect Peripherals (Tablets, Operator Panels, Bar Code Scanners and More\*)**
- **LMU 4220 (No Engine Diagnostics)**
- **Tamper Alert**

\*Ask for more details

## Hardware Breakdown Cont.

### Plugin Vehicle Unit - 3030

- 3030 Plug-N-Play



### 3030 (Self Install Unit)

- Internal Antenna
- Designed for (Cars, Vans & Trucks F-350 and smaller)
- Engine Diagnostic basic reading
- Connects to the OBDII Port
- No external event monitoring
- Core GPS Track & Trace
- Tamper Alert

## **Synovia's Synsurance INCLUDES the following components:**

- ✓ **Reliable Hardware**
  - Lifetime Warranty
  - Spare Hardware (2% of fleet)
- ✓ **Powerful Software**
  - Hosted Solution
    - Real Time Information – Pings every 30 seconds and left, right turn or harsh incident
    - On-demand, Drill-down Reports
    - Scheduled Reports
    - Maps and Weather Overlay
    - Geo-fence Reporting
    - Alerts
    - Key Performance Indicators (KPI) Dashboard
    - Engine Diagnostics
    - Driver Behavior Monitoring
      - Speeding
      - Harsh Braking
      - Harsh Acceleration
      - Harsh Turning
      - Engine Idling
  - Software as a Service (SaaS)
    - Unlimited Number of Users
  - Continual Updates and Upgrades
- ✓ **Scalable Services**
  - Hardware Installation
  - Software Implementation
  - Training (on-site, online & video)
  - Toll-free Support Line
  - Project Management
  - Rapid Response Support
- ✓ **Dependable Verizon Wireless Data Plan**
  - Best Nation-wide Coverage
  - Best Network Backup Infrastructure
  - No Overage Charges
  - Synovia is an authorized Verizon Wireless Reseller
- ✓ **Affordable Financial Terms**
  - **No Upfront Investment**
  - **No Hidden Costs**
  - **No Extra Costs**
  - No Price Increases
  - One Monthly All-inclusive Service Fee
  - Self-funding (typically within 90 days)

Please let me know what questions you might have about information listed on above pages!

## **Josiah Mullen**

**Fleet Management Specialist**

*Synovia Solutions*

Direct Line: 317-663-4527

Cell Phone: 765-414-1947

Fax: 317-208-2202

Email: [jmullen@synoviasolutions.com](mailto:jmullen@synoviasolutions.com)

[www.synoviasolutions.com](http://www.synoviasolutions.com)



## AGENDA ITEM REVIEW FORM

**Work Session****3. A.****Meeting Date:** 01/18/2017**Department Head:** Eulogio Vera, Public Works Director, Public Works Department**Submitted By:** Manuel Rojas, Assistant Public Works Director, Public Works Department**Action Requested:** Discussion Item - No Action to be Taken**ITEM:**

Discussion on any and all matters regarding Water Division, Back-Flow Program and bringing all commercial and multi-residential property owners in compliance with Ordinance No. 125. **(Manuel Rojas, Assistant Public Works Director)**

**SUMMARY:**

The Back-Flow Program was set in place under the Safe Drinking Water Act as amended in 1986, and Arizona Administrative Code R18-4-115 (Now A.A.C. R-18-4-215) in efforts to protect the potable water supplies from contaminants or pollutants due to back-flow. The City adopted Ordinance No. 125 in 1995, which required the use of a back-flow prevention device to commercial and multi-family accounts. To better manage the back-flow program and to try and reach full compliance, Water Division has purchased the XC2 Back-Flow Program, which has worked with several businesses and multi-residential property owners assisting them to reach full compliance. Per regulations, there is no grand fathering for back-flow program requirements. Currently, the City of San Luis has 380 active accounts that require a back-flow device, of which 28 are noncompliance with the Back-Flow Program. In the intent to achieve full compliance, staff has sent three (3) letters out to various businesses requesting compliance, and the remaining 28 accounts have not been responsive. On February 1, 2017, staff will be sending a 45-day notice to all business that are non-compliant, which afterwards will be followed with a 15-day disconnect notice.

