

CITY OF SAN ANTONIO

PURCHASING AND CONTRACT SERVICES DEPARTMENT



REQUEST FOR COMPETITIVE SEALED PROPOSAL ("RFCSP 08-003")

for

Parking Revenue Control System

**Issued: Tuesday, December 19, 2007
Proposals Due: Tuesday, February 19, 2008, 2:00 p.m.**

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I. INTRODUCTION

The City of San Antonio Aviation Department seeks proposals for the design, development, programming, reliability testing, fabrication, unit testing, system testing, packaging, shipping, installation and start-up, and documentation of a Parking Revenue Control and Ground Transportation Management System (System) for the San Antonio International Airport (Airport).

Owned and operated by the City, the Airport serves over 9 million airport users annually, including passengers, employees and visitors. Currently the Airport is comprised of two terminals connected by an outside walkway. Fourteen scheduled passenger airlines currently operate from the airport and provide direct service to more than 70 cities. The airlines operate over 130 daily scheduled departures. In 2006, there were approximately 4 million enplanements at the Airport. Total enplanements at the Airport are projected to increase at an average annual rate of 2.6% through 2010.

Currently, the Airport maintains approximately 5,595 public parking spaces and 1,263 employee parking spaces. General operating conditions include: on average, 2,600 daily in/out; \$16.4m gross annual revenue, and 31% credit card usage (67% of gross revenue).

As part of the Airport's 5-year Terminal Expansion Project, needed improvements to address current and projected growth are planned. Terminal B, with eight (8) passenger gates, will be constructed adjacent to the existing Terminal 1. Once Terminal B is completed, Terminal 2 will be demolished to make way for construction of Terminal C, which is slated for construction in phases with an ultimate gate capacity of eleven. Terminals B and C will be linked by an enclosed, walkway connector. A new five-story parking garage will offer approximately 2,000 additional long-term spaces. Approximately 300 spaces opened in December 2007 and the estimated completion of the remainder is June 2008. The two-tier roadway system in front of Terminal 1 will be extended to serve Terminals B and C. When the Terminal Expansion Project has been completed, the Airport will have 35 total gates. The selected Respondent will be expected to coordinate through the Aviation Department's Parking Division to coordinate the project schedule with other on-going construction projects.

II. SCOPE OF SERVICES

The scope of the required project shall include, but not be limited to, the design, development, programming, reliability testing, fabrication, unit testing, system testing, packaging, shipping, installation and start-up, and documentation of a Parking Revenue Control System (PRCS) to record and charge parking fees for vehicles using Airport facilities, and a Ground Transportation Management System (GTMS) to record and charge transaction fees for commercial vehicles which also incorporates a taxi dispatch system designed to provide an adequate number of taxis at the terminals to service airport patrons. An integral component of the PRCS is a proximity card access system to be installed and operational at the employee parking lot. In addition, the PRCS shall incorporate a parking guidance system that will count and track vehicles as they enter the various garages and sections of the Long-Term garage and will control directional signage to facilitate

patrons' finding available parking spaces quickly, as well as capability for online revenue collection functions, an Automatic Vehicle Identification system, and Credit Card Acceptance system. In addition, the successful Respondent will also be responsible for training of Airport personnel and integrating hardware and software.

The Technical Specifications for the project, as set out in Exhibit A to this RFCSP, describe the system concepts, operational and technical requirements and various procedures for the design, development, fabrication, programming, testing, installation and implementation of the various items of fee collection equipment. The Respondent must respond to all of the Technical Specifications to be considered eligible for contract award.

III. PROJECTED RFCSP DATES AND DEADLINES

Following is a list of **projected dates** with respect to this RFCSP:

RFCSP Solicitation Issued	Wednesday, December 19, 2007
Pre-Submittal Conference	Thursday, January 3, 2008 10:00 a.m. – 12:00 p.m.
Walk Through	Thursday, January 3, 2008 2:00 p.m. – 3:00 p.m.
Deadline for Questions	Friday, January 18, 2008 4:30 p.m.
Proposals Due	Tuesday, February 19, 2008; 2:00 p.m.

IV. TERM OF CONTRACT

The anticipated term of the proposed contract will begin upon award by San Antonio City Council and terminate upon at the conclusion of the Warranty Period established in Section 11 of the Exhibit A, Technical Specifications.

The City reserves the right to extend support and maintenance, to include all parts and labor as originally installed and, to include any additional components added to the system by the selected Respondent at the City's request, for four (4) years after the expiration of the Warranty Period, with an option to extend for an additional four (4)-year period, for a total of eight (8) years.

V. PERFORMANCE AND PAYMENT BONDS

If selected, Respondent shall provide a performance and a payment bond, each of which shall be in a form acceptable to the City, executed by a corporate surety acceptable to City who is licensed pursuant to the Texas Insurance Code and listed on the United States Department of the Treasury's Listing of Approved Sureties (Dept Circular 570) in the full amount of the contract price as estimated by the City. Each bond must have attached thereto a Power of Attorney as evidence of the authority of the person executing the bond to bind the surety. Each bond must clearly and prominently display on the bond or on an attachment to the bond: (1) the name, mailing address, physical address, and telephone number, including the area code, of the surety

company to which any notice of claim should be sent; or (2) the toll-free telephone number maintained by the Texas Department of Insurance under Article 1.35D, Insurance Code, and a statement that the address of the surety company to which any notice of claim should be sent may be obtained from the Texas Department of Insurance by calling the toll-free telephone number. The performance bond shall be made payable to the City of San Antonio, Texas. The payment bond shall be provided as security for all persons supplying labor and material in the performance of the contract.

The Performance and Payment Bonds must be executed and delivered to City prior to commencement of work under the contract awarded pursuant to this RFCSP.

VI. PROPOSAL REQUIREMENTS

Respondent's Proposal shall include the following items in the following sequence:

- A. RESPONDENT QUESTIONNAIRE: Complete and submit the Respondent Questionnaire.
- B. DISCRETIONARY CONTRACTS DISCLOSURE: Complete, sign and submit the Discretionary Contracts Disclosure Form.
- C. LITIGATION DISCLOSURE: Complete and submit the Litigation Disclosure Form. If Respondent is proposing as a team or joint venture, then all persons or entities who will be parties to the contract (if awarded) shall complete and return this form with the proposal.
- D. SMALL BUSINESS ECONOMIC DEVELOPMENT ADVOCACY FORM: Complete, sign and submit the Good Faith Effort Plan form.
- E. PRICING SCHEDULE: Complete and submit the Pricing Schedule.
- F. PROOF OF INSURABILITY: Obtain and submit a letter from Respondent's insurance provider stating provider's commitment to insure the Respondent for the types of coverage and at the levels specified in this RFCSP if awarded a contract in response to this RFCSP. Respondent shall also submit a copy of their current insurance certificate.
- G. PROPOSAL BOND: Respondent must submit a proposal bond, in a form acceptable to the City, made payable to the City of San Antonio, executed by a corporate surety acceptable to the City who is licensed pursuant to the Texas Insurance Code and listed on the United States Department of the Treasury's Listing of Approved Sureties (Dept Circular 570) in the amount of \$10,000.00. The Proposal Bond shall be valid for one-hundred and twenty (120) days following the deadline for submission of proposals. The Proposal Bond must be accompanied by an original signed and notarized Power-of-Attorney bearing the seal of the issuing surety company and reflecting that the signatory to the bond is a designated Attorney-in-Fact. If Respondent is not selected, the City will not collect on the bond, but will keep the original document pursuant to the Local Government Records Act and applicable retention schedule.

H. TECHNICAL SPECIFICATIONS: Prepare and submit the following items in the following order:

1. Agreed Technical Specifications: Initial and submit the Technical Specifications. (NOTE: The Respondent must initial, where indicated in the Technical Specifications, each specification that Respondent agrees to provide and/or adhere to as written.)
2. Technical Specifications Narrative: Provide a document which includes, as appropriate: 1) an explanation of why the Respondent cannot agree to the specifications Respondent has not initialed in accordance with the instructions in H-1 above; 2) a description of the Respondent's proposed alternative specification; and/or 3) any supplemental description, explanation or attachments otherwise called for in the Technical Specifications. (NOTE: Each item in the Respondent's Technical Specifications Narrative must be numbered, labeled, and presented using the outline protocol established in the Technical Specifications. The Technical Specifications Narrative should not include the numbers and labels for items to which the Respondent has agreed/initialed per H-1 above and/or which require no supplemental description, explanation or attachment.)

I. SIGNATURE PAGE: Complete, sign and submit the Signature Page. The Signature Page must be signed by a person, or persons, authorized to bind the entity, or entities, submitting the proposal.

J. PROPOSAL CHECKLIST: Complete and submit the Proposal Checklist.

Respondent is expected to examine this RFCSP carefully, understand the terms and conditions for providing the services listed herein and respond completely. FAILURE TO COMPLETE AND PROVIDE ANY OF THESE DOCUMENTS MAY RESULT IN THE RESPONDENT'S PROPOSAL BEING DEEMED NON-RESPONSIVE AND THEREFORE DISQUALIFIED FROM CONSIDERATION.

VII. ADDENDUMS TO RFCSP

Addendums regarding this RFCSP will be posted on the City's website at <http://www.sanantonio.gov>. It is Respondent's responsibility to review this site and ascertain whether any addendums have been made prior to submission of a proposal. A Respondent who does not have access to the Internet, must notify City in accordance with Section X, Restrictions on Communication, that Respondent wishes to receive copies of addendums to this RFCSP by mail.

No oral statement of any person shall modify or otherwise change or affect the terms, conditions or specifications stated in the RFCSP, and changes to the RFCSP – if any – shall be made by addendum only.

The only avenue for making changes to this RFCSP is a published Addendum. Addendums are posted to the City's website and to <http://www.demandstar.com/>. If there is a conflict between anything contained on the City's website, Demandstar, and/or the signed and issued Addendum, then the Addendum will control.

VIII. SUBMISSION OF PROPOSALS

- A. Respondent shall submit one (1) original, signed in ink and thirteen (13) copies of the Proposal, in a sealed package, clearly marked on the front: "PRCS RFCSP". All Proposals must be received in the City Clerk's Office no later than 2:00 p.m. central time, Tuesday, February 19, 2008 at the address below. Proposals submitted prior to the above time and date may be modified provided such modifications are sealed and received by the City Clerk's Office prior to the time and date set for submission of proposals. Any Proposal or modification received after this time shall not be considered.

Mailing Address:

City Clerk's Office
Attn: RFCSP #08-003, PRCS
P.O. Box 839966,
San Antonio, Texas 78283-3966

Physical Address:

City Clerk's Office
Attn: RFCSP #08-003, PRCS
100 Military Plaza
2nd Floor, City Hall
San Antonio, Texas 78205.

Proposals sent by facsimile or email will not be accepted.

- B. Proposal Format: Each proposal shall be typewritten and submitted on 8 ½" x 11" white paper inside a three ring binder. The use of recycled paper is encouraged. Unnecessarily elaborate brochures, artwork, bindings, visual aides, expensive paper or other materials beyond that sufficient to present a complete and effective submission are not required. Font size shall be no less than 12-point type. All pages shall be numbered and printed one-sided. Margins shall be no less than 1" around the perimeter of each page. Electronic files, websites, or URLs shall not be included as part of the proposal; compact disks and/or computer disks submitted as part of the proposal shall not be considered. Each proposal must include the sections and attachments in the sequence listed in the RFCSP Section VI, Proposal Requirements, and each section and attachment must be indexed and divided by tabs and indexed in a Table of Contents page. Failure to meet the above conditions may result in disqualification of the proposal.
- C. Respondents who submit responses to this RFCSP shall correctly reveal, disclose, and state the true and correct name of the individual, proprietorship, corporation, and /or partnership

(clearly identifying the responsible general partner and all other partners who would be associated with the contract, if any). No nicknames, abbreviations (unless part of the legal title), shortened or short-hand, or local "handles" will be accepted in lieu of the full, true and correct legal name of the entity. These names shall comport exactly with the corporate and franchise records of the Texas Secretary of State and Texas Comptroller of Public Accounts. Individuals and proprietorships, if operating under other than an individual name, shall match with exact Assumed Name filings. Corporate Respondents and limited liability company Respondents shall include the 11-digit Comptroller's Taxpayer Number in their proposal's Respondent Questionnaire.

If an entity is found to have incorrectly or incompletely stated its name or failed to fully reveal its identity on the Signature Page of its proposal, the Director of the City Purchasing Department shall have the discretion, at any point in the contracting process, to suspend consideration of the proposal.

- D. All provisions in Respondent's proposal, including any estimated or projected costs, shall remain valid for one hundred twenty (120) days following the deadline date for submissions or, if a proposal is accepted, throughout the entire term of the contract.
- E. All proposals become the property of the City upon receipt and will not be returned. Any information deemed to be confidential by Respondent should be clearly noted on the page(s) where confidential information is contained; however, the City cannot guarantee that it will not be compelled to disclose all or part of any public record under the Texas Public Information Act, since information deemed to be confidential by Respondent may not be considered confidential under Texas law, or pursuant to a Court order.
- F. Any cost or expense incurred by the Respondent that is associated with the preparation of the Proposal, the pre-submittal conference, if any, or during any phase of the selection process, shall be borne solely by Respondent.

IX. PRE-SUBMITTAL CONFERENCE AND WALK-THROUGH

On Thursday, January 3, 2008, a Pre-Submittal Conference will be held in the Mezzanine Conference Room on the Mezzanine Level of Terminal Two at the Airport, 9800 Airport Boulevard, San Antonio, Texas. The Pre-Submittal Conference will run from 10:00 a.m. until 12:00 p.m. A Walk-Through will be held on the same day beginning at 2:00 p.m. The Walk-Through will depart from the Mezzanine Conference Room.

Respondents are encouraged to prepare and submit their questions in writing three (3) calendar days in advance of the Pre-Submittal Conference in order to expedite the proceedings. City's responses to questions received by this due date may be distributed at the Pre-Submittal Conference and posted on the City's website at <http://www.sanantonio.gov/rfp/>. Attendance at the Pre-Submittal Conference and Walk-Through is optional.

This meeting place is accessible to disabled persons. The Pre-Submittal Conference location is wheelchair accessible. The accessible entrance is located at 9800 Airport Boulevard. Accessible

parking spaces are located at 9800 Airport Boulevard. Auxiliary aids and services are available upon request. Interpreters for the Deaf must be requested at least 48 hours prior to the meeting. For assistance, call (210) 207-7245 Voice/TTY.

Any oral responses provided by City staff at the Pre-Submittal Conference and Walk-Through shall be preliminary. A written summary of the Pre-Submittal Conference and Walk-Through shall contain official responses, if any. Any oral response given at the Pre-Submittal Conference and Walk-Through that is not confirmed in the written summary of the Pre-Submittal Conference and Walk-Through or by a subsequent addendum shall not be official or binding on the City. Only written responses shall be official and all other forms of communication with any officer, employee or agent of the City shall not be binding on the City.

X. RESTRICTIONS ON COMMUNICATION

A. Respondents are prohibited from communicating with elected City officials and their staff regarding the RFCSP or Proposals from the time the RFCSP has been released until the contract is posted as a City Council agenda item. Respondents are prohibited from communicating with City employees from the time the RFCSP has been released until the contract is awarded. These restrictions extend to “thank you” letters, phone calls, emails and any contact that results in the direct or indirect discussion of the RFCSP and/or Proposal submitted by Respondents. Violation of this provision by Respondent and/or their agent may lead to disqualification of Respondent’s proposal from consideration. Exceptions to the restrictions on communication with City employees include:

1. Respondents may ask verbal questions concerning this RFCSP at the Pre-Submittal Conference.
2. Respondents may submit written questions concerning this RFCSP to the Staff Contact Person listed below 4:30 p.m., local time, on Friday, January 18, 2008. Questions received after the stated deadline will not be answered. It is suggested that all questions be sent by certified mail, return receipt requested, to:

William Flint, Senior Procurement Specialist
City of San Antonio, Purchasing and Contract Services Department
506 Dolorosa Street, Suite 175
San Antonio, TX 78205

However, electronic submissions by e-mail will also be accepted at william.flint@sanantonio.gov

3. Respondents and/or their agents are encouraged to contact the Small Business Outreach Office of the Economic Development Department for assistance or clarification with issues specifically related to the City’s Small Business Economic Development Advocacy Program policy and/or completion of the Good Faith Effort Plan form. The point of contact is Ms. Anita Uribe Martin. Ms. Martin may be reached by telephone at (210) 207-3900 or by e-mail at anita.martin@sanantonio.gov. Respondents and/or their

agents may contact Ms. Martin at any time prior to the due date for submission of proposals. Contacting her or her office regarding this RFCSP after the proposal due date is not permitted.

4. Respondents may provide responses to questions asked of them by the Staff Contact Person named above in A-2 after responses are received and opened. During interviews, if any, verbal questions and explanations will be permitted.
- B. The City reserves the right to contact any Respondent for clarification after responses are opened and/or to further negotiate with any Respondent if such is deemed desirable by City.
- C. City Code Article VII, Section 2-309 provides that any person acting as a legal signatory for a proposed contractual relationship that applies for a “high profile” discretionary contract, as defined by the City of San Antonio Contracting Policy and Process Manual, may not make a political contribution to any councilmember or candidate at any time from the time the person submits the response to the solicitation until 30 calendar days following the contract award. Any legal signatory for a proposed high-risk contract must be identified within the response to this solicitation, if the identity of the signatory will be different from the individual submitting the response.

If the legal signatory entering into the contract has made such a contribution, the City may not award the contract to that contributor or to that contributor’s business entity. Any contract awarded in violation of this provision shall be voidable at the discretion of the City Council.

The City has identified this solicitation as “high profile”.

XI. PRESENTATIONS

Subsequent to the City’s preliminary review and evaluation of the submitted Proposals, the City may, but is not required to, invite one or more Respondents to make presentations, give demonstrations and/or be interviewed by the City. For those Respondents who are invited, attendance will be mandatory. Therefore, Respondents are encouraged to “save the date” for the presentations and interviews which are anticipated to be held on Wednesday, March 19, 2008. Respondents who are selected to participate in the presentation and interview process will be informed regarding the location, date, and time. This date is subject to change at the City’s discretion.

XII. EVALUATION CRITERIA

The City will conduct a comprehensive, fair and impartial evaluation of all Proposals received in response to this RFCSP. The City will appoint a selection committee to perform the evaluation. Each Proposal will be analyzed to determine overall responsiveness and qualifications under the RFCSP. Criteria to be evaluated will include the items listed below. The selection committee

may select all, some or none of the Respondents for interviews. If the City elects to conduct interviews, Respondents may be interviewed and re-scored based upon these same criteria. The City may also request additional information from Respondents at any time prior to final approval of a selected Respondent. Final approval of a selected Respondent is subject to the action of the San Antonio City Council. The Evaluation Criteria are:

A. Experience, Background, Qualifications (20 %)

B. Proposed Solution (40 %).

C. Pricing (20 %)

D. Small Business Economic Development Advocacy Program (SBEDA) (20%):

1. A maximum of ten percentage (10%) points for Local Business Enterprises (LBEs).

Prime contractors who have a local branch office will receive six percent (6%) of the selection points.