**RECOMMENDATION / SUGGESTED MOTION:**

Discussion only, no action.

**Supporting information not attached to the Agenda Item Review Form:**

N/A

**Document to be Recorded?:** No

N/A

**Fiscal Impact**

<b>IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:</b>	N/A
<b>CITY/STATE/FEDERAL FUNDS:</b>	N/A
<b>TOTAL:</b>	N/A
<b>BUDGETED:</b>	N/A
<b>AVAILABLE TO TRANSFER:</b>	N/A

**GL ACCT # & NAME/REMAINING BALANCE BEFORE PURCHASE: N/A**

**FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):**

No financial impact, discussion only

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**Attachments**

Non-Compliant Accounts

BFA Informational Flyer

Ordinance No. 125

---

## Active Commercial Accounts

Account Name	Full Address	BF Device
Gethsemane Baptist Mission	1010 E B ST	N
Gethsemane Baptist Mission	1018 E 'B' ST	N
Pilkington Commercial Co. Inc.	1052 N 10TH AVE	N
Curiel, Orlando	1252 N HIDALGO AVE	N
Iglesia Apostolica De la Fe	1329 N MAIN ST	N
San Luis SDA Church	2061 SAN LUIS LN	N
Del Mundo Co. LLC	476 N CESAR CHAVEZ ST	N
Sol Internantional / Seul Danny	506 N MAIN ST	N
WW Wholesale/Weinstein Alan	522 N MAIN ST	N
Casas, Maria G	536 N CESAR CHAVEZ ST	N
Diez-Martinez, Manuel	560 N ARCHIBALD ST	N
Thompson, Pablo A	576 N ARCHIBALD ST	N
Carlos, Alejandro	598 N ARCHIBALD ST	N
Payless Shoe Source Site #03392	639 N MAIN ST	N
Ramos, Maria	655 N 2ND AVE	N
Lara, David	655 N 2ND AVE-ALLEY	N
San Luis Business Center	689 N MAIN ST	N
San Luis Air Conditioning	704-B N CESAR CHAVEZ ST	N
Ppep Inc.	731 1ST AVE	N
Camillus Health Center	780 N CESAR CHAVEZ ST	N
RL Jones Properties	800 N MAIN ST	N
Medina, Jesus	804 N MESA ST APT B	N
Ramirez, Salvador	844 N 4TH ST	N
Padilla, Luciana	863 'D' ST.	N
Hillside Mini Storage	874 N MESA ST	N
Padilla, Arcenio	890 'D' ST	N
Yuma Co. Water Users	600 N. Hidalgo Ave.	N
DeSantiago Auto Sales	1063 Main St.	Well

## Compliance is mandatory

City of San Luis is working on implementing the Backflow Prevention plan for all commercial water services. This is under the Safe Drinking Water Act Public Law 99-339 Amendment of 1986, The State of AZ R18-4-115 and also adopted by the City of San Luis Ordinance No. 125 in 1995.

## A clean water supply is OUR responsibility

City of San Luis Water Department is responsible for protecting the public water and sewer supply, which begins at the source, includes the entire water distribution system and service connections, and ends at the point of delivery to the consumer. City of San Luis requires backflow prevention devices for containment of pollution sources.

City of San Luis Water Department is responsible for regulating the protection of the consumer's water system, which begins at the point of delivery from the supplier and includes all piping installations inside the consumer's premises. Backflow devices required are for isolation of pollution sources within the building.

## Compliance is YOURS

Customers are responsible for providing backflow prevention devices and having them inspected, tested, and repaired. Tests are required at the time of installation and at least every twelve (12) months thereafter. Inspections, tests, and repairs of backflow devices are at the expense of the water customer, and must be performed by a certified tester.



Need additional information about backflow prevention, contact:

### Department of Public Works

Manuel Rojas, Asst. PW Director  
☎ 928-341-8577

✉ mrojas@cityofsanluis.org

### Water Division

Antonio Sandoval, Water Supervisor  
☎ 928-341-8578

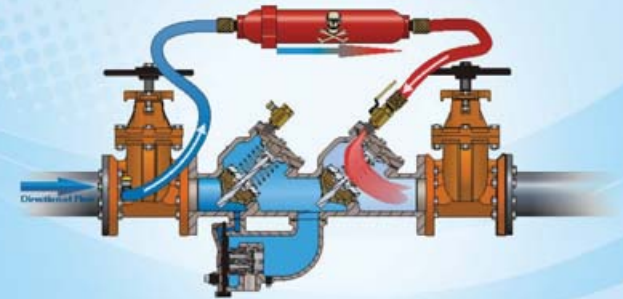
✉ asandoval@cityofsanluis.org

Forms can be found at: [cityofsanluis.org](http://cityofsanluis.org)  
(search for Public Works/Water Division)  
or at the Public Works Office  
1090 E. Union St.  
PO Box 3750  
San Luis, AZ 85349



# BACKFLOW PREVENTION PROGRAM

Important information for  
**Commercial,  
Industrial,  
Institutional  
& Multi-Residential Property Owners**



City of San Luis  
Department of Public Works

## What is backflow?

Backflow is any reversal of flow within a piping system. City of San Luis Water and Wastewater Department maintains the high quality of our water until it enters a customer's piping system. After water enters a customer's premises, our Water Department cannot control its quality or use. Allowing water to flow backward from a customer's piping into the distribution system could endanger the public water supply.

## What causes backflow?

Backflow can be caused by two different force, backsiphonage and backpressure. Backsiphonage occurs when there is a sudden reduction in water pressure within the distribution system. This can occur when a water main breaks or when a car strikes a fire hydrant. The sudden pressure drop creates suction that can siphon water from your pipes, and anything connected to them, back into the distribution system. Backpressure can cause backflow when the water pressure inside a boiler or other equipment connected to a customer's piping system becomes higher than the pressure in the distribution system. Some types of pressurized equipment contain soap, acid, anti-freeze, or other undesirable substances.



## What is cross-connection?

A cross-connection is any temporary or permanent connection between portable water and any other substance. A temporary cross-connection could be a hose connected to a faucet, with its other end submerged in the contents of a utility sink, swimming pool, car radiator, or industrial cooling system. It could be a garden hose connected to an insecticide dispenser. Cross-connections can defeat your plumbing system's built-in backflow prevention principles, allowing harmful substances to backflow into your water pipes.

## How can backflow be prevented?

We can prevent backflow by eliminating cross-connections and using backflow prevention devices. Household devices are available for use with hoses. Industrial, commercial, and multi-family applications required devices such as:

- Air Gap Separation
- Double Check Valve
- Reduced Pressure Double Check Valve

The type of protection required is based on the potential for backflow and the degree of hazard to the public water supply.

## Where is protection required?

City of San Luis requires a reduced pressure backflow prevention assembly to be installed on each water line entering a commercial building, industrial facility, or multi-family residential building of more than three units. Reduced pressure devices must be installed inside a building unless they are protected from cold temperatures and freezing by installation of a hot box. They cannot be installed in pits or below grade level. We also require fire lines to have backflow prevention assembly.

## Testable Backflow Preventers



Newly Installed 4-Inch  
Reduced Pressure Principle Backflow Preventer



Reduced Pressure Backflow Device



Double Check Valve Device

ORDINANCE NO. 125

AN ORDINANCE OF THE CITY OF SAN LUIS, ARIZONA FOR PREVENTION OF BACKFLOW; PROVIDING DEFINITIONS; SETTING FORTH PREVENTION REQUIRED; ESTABLISHING HAZARDS, APPROVED METHODS; ASSEMBLY REQUIREMENTS, INSTALLATION, INSPECTION, RETROACTIVE APPLICATION, PLAN REVIEWS, FEES, AND PROVIDING PENALTIES FOR VIOLATION.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF SAN LUIS, ARIZONA AS FOLLOWS:

SECTION 1. DEFINITIONS:

A. Approved

Accepted by the Department as either meeting an applicable specification stated or cited in this Chapter, or suitable for the proposed use.