Non-local prime contractors can receive points for subcontracting with local businesses proportional to the amount of work performed by those local subcontractors (i.e. – 50% to local = 5 points).

2. A maximum of five percentage (5%) points for companies designated as Historically Underutilized Enterprises (HUEs).

Prime contractors who subcontract with HUEs can receive points proportional to amount of work performed by those HUEs (i.e. – 50% to HUEs = 2.5 points).

HUEs must be certified by the City’s certifying agency or approved by the Director of Economic Development or designee.

3. A maximum of five percentage (5%) points for Prime Contractor compliance with the Small Business Economic Development Advocacy (SBEDA) policy:

- a. One percent (1%) for submission/approval of the Good Faith Effort Plan.
- b. One percent (1%) for meeting/exceeding the MBE goal.
- c. One percent (1%) for meeting/exceeding the WBE goal.
- d. One percent (1%) for meeting/exceeding the AABE goal.
- e. One percent (1%) for meeting/exceeding the SBE goal.

XIII. AWARD OF CONTRACT AND RESERVATION OF RIGHTS

A. City reserves the right to award one or no contract(s) in response to this RFCSP.

- B. The Contract, if awarded, will be awarded to the Respondent(s) whose Proposal(s) is deemed most advantageous to City, as determined by the selection committee, upon approval of the City Council.
- C. City may accept any Proposal in whole or in part. If subsequent negotiations are conducted, they shall not constitute a rejection or alternate RFCSP on the part of City. However, final selection of a Respondent is subject to City Council approval.
- D. City reserves the right to accept one or reject any or all proposals received in response to this RFCSP, and to waive informalities and irregularities in the proposals received. City also reserves the right to terminate this RFCSP, and reissue a subsequent solicitation, and/or remedy technical errors in the RFCSP process.
- E. The City reserves the right to pursue Best and Final Offers (BAFO) and may choose to do so with a short list of Respondent(s) based on initial proposal scoring. Only selected Respondents meeting the standards determined by the City may submit a Best and Final Offer. In the event that Best and Final Offers are requested, the City will notify qualified Respondents in writing. All responses to the request for Best and Final Offer will be submitted in writing. The City will not consider any BAFO not submitted in writing.
- E. City will require the selected Respondent(s) to execute a contract with the City, prior to City Council award. No work shall commence until City signs the contract document(s) and Respondent(s) provides the necessary evidence of insurance and performance bond as required in this RFCSP and the Contract. Contract documents are not binding on City until approved by the City Attorney. In the event the parties cannot negotiate and execute a contract within the time specified, City reserves the right to terminate negotiations with the selected Respondent and commence negotiations with another Respondent.
- F. This RFCSP does not commit City to enter into a Contract, award any services related to this RFCSP, nor does it obligate City to pay any costs incurred in preparation or submission of a proposal or in anticipation of a contract.
- G. If selected, Respondent will be required to comply with the Insurance and Indemnity Requirements established herein.
- H. The successful Respondent must be able to formally invoice the City for services rendered, incorporating the SAP-generated contract and purchase order numbers which shall be provided by the City.
- I. Conflicts of Interest. Respondent acknowledges that it is informed that the Charter of the City and its Ethics Code prohibit a City officer or employee, as those terms are defined in the Ethics Code, from having a financial interest in any contract with City or any City agency such as City-owned utilities. An officer or employee has a “prohibited financial interest” in a contract with City or in the sale to City of land materials, supplies or service, if any of the following individual(s) or entities is a party to the contract or sale: the City officer or employee; his parent; child or spouse; a business entity in which he or his parent, child or

spouse owns ten percent (10%) or more of the voting stock or shares of the business entity, or ten percent (10%) or more of the fair market value of the business entity; or a business entity in which any individual or entity above listed is a subcontractor on a City contract, a partner or a parent or subsidiary business entity.

Respondent is required to warrant and certify that it, its officers, employees and agents are neither officials nor employees of the City, as defined in Section 2-43 of the City's Ethics Code. (Discretionary Contracts Disclosure – Attachment 2)

- J. Independent Contractor. Respondent agrees and understands that, if selected, it and all persons designated by it to provide services in connection with a contract, is (are) and shall be deemed to be an independent contractor(s), responsible for its (their) respective acts or omissions, and that City shall in no way be responsible for Respondent's actions, and that none of the parties hereto will have authority to bind the others or to hold out to third parties, that it has such authority.
- K. Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that persons, or their agents, who seek to contract for the sale or purchase of property, goods, or services with the City, shall file a completed conflict of interest questionnaire with the City Clerk not later than the 7th business day after the date that the person: (1) begins contract discussions or negotiations with the City; or (2) submits to the City an application, response to a request for proposals or bids, correspondence, or another writing related to a potential agreement with the City. The conflict of interest questionnaire form is available from the Texas Ethics Commission at www.ethics.state.tx.us <<http://www.ethics.state.tx.us>>. Completed conflict of interest questionnaires may be mailed or delivered by hand to the Office of the City Clerk. If mailing a completed conflict of interest questionnaire, mail to: Office of the City Clerk, P.O. Box 839966, San Antonio, TX 78283-3966. If delivering a completed conflict of interest questionnaire, deliver to: Office of the City Clerk, City Hall, 2nd floor, 100 Military Plaza, San Antonio, TX 78205

EXHIBIT A

TECHNICAL SPECIFICATIONS

1.0 GENERAL DESCRIPTION

The equipment that is necessary for the operation of the Parking Revenue Control and Ground Transportation Management System (System) shall be installed at locations on the San Antonio International Airport (Airport) grounds

Glossary of Terms

The following glossary includes acronyms that are used throughout these specifications and their definitions:

ADA	Americans with Disability Act
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ATP	Acceptance Test Plan
AVI	Automatic Vehicle Identification
CCTV	Closed Circuit Television
CD	Compact Disc
CPI	Consumer Price Index
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CS	Cashier Station
DDD	Detailed Design Document
DMS	Dynamic Message Signs
DSRC	Dedicated Short-Range Communication
DVD	Digital Video
ET	Entry Terminal
FAT	Factory Acceptance Test
FCC	Federal Communications Commission
FIFO	First In First Out
GB	Gigabytes
GHz	GigaHertz
GTMS	Ground Transportation Management System
HMTL	Hyper Text Markup Language
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standards
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LPI	License Plate Inventory
LPR	License Plate Recognition
MHz	Megahertz
MMRS	Maintenance and Monitoring Reporting System
NEMA	National Electrical Manufacture's Association
NFPA	National Fire Protection Association
NTP	Notice to Proceed

OCR	Optical Character Recognition
PDD	Preliminary Design Document
PI/XS	Patron Interface/Exit Station
PMO	Parking Management Office
POF	Pay-on-Foot
PVC	Polyvinyl Chloride
RAID	Redundant Array of Independent Disks
RDBMS	Relational Data Base Management System
RF	Radio Frequency
RFID	Radio Frequency Identification
R/W	Read/Write
Airport	San Antonio International Airport
SDD	System Design Document
SQL	Sequel
TD	Ticket Dispenser
UL	Underwriter's Laboratory
UPS	Uninterruptible Power Supply
VIP	Very Important Person
XS	Exit Station

1.01 Scope of Project

The scope of this project is the design, procurement, and installation of a System to:

- record and charge parking fees for vehicles using Airport facilities,
- record and charge transaction fees for commercial vehicles which also incorporates a taxi dispatch system designed to provide an adequate number of taxis at the terminals to service airport patrons,
- provide a proximity card access system to at the employee parking lot, and
- incorporate a parking guidance system that will count and track vehicles as they enter the various facilities, as well as sections/zones of the Long-Term garage, and will control directional signage to assist patrons with quickly locating available parking spaces.

The selected vendor will be responsible for providing, installing, training of airport personnel, and integrating hardware and software.

The specifications for this project describe the system concepts, operational and technical requirements and various procedures for the design, development, fabrication, programming, testing, installation and implementation of the various items of fee collection equipment. The Respondent shall disclose whether the various systems are integrated into a single, comprehensive system or operating as disparate systems on separate Host Computers. In either case, the Respondent shall include in their response the system architecture for their proposed system(s). These Technical Specifications refer to the required systems as the System.

Hardware and software are specified, in some areas, to ensure a level of quality and performance. It is the intent of these specifications to permit technological state-of-the-art and flexibility in the design and development of the equipment and software.

Certain management requirements, such as quality assurance, reliability and software development procedures, are specified to enable the City to monitor the progress of the work and to ensure that the work proceeds in a timely manner.

Materials and products, which have been previously used for development work or in leased systems, will not be permitted for this contract. All equipment, supplies and materials for this system shall be new.

The work to be performed for this project shall include, but not be limited to, the design, development, programming, reliability testing, fabrication, unit testing, system testing, packaging, shipping, installation and start-up, and documentation as may be required to meet these specifications.

1.02 Overview

The following attributes are critical to the success of the System:

1. The System must be expandable and have the capability to include other aviation parking functions.
2. Reports must be automatically generated and the City must have the ability to perform “ad-hoc” queries and report generation. Reports shall be displayed on the computer monitor and printed upon demand by user discretion.
3. The System shall be developed with strict internal audit controls to ensure that all transactions are accounted for correctly and reported properly. The System shall provide the City access to individual transaction data at the service level in order to ensure accurate and full accounting controls. It is advantageous for the proposed system to have been fully reviewed and audited by an independent third party accounting firm who has rendered a professional opinion regarding the accounting controls and accuracy of the system reports and data. A copy of this professional opinion shall accompany the Respondent’s response to these Technical Specifications.
4. The System must be Windows based and shall provide interface to the City’s SAP financial system for the transfer of data from the System to the current accounting/financial system installed and operating at the airport. The current system is SAP. Further requirements are defined in additional sections within these specifications
5. The System must allow the flexibility for future parking Class or rate adjustments to be performed by City personnel.
6. The System may provide an integrated license plate tag inventory through the capture of license plate data via mobile LPR camera system or through the use of Handheld LPI computers and downloading base.

7. The System shall incorporate a fully integrated License Plate Recognition (LPR) system.
8. The System shall incorporate the ability to query a “hot” list of stolen license plate numbers that will enable the local police department in identifying and possibly apprehending stolen vehicles from the airport property.
9. The System shall incorporate a preferred parking system that provides the ability for certain patrons to join an airport sponsored preferred parking or frequent parking program that will have the ability to set aside certain nested areas within the airport’s parking system for those patrons who have joined the program and will provide reserved parking for these patrons. In addition, the airport wishes to include a frequent parking program that will allow patrons who join this program to earn points, based upon either the number of days of parking or the amount of parking fees to accumulate towards a reward program that will reward patrons with certain awards, such as one day of free parking or similar awards. The Respondent shall include within their response their frequent parking or preferred parking programs that have been included in other airports.

Read and Agree _____

1.02.01 Current City IT Environment

The City's current IT architecture includes the following platforms and versions:

<u>Software</u>	<u>Version</u>
Oracle	10g
SQL Server	2000 SP4
SAP R/3	4.7e (640 Kernel)
SAP BW	2004s(7.0 Kernel)
Business Objects/ Crystal	XI
Solaris	9
Windows	Server 2003 EE SP1, R2
Mainframe z/OS	1.6
CICS	2.3
Natural	4.1.4
Adabas	7.4.3

Server Environment:

Base Unit:	Dual Core Xeon Processor 5148LV, 4MB Cache, 2.33GHz 1333MHz FSB,
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	PE2950 (222-6440)
Processor:	Dual Core Xeon 2nd Processor 5148LV, 4MB Cache, 2.33GHz 1333MHz FSB, PE2950 (311-6703)
Memory:	4GB 667MHz (4X1GB), Dual Ranked Fully Buffered DIMMs (311-6154)
Keyboard:	No Keyboard Selected (310-5017)
Video Card:	Broadcom TCP/IP Offload Engine Not Enabled (430-1765)
Video Memory:	Riser with 3 PCIe Slots for PowerEdge 2950 (320-4607)
Hard Drive:	73GB, SAS, 3.5-inch 15K RPM Hard Drive (341-3029)
Hard Drive Controller:	PERC 5/i, x6 Backplane Integrated Controller Card (341-3066)
Floppy Disk Drive:	No Floppy Drive for x6 Backplane (341-3685)
Operating System:	No Operating System, Microsoft (420-4077)
Mouse:	Mouse Option None (310-0024)
NIC:	Embedded Broadcom Net Xtreme II5708 Gigabit Ethernet NIC (430-1764)
CD-ROM or DVD-ROM Drive:	24X IDE CD-RW/DVD ROM Drive for PowerEdge 2950 (313-3934)
Sound Card:	Bezel for PE 2950 (313-3920)
Speakers:	1x6 Backplane for 3.5-inch Hard Drives (311-5747)
Documentation Diskette:	Electronic Documentation and Open Manage CD Kit, PE2950 (310-7415)
Additional Storage Products:	73GB, SAS, 3.5-inch 15K RPM Hard Drive (341-3029)
Feature	Integrated SAS/SATA RAID 1 PERC 5/i Integrated (341-3059)
Feature	Rack Chassis w/Sliding Rapid/Versa Rails and Cable Management Arm,Universal (310-7412)
Service:	Premier Enterprise Support Service Gold Welcome Letter (310-3785)
Service:	GOLD Enterprise Support: 4 Hour 7x24 Onsite Service with Emergency Dispatch,2 YR Ext (960-8322)
Service:	GOLD Enterprise Support: 7x24 Escalation Manager, Hw/Sw Tech Phone Support, Enterprise Command Center, 3Yr (960-8572)

Service:	GOLD Enterprise Support: 4 Hour 7x24 Onsite Service with Emergency Dispatch, Init YR (970-4190)
Service:	Dell Hardware Warranty Plus Onsite Service Initial YR (984-1399)
Service:	Dell Hardware Warranty, Extended YR (984-1417)
Installation:	On-Site Installation Declined (900-9997)
Service One:	Open Manage Server Subscription 8 Editions, 2 Year (902-9887)
Misc:	Redundant Power Supply with Dual Cords for PowerEdge 2950 (310-7422)

1.03 Implementation

This project will concentrate on implementing Revenue Control Equipment in lanes at all entrance and exit lanes of all parking facilities located at Airport. Existing Revenue Control Equipment shall be removed and replaced with new Revenue Control equipment as a part of this project. Included is the installation of twenty-five (25) lanes of revenue control equipment (see Section 2 for specific locations and number of lanes of equipment), eight (8) lanes of proximity card access located in two (2) employee lots, four (4) shuttle control lanes (one which is shared with the proximity card access) located in the employee lots, various GTMS antenna locations, and nineteen (19) Pay-on Foot machines installed at the following locations:

Long-Term Garage	4 CC only
Hourly Garage – Level 2	5 Cash and CC, 1 CC only
Hourly Garage – Tunnel	3 Cash and CC, 1 CC only
Hourly Surface lot	4 Cash and CC, 1 CC only

The Respondent shall verify and show proof that they are the certified or authorized manufacturer's local representative for the equipment they are proposing to supply under this contract. They must also show proof that they maintain a local authorized factory trained and certified service personnel. In addition, the equipment supplier must show proof that it is capable of providing maintenance services as required in these Technical Specifications. All parts, special tools, wiring schematics and other necessary components and equipment must be maintained and stocked at the selected vendor's local office to assure prompt satisfactory service as defined further in the Section 11 of these specifications.

All parking control equipment and revenue control equipment including, but not limited to, microprocessor based ticket dispensers, exit stations, host computers, barrier gates, dynamic message signs (DMS), electronic signs, and pay stations must be supplied by a single equipment supplier to assure quality control, reliability, uniform compatibility, and one source service responsibility.

Read and Agree _____

1.04 Equipment and Services

The System can be divided into the following categories:

1. Revenue Control equipment including the following at a minimum;
 - a) Entrance vehicle counters (loops or other technology)
 - b) Exit vehicle counters (loops or other technology)
 - c) Ticket dispensers with intercom
 - d) Proximity card readers
 - e) Barrier gates
 - f) Revenue computers/Cashier Stations
 - g) Space counting devices
 - h) Mobile LPR vehicles and license plate inventory hand held computers
 - i) License Plate Recognition cameras and software
 - j) Card Access system
 - k) Patron fee displays
 - l) Lane controllers
 - m) Lane lights
 - n) Stand-alone Exit Stations
 - o) Pay-on-Foot stations (credit card only and cash/credit card combination)
 - p) Credit card processing system, magnetic and contactless (Whenever a credit card transaction is described, this transaction is with both types of credit card technologies)
 - q) Automatic Vehicle Identification (AVI)
2. Host computers and related software,
3. Dynamic Message Signs (DMS) showing available spaces on in the Hourly and Long-Term parking areas.
4. Electronic signs included within the Long-Term garage to provide parking availability for patrons on each floor and/or zone within each floor of the garage.
5. Electronic signs installed on the canopy above each exit lane describing function of that exit lane.
6. Electronic signs included within advanced signs installed in the terminal roadway access road to provide advanced information of parking availability for each parking area and direct patrons to whatever parking facility that offers available parking.
7. Miscellaneous equipment, data cabling and network integration
8. Computer workstations,
9. Frequent parker program and reserved parking program,
10. Installation and construction to meet city specifications and ordinances
11. Training of City Personnel,
12. Warranty and maintenance of system.

Alternative Bid Items:

1. Paris Software
2. Geneva Software

3. Diamond Vision type sign located at entrance plaza

Read and Agree _____

1.05 Interface

The System shall be provided with complete integrated facility management capabilities to seamlessly address revenue control financial statistics, count and monitoring statistics, on-line credit card processing, alarm monitoring and remote control capabilities. The system shall employ a multi-tasking, multi-user standard operating system that can provide information and reports on up to twelve (12) remote, on-line work stations in its standard configuration. The System shall use industry standard TCP/IP as the communication standard.

The selected vendor shall be responsible for providing an communications infrastructure plan which is consistent with specifications and standards to be specified by the City in a later addendum to this RFCSP. Once approved, the selected vendor shall be responsible for implementing the plan to include providing connectivity, installing conduit, certifying the installation and providing maintenance throughout the Warranty Period.

Read and Agree _____

1.05.01 Installation of Hardware

The selected vendor shall be required to submit an installation schedule for hardware, software, and system testing as described that meets the deadlines established in the submittal schedule included within these Technical Specifications.

Read and Agree _____

1.05.02 Testing of the System

The Respondent shall provide with its proposal an Acceptance Testing Procedure (ATP) plan, testing procedure and test schedule acceptable to the City and its designated representatives. In addition to the selected vendor's testing, the City will develop test procedures independently to confirm that the equipment and system installed conforms to the requirements within the Technical Specifications. The System shall be tested as defined in these Technical Specifications. Test results for individual components and the overall system shall meet technical requirements as stated in these Technical Specifications. Lane equipment shall meet the performance standards defined in these specifications.

Read and Agree _____

1.05.03 Maintenance of the System

The selected vendor shall provide comprehensive maintenance services for the System for a Warranty Period of one (1) year starting upon Date of Final Acceptance. Maintenance is further defined in Section 11 of these Technical Specifications.