B. Auxiliary Water Supply

Any water supply on, or available to, premises other than potable water supplied by the City of San Luis. These auxiliary waters may include, but shall not be limited to, water from another purveyor's public potable water supply or any natural sources such as a well, spring, river, stream, harbor, or treated effluent, waste waters or industrial fluids. These waters may be polluted or contaminated or may be objectionable and constitute an unacceptable water source over which the Department does not have sanitary control.

C. Backflow

The undesirable reversal of flow in the potable water system caused by either backpressure or backsiphonage.

D. Backpressure

Any elevation of pressure in a customer's water supply system, above the pressure of the public potable water supply system, which could cause water or other liquids, mixtures or substances to flow from a customer's water supply system into the distribution system of the public potable water supply system.

E. Backsiphonage

A reversal of the normal flow of water caused by a reduction of pressure in the potable water supply system which causes the flow of water or other liquids, mixtures or substances to flow from a customer's water supply system into the distribution system of the public potable water supply system.

F. Backflow Preventer

An approved assembly or means designed to prevent the reversal of the normal flow of water caused by either backpressure or backsiphonage.

G. Certified Tester

An individual certified and approved by an agency recognized by the Department to conduct testing on backflow prevention assemblies.

H. Contamination

An impairment in the quality of potable water, by sewage, industrial fluids, waste liquids, compounds or other material or fluids, to a degree which creates an actual hazard to the public health by poisoning or the spread of disease.

I. Cross-Connection

Any actual or potential connection or other arrangement of piping or fixtures, between a piping system containing potable water and piping system containing nonpotable water, waste fluids, industrial fluids or other fluids of questionable safety for human consumption, through which, or because of which, backflow may occur into the public potable water system. Cross-connections include any temporary connections such as swing connections, removable sections, fourway plug valves, spools, dummy sections of the pipe, swivel or changeover devices or sliding multi-port tubes, hose connections, or any other temporary or permanent devices, through which, or because of which, backflow can or may occur.

J. Customer Water Supply System

The water distribution facilities within a customer's premises commencing at the discharge point of the service connection.

K. Department

The City of San Luis, Department of Public Works.

L. Distribution System

The network of conduits used to deliver potable water from the source facilities to the customer's water supply system.

M. Hazard, Degree of

Evaluation of the potential risk to the public health and the adverse effect of the hazard upon the public potable water system.

N. Industrial Fluid System

Any system containing a fluid or solution which is chemically, biologically or other wise contaminated or polluted in a form or concentration such as would constitute a health, system, pollution, or plumbing hazard if introduced into the public potable water system. This may include, but shall not be limited to: polluted or contaminated waters' all types of process waters, waste waters and used waters originating from the public potable water system which may have deteriorated in sanitary quality; chemicals in fluid form; plating acids and alkaline, circulating cooling waters connected to an open cooling tower and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, or oils, gases, glycerine, paraffins, caustic and acid solutions and other liquid and gaseous fluids used in industrial or other purposes or for fire-fighting purposes.

O. Nonpotable Water

Water which is not safe for human consumption or which is of questionable quality for human consumption.

P. Pollution

The presence of any foreign substance (organic, inorganic or biological) in water which tends to degrade its quality or impair its usefulness to a degree which does not create an actual hazard to the public health, but which does adversely and unreasonably affect such water for domestic use.

Q. Potable Water

Any water is safe for human consumption pursuant to the standards set by the Arizona Department of Environmental Quality.

R. Public Potable Water Supply System

The source facilities and the distribution system under control of the City of San Luis to the point where a customer's water supply system commences. A customer's water supply system commences at the discharge point of the service connection.

S. Service Connection

The terminal end of a service line from the public potable water system at its point of delivery to the customer's water system where the Department loses jurisdiction and sanitary control over the water. If a meter is installed between the customer's water supply system and the public potable water system, the service connection shall be the discharge-end of the meter. Service connections shall also include a water connection from a fire hydrant and any other temporary or emergency water connections with the public potable water supply system.

T. Source Facilities

All components and facilities utilized in the production, treatment, storage and delivery of potable water to the distribution system.

U. Used Water

Any water supplied by the Department, from the public potable water system to a customer's water system, after it has passed through the service connection and is no longer under the sanitary control of the Department.

SECTION 2. PURPOSE

- A. To protect the public potable water supply of the City of San Luis from the possibility of contamination or pollution by preventing the backflow of contaminants and pollutants into the public potable water supply system; and
- B. To promote the elimination or control of existing cross-connections, actual or potential, within a customer's internal potable water system, plumbing fixtures and industrial piping systems; and
- C. To provide for a continuing program of cross-connection control which will prevent the contamination or pollution of the public potable water supply system.

SECTION 3. BLACKFLOW PREVENTION REQUIRED

- A. The minimum level of backflow protection which shall be provided to protect the public water supply system shall be that which is recommended by the Manual or Cross Connection

Control, 8th Edition, June 1988 (and no future editions), which is incorporated herein by reference and on file in the office of the City Manager.

- B. An approved backflow prevention method shall be utilized or installed at every service connection to a customer's water system when the Department determines the potable water supplied by the public potable water system may be subject to contamination, pollution or other deterioration in sanitary quality by conditions within the customer's water system.
- C. The backflow prevention method to be utilized or installed shall be determined by the Department. The method required by the Department shall be sufficient to protect against the potential degree of hazard, as determined by the Department, to the public potable water supply from the customer's water system.

#### SECTION 4. HAZARD POTENTIAL

The degree of hazard potential to the public potable water supply and system from a customer's water supply system shall be determined using the following hazard factors:

A. Health

Any condition, device or practice which, in the judgment of the Department, may create a danger to the health and well-being of the potable water consumers.

B. Plumbing

A plumbing type cross-connection that is not properly protected by an approved backflow prevention method.

C. Pollution

An actual or potential threat to the physical facilities of the public potable water supply system or to the potable water supply which, although not dangerous to health, would constitute a nuisance or be esthetically objectionable, or could cause damage to the system or its appurtenances.

D. System

An actual or potential threat which may cause severe damage to the physical facilities of the public potable water supply system or which may have a protracted effect on the quality of the potable water in the system.

SECTION 5. BACKFLOW PREVENTION METHODS:  
APPROVED LIST

- A. A backflow prevention method shall be any assembly or other means designed to prevent backflow. The following are the recognized backflow prevention methods which the Department may require under Section 3 or Section 4 of this regulation.
1. Air gap: The unobstructed vertical distance through the free atmosphere between the lowest opening of any pipe or faucet supplying potable water to a tank, plumbing fixture or other device and the flood level rim of said tank, plumbing fixture or other device. An approved air gap shall be at least double the diameter of the supply pipe or faucet and in no case less than one (1) inch.
  2. Reduced pressure principle assembly (hereinafter "RP"): An assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves, and at the same time below the first check valve. The assembly shall include properly located test cocks and tightly closing shut-off valves at each end of assembly.
  3. Double check valve assembly (hereinafter "DC"): An assembly composed of two independently acting, approved check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with a properly located test cocks.
  4. Pressure vacuum breaker assembly (hereinafter "PVB"): An assembly containing an independently operating, internally loaded check valve and an independently operating, loaded air inlet valve located on the discharge side of the check valve. The assembly shall be equipped with properly located test cocks and tightly closing shut-off valves located at each end of the assembly.
- B. A backflow prevention method may be approved by the Department if it has received the approval of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California.
- C. The Department shall maintain a list of approved backflow prevention assemblies, by type and manufacturer. The list shall be furnished to any customer required to install a backflow prevention assembly.