The City reserves the right to extend support and maintenance, to include all parts and labor as originally installed and, to include any additional components added to the system by the selected Respondent at the City's request, for four (4) years after the expiration of the Warranty Period, with an option to extend for an additional four (4)-year period, for a total of eight (8) years.

Read and Agree _____

1.06 Submittal and Installation Schedules

The System shall be installed in phases with total system wide operational capability to be completed within eighteen (18) months of the inception of the executed contract.

The selected vendor shall be required to meet the submittal schedule as set forth in the following table. For the purposes of this table, it is anticipated that Notice to Proceed (NTP) will occur by April 15, 2007.

Submittal Schedule

SUBMITTAL	DUE DATE
Project Management Plan	15 days from NTP
Progress Schedule (Resubmittal within 10 days if requested)	15 days from NTP
Conduit and Plaza Modifications	May 15, 2008
Qualification Assurance Plan	May 15, 2008
Software Development Plan (SDP)	May 31, 2008
Software Develop Plan (SDP Review (Updates as specified)	June 15, 2008
Detailed Design Document	July 31, 2008
Detailed Design Review (DDR)	August 15, 2008
Factory Acceptance Test Plan	August 31, 2008
Factory Acceptance Test	September 15, 2008
Field Test Plan	November 30, 2008
Installation Plan	November 30, 2008
Training Plan	November 30, 2008
Maintenance Plan	November 30, 2008
Sepias and Shop Drawing Documents	December 15, 2008
Preliminary Draft Software Documentation	December 15, 2008
Final Draft Software Documentation	December 15, 2008
Final Software Documentation	December 15, 2008
Preliminary Maintenance Service Manual	Prior to commencement of Equipment Installation Phase II
Parts List	30 Days after Phase II Approval
Central Processing System Operator's Manual (Final)	January 30, 2009
Auditor's Workstation Manual	January 30, 2009
Cashier's and supervisor's Manuals (Final)	January 30, 2009

Installation complete	May 31, 2009
Final Acceptance Testing (30 Days)	June 30, 2009
Final Record Drawings	August 31, 2009
Maintenance Service Manual (Final)	August 31, 2009

Read and Agree _____

2.0 SYSTEM DESCRIPTION AND LOCATIONS

This section provides an overview of the System, describes the various work sites, and identifies specific locations for various items of required equipment.

2.01 History

The City has historically provided parking access through a combination of multi-structured parking garages and several surface parking lots. Facilities include the Hourly Garage, Hourly Surface lot, the Economy Surface lot, and the Long-Term garage. Recently, the City has initiated construction to expand the Long-Term parking garage. This project is estimated to be completed in June 2008.

2.02 Proposed Configuration

The following provides the minimum locations, type and number of equipment to be installed.

Hourly and Long-Term Parking Garage

Hourly Parking Entrance:

Three (3) Entrance Lanes

- Three (3) loops and detectors
- One (1) Ticket Dispenser per lane with intercom
- One (1) Barrier Gate
- One (1) Proximity Card reader
- One (1) Canopy mounted electronic lane open/closed sign
- Two (2) CCTV Cameras for LPR, post capture
- Two (2) Auxiliary lights
- One (1) Lane UPS

One (1) Recirculation Lane from Terminal Roadway

- Three (3) loops and detectors
- One (1) Ticket Dispenser per lane with intercom
- One (1) Barrier Gate
- One (1) Proximity Card reader
- One (1) open/closed sign
- Two (2) CCTV Cameras for LPR, post capture
- Two (2) Auxiliary lights
- One (1) Lane UPS

Long-Term Parking Entrance:

Three (3) Entrance Lanes

- Three (3) loops and detectors
- One (1) Ticket Dispenser per lane
- One (1) intercom station with button activation
- One (1) Barrier Gate
- One (1) Proximity Card reader
- One (1) Lane Open/Closed light
- Two (2) CCTV Cameras for LPR

Two (2) Auxiliary lights
One (1) Lane UPS

Two (2) Hourly and Two (2) Long-Term Entrance lane shall also include one AVI reader/antenna. Additionally, the One (1) Recirculation Lane shall include an AVI reader/antenna.

Consolidated Exit Plaza:

Three (3) Multi-purpose Exit Lanes (Lanes 3, 4, & 5)
Two (2) loops and detector
One (1) Cashier Station with two cash drawers
One (1) Booth mounted Patron Interface (Exit Station)
One (1) Internal intercom for Cashier Access
One (1) Barrier Gate
One (1) Proximity Card reader
Two (2) CCTV cameras with auxiliary lighting as required for LPR
One (1) Lane open/closed DMS – this sign shall show type of transaction as well, i.e. Cashier, Credit/Debit Card, Paid Tickets, Closed, etc.
One (1) AVI reader
One (1) Lane UPS

Eight (8) Non-Cashiered Lanes:
Two (2) loops and detector
One (1) Exit station standalone with proximity card reader, with intercom to operate in non-cashier-less mode
One (1) Barrier Gate
One (1) Proximity Card reader
Two (2) CCTV cameras with auxiliary lighting as required for LPR
One (1) Lane open/closed DMS – this sign shall show type of transaction as well, i.e. Credit/Debit Card, Paid Tickets, Closed, etc.
One (1) AVI Reader
One (1) Lane UPS

Note: The total of eleven lanes assumes an expansion of the current exit plaza from eight lanes to eleven lanes.

Ramp from Hourly to Consolidated Exit Plaza (2 lanes)

Two (2) loops and detector
One (1) Barrier Gate
One (1) AVI Reader/Antenna
One (1) Yellow warning flashing light when gate is in operation

Electronic Signing

Master sign (Dynamic Message Sign) for Long-Term garage located at entrance to Long-Term garage displaying parking availability by floor.

Miscellaneous Equipment

Intercom master host station (interfaced to the CCTV security system) located within the parking operator's offices at the exit plaza.
Host computers – One (1) in PMO and one (1) in Terminal
UPS for Host computer located in the PMO only
Workstations to access reports, enter data, and audit cashiers – Minimum of 12 to be located in the following locations:
Reception area – 1
Conference Room – 2
Airport Administration – 1
Parking Manager – 1
Parking Supervisor – 1
Ground Transportation Supervisor – 1
Superintendent – 1
Accounting offices (Terminal 1) - 4
Laser Printers – Five (5) black and white printers – both capable of printing on legal paper as well as letter size paper to be located at the following locations (HP laser printer capable of printing 20 ppm or faster):
Accounting (Terminal 1) - 1
Parking Manager – 1
Conference Room – 1
City Administration - 1
Reception Area - 1
Network cabling
Two (2) mobile LPR vehicles with detachable monitor
Six (6) Handheld License Plate Inventory (LPI) computers with charging base and download capability to Host computer
Pay-on-Foot machines
Eight (8) credit card only
Twelve (12) cash/credit card combinations
Application software
OCR conversion software
Network Software

Economy Parking Lot

Four (4) Entrance Lanes
Three (3) loops and detectors
One (1) Ticket Dispenser per lane

- One (1) intercom station with button activation
- One (1) Barrier Gate
- One (1) Proximity Card reader
- One (1) Lane Open/Closed light
- Two (2) CCTV Cameras for LPR
- Two (2) Auxiliary lights
- One (1) Lane UPS

* Two of these lanes (one in each physical location) shall have an AVI reader

One (1) Multi-purpose Exit Lane

- Two (2) loops and detector

- One (1) Cashier Station with two cash drawers

One (1) Booth mounted Patron Interface (Exit Station)

- One (1) Barrier Gate

- One (1) Proximity Card reader

- Two (2) CCTV cameras with auxiliary lighting as required for LPR

- One (1) Lane open/closed DMS – this sign shall show type of transaction as well, i.e. Cashier, Credit/Debit Card, Paid Tickets, Closed, etc.

- One (1) AVI Reader/Antenna

- One (1) Lane UPS

One (1) Dedicated Credit Card only Exit Lane

- Two (2) loops and detector

- One (1) Exit Station

- One (1) Barrier Gate

- One (1) Proximity Card reader

- Two (2) CCTV cameras with auxiliary lighting as required for LPR

- One (1) Lane open/closed DMS – this sign shall show type of transaction as well, i.e. Cashier, Credit/Debit Card, Paid Tickets, Closed, etc.

- One (1) AVI reader/antenna

- One (1) Lane UPS

Two (2) Shuttle bus reversible entry/exits

- Two (2) loops and detector

- One (1) AVI Reader in each direction

Main Employee Parking Lot #4

Three (3) Entrance Lanes

- Two (2) loops and detectors

- One (1) Barrier Gate

- One (1) Proximity Card reader
- One (1) Intercom
- One (1) Lane UPS

- Three (3) Exit Lanes
 - Two (2) loops and detectors
 - One (1) Barrier Gate
 - One (1) Proximity Card reader
 - One (1) Intercom
 - One (1) Lane UPS

- One (1) Shuttle bus reversible entry/exit
 - Two (2) loops and detector
 - One (1) AVI Reader in each direction

Overflow Employee Parking Lot #8

- One (1) Entrance Lane
 - Two (2) loops and detectors
 - One (1) Barrier Gate
 - One (1) Proximity Card reader
 - One (1) Intercom
 - One (1) Lane UPS

- One (1) Multi-Use Exit Lane
 - Two (2) loops and detectors
 - One (1) Barrier Gate
 - One (1) Proximity Card reader
 - One (1) Intercom
 - One (1) AVI reader
 - One (1) Lane UPS

- One (1) Shuttle bus entrance lane
 - Two (2) loops and detector
 - One (1) AVI Reader

Ground Transportation System

- Taxi Staging Area – Terminal One
 - Two (2) loops and detector
 - One (1) Barrier Gate
 - One (1) Proximity Card Reader
 - One (1) Intercom
 - One (1) Lane UPS

- Taxi Staging Area – Terminal Two
 - Two (2) loops and detector

One (1) Barrier Gate
One (1) Proximity Card Reader
One (1) Intercom
One (1) Lane UPS

Terminal Roadway
Incoming Traffic
Four (4) Readers/Antenna

Exiting Traffic
Four (4) Readers/Antenna

Parking Administration Office
Posting Reader for Ground Transportation Customer Payments

Training Room

One (1) Cashier Station with patron fare display
One (1) Ticket Dispenser
One (1) Patron Interface
One (1) Exit Station
One (1) Gate
Two (2) LPR Cameras – One set up as entry lane; one set up as exit lane
One (1) AVI Reader
Simulation loop system

It is anticipated the employee lots will be relocated in the near future, probably within one to two years.

The System proposed must be expandable to include other functions or future applications, such as additional entrance and exit lanes.

Read and Agree _____

2.03 Placement of Equipment

The existing facilities will be modified to accommodate the System. The selected vendor shall remove the existing equipment located within existing lanes in order to install the new equipment. Removal of existing equipment and subsequent installation of the new equipment shall be staged in order to maintain operations capability of the existing parking system. The selected vendor shall work with the City in maintaining an adequate level of operating capability so as to not impair the parking operations or the ground transportation capabilities of the City. The selected vendor shall provide an integration phasing program that will be designed to minimize operational inefficiencies and maximize transaction processing.

The existing islands shall be modified as part of the proposed System, specifically the LPR requirement. These modifications shall be based upon submittals provided by the selected vendor.

The modified islands for the parking system shall be provided with electrical conduit and wiring to a central location within each island and with conduit including a pull wire for the fiber optic cabling to each location. The selected vendor shall submit shop drawings for approval by the City or its representative based upon the schedule provided within these Technical Specifications. The City or its representative shall review the submitted shop drawings and provide comments or approval within seven (7) days of receipt of submittals.

The host computer(s) and/or server(s) will be installed in various locations as described within these Technical Specifications.

Read and Agree _____

3.0 SYSTEM REQUIREMENTS

This section defines the requirements for furnishing and installing the System equipment, including the system design requirements to implement the Work. The System shall include lane equipment for the collection and storage of transaction data and communication of data from the lane equipment to the host computer for storing and summarizing transaction data.

Read and Agree _____

3.01 System Design Capacities

The Airport is open to traffic twenty-four hours every day. The System shall accommodate the specified overall system volumes without interference or delays to the collection of parking fee revenues or loss of data in a normal or degraded mode of operation, such as when communications are down.

Read and Agree _____

3.01.01 System Transaction Capability

A System transaction is defined as any event processed by the revenue control equipment or the count monitoring system.

3.01.02 Transaction Capability and Design Speed

The System shall be designed to provide the capability of processing vehicles through a lane with a barrier at an average rate of 10 transaction cycles per minute. The minimum transaction cycle shall not exceed 6 seconds per transaction, including all read, write and data transmission times for the transaction.

Read and Agree _____

3.01.03 System Accuracy Requirements

The System equipment shall be designed, programmed and fabricated to operate with the following accuracy depending upon the testing parameters and controlled test conditions.

Overall System Accuracy

The System shall use extensive error detection methods to ensure that information is accurately transferred from each device to and from the host computer(s). Typical error detection methods include, but are not limited to the following:

1. Start of message and end of message.
2. Encoding of each data bit.
3. A full ACK/NAK confirmation sequence to assure that detected communication errors are corrected.

The City shall require the overall accuracy requirement of not less than 99.95% (5 errors in 10,000 transactions) for each type of lane. The Respondent shall provide in its written response to these Technical Specifications the type of error detection method employed within their system to achieve this level of overall accuracy. Furthermore, the Respondent shall provide in its written response to these Technical Specifications how the software tracks all transactions and how the Respondent and the proposed system accounts for all transactions generated.

The system shall be capable of printing reports that show all transactions, by transaction number, type, and location. The system shall also be capable of generating reports that show all exceptions, such as missing transactions, error recovery, and all anomalies that may occur. These reports shall be provided so they can be either viewed on a computer monitor or printed based upon the choice of the airport representative who requested the report.

Read and Agree _____

3.01.04 Exceptions and Anomalies

Exceptions and anomalies are various events where something different, peculiar or not easily classified occurs under normal traffic conditions. These exceptions and anomalies are described in the context of the total operation where applicable. The selected vendor shall work with the City to resolve problems involving its respective equipment or services but overall System performance shall remain the selected vendor's responsibility until accepted by the City.

The selected vendor's System design shall include, but not be limited to, illustrative details or flow charts with written text as appropriate to fully describe how these exceptions and anomalies will be addressed.

Approval of the various tests and acceptances will not be granted by the City until all exceptions and anomalies have been resolved.

Prior to final acceptance, the System will be tested for various anomalies that potentially affect its operation performance and reliability. If anomalies are found which are related to the equipment design or operation, the selected vendor shall be responsible for taking corrective action to remedy the problem. Any such corrective action shall be completed and accepted by the City prior to granting final System acceptance.

Read and Agree _____

3.02 Environmental Requirements

The System equipment will be exposed to the exterior environmental conditions prevailing in San Antonio, Texas.

Any interior equipment shall be designed, fabricated and environmentally tested for operation in the temperature range of 0° C (32° F) to 65.6° C (150° F) with a relative humidity of 15 to 95 percent, non-condensing.

All exterior equipment shall be designed, fabricated and environmentally tested for operation in the temperature range of -29° C (-20° F) to 65.6° C (150° F) with a relative humidity of 15 to 100 percent, condensing.

The exterior equipment shall be suitably protected and designed to operate in conditions of rain, sleet, ice, high winds, high humidity, salt, airborne dust, exhaust emissions and other contaminants found in high traffic areas. The exterior equipment shall operate under normal ambient conditions without heating or air conditioning provided by the City.

The equipment, data cables and the System uninterruptible power distribution wiring shall not be affected by existing electrical noise conditions. These conditions include, but are not limited to electrical fields, VHF and UHF communications transmitters, RF radiation from various types of RADAR, CB radios, ignition noise, microwave, lighting fixture static, transients, booth heater noise and electrical interference while the System is in operation. Lightning and surge protection shall be provided by the selected vendor. In addition, the proposed system shall not cause interference with the existing City's Public Safety 800 MHZ Radio System or any other existing FAA or Airport systems. Appropriate grounding shall be provided to ensure the safety of the employees and to eliminate effects of static electricity.

As lightning is a regular weather feature in San Antonio, the selected vendor shall provide adequate lightning protection for the proposed system. The lightning protection system shall be fully described in the Respondent's proposal.

The Respondent shall thoroughly investigate all environmental factors that may affect the operation, reliability and life of the System to be provided and provide in their proposal the results of such investigation.

No equipment shall be damaged when stored in a temperature of 0° C (32° F) to 65.6° C (150° F).

Read and Agree _____

3.03 System Design Requirements

The following requirements and standards shall govern the design of the System equipment under the Contract.

3.03.01 System Life

The minimum design goal for reliability of the System shall be ten (10) years of service life. The selected vendor shall include a statement regarding this requirement in all sub-contracts for the System project.

Read and Agree _____

3.03.02 Modular Design

Modular design principles shall be utilized throughout the System. Modular design means the packaging of components together in replaceable units according to the function they perform. Standardized hardware and components shall be used whenever possible to facilitate maintenance.

Electrical connections to modules that require removal for preventive maintenance or replacement shall be of the plug-in type.

Read and Agree _____

3.03.03 Interchangeability

Standard commercially available components and hardware shall be used.

Read and Agree _____

3.03.04 Accessibility

All assemblies, subassemblies and modules shall be readily accessible for removal, testing, or replacement without extensive removal of other modules or assemblies. Components shall be located so that there is visibility and access for the use of hand tools and standard test probes when maintenance is required.

Read and Agree _____

3.03.05 Test Points

All test points necessary for maintenance while equipment is in operation shall be located and accessible on a test panel, card edge, or other easily accessible location. Test points for individual modules shall be located on the respective modules. All test points shall be capable of accepting standard commercial test probes and leads.

Read and Agree _____

3.03.06 Bundling and Labeling of Electrical Wires

All wires shall be bundled together to provide a neat, clean, and tidy orifice within each device. Each cable shall be labeled at both ends as to what the cable is for, and where it shall be attached, or plugged into in order for the device to function as designed. Once a cable has been replaced due to preventive or replacement maintenance, the labels shall be re-affixed and the bundle shall be re-bundled as a unit.

Read and Agree _____

3.03.07 Over current Protection

All power circuits shall contain Underwriters' Laboratories approved manually re-settable or replaceable over-current protection devices for all input circuits to protect the equipment. All over current protection devices shall be sized to protect both equipment and the minimum size of wire in the circuit.

Components and devices that are susceptible to damage upon failure of the regulating element within a power supply shall be protected by means of an over-voltage protective circuit.

Read and Agree _____

3.04 Electrical Power Requirements

The selected vendor shall submit appropriate product design data in the form of a submittal to clearly define and identify the level of protection and devices, including UPS equipment, to be used for equipment protection for review and approval by the City. The submittal shall be included as a Preliminary Design Review.

The selected vendor's design and recommendations shall conform to the applicable lightning protection and surge and transient protection standards such as NFPA-78, IEEE Std 587 and UL-1449 as they apply to each area of protection. The submittal shall identify the appropriate standard and level of protection to be provided for each area of protection. It is recommended that each island shall include one model 54 Series Wired 30 Amp AC Transient Voltage Surge Suppressor "ITD54PO3BJD0-21" per AC line.

Read and Agree _____

4.0 SYSTEM MATERIALS AND EQUIPMENT

This section specifies the general material requirements for all components, cables, wires, devices and equipment furnished under this Contract.

4.01 General Requirements

All materials, equipment, appliances and workmanship shall be of the best quality and shall be free from all defects. Any materials not specifically covered in these Specifications shall be in accordance with accepted standards, and as approved by the City. During the progress of work, any materials, appliances, or installations that may be deemed defective, damaged, or otherwise unsatisfactory by the City shall be removed and replaced or repaired in an approved manner.

Read and Agree _____

4.02 Substitution of Materials

Wherever a particular brand or model number is specified, it is intended to establish a standard of quality and shall not be interpreted to preclude substitutions of other manufacturers, subject to the conditions given hereinafter. Once the model or manufacturer has been approved by the City, no substitution may be made unless approved by the City and installed system wide.

Where the terms “or equal” or “approved equal” are given in the Specifications in conjunction with a particular brand, make, material, device or component, substitution will be considered when such proposed substitution equals or exceeds requirements with respect to quality, workmanship, service, maintenance, economy, technical performance, compatibility with other components, operational performance and reliability.

If the Respondent proposes substitution of a brand, make of material, device or equipment, other than that specified, the proposal must show that the Respondent has performed a thorough investigation and certify to the City that the proposed substitution meets all requirements and is truly equal in every respect. The Respondent shall include in the proposal all required data, test results, samples and reports necessary to substantiate Respondent’s findings. Color, finish, size, space requirements, general appearance and aesthetics will also be considered.

Read and Agree _____

4.03 Cables and Wires

Wires shall be of the types and sizes specified and shall meet the following minimum requirements:

The selected vendor shall submit for review all catalog cuts and specification sheets along with the typical test data of the wire, in conformance with appropriate ICEA/NEMA physical, aging, electrical and accelerated water absorption test requirements, prior to placing an order for the manufacture or purchase of these materials.

The selected vendor shall furnish to the City all termination information necessary for the proper installation of all wires. The selected vendor shall furnish (2) - 2 foot samples of all types and sizes of wires proposed for use on the project for review by the City.

Specifications and standards for communications cabling will be issued by the City in a separate addendum to this RFCSP.

Read and Agree _____

4.03.01 Single Conductor Power Wiring

Single conductor wiring used for general power distribution purposes in conduits and wire-ways shall conform to the latest requirements of NFPA 70 and shall meet all ICEA specifications.

All wires including neutrals shall be stranded copper, No. 12 AWG minimum size with RXW thermoplastic insulation conforming to NEMA WC5, rated for 600 volt applications. Wires shall be new and have size, insulation grade, voltage and manufacturer's name permanently marked on outer covering at regular intervals. It shall be delivered in complete coils or reels with identifying size and insulation.

All wires shall be factory color coded for each phase and neutral, matching the existing circuit identifications used throughout the system. All ground conductors shall be green in color and shall be used exclusively for this purpose.

Read and Agree _____

4.03.02 Grounding

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- B. Signal Ground Terminal: Locate in each equipment room and wiring closet. Isolate from power system and equipment grounding.
- C. Signal Ground Bus: Mount on wall of main equipment room with standoff insulators.
- D. Signal Ground Backbone Cable: Extend from signal ground bus to signal ground terminal in each wiring closet and equipment room.

Read and Agree _____

4.03.03 Installation in Equipment Rooms and Closets

- A. Line walls with plywood backboards, floor to ceiling.
- B. Mount terminal blocks and other connecting hardware for voice links on backboards, unless otherwise indicated.
- C. Group connecting hardware for wiring into separate logical fields.
- D. Distribution Racks and Frames: Label each unit and field within that unit.
- E. Within Connector Fields, in Wiring Closets and Equipment Rooms: Label each connector and each discrete unit of wire-terminating and connecting hardware.
- F. Wires, General: Label each wire within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
- G. Wiring Schedule: Post in prominent location in each wiring closet and equipment room. List incoming and outgoing wires and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Provide electronic copy of final comprehensive schedules.

Read and Agree _____

4.04 Conduits and Raceways

Conduits and raceways shall be of the types and sizes shall meet the minimum requirements of the city of San Antonio Codes and Ordinances and the City wiring and conduit standards. Any conduit or raceway provided under this contract must be marked as System or other City approved terminology.

Read and Agree _____

4.05 Credit Card Clearing House

The selected vendor shall interface all credit card processing from the System through the current credit card clearing house provider (Bank of America/Global). The credit card processing shall be initiated in such a manner as to expedite the processing process. There shall be a central location, such as at the Host computer that recognizes the credit card process occurring at the lane level and automatically forwards the inquiry directly to the clearinghouse. Should more than one inquiry be required, the Host computer shall maintain the line connection with the clearinghouse and process each and every inquiry as expeditiously as possible in a First In First Out (FIFO) manner. Additional inquiries should be piggy-backed upon a previous inquiry so that the Host computer does not need to establish a line connection for every inquiry. All processes internal to the selected vendor's system will be PCI-CISP compliant.

Credit card transactions shall be transmitted to the clearinghouse at the time of transaction. Authorization for credit card transactions, from swipe to authorization shall not exceed six (6) seconds. The selected vendor shall be responsible for integrating and supporting the communication system desired by the City for establishing the connection between the System and its clearinghouse processor. The communication system may be a lease line, an internet connection, a standard telephone line, or a satellite interface. This communication interface will be provided by the City in coordination with the selected vendor.

The System shall be capable of automatically batch processing of credit card charges based either on time of day and by volume. For example, should the volume of credit card charges reach a certain pre-determined threshold during a twenty-four hour period, the System shall automatically transmit the batch to the credit card clearinghouse for processing. Additional credit card charges occurring within this same twenty-four hour period shall be accumulated and processed at the pre-determined time.

In the proposal, the Respondent shall provide a copy of PCI-CISP Certification of all System parts and equipment.

Read and Agree _____

4.06 Hardware and Miscellaneous Devices

4.06.01 Hardware

Galvanizing of parts, where required, shall be by the hot-dip process, after fabrication. The weight of zinc coating shall not be less than 2 ounces per square foot of actual surface, and shall conform to ASTM Designation A123. All parts to be galvanized shall be cleaned and pickled before such application. All galvanized hardware shall conform to ASTM Designation A153.

Unless otherwise specified, all hardware to be used for the purpose of mounting or attaching equipment, cabinets, boxes, cable trays, wire-ways, support channels and other devices shall be stainless steel, and shall conform to ASTM Designation A276, Type 304. Washers shall be stainless steel conforming to ASTM Designation A167, Type 304.

Supplemental support channels to be installed in the utility tunnel for attachment of lane controllers, cable trays, wire-ways, outlet boxes, conduits and other devices shall be hot-dipped galvanized, with associated hardware, or approved equal.

Read and Agree _____

4.06.02 Paint Color

The selected vendor shall provide the City with various color schemes for approval by the City prior to the application of paint to any device.

Read and Agree _____

4.06.03 Identification Tags

Identification tags shall be provided on all cabinets, power panels, and switches and shall be engraved, plastic laminated, 1/16 inch thick textolite nameplates, black with white lettering. All tags shall be securely fastened to surfaces using stainless steel hardware, as approved by the City.

Identification tags on power panels shall be 1 inch high with 3/4 inch high lettering. Legend used at the lane controller site shall be "System LANE1, System LANE2, etc."

Read and Agree _____

4.06.04 Loop Detectors

The loop detector shall be a vehicle detection device used to detect vehicle presence as well as direction of travel for use in a parking facility. This section is written to specify the use of inductive loop technology. Alternative counting technology can be proposed as an alternate and will be evaluated by the City and its representatives.

The loop detector shall provide separate, momentary contact for all Loop presence and pulse detections. The vehicle must be covering, or be in the detection area of two loops (A and B) simultaneously for a directional output to occur. The loop detector shall be capable of generating a reverse count should a vehicle back up after having generated a directional count in the forward direction.

Forward Direction Inputs

As the vehicle approaches and covers Loop A and then Loop B (in this order), immediately the A-B Presence output shall be generated and held. Simultaneously, the A-B Pulse shall be generated. The A-B Presence shall not be deactivated until the vehicle clears Loop B having already left Loop A.

Reverse Direction Outputs

As the vehicle approaches and covers Loop B and then Loop A, the B-A Presence output shall be activated and remain active. Simultaneously, the B-A Pulse output shall be generated. The B-A Presence shall deactivate only when the vehicle clears Loop A having already left Loop B.

Forward Direction - Back Out Outputs

As the vehicle approaches and covers Loop A and then Loop B, the A-B Presence output shall be activated and remain active. Simultaneously, the A-B Pulse output shall be generated. If the

vehicle backs up and clears Loop B, the A-B Presence shall deactivate. When the vehicle clears detector Loop A, the B-A Pulse shall generate.

Tailgate Recognition System

The Loop detector shall incorporate a tailgate recognition system capable of detecting two automobiles within six (6) inches of each other. If this situation should occur, the detector shall issue a violation alarm message to the host computer.

Electrical

The Loop Detector shall have a fully regulated internal power supply with RFI filtering, allowing it to operate within an electrically noisy environment typically found in parking systems. Each Detector shall resist lightning induced power surges on the detector loop by using a loop transformer between the loop and the loop circuitry, along with zenor diode and neon protection. Power feed shall be 110 VAC at 60 hz.

Construction

All connections shall be made through a heavy duty military specification connector supplied for each detector. Each detector shall be capable to continuously retune itself to its loop frequency during non-detect periods. This shall prevent the detector from generating a false detect output due to frequency variances caused by environmental effects or other factors.

The selected vendor shall provide single channel detectors. Loop wire shall be 14 AWG E40299, AWM 3173, 600v/125c, FT2.

Inductive Loops

Inductive loops shall be either cut-in to paving surface or provided in prefabricated conduit for installation in supported slabs, and shall:

- 1) Be formed by three (3) to four (4) turns of sixteen (16) gauge single-conductor wire.
- 2) Be continuous, not spliced.
- 3) Have loop leads which are:
 - a) Limited to a length of one-hundred (100) feet.
 - b) Have a four (4) twist minimum per foot and located at a minimum of eighteen (18) inches from electrical power lines.
 - c) Be contained in separate conduit to prevent interference from electrical signals.
- 4) Cut-in loops shall be placed in saw-cuts 1/2" wide and 1" deep into paving surface and filled with sealant approved by City's representative.
- 5) If prefabricated loops are provided, they shall be contained within 1/2" PVC conduit, and shall be cast into paving concrete approximately 1 and ½ inches beneath the surface.
- 6) Surface mounted loops are not acceptable.

Alternative Proposal

The Respondent is encouraged to submit alternative proposals to the inductive loop technology. Alternative technology shall be installed and operational in a minimum of five (5) locations over a period of not less than three (3) consecutive years. The Respondent shall include within their proposal, references for these installations as well as statistics supporting the ability of these alternative system to meet or exceed inductive loop counting technology.

Read and Agree _____

4.06.05 Ticket Dispenser (TD)

General Operation

The TD shall be installed to control access into the Airport's parking facilities. It shall be capable of operating in an on-line, real time environment or independently in case of communication failure. This on-line, real time communication shall allow the host computer to collect all entry transaction data, monitor the equipment status and alarms, and provide for remote control capabilities. The TD shall be designed with a universal transport mechanism to allow for the issuance of magnetic stripe tickets.

Functions Provided by the TD

The following functions shall be provided by the TD at a minimum:

- Control and monitoring of barrier gates
- Ticket issuance upon vehicle crossing the arming loop and the patron activating a push button on the TD
- On-line communication operation with the host computer
- Read/write function
- Capacity counting for all entry transactions
- Processing of up to 600 continuous transactions cycles per hour
- Intercom
- Digital audio message instructions to the patrons
- Error messaging to the Host Computer regarding potential errors, such as low ticket stock, stuck ticket, and other malfunctions.

Design Requirements

The TD shall be a freestanding unit designed for continuous unattended operation. Each TD shall consist of a ticket transport mechanism, ticket supply magazine, magnetic stripe reader/writer, retracted ticket hopper, stand alone/on-line central processing unit, power supply, thermostatically controlled heater and fan unit, programmable LED (preferable) or LCD display, and an integral intercom. The TD shall include a ticket retraction feature, which will

automatically retract and void any ticket not taken upon vehicle back away after completion of the ticket issuance sequence.

The TD shall be designed and fabricated to ensure that the machine operates satisfactorily without material degradation for a minimum life of ten (10) years.

Any interior equipment shall be designed, fabricated and environmentally tested for operation in the temperature range of 0⁰ C (32⁰ F) to 65.6⁰ C (150⁰ F) with a relative humidity of 15 to 95 percent, non-condensing.

All exterior equipment shall be designed, fabricated and environmentally tested for operation in the temperature range of -29⁰ C (-20⁰ F) to 65.6⁰ C (150⁰ F) with a relative humidity of 15 to 100 percent, condensing.

The TD cabinet shall be a self-supporting structure specifically designed to withstand the usage and environmental conditions associated with a parking application in the San Antonio, Texas climate and environment.

The TD cabinet shall be fabricated with cold roll steel, minimum of 14 gauge, finished with two coats of enamel after having been cleaned, phosphatized and primed with two coats of epoxy primer. Equivalent methods of cabinet protection may be submitted for review and approval by the City or its representative.

The main frame assembly including all attachments and hardware shall be fabricated, cleaned and plated to prevent rusting and corrosion of the assembly. The plating or other process to be used to protect the material shall be specified on all fabrication drawings.

All hardware used to assemble the TD cabinet and its component parts shall be stainless steel or other non-corrosive material. The access door(s) hinges shall be stainless steel and shall be thoroughly sealed. All TD cabinet access doors shall be located on the side, entry or exit sides of the cabinet.

All access doors shall be "gasketed" with a neoprene, non-hardening material that will provide a weather tight enclosure for the respective compartments in the cabinet. All access doors and exposed metal parts shall be bonded to the main cabinet assembly.

If required for operation in extreme high temperature or low temperature, the TD shall be equipped with an environmental control system consisting of a heater and cooling fan system which shall ensure that optimal temperature is maintained and that positive pressure is applied at all times within the TD. Louvers, if required, shall be screened and filtered or otherwise secured to prevent entry of foreign materials into the TD.

All graphics, instructions and symbols to be painted or otherwise placed on the TD cabinets shall be submitted to the City for approval prior to painting the cabinets. The TD cabinet colors shall be submitted to the City for approval.

Ticket Transport Mechanism

Each ticket transport mechanism shall be a separate and removable module within the TD. The transport shall utilize a rotary cutter assembly that is integral to the unit. The transport assembly shall contain the ticket drive unit, guides, rollers, optic sensors, rotary cutter, and associated electronics.

The ticket transport shall contain optical sensors to determine ticket position. The optical sensors shall interface with the ticket cutter to maintain and precisely control ticket issue. The ticket transport shall be secured to the base by quick release latches.

The selected vendor shall provide the specifications for the preferred design of the magnetic stripe ticket to the airport no less than 45 days prior to the scheduled installation of equipment. The selected vendor shall order, print, and deliver the initial supply of parking tickets in the amount of 500,000 tickets to the City.

Intercom

Each TD shall have an integral intercom for the patron to communicate with the Intercom master station that shall be located in the consolidated exit plaza. The main intercom station shall be located at the main parking operator's administrative location. The intercom shall be activated by the patron pressing a call button located on the face of the TD or other equipment. The selected vendor shall provide an interface from each intercom push button to the future CCTV security system that will automatically enable the closest proximate CCTV camera within the CCTV security system to pan directly to capture an image of the device where the intercom push button had been activated. This image shall be displayed on a monitor located in the parking management offices.

Audio Customer Interface

Each TD shall provide an audio instruction to the patron to assist the patron in processing the entry transaction. Upon the vehicle crossing over Loops A and B, the TD will play an audio message requesting the patron to press the button to take a ticket. This audio message will be repeated until the patron presses the button to create a ticket or presents a valid proximity card. Once the ticket has been printed and ejected, the TD shall change the message to request the patron to take the ticket from the TD. The audio message shall be user defined and programmable to ensure the user the ability to change the message as desired.

Magnetic Stripe Reader/Writer (R/W)

The R/W shall be a separate and removable component. The R/W device shall contain a ticket drive unit, magnetic read & write unit, a printer, optical sensors, and associated electronics. The R/W device shall be fully interchangeable with other TDS, exit stations, cashier stations, Pay-on-Foot devices, and any other device installed within the System utilizing a magnetic stripe reader/writer. The printer shall be either a printer, or other printer that shall operate in maximum efficiency within the environmental concerns of the project area.

The R/W device shall be capable of processing both tickets and cards (such as credit or debit cards) within the same unit. The R/W device shall read and encode magnetic stripe tickets and cards utilizing standard ISO 1864 format. The optical sensors shall monitor the travel and position of the ticket/card throughout the entire read/write process. The sensors shall be interfaced with the ticket transport mechanism to maintain and precisely control ticket issuance.

The ticket printer shall use an integrated ink jet printer, thermal, or dot matrix printer. If an ink jet printer is used it shall use an ink jet cartridge, which contains the ink supply. The cartridge shall have a minimum life of three months, or no less than 1,500 transactions per day per TD.

Retracted tickets shall be invalidated electronically by the erasure of the magnetic stripe and visually by the additional printing of pre-determined symbols, as defined by the City, or its representative. These symbols shall be printed over the entry information line of eye readable characters and extend beyond the printed information.

The R/W shall be programmable to print the following information, at a minimum:

- Two digit month of entry
- Two digit day of entry
- Four digit military time of entry
- Last two digits of year of entry
- Five digit alphanumeric location designator
- Invalid mark or symbols for retracted ticket

The R/W shall be capable of simultaneously encoded the following information, at a minimum, onto the magnetic stripe of the ticket:

- Entry station number or lane number
- Lot Number
- Time of entry
- Date of entry
- Status of ticket
- Number of entries remaining

Ticket Magazine

The ticket magazine shall be located within the TD and shall hold a minimum of 5,000 fan folded tickets. A low-ticket indicator switch shall issue a signal to the host computer when the remaining balance of tickets reaches approximately 150. The ticket magazine shall be removable to allow easy access to other components within the TD. The TD shall also be capable of storing 5,000 additional tickets as a spare cartridge.

Retracted Ticket Hopper

The retracted ticket hopper shall catch and retain a minimum of 150 tickets. The hopper shall be located within the TD to ensure easy access and removal. A full ticket indicator switch shall issue a signal to the host computer when the balance of tickets reaches approximately 125.

Central Processing Unit (CPU)

Each TD shall contain one CPU that shall provide the logic and functional processing for all input and output functions of the TD. The CPU shall also be capable of communicating to the host computer in an on-line, real time environment. Each TD shall be fully field programmable with parameters entered through either a hand held programming device, or from the on-line host computer. Each TD shall have a perpetual clock/calendar that is synchronized from the Host computer at least once every hour.

Data Transmitted

The TD shall communicate to the host computer on a real time basis. At a minimum, the following data shall be transmitted from the TD to the host computer.