SECTION 6. BACKFLOW PREVENTION METHOD REQUIRE  
SPECIFIED ACTIVITIES

- A. When any of the following activities are conducted on premises served by the public potable water system, a potential hazard to the public potable water supply shall be presumed and a backflow prevention method, of the type specified for that activity herein, must be utilized or installed at the service connection for that premise.
1. Aircraft and missile plant: RP
  2. Animal clinics and animal grooming shops: RP
  3. Any premises where a cross-connection is maintained: RP
  4. Automotive repair with steam cleaner, acid cleaning equipment, or solvent facilities: RP
  5. Auxiliary water systems: RP
  6. Bottling plants, beverage or chemical: RP
  7. Breweries: RP
  8. Multi-storied buildings: DC
  9. Buildings with house pumps and/or potable water storage tank: DC
  10. Buildings with landscape fountains, ponds, or baptismal tanks: RP or Air Gap
  11. Buildings with sewage ejectors: RP or Air Gap
  12. Canneries, packing houses, and reduction plants: RP
  13. Car wash facilities: RP
  14. Cooling towers, boilers, chillers, and other heating and cooling systems utilizing potable water: RP
  15. Chemical plants: RP
  16. Chemically treated potable or nonpotable water systems: RP
  17. Civil works (government owned or operated facilities not open for inspection by the Department): RP
  18. Commercial laundries: RP
  19. Dairies and cold storage plants: DC
  20. Dye works: RP
  21. Film processing laboratories, facilities or equipment: RP
  22. Fire systems - as classified by the American Water Works Association (AWWA)  
Manual 14:
    - A) Class 1, Class 2: DC  
This requirement may be waived for fire protection systems constructed of approved potable water materials per the Uniform Plumbing Code as adopted by the City.
    - B) Class 3, all systems: DC
    - C) Classes 4, 5 and 6, all systems: RP
  23. Fire systems - where backflow protection is required on the industrial/domestic service connection that is located on the same premises, both service connections will have adequate backflow protection for the highest degree of hazard effecting either system.

24. Food processing plants: RP
25. High schools and colleges: RP
26. Holding tank disposal stations: RP
27. Hospitals and mortuaries (major complexes): RP
28. Medical and dental buildings, sanitariums, rest and convalescent homes engaged in the diagnosis, care or treatment of human illness: DC
29. Irrigation systems (not to include single family residences used solely for residential purposes unless otherwise identified as having a cross connection or back flow problem):
  - A) Premises where nonpotable water is used for irrigation: RP
  - B) Premises using potable water with nonpotable water piping: RP
  - C) Premises having a system served by more than one (1) service connection (looped system): RP
  - D) Premises where chemigation is practiced: RP
30. Laboratories using toxic materials: RP
31. Manufacturing, processing, and fabricating plants: RP
32. Mobile home parks served by master meter: DC
33. Motion picture studios: RP
34. Multiple services - interconnected: DC
35. Oil and gas production facilities: RP
36. Paper and paper production facilities: RP
37. Plating plants: RP
38. Portable insecticide and herbicide spray tanks: RP or Air Gap
39. Power plants: RP
40. Radioactive materials processing facilities: RP
41. Restricted, classified, or other closed facilities: RP
42. Rubber plants: RP
43. Sand and gravel plants: RP
44. Sewage and storm drainage facilities: RP
45. Shopping centers served by master meters: RP
46. Public swimming pools with self-levelers or automatic fillers: PVB
47. Street sweepers, steel wheeled rollers: RP or Air Gap
48. Water trucks, water tanks, or hydraulic sewer cleaning equipment: RP or Air Gap
49. Hydrant meters connected to system to be used for irrigation or any use not included in No. 48: RP or Air Gap
50. Buildings used for commercial mini-warehouses or industrial uses where one (1) service connection supplies more than one (1) tenant or occupant of the building: RP

B. When two or more of the activities listed above are conducted on the same premises and served by the same service connection, the most restrictive backflow prevention method required for

any of the activities conducted on the premises shall be required to be utilized or installed at the service connection. The order of most restrictive to least restrictive backflow prevention methods shall be as follows:

1. Air Gap (most restrictive);
  2. Reduced Pressure Principle Assembly (RP);
  3. Double Check Valve Assembly (DC);
  4. Pressure Vacuum Breaker Assembly (PVB) (least restrictive)
- C. If the Department determines, after inspection of the customer's system, that a backflow prevention method less restrictive than that required in Section 3 of this regulation will provide adequate protection of the public potable water system, the Department may, in its sole discretion, modify the requirements of Section 6 of this regulation.