- a) Valid and invalid transaction messages to include:
 - i) Station address
 - ii) A sequentially assigned transaction number
 - iii) Date and time of entry
 - iv) Any applicable rejection codes
- b) Alarm messages to include the following, at a minimum:
 - i) A sequentially assigned transaction number
 - ii) Time of occurrence
 - iii) Description of alarm, such as
 - a) Station out of order
 - b) intercom activated,
 - c) Tickets low
 - d) Loss of communication
 - e) Clock difference
 - f) Warm boot
 - g) Cold boot
 - h) No program downloaded to station
 - i) Stolen tickets
 - j) Full status of retracted ticket vault
- c) Station status, included the following:
 - i) Date and time of station
 - ii) Gate electronically locked in the open position
 - iii) Position of gate - open/closed
 - iv) Loops A, B, and C, presence - on/off
 - v) Number of tickets issued.
- d) Programmable and vehicle counting pulses

- e) Communication status
- f) The following information shall be transmitted from the Host computer to the TD:
 - i) Remote control signals to perform the following functions:
 - a) Open or lock open gates
 - b) Close gates
 - c) Block a station to prevent issuance of ticket
 - ii) Complete program and parameter update information
 - iii) Time synchronization from the system clock
 - iv) Reboot signal to reset a station.

Read and Agree _____

4.06.06 Barrier Gates

This section will describe the requirements and Technical Specifications for the design, procurement, installation and performance standards for the barrier gates required as part of the System.

The Barrier Gate shall be a microprocessor-based, parking control device that shall restrict access within a vehicle traffic lane by means of an aluminum barrier gate arm. The gate shall be activated by a vend signal from an access or revenue control device.

Design Requirements

The automatic control gate will be utilized to control vehicles through all lanes in an unattended or attended lane. The automatic control gate shall be designed to operate reliably in a revenue control application.

The automatic control gate shall be capable of opening and closing in not more than 15 seconds. The gate shall be capable of operating through 10,000 cycles per day.

The selected vendor shall install within each barrier gate a mechanical, non-re-settable counting device that shall increment by one each time the barrier gate is raised and lowered. This device shall be provided in order to provide an additional auditing control for verification of the number of gate vends to the number of tickets issued to the number of vehicles counted by the counting loops.

Gate Housing

The automatic control gate housing shall be a self-supporting structure specifically designed to withstand the usage and environmental conditions associated with a parking revenue collection application in the San Antonio, Texas climate and environment.

The gate housing shall be fabricated of material to provide a minimum of a ten (10) year sustained life. The gate housing shall be fabricated with stainless steel, Type 304L or cold rolled steel finished with two coats of enamel after having been cleaned, phosphatized and primed with two coats of epoxy primer.

The main frame assembly including all attachments and hardware shall be fabricated, cleaned and treated to prevent rusting and corrosion of the assembly. The treatment or other process to be used to protect the material shall be specified on all fabrication drawings.

The dimensions of the gate housing shall be no larger than 18 inches Wide x 48 inches High x 18 inches Deep.

All hardware used to assemble the housing, and its component parts, shall be stainless steel or other non-corrosive material. The access door(s) hinges shall be stainless steel and shall be thoroughly sealed to meet the environmental requirements.

All graphics, instruction and symbols, if any, to be painted or placed on the housing shall be submitted to the City for approval prior to painting the housing.

Gate Drive Unit

The Barrier Gate shall be driven by a motor of the following minimum requirements:

- 1/3 HP, heavy duty, high output torque, 115 VAC, single phase, instant reversing motor
- A breakdown torque of 33.6 ounce per foot
- A duty cycle to operate at a minimum of 10,000 transaction cycles per day.

Adjustable CAMS shall be provided to allow adjustment of the gate arm travel. Mechanical action shall be such that mechanical stops or braking devices are not necessary.

The motorized unit shall power the gate arm to the down (closed) position. When in the down (closed) position, the motor power shall be reduced to minimize operating costs and to produce sufficient heat to prevent freezing and corrosion. The gate arm shall automatically restore to its down position in the event of a power failure.

Electrical Requirements

The gate shall operate from 115 VAC, 60 Hz power source. The gate shall have an electrical panel with appropriate fuses, breakers, power ON-OFF switch and a manual UP-AUTO-DOWN switch as a minimum requirement. The UP and DOWN switch will lock the gate in these positions. The AUTO position is for normal operations. Provisions shall be made for remotely raising and lowering the gate arm from remote locations.

Gate Control

The Gate shall accept two output signals from other revenue control devices, one to OPEN the gate to the UP (open) position and one to CLOSE the gate in the DOWN (closed) position. These signals shall be pulsed for an adjustable period of time (10 msec - 750 msec). In the technical response the Bidder shall state the optimum value, and allowable tolerance, for this adjustable pulse.

In the technical response the Bidder shall state what action the gate will perform if both signals (OPEN and CLOSE) are simultaneously energized.

As an option, the gate shall accept a single output signal. When the output signal is ON, the gate shall be DOWN (closed), and when the output signal is OFF, the gate shall be UP (open). ON shall correspond to the optical relay conducting current, and OFF shall correspond to the optical relay not conducting current. In the technical response the Bidder shall state if this optional control strategy is available as a standard component of the gate control system, or is an extra price option. If it is an extra price option, list the price on the Schedule of Prices.

The gate shall have the ability to automatically reverse its downward motion should any object be struck by the gate arm during its descent and shall immediately return to the upright position and remain up until automatically reset by a variable timer control. This action shall be initiated by a mechanical sensing switch action.

Gate Arm

The gate arm shall be approximately 10 feet long aluminum arms and painted with red and white diagonal stripes across the front face. Articulated arms shall be provided as necessary. The white diagonal stripes shall be light reflective in order to improve visibility of the gate arm. The gate arm shall be attached to the drive shaft by a quick release assembly for ease of replacing the gate arm. The gate arm attachments shall be sized to accommodate American sized pipe or conduit. In the closed position, the bottom of the gate arm shall be a minimum height of 40 inches from the road surface, counting the height of the island. This height has been determined to be the minimum clearance height of a full size passenger vehicle.

If the vendor's equipment does not meet the minimum height requirement of 40 inches from the road surface, the vendor shall include, in the technical response, the method to be used to achieve this height requirement.

The gate arm shall be equipped with a breakaway gate arm flange which shall assure a clean break should a vehicle hit the gate arm. This gate arm flange shall also enable quick and easy change of damaged arms.

Each gate arm shall be provided with a presence sensor that shall automatically raise the gate arm should it sense a vehicle or presence below the gate arm as it is closing. Each gate arm shall include a rubberized bottom edge to protect vehicles should the gate arm accidentally close onto a vehicle.

The Respondent shall include pricing for two (2) additional gate arms, including rubber bottom edge materials, in their proposed lump sum Total Base Bid.

Each barrier gate shall provide a broken gate arm monitoring capability. If a broken gate arm is detected, the Controller shall generate an alarm message indicating the condition and store this message in the Exception Event Report.

Standard Features of the Barrier Gate

The Barrier Gate shall contain an internal controller that shall provide the following:

- All logic control and monitoring functions of the gate
- A means of performing programming, send commands and monitor lane operations which may be provided by a 6 button keypad, software controls from the host computer or networked workstation, or a jack that will allow interface from a portable or laptop computer.
- An internal control allowing manual setting of the gate to be locked in either the UP or DOWN position.

Lane count signals shall not be issued until the vehicle has moved under the gate arm and across the exit loop (Loop C for entry lanes and Loop B for exit lanes) for maximum accuracy.

Read and Agree _____

4.06.07 Patron Interface/Booth Mounted Exit Station (PI/XS)

General Operation

The PI/XS (Exit Station) shall be installed to control the egress of parkers from the garage and parking facilities. The PI/XS shall be designed to function in an on-line, real time environment or in an independent state should communications fail. The transport mechanism shall be designed to accept and process magnetic strip tickets as well as credit or debit cards through the same device. Each cashier booth shall be modified to provide access to a PI/XS so that every lane can be operated in a cashier-less operating mode. The cashier booths shall be modified by the selected vendor such that the PI/XS can be mounted through the wall of the booth and accessible to patrons while sitting in their vehicle.

On-line communications shall be provided to the system host computer for the collection of all exit transactions, monitoring of equipment status and alarms, and remote control capabilities.

When the PI/XS is operated in a stand-alone exit lane, it shall have the capability to accept magnetic stripe tickets, calculate the parking fee due, and accept credit or debit cards through the same device. When the magnetic stripe ticket is inserted, the PI/XS shall automatically calculate the total parking fee due and display this information on the patron fare display (LED or LCD). The patron will then be directed to insert the credit/debit card into the device. Once the credit/debit card is accepted, the PI/XS shall read the credit holder account number information and transmit to the host computer for processing through the clearing house system, and process the appropriate action either granting or denying credit card exit. A built-in receipt printer will automatically issue the patron a receipt detailing the charges to the credit card account.

The PI/XS shall accept pre-paid tickets that have been re-coded when processed through a Pay-on-Foot device. When a pre-paid magnetic stripe ticket is inserted, the PI/XS shall automatically calculate if the patron has exited during the allotted grace period. If the patron has exited during the grace period, the PI/XS shall vend the barrier gate “UP” thereby allowing the patron to exit

the facility. If the patron has exceeded the grace period, the PI/XS shall calculate the additional fee due and display this information on the patron fare display. The patron will then be directed to insert a credit or debit card into the device to pay the remaining balance.

Functions

The PI/XS shall have the following minimum functions:

- Control and monitoring of barrier gates
- Collection of used tickets
- Display parking fee on patron fare display
- On-line communication with host computer
- Credit card processing
- Read/write functions for ticket validation
- Full/Open/Close signs control
- Capacity counting for all exit transactions by category
- Processes up to 600 exit lane transaction cycles per hour.
- Intercom with call button
- Receipt printer
- Patron fare display

Design Requirements

The PI/XS shall be a booth mounted device designed for continuous unattended operation. Each PI/XS shall consist of a ticket transport mechanism, universal card device (magnetic stripe reader/writer), collected ticket hopper/vault, stand alone/on-line central processing unit, power supplies, thermostatically controlled heater and fan unit, programmable display, printer, and integral intercom. The printer shall conform to the requirements as specified in the previous section.

Each booth mounted PI/XS shall be flush mounted in the wall of the booth in order to not impede or obstruct vehicles as they exit the lane. Each booth mounted PI/XS shall be fully functional and capable of accepting magnetic stripe tickets and credit cards for payment, a LED or LCD display shall be included that will display messages to the parking customer. This display may be either an integral component of the PI/XS or a separate display device. The PI/XS at the exit plaza shall be wall mounted through the wall of the exit booth.

The PI/XS shall be designed and fabricated to ensure that the machine operates satisfactorily without material degradation for a minimum of ten (10) years. The PI/XS and its components shall be completely sealed to ensure that water, dust, and other contaminants do not enter the assembly.

Intercom

Each PI/XS shall have an integral intercom for the patron to communicate with the Intercom master station that shall be located in the consolidated exit plaza. The main intercom station

shall be located at the main parking operator's administrative location. The intercom shall be activated by the patron pressing a call button located on the face of the PI/XS or other equipment. The selected vendor shall provide an interface from each intercom push button to the future CCTV security system that will automatically enable the closest proximate CCTV camera within the CCTV security system to pan directly to capture an image of the device where the intercom push button had been activated. This image shall be displayed on a monitor located in the parking management offices.

Ticket Transport Mechanism

Each ticket transport mechanism shall be a separate and removable module within the PI/XS. The transport assembly shall contain the ticket drive unit, guides, rollers, optic sensors, and associated electronics.

The ticket transport shall contain optical sensors to determine ticket position. The optical sensors shall interface with the ticket cutter to maintain and precisely control ticket issue. The ticket transport shall be secured to the base by quick release latches.

Magnetic Stripe Reader/Writer (R/W)

The R/W shall be a separate and removable component. The R/W device shall contain a ticket drive unit, magnetic read & write unit, printer, optical sensors, and associated electronics. The R/W device shall be fully interchangeable with other TDs, PI/XS, cashier stations, and any other device installed within the System utilizing a magnetic stripe reader/writer. The printer shall conform to the Technical Specifications as defined in the previous section of the Technical Specifications.

The R/W device shall be capable of processing both tickets and cards (such as credit or debit cards) within the same unit. The R/W device shall read and encode magnetic stripe tickets and cards utilizing standard ISO 1864 format. The optical sensors shall monitor the travel and position of the ticket/card throughout the entire read/write process. The sensors shall be interfaced with the ticket transport mechanism to maintain and precisely control ticket issuance.

The ticket printer shall use an integrated ink jet printer, dot matrix, or thermal printer. The ink jet printer shall use an ink jet cartridge, which contains the ink supply. The cartridge shall have a minimum life of three months, or no less than 1,500 transactions per day per PI/XS.

Retracted Ticket Hopper

The retracted ticket hopper shall catch and retain a minimum of 5,000 tickets. The hopper shall be located to ensure easy access and removal of tickets. The PI/XS shall have installed an alarm switch that shall send an alarm message to the host computer when the volume of tickets in the ticket hopper counts approximately 4,500 tickets. The ticket hopper shall be secured within the device with a keyed lock.

Stand Alone/On-line Central Processing Unit

Each PI/XS shall contain one CPU which shall provide the logic and functional processing for all input and output functions of the PI/XS. The CPU shall also be capable of communicating to the host computer in an on-line, real time environment. Each PI/XS shall be fully field programmable with parameters entered through either a hand held programming device, or from the on-line host computer. Each PI/XS shall have a perpetual clock/calendar that is synchronized from the Host computer at least once every hour.

The PI/XS shall be fully field programmable with parameters entered from a hand held programmer or from the on-line host computer. The following exit parameters shall be programmable, at a minimum:

- Station Number
- Time of Exit (in military format)
- Date of Exit
- Receipt text
- Acceptance of credit/debit cards
- Retain or return credit/debit cards
- Timer to determine closing of gate in the event of a vehicle backing away with exit ticket.
- Password protection

The PI/XS shall have a built in inkjet or thermal printer for printing receipt information at the exit for patrons using a credit card to exit. The receipt printer shall be capable of printing the following receipt information, at a minimum:

- Programmable text for location of parking facility
- Date/time of entry
- Date/time of exit
- Parking Duration
- Amount paid
- Type of credit card
- Credit card account number
- Authorization number

Patron Display

The Patron Display shall be either a LED or LCD display and mounted on the face of the PI/XS and shall be fully programmable. The display will activate when the presence of a vehicle is detected by the loop detector. The following scenario shall be followed:

- a) The Patron Display shall display instructions to the patron. The message “Insert Ticket or Credit Card for Exit” shall be displayed when a vehicle is detected.
- b) The Patron Display shall then instruct the patron to insert the credit card and display the total parking fee due: “Amount due: \$XX.XX. Please insert Credit/Debit Card”.

- c) When the credit card is retracted and the host computer is accessing the clearinghouse, the Patron Display shall display the following message: "One Moment Please".
- d) When the clearinghouse has cleared the credit card transaction, the host computer will instruct the PI/XS to issue the following display: "Please take receipt. Thank You".
- e) When the ticket is retracted and the information read from the magnetic stripe, the Patron Display will display the following information "Thank you for Parking at the San Antonio International Airport".
- f) If there is a problem with the credit card or if communication is not working properly, the Patron Display shall direct the patron to an attended lane by displaying the following: "Please see Attendant".

The PI/XS shall communicate to the host computer on a real time basis. At a minimum, the following data shall be transmitted from the PI/XS to the host computer.

- a) Valid and invalid transaction messages to include:
 - i) Station address
 - ii) A sequentially assigned transaction number
 - iii) Date and time of entry
 - iv) Any applicable rejection codes
- b) Alarm messages to include the following:
 - i) A sequentially assigned transaction number
 - ii) Time of occurrence
 - iii) Description of alarm, such as
 - a) Station out of order
 - b) Intercom activated
 - c) Ticket hopper full
 - d) Loss of communication
 - e) Clock difference
 - f) Warm boot
 - g) Cold boot
 - h) No program downloaded to station
- c) Station status, included the following:
 - i) Date and Time of station
 - ii) Gate electronically locked in the open position
 - iii) Position of gate - open/closed
 - iv) Loops A, and B, presence - on/off
- d) Programmable and vehicle counting pulses
- e) Credit card number and parking fee due
- f) Communication status
- g) The following information shall be transmitted from the Host computer to the PI/XS:
 - i) Remote control signals to perform the following functions:
 - a) Open or lock open gates
 - b) Close gates
 - ii) Complete program and parameter update information
 - iii) Time synchronization from the system clock
 - iv) Credit card authorization or non-authorization

- iv) Reboot signal to reset a station.

Read and Agree _____

4.06.08 Exit Station – Stand-alone

General Operation

The Exit Station (Exit Station) shall be installed to control the egress of parkers from the garage and parking facilities. The Exit Station shall be designed to function in an on-line, real time environment or in an independent state should communications fail. The transport mechanism shall be designed to accept and process magnetic stripe tickets as well as credit or debit cards through the same device. The accepted credit or debit cards shall include the conventional magnetic striped cards as well as the newer, contactless cards.

On-line communications shall be provided to the system host computer for the collection of all exit transactions, monitoring of equipment status and alarms, and remote control capabilities.

The Exit Station shall have the capability to accept magnetic stripe tickets, calculate the parking fee due, and accept credit or debit cards through the same device. When the magnetic stripe ticket is inserted, the Exit Station shall automatically calculate the total parking fee due and display this information on the patron fare display (LED or LCD). The patron will then be directed to insert the credit/debit card into the device. The PI/XS will read the credit card data and eject the credit card within two (2) seconds of the insertion of the credit card. Once the credit/debit card is accepted, the Exit Station shall read the credit holder account number information and transmit to the host computer for processing through the clearing house system, and process the appropriate action either granting or denying credit card exit. A built-in receipt printer will automatically issue the patron a receipt detailing the charges to the credit card account.

The Exit Station shall accept pre-paid tickets that have been re-coded when processed through a Pay-on-Foot device. When a pre-paid magnetic stripe ticket is inserted, the Exit Station shall automatically calculate if the patron has exited during the allotted grace period. If the patron has exited during the grace period, the Exit Station shall vend the barrier gate “UP” thereby allowing the patron to exit the facility. If the patron has exceeded the grace period, the Exit Station shall calculate the additional fee due and display this information on the patron fare display. The patron will then be directed to insert a credit or debit card into the device to pay the remaining balance.

Exit Station Housing

The Exit Station housing shall be a self-supporting structure specifically designed to withstand the usage and environmental conditions associated with a parking revenue collection application in the San Antonio, Texas climate and environment.

The housing shall be fabricated of material to provide a ten (10) year sustained life. The housing shall be fabricated with stainless steel, Type 304L or cold rolled steel finished with two coats of enamel after having been cleaned, phosphatized and primed with two coats of epoxy primer.

The main frame assembly including all attachments and hardware shall be fabricated, cleaned and treated to prevent rusting and corrosion of the assembly. The treatment or other process to be used to protect the material shall be specified on all fabrication drawings.

All hardware used to assemble the housing, and its component parts, shall be stainless steel or other non-corrosive material. The access door(s) hinges shall be stainless steel and shall be thoroughly sealed to meet the environmental requirements.