SECTION 7. BACKFLOW ASSEMBLY INSTALLATION  
REQUIREMENTS: LOCATION

- A. Backflow prevention assemblies shall be installed by the customer, at the customer's expense and in compliance with the standards and specifications adopted by the City of San Luis, at the service connection.
- B. The assembly shall be in an accessible location approved by the Department. A reduced pressure principle assembly and pressure vacuum breaker assembly shall be installed above ground. A double check valve assembly may be installed, at the customer's option, below ground in a vault which meets standard specifications established by City of San Luis.
- C. When customer desires a continuous water supply, two (2) or more backflow prevention assemblies shall be installed parallel to one another at the service connection to allow a continuous water supply during testing of the backflow prevention assemblies. When backflow prevention assemblies are installed parallel to one another, the sum of the diameters of the assemblies shall be at least equal to the diameter of the service connection. Fire system assemblies are addressed in Section 8.
- D. Section 7 of this regulation shall not apply to fire sprinkler systems.

SECTION 8. INSTALLATION OF BACKFLOW PREVENTION ASSEMBLIES  
FOR FIRE SPRINKLER SYSTEMS

- A. All control valves on the backflow device shall be locked in the open position or be tamper switch protected in accordance with NFPA.
- B. When a backflow prevention assembly is required for a water service connection supplying only to a fire sprinkler system, assembly shall be installed at the user connection for the fire sprinkler system in compliance with standard specifications adopted by the City of San Luis.
- C. If the authority enforcing the Uniform Fire Code determines that a fire sprinkler system shall have a continuous water supply which may not be interrupted during testing of the backflow prevention assembly, the customer shall install, at his expense, two backflow prevention assemblies parallel to one another at the service connection. The diameter of each assembly shall be at least equal to the diameter of the service connection.
- D. When a backflow prevention assembly is required for a building which already contains a fire sprinkler system, the sprinkler system shall be tested and certified by a licensed registrant in the State of Arizona that it will perform within the specification of the National Fire Protection Association and the City of San Luis fire codes, after installation of the required assembly.

SECTION 9. INSPECTIONS, TESTING, MAINTENANCE, RECORDS

- A. A customer's water system shall be available at all times during business hours for inspection by authorized personnel of the Department. The inspection shall be conducted to determine compliance with this regulation.
- B. The customer shall test and service backflow prevention assemblies at least once a year. If the testing reveals the assembly to be defective or in unsatisfactory operating condition, the customer shall perform any necessary repairs, including replacement or overhaul of the assembly, if necessary, which will return the assembly to satisfactory operating condition.
- C. If the Department or customer learns or discovers, during the interim period between tests, that an assembly is defective or in unsatisfactory operating condition, the customer shall

perform any necessary repairs, including replacement or overhaul of the assembly if necessary, which will return the assembly to satisfactory operating condition.

- D. The annual testing shall be performed by an individual certified and approved to conduct such testing by an agency recognized by the Department. A list of certified, approved and recognized individuals will be maintained by the Department and will be available upon request to all persons required to install or maintain a backflow prevention assembly. A tester may be suspended or removed from the list for improper testing, maintenance, reporting or other improper practices as determined by the department.
- E. The customer shall maintain records, on forms approved by the Department, of the results of all tests and all servicing, repairs, overhauls or replacements of the backflow prevention assembly. A copy of the records shall be submitted to the Department within fourteen (14) days after completion of the activity for which the record is made.

#### SECTION 10. RETROACTIVE APPLICATION SYSTEM RETROFIT

- A. The provisions of this regulation shall apply to all new water customers and all water customers existing prior to the enactment date of this regulation.
- B. Backflow prevention assemblies installed prior to enactment of this regulation, and which do not comply with the requirements set forth herein, shall be replaced with assemblies which comply with the standards set forth herein.
- C. All water customers existing prior to the enactment of this regulation shall comply with the standards set forth herein within a period of time as determined by the Department. The maximum time allowed for compliance shall be July 1, 1994.
- D. A change of ownership or name change or type of use change shall require a new survey of use. If the survey determines an assembly is required, installation needs to be completed before granting the change.
- E. Fire sprinkler systems which will require retrofit prior to July , 1994:
  - 1. A fire sprinkler system designed by pipe schedule which is modified, expanded or augmented under issuance of a building permit.

2. A fire sprinkler system designed by hydraulic calculation which is modified in an area equal to the size of the design area or effecting 10 sprinkler heads.
- F. The Quarterly Flow & Valve Confidence Test. Class 1 and Class 2 fire sprinkler systems constructed with nonpotable BPA immediately, replacing the single check valve or to have the fire sprinkler system single check (or alarm check) inspected at least quarterly to verify the existing single check (an/or alarm check) valves are properly installed and functioning. Quarterly Flow & Valve Confidence Test reports shall be provided to the department and the fire chief within 14 days following the inspection, submitted on forms approved by the Department. Any fire sprinkler system which falls two consecutive quarterly inspections shall be re-engineered with; the single check valve replaced by the appropriate backflow prevention assembly. The water customer or properly owner shall pay for this quarterly flow & valve confidence test.

#### SECTION 11. PLAN REVIEW

- A. All backflow prevention assemblies which will be installed shall be shown and specified on all required building and engineering plans. City approval of the intended assembly installation is required prior to issuance of any building or engineering permit.
- B. Plumbing permits for the installation of all backflow prevention assemblies required by the City shall be obtained from the City prior to installation.
- C. Replacement of existing backflow prevention assemblies shall require a plumbing permit.
- D. Backflow prevention assemblies must be installed as to meet the standard specifications of the City and be tested by a certified tester and shown to be operating correctly. A copy of all testing records shall be submitted to the Department within fourteen (14) days.

#### SECTION 12. FEES

- A. A monthly service fee may be established by City Council resolution to cover the costs of implementing and enforcing this regulation and if established shall be charged to every customer who is required to install a backflow prevention assembly. The fee shall be included in the customer's monthly water bill.

- B. A fee may be established by the City for any permits issued pursuant to the terms of this regulation.

SECTION 13. ENFORCEMENT

- A. It shall be unlawful for any person, firm or corporation to bypass or remove a backflow prevention method without the approval of the Department. Any person, firm or corporation violating the provisions of this paragraph shall be guilty of a Class 1 misdemeanor, and upon conviction thereof shall be punished in accordance with the Arizona Revised Statutes. Each separate day or part thereof during which any violation of this paragraph occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.
- B. If the Department discovers that a customer has not installed a required backflow prevention method or that a backflow prevention method has been improperly tested or maintained, by passed or removed, or that an unprotected cross-connection exists in the customer's water system, the water service to that service connection shall be disconnected if the situation is not remedied within the time specified in the notice sent to the customer as required by this section. The service shall not be restored until the condition is remedied.
- C. Water service to a fire sprinkler system shall not be subject to disconnection under this section. If a situation, which could otherwise result in discontinuance of water service in subsection B, above, is not remedied within the time provided in the notice sent to the customer, the customer shall be guilty of a Class 1 misdemeanor. Each separate day or part thereof during which any violation of this paragraph occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.
- D. Prior to disconnecting any water service because a condition set forth in subsection A. above exists, the Department shall send a notice to the customer describing the condition and notifying the customer the condition must be remedied within forty-five (45) days after mailing of the notice by the Department. If such condition is not remedied within said forty-five (45) day period, the Department shall send a second notice, by certified mail, to the customer modifying the customer notifying the customer that water service will be disconnected in fifteen (15) days in the condition is not remedied within such time period.

Page 14  
Ord. No. 125

- E. The Department may disconnect, without notice, water service to any customer when the Department discovers that the customer's water system is contaminating the public potable water supply.

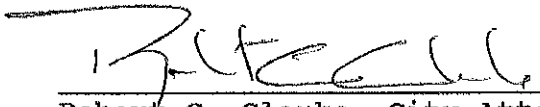
PASSED AND ADOPTED by the Mayor and Council of the City of San Luis, Arizona, this 11<sup>th</sup> day of Sept., 1995.

  
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Miguel A. Lopez, Mayor

Attest:

  
\_\_\_\_\_  
Victor M. Stevens, City Manager

Approved as to form:

  
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Robert C. Clarke, City Attorney