All graphics, instruction and symbols, if any, to be painted or placed on the housing shall be submitted to the City for approval prior to painting the housing.

Functions

The Exit Station shall have the following minimum functions:

- Control and monitoring of barrier gates
- Collection of used tickets
- Display parking fee on patron fare display
- On-line communication with host computer
- Credit card processing
- Read/write functions for ticket validation
- Full/Open/Close signs control
- Capacity counting for all exit transactions by category
- Processes up to 600 exit lane transaction cycles per hour.
- Intercom with call button
- Receipt printer
- Patron fare display

Design Requirements

The Exit Station shall be a stand-alone device designed for continuous unattended operation. Each Exit Station shall consist of a ticket transport mechanism, universal card device (magnetic stripe reader/writer), collected ticket hopper/vault, stand alone/on-line central processing unit, power supplies, thermostatically controlled heater and fan unit, programmable display, printer, and integral intercom. The printer shall conform to the requirements as specified in the previous section.

The Exit Station shall be designed and fabricated to ensure that the machine operates satisfactorily without material degradation for a minimum of ten (10) years. The Exit Station and its components shall be completely sealed to ensure that water, dust, and other contaminants do not enter the assembly.

Intercom

Each XS shall have an integral intercom for the patron to communicate with the Intercom master station that shall be located in the consolidated exit plaza. The main intercom station shall be located at the main parking operator's administrative location. The intercom shall be activated by the patron pressing a call button located on the face of the XS or other equipment. The selected vendor shall provide an interface from each intercom push button to the future CCTV security system that will automatically enable the closest proximate CCTV camera within the CCTV security system to pan directly to capture an image of the device where the intercom push button had been activated. This image shall be displayed on a monitor located in the parking management offices.

Ticket Transport Mechanism

Each ticket transport mechanism shall be a separate and removable module within the Exit Station. The transport shall utilize a rotary cutter assembly that is integral to the unit. The transport assembly shall contain the ticket drive unit, guides, rollers, optic sensors, and associated electronics.

The ticket transport shall contain optical sensors to determine ticket position. The optical sensors shall interface with the ticket cutter to maintain and precisely control ticket issue. The ticket transport shall be secured to the base by quick release latches.

Magnetic Stripe Reader/Writer (R/W)

The R/W shall be a separate and removable component. The R/W device shall contain a ticket drive unit, magnetic read & write unit, printer, optical sensors, and associated electronics. The R/W device shall be fully interchangeable with other TDs, exit stations, cashier stations, and any other device installed within the System utilizing a magnetic stripe reader/writer. The printer shall conform to the Technical Specifications as defined in the previous section of the Technical Specifications.

The R/W device shall be capable of processing both tickets and cards (such as credit or debit cards) within the same unit. The R/W device shall read and encode magnetic stripe tickets and cards utilizing standard ISO 1864 format. The optical sensors shall monitor the travel and position of the ticket/card throughout the entire read/write process. The sensors shall be interfaced with the ticket transport mechanism to maintain and precisely control ticket issuance.

The ticket printer shall use an integrated ink jet printer or thermal printer. The ink jet printer shall use an ink jet cartridge, which contains the ink supply. The cartridge shall have a minimum life of three months, or no less than 1,500 transactions per day per Exit Station.

Retracted Ticket Hopper

The retracted ticket hopper shall catch and retain a minimum of 5,000 tickets. The hopper shall be located to ensure easy access and removal of tickets. The Exit Station shall have installed an alarm switch that shall send an alarm message to the host computer when the volume of tickets in the ticket hopper counts approximately 4,500 tickets. The ticket hopper shall be secured to the device with a keyed lock.

Stand Alone/On-line Central Processing Unit

Each Exit Station shall contain one CPU which shall provide the logic and functional processing for all input and output functions of the Exit Station. The CPU shall also be capable of communicating to the host computer in an on-line, real time environment. Each Exit Station shall be fully field programmable with parameters entered through either a hand held programming device, or from the on-line host computer. Each Exit Station shall have a perpetual clock/calendar that is synchronized from the Host computer at least once every hour.

The Exit Station shall be fully field programmable with parameters entered from a hand held programmer or from the on-line host computer. The following exit parameters shall be programmable, at a minimum:

- Station Number
- Time of Exit (in military format)
- Date of Exit
- Receipt text
- Acceptance of credit/debit cards
- Retain or return credit/debit cards
- Timer to determine closing of gate in the event of a vehicle backing away with exit ticket.
- Password protection

The Exit Station shall have a built in inkjet or thermal printer for printing receipt information at the exit for patrons using a credit card to exit. The receipt printer shall be capable of printing the following receipt information, at a minimum:

- Programmable text for location of parking facility
- Date/time of entry
- Date/time of exit
- Parking Duration
- Amount paid
- Type of credit card
- Credit card account number
- Authorization number

Patron Display

The Patron Display shall be either a LED or LCD display and mounted on the face of the Exit Station and shall be fully programmable. The display will activate when the presence of a vehicle is detected by the loop detector. The Respondent shall specify the letter height and font used for this display in their Proposal. The following scenario shall be followed:

- g) The Patron Display shall display instructions to the patron. The message "Insert Ticket or Credit Card for Exit" shall be displayed when a vehicle is detected.
- h) The Patron Display shall then instruct the patron to insert the credit card and display the total parking fee due: "Amount due: \$XX.XX. Please insert Credit/Debit Card".
- i) When the credit card is retracted and the host computer is accessing the clearinghouse, the Patron Display shall display the following message: "One Moment Please".
- j) When the clearinghouse has cleared the credit card transaction, the host computer will instruct the Exit Station to issue the following display: "Please take receipt. Thank You".
- k) When the ticket is retracted and the information read from the magnetic stripe, the Patron Display will display the following information "Thank you for Parking at the San Antonio International Airport".
- l) If there is a problem with the credit card or if communication is not working properly, the Patron Display shall direct the patron to an attended lane by displaying the following: "Please see Attendant".

The Exit Station shall communicate to the host computer on a real time basis. At a minimum, the following data shall be transmitted from the Exit Station to the host computer.

- a) Valid and invalid transaction messages to include:
 - i) Station address
 - ii) A sequentially assigned transaction number
 - iii) Date and time of entry
 - iv) Any applicable rejection codes
- b) Alarm messages to include the following:
 - i) A sequentially assigned transaction number
 - ii) Time of occurrence
 - iii) Description of alarm, such as
 - a) Station out of order
 - b) Intercom activated
 - c) Ticket hopper full
 - d) Loss of communication
 - e) Clock difference
- c) Station status, included the following:
 - i) Date and Time of station
 - ii) Gate electronically locked in the open position
 - iii) Position of gate - open/closed
 - iv) Loops A, and B, presence - on/off
- d) Programmable and vehicle counting pulses

- e) Credit card number and parking fee due
- f) Communication status
- g) The following information shall be transmitted from the Host computer to the Exit Station:
 - i) Remote control signals to perform the following functions:
 - a) Open or lock open gates
 - b) Close gates
 - ii) Complete program and parameter update information
 - v) Time synchronization from the system clock
 - vi) Credit card authorization or non-authorization
 - iv) Reboot signal to reset a station.

Read and Agree _____

4.06.09 Cashier Station

Each exit lane that is configured as a cashiered lane shall have installed one Cashier Station that shall be used to process tickets by a cashier upon exit. The Cashier Station shall incorporate the ability to read the information located on the magnetic stripe of the parking ticket, print unique information on the magnetic stripe of the ticket, print certain exception forms for patron signature (such as ADA), automatically calculate the parking fee due, and issue a vend signal to the barrier gate to raise the gate arm to allow the patron to exit the facility. The Cashier Station shall be capable of accepting payments through either cash, credit or debit card, or processing appropriate access cards as provided under these Technical Specifications. The monitor for each Cashier Station shall be a touch sensitive flat panel monitor. The read system shall produce a unique ticket "signature" on the magnetic stripe consisting of month, date, time, lane number, and ticket number. Once the ticket has been processed at the Cashier Station in the exit lane, the ticket shall be validated with the exit transaction information and automatically voided from the system to prevent future reuse of the processed ticket.

The Cashier Station shall communicate to the Host computer in an on-line, real time environment for the collection of revenue transactions, monitoring of equipment status and alarms, remote capabilities, and the space count and monitoring system. The Cashier Station shall control the lane signs such that when a cashier logs onto the lane (cashier station) the lane sign will automatically change to the appropriate message (cashier). When the cashier logs off, the lane sign will automatically change to "Credit Card only".

General Operation

The arming loop (Loop A in the exit lane) shall activate the Cashier Station upon arrival of a vehicle at the exit booth. The patron will then insert the parking ticket into the PI/XS. The Cashier Station shall then read the entry data from the magnetic stripe of the ticket, automatically calculate the parking fee due, and display the fee due on a fare display for the attendant and on the patron fare display. The patron may then pay by either cash or credit/debit card. If the patron pays with a cash/debit card, the patron will insert this card into the PI/XS for processing. The PI/XS will read the credit card data and eject the credit card within two (2) seconds of the

insertion of the credit card. Upon completion of the transaction, the ticket is validated with the revenue transaction data in eye readable form, the magnetic stripe is electronically voided, and the ticket is vaulted in a ticket validator lock box. A vend signal is then forwarded to the barrier gate to raise the gate arm, thereby allowing the patron to proceed with their exit. The transaction record is stored and communicated to the Host computer.

In a backup method of operation, the Cashier Station shall be used as a stand-alone device and provide the cashier with the ability to process exit transactions without the interface to the PI/XS. In this situation, the following scenario shall occur:

The arming loop (Loop A in the exit lane) shall activate the Cashier Station upon arrival of a vehicle at the exit booth. The patron will then present the parking ticket to the attendant who will insert the ticket into the ticket reader located within the booth. The Cashier Station shall then read the entry data from the magnetic stripe of the ticket, automatically calculate the parking fee due, and display the fee due on a fare display for the attendant and on the patron fare display. The patron may then pay by either cash or credit/debit card. Upon completion of the transaction, the ticket is validated with the revenue transaction data in eye readable form, the magnetic stripe is electronically voided, and the ticket is vaulted in a ticket validator lock box. A vend signal is then forwarded to the barrier gate to raise the gate arm, thereby allowing the patron to proceed with their exit. The transaction record is stored and communicated to the Host computer.

The Cashier Station shall accept pre-paid tickets that have been re-coded when processed through a Pay-on-Foot device. When a pre-paid magnetic stripe ticket is inserted, the Cashier Station shall automatically calculate if the patron has exited during the allotted grace period. If the patron has exited during the grace period, the Cashier Station shall vend the barrier gate "UP" thereby allowing the patron to exit the facility. If the patron has exceeded the grace period, the Cashier Station shall calculate the additional fee due and display this information of a fee display for the attendant and the patron fare display. The patron will then be directed to present a credit card to the cashier to pay the remaining balance or to pay the remaining balance in cash to the cashier.

Functions

The following are the minimum functions to be provided by the Cashier Station:

- Universal control of parker exit events
- Control and monitoring of barrier gates
- Read/write functions for ticket validation
- Full/Open/Close signs control
- Capacity counting for all exit transactions
- RS422/485 interface for on-line operation
- Display of parking fee due
- Acceptance of credit/debit cards for payment

Ticket Data

The Cashier Station shall be programmable and print at a minimum the following information:

- a) Four digit military time
- b) Two digit month of exit
- c) Two digit date of exit
- d) Last two digits of year of exit
- e) Five digit alphanumeric station or lane number
- f) Invalid mark for invalid ticket
- g) Gross fee
- h) Validation amount
- i) Attendant I.D.

Associated Hardware

The Cashier Station shall utilize a thermal printer or an ink jet printer to print exit data, eye readable information onto the parking ticket.

Each station shall have an independent computer based perpetual clock calendar which shall be synchronized by the Host computer at least every hour.

Each Cashier Station shall have a CRT display monitor capable of user access through a standard asynchronous terminal. This monitor shall be a flat panel touch screen monitor.

Each Cashier Station shall have an external receipt printer, preferably a thermal printer, capable of printing the following minimum receipt information:

- a) Programmable text
- b) Date/Time of Entry
- c) Date/Time of Exit
- d) Parking Duration
- e) Amount Paid
- f) Kind of payment

The Cashier Station shall have a separate controller to compute the appropriate fee based upon the information read from the ticket reader. Once the transaction has been completed, the transaction data shall be stored in memory and downloaded to the Host computer. The Cashier Station shall be capable of continuous operation in case of communication failure to the Host computer. Revenue transactions shall be retained, or stored, in memory for a minimum period of seventy two (72) hours in the event of communication failure.

Invalid Ticket Control

Illegal ticket information shall be transmitted to the Cashier Station from the Host computer and stored in local memory. Each exit transaction shall be verified for validity at the Cashier Station

during the transaction process. If the ticket is invalid, the Cashier Station shall send an alarm message to the attendant and report this event to the Host computer.

Communication to the Host Computer

The Cashier Station shall communicate to the Host computer in an on-line, real time environment. At a minimum, the following data shall be transmitted from the Cashier Station to the Host Computer:

- a) Valid and invalid transaction messages to include: Station address, a sequentially assigned transaction number, time and date of exit, applicable rejection codes, amount of transaction, and type of transaction.
- b) Alarm messages to include:
 - i) station address,
 - ii) sequential protocol number,
 - iii) time and date of occurrence, and
 - iv) Description of alarm. Alarms that are typically sent to the Host Computer are:
 - a) Out of order,
 - b) Loss of communication
- c) Station status:
 - i) Date and time
 - ii) Barrier gate locked status
 - iii) Barrier gate current operational status
 - iv) Exit station blocked status
 - v) Loops A, B, & C status
 - vi) Number of tickets processed
 - vii) On-line report of shift status
- d) The following information shall be sent from the Host Computer to the Cashier Station:
 - i) Remote control signals to open/close gate, block a station to prevent ticket processing
 - ii) Complete program and parameter loading and updating capability
 - iii) Time synchronization
 - iv) Programmable outputs to control signs, relays, or other devices
 - v) Reboot signal to reset a Cashier Station

Security

There shall be at least two levels of passwords to protect access to the Cashier Station. Alarms shall be available that include an open cash drawer. This alarm shall be programmable by the user.

Read and Agree _____

4.06.10 License Plate Inventory (LPI)

The LPI shall be an on-line, fully integrate system with the parking System that enables a LPI check on every Parking System exit transaction. The LPI data may be gathered by a mobile LPR enabled vehicle equipped with CCTV cameras and computer or by hand-held computers, as a backup, and offloaded into the computer database. This provides the parking operators with a means of cross checking a patron's parking duration.

If so designated by the Respondent, this system shall consist of a vehicle equipped with CCTV cameras and a computer system. This vehicle shall be capable of driving through the parking areas on a zone by zone basis, capture the license plate data images, convert these images to electronic data and download this data to the LPI computer. This function shall occur on a nightly basis. The LPR function shall conform to the specifications included later in these specifications.

Data removal, stored license numbers shall be removed from inventory and may be accomplished by the cashier entering the license plate number into the cashier machine. The system then processes the transaction and removes the stored license number from the LPI.

The System shall provide a back-up solution with software and sufficient capacity to automatically back-up the current LPI inventory from the computer and store for one (1) year.

LPI Software shall provide the following functionalities, at a minimum:

1. Provide a listing, with selectable output to printer or monitor, of all cars parked in each parking facility, separated by parking facility. Listing shall be sorted alpha-numerically by state and license plate number.
2. Provide a listing, both printed and via monitor, of all cars parked within each sub-area (i.e., each floor, section, row number and/or space number, etc.) for each parking facility. Listing shall be sorted alpha-numerically by state and license plate number.
3. Provide records for each parked vehicle including license plate number, state of registration, area of parking lot, row number, date of first appearance on the inventory, minimum fee due. Display shall be selectable for monitor or printer.
4. Provide listings with summary totals of the number of cars parked (Entered each facility but not exited).
5. Provide listings that are automatically updated as new data is uploaded from the hand held units.
6. Provide software with the ability to query by license plate to determine the location of lost cars.
7. Provide software that allows the manual entry of records via the computer keyboard.
8. Provide software that shall generate reports, on command, showing the vehicles parked greater than a programmable number of days, and their locations. Display shall be selectable for monitor or printer.
9. Provide software that shall generate reports, on command, showing the vehicles parked sorted by state. Display shall be selectable for monitor or printer.
10. Provide software that shall retain data concerning plate numbers that disappear from the

inventory in a separate file until the next inventory update. Those vehicles that do not reappear, in the same location, on the next update shall be deleted and recorded in an exception log.

Hand-held LPI Computers

Hand-held computers to be provided, will be used for the following functions, but not limited to:

1. Operate the License Plate Inventory (LPI) software

Hand-held computers must provide the following features, at a minimum:

1. Sixteen (16) kilobytes of random access memory.
2. Full alphanumeric keyboard with a traditional ten (10) key numeric format.
3. Four (4) line display (16 characters each) which is highly visible in daylight and darkness.
4. A synchronous RS-232C serial communication port.
5. Removable, rechargeable battery pack.
6. Battery operation for a minimum of eight (8) hours between charging.

Each hand-held computer shall contain sufficient random access memory to store a minimum of 7,500 license plates without the loss of data or overwriting of data.

The selected vendor shall provide the equipment and software for uploading data from the hand-held computers with error checking protocol to the Host computer. The selected vendor shall provide this upload process from any exit station on the network.

The LPI software for the hand held computers shall allow for the correction of mistakes made during the inventory collection process. Inventory personnel shall be able to delete any specific license plate entry. LPI software shall provide the ability to set defaults to Texas license plates. An audit trail shall be provided by the LPI system that includes all transactions performed by each staff member.

The hand-held computers shall be watertight, shock resistant, and capable of continuous, dependable operation within the range of weather conditions experienced at the project site.

CCTV Cameras

License plate data shall be available through the CCTV cameras installed for the license plate recognition system described later in this section.

Read and Agree _____

4.06.11 Parking Guidance Dynamic Message Signs

The selected vendor shall provide, install, and train City personnel to operate Dynamic Message Signs (DMS) to inform patrons the number of available parking spaces in the Long-Term parking area. The number shall decrement in increments of ten (10) counts until the system reaches twenty (20) spaces for a particular area. Once the system counts down to twenty, the number of available spaces shall decrement by one (1). All decrements and increments shall be user controlled. Until the area becomes full (as defined as less than 15 spaces available for parking), the DMSs shall reflect the number of spaces available in those locations as “NNNN”. Once an area becomes full all appropriate DMSs shall exhibit a “FULL” message for that area. When the area becomes open, as determined by the space and monitoring system, the DMS shall exhibit the number of spaces available in those locations as “NNNN” message for that area. The function of the Parking Guidance System is further described in detail in a later section of these Technical Specifications.

General

The DMS shall be a Light Emitting Diode (LED), “continuous line”, variable message sign designed and constructed to withstand operation in the San Antonio, Texas environment. The signs shall display characters with nominal heights of six (6) inches. The characters shall be readable in all lighting conditions, especially while displaying the images in direct, harsh sunlight.

The selected vendor shall furnish and install all materials necessary to provide complete and properly functioning DMS’s in accordance with these Technical Specifications. Miscellaneous equipment, materials, and work not mentioned but necessary to provide DMS’s that are complete and fully operational shall be furnished by the selected vendor as incidental to the work.

Design of the DMS shall minimize the possibility that failure of any one device or module shall cause total system failure. The failure of one module or subassembly shall not cause the failure of any other module or subassembly.

For each display technology required, the DMS display and the DMS controller shall be from the same manufacturer.

The DMS and corresponding static signs shall conform to the City of San Antonio sign standards.

Each DMS installation shall include, but is not limited to, the following:

- a) Dynamic message sign (includes the sign housing plus all electronically controlled display elements).
- b) Local DMS controller
- c) Sign intensity controls
- d) Communication and power cabling between the sign controller, the DMS, and the Host computer.

Submittals

The Respondent shall submit the following details in their response:

- Elevation of each sign clearly showing text arrangement and characteristics in proper relationship to all characters and to sign enclosure or background dimensions
- Product data for prefabricated items or items that cannot be described in shop drawings.

Products

The selected vendor shall provide the following materials and products:

The display shall consist of green and red color LED's, HP (HLMA-DL00) high output or approved equal.

Read and Agree _____

4.06.14 Dynamic Signs at Exit Plaza

The selected vendor shall install dynamic message signs for each lane at the exit plaza. These signs shall display the function of the associated lane by scrolling the message from right to left across all similar signs. For example, if the three middle lanes are configured as "Cashier Lanes" the DMS above all three lanes shall scroll the message "Cashier Only" across the signs located on all three lanes. Similarly for the contiguous dedicated lanes, such as Credit Card Only, the DMS associated with these lanes shall continuously scroll this message across the signs for all these lanes. The dynamic signs shall be installed on the face of the overhead canopy of the exit plaza and shall be readable from a minimum of sixty (60) feet by vehicles traveling estimated speeds of thirty (30) miles per hour.

Read and Agree _____

4.06.15 Large LED Video Display

The selected vendor shall provide and install a large screen, outdoor LED video display to be located prior to the main entrance of the Hourly and Long-Term parking entrance plaza. This video display shall be capable of providing high definition display of video images. Similar type signs commonly provided are Jumbotron, Diamondvision, or ProStar products offered by various manufacturers. The anticipated size of this product is currently estimated to be approximately 24' x 36'. The Respondent shall provide cut sheets, documentation, and brochures of the proposed display.

Read and Agree _____

4.07 Automatic License Plate Recognition

The Work under this section shall include all labor and materials necessary to provide a reliable, real-time parking facility license plate recognition (LPR). The LPR shall be continuously updated as each vehicle enters or leaves and an image of its license plate is captured and read by dedicated hardware and software. The LPR shall be robust so that the system performance is unaffected by the total number of computers employed within the system or accessing the network.

Each entry and exit lane shall have two image capture cameras and illumination system in order to provide illumination to ensure a valid image capture. The cameras shall be installed such that one camera will capture the license plate of most passenger vehicles. The second camera shall be installed to capture the license plate of larger SUV and Pickup trucks. Additionally, each exit lane shall have installed one workstation with a color monitor for the purpose of displaying images of the exiting vehicles to the parking attendant for verification of license plate data and manual entry, if required.

Read and Agree _____

4.07.01 General Performance Specification

The LPR system shall capture 99.0% image capture of unobstructed, un-obscured license plates and will correctly read by Optical Character Recognition (OCR) and match an entry and exit license plate to the LPR "Active" database with no more than 5% exceptions. The exceptions will require a minimal amount of manual processing. The system shall automatically process all entry and exit transactions such that no more than 5% of the total transactions shall be required to be entered manually.

The Respondent shall fully describe the proposed system and how the system shall meet these required specifications.

CCTV Cameras

CCTV color cameras and a color monitor shall be installed at each exit lane of the exit plaza to visually identify license plates. The license plate image shall be displayed on either a color monitor located within each exit booth or on the cashier display of the cashier terminal. The cashier shall be required to enter the license plate number into the Cashier Station only if the System does not recognize a match with an appropriate entry transaction. The Cashier Station will then process the transaction and remove the stored license plate number from the LPI database. The cameras shall provide clear pictures at all times during the day or night, including poor weather. If auxiliary lighting is required, the selected vendor shall be responsible for providing auxiliary lighting.

Read and Agree _____

4.07.02 General Operation

The following description is to provide generally what actions shall occur at the entrance and exit lanes to capture the license plate data. It is recognized that systems may differ somewhat in performance requirements. The Respondent must include a detailed description of the proposed system in their response to these Technical Specifications.

Entry Operation

As the vehicle passes through the entry lane, the Loop C will send a vend signal to the OCR controller which will then activate the camera(s) and take a series (customer programmable) of digital images of the vehicle. These data and images shall then be transmitted together with the date, time, and lane-identifier information to the OCR Host computer. The OCR Host computer shall then perform enhancement operations of the digitized images, locate the license plate data through pattern recognition or other programming routines on each image, and perform OCR processing on the license plate to determine the license plate number which shall then be converted into alpha-numeric data to be stored within the license plate inventory database. The OCR image shall be of a 95% confidence level. If the OCR host computer determines that the confidence level is less than a 95% level, then the image shall be transmitted to a workstation for manual verification and data entry. Once the image has been determined to be acceptable, through either automatic OCR processing or manual entry, the image is associated with the associated transaction information (time, date, lane number, ticket number, etc.) and a compressed version of the best image of the vehicle and processed against the “Active” LPR database. The OCR Host computer shall then check the “Active” LPR database to determine if there is a match to an existing record. If a match exists, the OCR Host computer shall then alert the supervisor who can manually resolve any ambiguity. If no match exists, then the OCR Host computer shall accept the data as a new vehicle entry into the parking area and store the collected data as part of the LPR database.

The LPR database shall store the active LPR for the facility, associated vehicle images, and other data determined as necessary to perform a fully interactive LPR function.

Once all ambiguities have been resolved, the best image is then compressed and stored, along with the license plate number and associated identifying information in the LPR database.

The LPR data for each entry transaction shall be compared to a “hot list” representing stolen vehicles from the San Antonio area. If the System finds a match to the “hot list”, the System will issue an alert to the supervisor monitor identifying the vehicle’s license plate number, and image of the vehicle, the date and time of entry, and identifying which parking area the vehicle has entered.

Exit Operation

As the vehicle enters the exit lane, the vehicle will activate Loop A, which will then send a vend signal to the OCR controller to activate the camera(s) at that lane. The camera(s) shall take the stipulated number of images (customer programmable) and sends the images with identifying

information (date, time, lane number, etc.) to the OCR Host Computer, which shall then process the images and perform OCR processing on the image. The OCR Host computer shall then perform enhancement operations of the digitized images, locate the license plate data through pattern recognition or other programming routines on each image, and perform OCR processing on the license plate to determine the license plate number which shall then be converted into digital alpha-numeric data to be stored in the LPR database.

The OCR image shall be of a 95% confidence level. If the OCR host computer determines that the confidence level is less than a 95% level, then the image shall be transmitted to a workstation at the exit booth for manual verification and entry.

Once the image has been determined to be acceptable, through either automatic OCR processing or manual entry, the image is matched against the LPR database, based upon a predetermined set of business rules. If an exact number match is found in the "Active" LPR database, the OCR Host computer sends a normal transaction record to the cashier machine and the attendant may then process the exit transaction. If an exact match is not found, the OCR Host Computer shall send an abnormal transaction record to the workstation located at the exit booth and alert the supervisor.

Upon exit of the vehicle, the cashier machine shall transmit a confirmation message to the OCR Host Computer, which shall then discard the associated image for all records except exception transactions.

If an acceptable match is not made to an existing entry transaction in the LPR database, the gate will not vend and the patron will not be allowed to exit the facility. The patron will be instructed by electronic message located on the associated Exit Station within that lane to call the supervisor by depressing the intercom button. The supervisor will then handle this exit transaction as an exception by looking up the license plate data in the LPI and the LPR databases.

Read and Agree _____

4.07.03 Lane Configuration

4.07.03.01 Entry Lane Configuration

Each entry lane shall have a minimum of two (2) installed CCTV cameras, two auxiliary illumination systems, all required cabling, and any required stanchion, gantry or mounting pole to provide exact positioning of the cameras to capture clean and unobstructed images of all license plates. The LPR system shall accept a vend signal from Loop C and take a series of images for storage. The number of images shall be user defined and changeable by a trained system administrator.

Whenever possible, the LPR equipment shall be mounted to existing structures, such as any overhead sign structure, or parking garage structure. The selected vendor shall provide all mounting hardware necessary to secure the LPR equipment to any existing structure or new

structure. It is the responsibility of the selected vendor to visually inspect the premises and check all existing drawings to determine the best method of installing their LPR System. The Respondent shall state in their response exact lane dimensions and determination of required distances for loops to accurately send messages to the camera equipment to take clear and concise images of the vehicles without obstructions. These distances shall also be stated and defined for the placement of the CCTV camera equipment.

Read and Agree _____

4.07.03.02 Exit Lane Configuration

Each exit lane shall have installed at least the following equipment; two CCTV cameras, two auxiliary illumination systems, all required cabling, additional loops when necessary, and any required stanchion, gantry or mounting pole to provide exact positioning of the camera to capture clean and unobstructed images of all license plates. Whenever possible, the LPR equipment shall be mounted to an existing structure, such as the exit plaza canopy, overhead sign structure, or parking structure. If such a structure is not accessible, or placement does not provide the required line of sight for acceptable imagery, or if the camera equipment cannot be extended, or cantilevered, from the structure, the selected vendor shall provide additional mounting hardware as necessary. The Respondent shall state in their response exact lane dimensions and determination of required distances for loops to accurately send messages to the camera equipment to take clear and concise images of the vehicles without obstructions. These distances shall also be stated and defined for the placement of the CCTV camera equipment.

Read and Agree _____

4.07.04 Environmental

The OCR equipment shall meet or exceed the environmental requirements as described in previous sections of these Technical Specifications.

Read and Agree _____

4.08 Housings

All cabinetry, environmental housings, mounting poles, stanchions or other devices shall meet or exceed the requirements as described in previous sections of these Technical Specifications. These requirements include, but are not limited to, fabrication techniques, assembly techniques, mounting or attachment hardware, access doors, environmental control systems such as heaters or cooling fan systems, receptacles, and all associated devices and systems necessary to provide a fully functional OCR system.

Read and Agree _____

4.09 Pay-on-Foot Stations

General

The Pay-on-Foot (POF) Station shall operate fully autonomously, or as part of the overall System network. The POF Station shall operate 24 hours per day, 365 days per year. Magnetic striped tickets as well as a variety of different magnetic striped cards shall be accepted through a single slot. The POF Station shall calculate parking fees automatically according to the current parking fee schedule, accept payment in a variety of forms, tender any change due, issue a customer receipt, and validate the parking ticket. The POF Station shall be capable of differentiating parking fees based upon which parking facility the patron parked in.

The airport wishes to install nineteen (19) POF stations in all. Seven (7) POF stations shall provide the capability to accept only credit cards or debit cards without requiring a PIN number. Twelve (12) POF Stations shall be capable of accepting payment in a variety of methods, including but not limited to, currency, credit cards (including the contactless credit cards), debit cards, and other airport issued cards. These POF Stations shall be capable of accepting at least four values of currency, including one dollar bills, five dollar bills, ten dollar bills, and twenty dollar bills and dispensing the same one dollar bills and five dollar bills as change.

Features

The POF Station shall use the magnetic stripe technology and shall be capable of reading magnetic striped tickets and cards, and be capable of rewriting data on the magnetic striped tickets.

The POF Station shall be capable of processing a variety of transactions including, but not limited, to the following:

- 1) Transient Parking Tickets – The POF Station shall be capable of processing parking tickets with up to ten variable parking rates associated with different parking lots and facilities.
- 2) Discount Tickets – The POF Station shall be capable of processing tickets at a discounted rate to include the following discounts:
 - a. Programmable number of uses
 - b. Fixed money amount of discount
 - c. Time adjustment to Entry or Exit time
 - d. Percent off Gross fee due
- 3) Management Badge used for supervisor override operations.
- 4) Fraudulent use of cards – the POF Station shall be capable of recognizing lost or stolen credit cards and shall either reject or retain these cards.
- 5) The POF Stations accepting cash shall be designed with a note escrow that will accept and hold the currency until the transaction has either been completed or until the patron has cancelled the transaction and the POF Station has returned the notes.

Magnetic Stripe Reader/Writer (R/W)

The R/W shall be a separate and removable component. The R/W device shall contain a ticket drive unit, magnetic read & write unit, printer, optical sensors, and associated electronics. The printer shall conform to the requirements as specified in the previous section of these Technical Specifications.

The R/W device shall be capable of processing both tickets and cards (such as credit or debit cards) within the same unit. The R/W device shall read and encode magnetic stripe tickets and cards. The optical sensors shall monitor the travel and position of the ticket/card throughout the entire read/write process. The sensors shall be interfaced with the ticket transport mechanism to maintain and precisely control ticket issuance.

The ticket printer shall use an integrated ink jet printer or thermal printer. The ink jet printer shall use an ink jet cartridge, which contains the ink supply. The cartridge shall have a minimum life of three months, or no less than 1,500 transactions per day per Station.

Display Panel

The POF Station shall provide an optical user guidance system with either a LCD or VFD display. The Station shall also provide an intercom with an access call button. The guidance system shall provide a choice of up to four (4) languages with acknowledgement and a cancellation key. Buttons shall be located along the side of the monitor to select or respond to program prompts. The depression of the access call button shall automatically engage the closest CCTV camera to pan and zoom onto this specific location. This transaction shall also create an alarm system on the supervisor's workstation.

A transaction may be cancelled at any time prior to completing the payment of the parking fee due. Any amount tendered is refunded to the patron.

Online/Offline Control

The POF Station may operate as a stand alone device in the off-line mode without degradation to processing transactions. Once the Station regains communication with the host computer, the Station shall continue to operate in the online mode.

While operating in the online mode, the Station shall transmit and receive data with the host computer. Data sent from the POF Station shall include, but not be limited, to the following:

- 1) Summary revenue reports
- 2) Individual transaction data
- 3) Alarm and trouble messages
- 4) Illegal ticket use attempted
- 5) Update pass card status
- 6) Credit card information for processing through the credit card clearing house.

Data received from the Host computer shall include, but not be limited, to the following:

- 1) Update program data
- 2) Date and time synchronization every hour
- 3) Illegal ticket data
- 4) Updated pass card status
- 5) Validated credit card acceptance

Design Requirements

The POF Station shall be a stand-alone device designed for continuous unattended operation. Each POF Station shall consist of a ticket transport mechanism, universal card device (magnetic stripe reader/writer), collected ticket hopper/vault, stand alone/on-line central processing unit, power supplies, thermostatically controlled heater and fan unit, programmable display, printer, and integral intercom. The printer shall conform to the written specifications as defined in the previous section of these Technical Specifications.

The POF Station shall be designed and fabricated to ensure that the machine operates satisfactorily without material degradation for a minimum of ten (10) years. The POF Station and its components shall be completely sealed to ensure that water, dust, and other contaminants do not enter the assembly.

Cabinet

The POF Station housing shall be a self-supporting structure specifically designed to withstand the usage and environmental conditions associated with a parking revenue collection application in the San Antonio, Texas climate and environment.

Any interior equipment shall be designed, fabricated and environmentally tested for operation in the temperature range of 0⁰ C (32⁰ F) to 65.6⁰ C (150⁰ F) with a relative humidity of 15 to 95 percent, non-condensing.

All exterior equipment shall be designed, fabricated and environmentally tested for operation in the temperature range of -29⁰ C (-20⁰ F) to 65.6⁰ C (150⁰ F) with a relative humidity of 15 to 100 percent, condensing.

All graphics, instruction and symbols, if any, to be painted or placed on the housing shall be submitted to the City for approval prior to painting the housing.

The Respondent shall provide, within the written submittal to these Technical Specifications, their scheme on how to secure each Pay-on-Foot device in order to deter theft of the machine. This submittal shall include their schemes for providing separate vault box keys separate and apart from all door keys.

Read and Agree _____

4.10 Automatic Vehicle Identification (AVI)

The selected vendor shall provide an AVI system capable of providing vehicular access control through selected entry and exit lanes. The functionality to be provided by the AVI system shall be an access control system for Airport maintenance vehicles and certain VIP (City specified) users to enter and exit the facilities without the requirement for printing and withdrawing a paper ticket. The AVI system shall initially provide a fully functional office and accounting system to be administered by the City.

Read and Agree _____

4.10.01 System Requirements

The selected vendor shall provide a turnkey end-to-end solution that includes the following components and services:

1. AVI transponders and reader systems
2. Integration of all AVI hardware and third-party equipment required for the system
3. Software to meet the functions and specifications described herein.
4. Integration to the Parking System. This integration shall allow for vehicles using a valid AVI transponder to enter or exit through all lanes without the requirement to issue a parking ticket at the entry lane or present a parking ticket at the exit lane.
5. Installation and commissioning services.
6. Transaction processing
7. Report generation
8. Selected vendor shall install, integrate, implement, and test the system to ensure components and software performs as required and as designed.

Read and Agree _____

4.10.02 System Specifications

The AVI system described within these specifications includes the general requirements associated with the Ground Transportation Management System. Specific requirements are included in a subsequent section of these specifications. The AVI system shall meet the following minimum specifications:

1. The AVI system shall deal properly with one or more tagged vehicles passing near the read zones for each antenna and reader simultaneously.
2. The AVI system shall have the capability of reading and accurately identifying no less than 99.8% of properly mounted tags that pass through the read zone for each antenna/reader.
3. For gated locations, the AVI system shall have a minimum range of twelve (12) feet and be capable of reading vehicles moving at speeds up to fifteen (15) mph.
4. The AVI system shall provide continual uploading of data to the main computer system in an online, real-time basis as soon as the system completes the decoding process for the

transponder.

5. The AVI system shall be capable of processing transponder reads at multiple locations, as required, to create a completed transaction. Completed transponder transactions shall be compiled once per day to create actual revenue transactions. Incomplete transponder read transactions, shall be buffered in the system and remain unprocessed until the host computer receives the matching transactions.
6. The reader system, inclusive of the in-lane controller, shall buffer a minimum of 2,000 transactions per lane and a minimum of sixty (60) days, if there is a failure of an in-lane controller.
7. Upon restoration of the main server or communications, the reader system shall automatically transmit previously un-transmitted, buffered data to the main computer.
8. The AVI system shall be designed to use the 915 MHz bandwidth for RFID as designated by the Federal Communication Commission (FCC).
9. The Respondent shall include in their submittal a list of all built-in features offered within their system.

Read and Agree _____

4.10.04 Transponders

The transponder shall be designed to operate under all anticipated weather conditions without degradation in performance.

The transponder shall be designed in such a manner that it is secure from counterfeiting and any other acts of fraud. The transponder shall respond to properly formatted queries only.

The selected vendor shall provide fifteen-hundred (1,500) pre-programmed transponders.

Read and Agree _____

4.10.05 Desktop Reader/Programmer

The selected vendor shall provide a desktop reader/programmer with the initial transponder delivery. The desktop reader/programmer shall be provided with all necessary software and hardware to operate the unit using a standard personal computer running Windows.

Read and Agree _____

4.10.06 AVI Antenna/Readers

AVI antennas/readers shall project a well-defined radio frequency (RF) pattern designed to facilitate communication with internally or externally mounted transponders. The antenna/reader shall be positioned and aligned so as to minimize the effects of vehicle shadowing.

The AVI antenna/reader shall broadcast and receive radio frequency (RF) signals in the range of 902 to 928 MHz RF band. The AVI antenna shall not exceed four (4) pounds in weight and shall

be approximately eight (8) inches wide by twenty-four (24) inches long. The AVI antenna shall be mounted on its own three (3) inch diameter galvanized pole located on each entry and exit island and positioned such that the “read zone” is only within the entry/exit lane for which it is intended. Care shall be utilized in the installation of each antenna to eliminate “cross-talk” from other contiguous lanes as well as to eliminate the capability to “read” transponders from contiguous lanes.

Read and Agree _____

4.10.07 AVI Reader

The RF module may be located within the reader unit itself or elsewhere. The reader unit and the RF module, including their enclosures, shall be capable of full operation without degradation in performance in all weather conditions. One reader unit shall be capable of operating two antennas in contiguous lanes.

The reader shall control the RF module and the antennas for the purposes of transmitting and receiving RF signals from transponders as they pass through the read zone. The reader shall search for the presence of transponders in the lane upon the activation of the arming loop (loop A) within that lane. The complete assembly shall be aligned and tuned to identify only vehicles in the proper location of the read zone.

The Reader shall provide an operational link between objects with radio frequency (RF) tags and the Host computer. The reader shall receive a demodulated signal from the RF module, decode the ID information, validate the ID code, and transmit the code along with any appended information, such as time and date, lane number, receiving antenna identification, or other data to the Host computer. The reader shall be capable of searching for specified ID codes and can filter ID data according to user-programmable criteria. The reader shall store approximately 2,000 ID codes with appended information.

Read and Agree _____

4.10.08 Lane System

Each lane system shall be capable of stand-alone operation, if communications to the Host computer are lost. Each lane system shall maintain a local clock which shall be synchronized to the Host computer at least once every twenty-four (24) hours. Adjustments to the system clock shall not cause errors in the database or system reports.

Read and Agree _____

4.10.09 Software Application

The AVI system shall be fully integrated into the parking System in order to provide a seamless access/control system that is fully auditable and provides integrated reports for the parking system as a whole.

The AVI system shall include fully functional administrative and reporting system that provides the following minimum functions:

- Account administration
 - o Open accounts
 - o Close accounts
 - o Modify accounts
- Report preparation and printing
- Audit controls

Read and Agree _____

4.10.10 Transponder Inventory Management System

The AVI system shall provide a transponder inventory management system that shall include the following information, at a minimum:

1. Total number of transponders in inventory
2. Active transponders and assignee
3. Transponders in storage
4. Lost, stolen, or invalid transponders
5. Delinquent payment on transponders

Read and Agree _____

4.10.11 FCC Regulatory Matters

The selected vendor shall complete all forms from the FCC and all other regulatory agencies for all necessary licenses for the operation of an AVI RFID System.

Read and Agree _____

5.0 SYSTEM AND OPERATIONAL OVERVIEW

5.01 System Overview

The Parking System shall be an on-line, real time, management system designed specifically to accommodate the revenue control and space count monitoring system for the City. It shall incorporate the latest in microprocessor technology which will allow the City to operate in a true multi-tasking, multi-user operating system with hardware platform independence and real time transactional data.

System security and data integrity shall be achieved using the latest in electronic media. This media consists of the magnetic strip ticket technology, system hardware peripherals with backup

RAM transaction storage, and both memory and operational power backup. All Cashier Station and revenue control peripherals shall be designed to minimize or eliminate the intervention of attendants with ticket or cash transactions. All tickets that are issued to parking patrons shall have the date and time encoded on the magnetic stripe of the ticket as well as in eye readable form on the paper ticket. When the ticket is surrendered by the patron to the attendant upon exit, information from the magnetic stripe shall be automatically read and the data used to compute the correct fee, thereby eliminating any manual key-in process by the attendant. Each attended lane shall be equipped with a universal credit card reader (magnetic stripe reader and contactless credit card reader), whereby a credit card transaction is automatically processed on-line through the City's credit card clearing house. The System must be capable of providing a credit card in/credit card out functionality in addition to those functions described above.

This System shall be installed complete with integrated facility management capabilities to address revenue control financial statistics, count and monitoring statistics, on-line credit card processing, alarm monitoring and remote control capabilities. All statistical data shall be available in a multi-tasking, multi-user standard operating system that can provide the information and reports from the system host computer management station on a minimum of twelve (12) remote, on-line workstations. The systems data shall be further connected to other hardware platforms through industry standard, TCP/IP Ethernet gateways.

Read and Agree _____

5.02 Operational Overview

A centrally located host computer shall come complete with menu driven software applications installed to manage, control, and audit all parking transactions and financial statistics within the parking facilities.

The management workstation shall allow optimization of the use of the facilities by providing management with the necessary statistical information, and the command structure to obtain the information from all lane peripheral stations within the system. The management workstation shall continually communicate with each and every peripheral hardware component to retrieve entry, exit, alarm, maintenance, and revenue transaction data. This communication shall occur in an on-line, real time basis.

The management workstation shall have the capability to remotely control all peripheral hardware component throughout the system to perform certain functions, such as open or close barrier gate, open or close a lane, issue tickets, etc.

Space counters shall be defined by lot based upon the transactions from the peripheral equipment. Station totals shall be calculated by specific lot within the facility every second. Statistical counter reports shall be capable of being displayed at the management station and printed on user demand.

Read and Agree _____

5.02.01 Entrance Process - Ticket

This section defines several typical entrance scenarios. There are several deviations that could occur which are not described herein.

Entry Scenarios:

These first scenarios describe the various processes for entering the parking facility through an entry lane. Each lane will be configured with the following equipment:

1. 3 loops with detector
2. Entry Station (Ticket dispenser)
3. Intercom
4. Barrier gate
5. LPR camera(s)
6. Auxiliary lighting
7. Lane light
8. Proximity card reader

Typical Entry Scenarios

Number	Entry Process
1	Ticket In
2	Proximity Card In
3	AVI In
4	Back Out Ticket
5	Stolen Ticket

1. Ticket in

Entry Transaction:

1. Patron approaches entry lane
2. Patron may enter any lane since all lanes offer ticket dispensers
3. Patron stops with driver's window aligned with ticket dispenser
4. Patron is instructed to push button for ticket
5. Patron pushes button for ticket
6. Ticket is ejected and an audible alarm sounds
7. Patron is instructed to extract ticket from dispenser
8. Once ticket is extracted, barrier gate arm is raised
9. The LPR camera takes an image of the vehicle's license plate
10. Host computer compares license plate image to "HOT" list and if a match is found displays an alarm on the supervisor's work station
11. Patron proceeds through the entry lane
12. Once Patron crosses the final loop, the barrier gate arm is lowered
13. System generates an entry transaction with the following information:
 - a. Date
 - b. Time

- c. Entry Lane
 - d. Shift Number
 - e. Digital image of vehicle's license plate
14. Transaction data is stored in the host computer database.

2. Proximity Card

Entry Transaction:

1. Patron approaches entry lane
1. Patron may enter any lane since all lanes offer Entry Stations
2. Patron stops with driver's window aligned with Entry Station
3. Patron is instructed to push button for ticket
4. Patron presents proximity card to reader in Entry Station
5. Entry Station reads data from the proximity card
6. If valid proximity card, Entry Station issues a vend signal to raise the gate arm
7. The LPR camera takes an image of the vehicle's license plate
8. Host computer compares license plate image to "HOT" list and if a match is found displays an alarm on the supervisor's work station
9. Patron proceeds through the entry lane
10. Once Patron crosses the final loop, the barrier gate arm is lowered
11. System generates an entry transaction with the following information:
 - a. Date
 - b. Time
 - c. Entry Lane
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Proximity Card number
12. Transaction data is stored in the host computer database.

3 AVI

Entry Transaction:

1. Patron approaches entry lane
2. Patron may enter lanes specified to read AVI transactions
3. Patron stops with driver's window aligned with Entry Station
4. AVI antenna "reads" the vehicle's AVI transponder
5. If valid AVI transponder, Entry Station issues a vend signal to raise the gate arm
6. The LPR camera takes an image of the vehicle's license plate
7. Host computer compares license plate image to "HOT" list and if a match is found displays an alarm on the supervisor's work station
8. Patron proceeds through the entry lane
9. Once Patron crosses the final loop, the barrier gate arm is lowered
10. System generates an entry transaction with the following information:
 - a. Date
 - b. Time

- c. Entry Lane
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Transponder number
13. Transaction data is stored in the host computer database.

4. Back-out Ticket

Entry Transaction:

1. Patron approaches entry lane
2. Patron may enter any lane since all lanes offer ticket dispensers
3. Patron stops with driver's window aligned with ticket dispenser
4. Patron is instructed to push button for ticket
5. Patron pushes button for ticket
6. Ticket is ejected and an audible alarm sounds
7. Patron does not take ticket and backs out of the lane
8. The Entry Station retracts the ticket and stores the ticket in its internal vault
9. Barrier gate arm does not raise
10. System generates an exception transaction with the following information:
 - a. Date
 - b. Time
 - c. Entry Lane
 - d. Shift Number
 - e. Back-out message
11. Transaction data is stored in the host computer database.

5. Stolen Ticket

Entry Transaction:

1. Patron approaches entry lane
2. Patron may enter any lane since all lanes offer ticket dispensers
3. Patron stops with driver's window aligned with ticket dispenser
4. Patron is instructed to push button for ticket
5. Ticket is ejected and an audible alarm sounds
6. Patron is instructed to extract ticket from dispenser
7. Once ticket is extracted, barrier gate arm is raised
8. Patron decides to back out of lane with ticket
9. Barrier gate arm closes after time out period has expired
10. System generates an entry transaction with the following information:
 - a. Date
 - b. Time
 - c. Entry Lane
 - d. Shift Number
 - e. Stolen ticket message
11. Transaction data is stored in the host computer database.

5.02.02 Exit Process**Exit Scenarios**

There are various formats of Exit Lanes due to the non-staffed or dedicated lanes that can accept payment by credit card or process pre-paid tickets where the patron has paid the parking fee due via a Pay-on-Foot Station. These dedicated lanes will be configured with an Exit Station.

Cashier Lanes

The cashier lanes will be configured so that these lanes can be operated as either a cashiered lane or a non-staffed lane, at the option of the airport. The following equipment will be installed:

1. 3 loops with detector
2. Cashier Station inside booth
3. Exit Station
4. Barrier gate
5. LPR camera(s)
6. Auxiliary lighting
7. Dynamic message sign
8. Proximity card reader

Typical Exit Scenarios – Cashier Lane

	Exit Lane
1	Ticket out – Cash out
2	Ticket out – Grace Period
3	Ticket out – Prepaid at POF
4	Ticket out – Credit/Debit Card
5	Ticket out – Bad Credit Card
6	Ticket Out - No Cash
7	Ticket Out - Validation
8	Ticket Out - Partial pay by credit card partial pay by cash
9	Ticket Out - ADA validation
10	Lost ticket
11	Ticket Out - Swapped ticket
12	Ticket Out – Unreadable ticket

1. Ticket Out - Cash Out

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window.
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into PI/XS.
6. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
7. Cashier Station displays LPR entry data
8. LPR entry data and transaction data from the paper ticket match
9. Cashier Station calculates parking fee due and displays fee due on Cashier Station and patron fare display.
10. Patron hands cashier appropriate cash.
11. Cashier inserts cash into cash drawer and makes appropriate change, if necessary.
12. Cashier hits the “paid” button on the Cashier Station
13. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of fee paid
 - h. Type of transaction - “cash”
14. The Cashier Station sends vend signal to barrier gate to raise gate
15. Patron proceeds through exit lane, crossing over the closing loop.
16. The barrier gate lowers.

2.0 Ticket Out – Grace Period

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window.
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket to PI/XS.
6. Cashier enters paper ticket into Cashier Station.
7. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
8. Cashier Station displays LPR entry data
9. LPR entry data and transaction data from the paper ticket match
10. Cashier Station calculates parking fee due and displays fee (\$0.00) due on Cashier Station and patron fare display.
11. Cashier hits the “paid” button on the Cashier Station
12. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:

- a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle's license plate
 - g. Amount of fee paid (\$0.00)
 - h. Type of transaction - "grace period"
13. The Cashier Station sends vend signal to barrier gate to raise gate
 14. Patron proceeds through exit lane, crossing over the closing loop.
 15. The barrier gate lowers.

3.0 Ticket Out – Prepaid at Pay-on-Foot Station

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. "cash" or "cashier"
2. Patron stops with driver's window aligned with cashier's window.
3. LPR camera records digital image of vehicle's license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into PI/XS.
6. Cashier enters paper ticket into Cashier Station.
7. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
8. Cashier Station displays LPR entry data
9. LPR entry data and transaction data from the paper ticket match
10. Cashier Station calculates that the patron has paid the parking fee due and is exiting within the predetermined grace period. ** See below if patron has exceeded the predetermined grace period.*
11. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle's license plate
 - g. Amount of fee paid
 - h. Type of transaction - "cash"
12. The Cashier Station sends vend signal to barrier gate to raise gate
13. Patron proceeds through exit lane, crossing over the closing loop.
14. The barrier gate lowers.

*

8. Cashier Station determines the patron has exceeded the predetermined exit grace period.

9. Cashier Station calculates the amount of fee due and displays this amount on the Cashier Station and the patron fare display
10. Patron hands cashier either cash or credit card. Alternatively, Patron inserts credit card into PI/XS.
11. Cashier processes payment and hits the “paid” button.
12. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of fee paid
 - h. Type of transaction - “cash” or “credit card”
 - i. Type of credit card
13. The Cashier Station sends vend signal to barrier gate to raise gate
14. Patron proceeds through exit lane, crossing over the closing loop.
15. The barrier gate lowers

4.0 Ticket Out - Credit Card Out

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into PI/XS and subsequently the credit card.
6. Cashier Station reads the entry transaction data on magnetic stripe of ticket
7. Cashier Station displays LPR entry data
8. LPR entry data and transaction data from the paper ticket match
9. Cashier Station calculates parking fee due and displays fee due on Cashier Station and patron fare display.
10. Cashier Station sends the credit card information to the credit card host computer for processing.
11. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
12. Credit Card clearinghouse processes information and sends approval for credit card
13. Once Cashier Station receives approval a vend signal is sent to the barrier gate to raise gate.
14. Cashier hits the “receipt” button on the Cashier Station to print a receipt
15. Cashier then hands the credit card and the receipt to the patron
16. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time

- c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle's license plate
 - g. Amount of fee paid
 - h. Type of transaction - "credit card"
 - i. Type of credit card used
17. Patron proceeds through exit lane, crossing over the closing loop.
 18. The barrier gate lowers.

5.0 Ticket Out - Bad Credit Card Out

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. "cash" or "cashier"
2. Patron stops with driver's window aligned with cashier's window
3. LPR camera records digital image of vehicle's license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket and credit card into PI/XS.
6. Cashier Station reads the entry transaction data on magnetic stripe of ticket
7. Cashier Station displays LPR entry data
8. LPR entry data and transaction data from the paper ticket match
9. Cashier Station calculates parking fee due and displays fee due on Cashier Station and patron fare display.
10. Cashier Station sends the credit card information to the credit card host computer for processing.
11. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
12. Credit Card clearinghouse processes information and returns a denial for credit card
13. Cashier returns invalid credit card to patron and asks for an alternate credit card
14. Patron hands alternate credit card to cashier
15. Cashier inserts alternate credit card into credit card reader
16. Cashier Station sends the credit card information to the credit card host computer for processing.
17. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
18. Credit Card clearinghouse processes information and returns approval for alternate credit card * *see alternate scenario below if alternate credit card is denied.*
19. When Cashier Station receives approval a vend signal is sent to the barrier gate to raise the gate arm.
20. Cashier hits the "receipt" button on the Cashier Station to print a receipt
21. Cashier then hands the credit card and the receipt to the patron
22. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time

- c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle's license plate
 - g. Amount of fee paid
 - h. Type of transaction - "credit card"
 - i. Type of credit card used
- 23. Patron proceeds through exit lane, crossing over the closing loop.
 - 24. The barrier gate lowers.

** Patron decides to pay by cash:*

- 16. Credit Card clearinghouse processes information and returns a denial for alternate credit card.
- 17. Cashier returns alternate credit card to patron and asks how the patron wishes to pay for parking fee due.
- 18. Patron decides to pay cash and hands cash to cashier
- 19. Cashier processes transaction as a cash transaction similar to Scenario #1.

** Patron decides to pay by check*

- 16. Credit Card clearinghouse processes information and returns a denial for alternate credit card.
- 17. Cashier returns alternate credit card to patron and asks how the patron wishes to pay for parking fee due.
- 18. Patron decides to pay by check.
- 19. Cashier processes transaction according to non-cash business rules established by City.

6.0 Ticket Out – No Cash or Credit Card

Exit Transaction:

- 1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. "cash" or "cashier"
- 2. Patron stops with driver's window aligned with cashier's window.
- 3. LPR camera records digital image of vehicle's license plate
- 4. Host computer searches for LPR entry data
- 5. Patron hands paper ticket to cashier.
- 6. Cashier enters paper ticket into Cashier Station.
- 7. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
- 8. Cashier Station displays LPR entry data
- 9. LPR entry data and transaction data from the paper ticket match
- 10. Cashier Station calculates parking fee due and displays fee due on Cashier Station and patron fare display.
- 11. Patron explains to cashier that they do not have any money
- 12. Cashier asks for the patron's driver's license.
- 13. Cashier displays the "Promise to Pay" screen on the Cashier Station

14. Cashier enters drivers license number, name, address, and pertinent information into Cashier Station
15. Cashier prints the “Promise to Pay” Agreement
16. Cashier hands the “Promise to Pay” Agreement and drivers license to Patron for signature.
17. Patron signs “Promise to Pay” Agreement and returns original to Cashier.
18. Cashier hits the vend button on the Cashier Station to raise the barrier gate arm.
19. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of fee due
 - h. Type of transaction - “Promise to Pay”
20. Patron proceeds through exit lane, crossing over the closing loop.
21. The barrier gate lowers.

7.0 Ticket Out - Validation

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window.
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron hands paper ticket with validation signature or stamp to cashier.
6. Cashier pushes the validation button on the Cashier Station
7. Cashier enters paper ticket into Cashier Station.
8. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
9. Cashier Station displays LPR entry data
10. LPR entry data and transaction data from the paper ticket match
11. Cashier Station calculates parking fee due and displays fee due (\$0.00) on Cashier Station and patron fare display.
12. Cashier hits the “paid” button on the Cashier Station
13. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of fee paid - \$0.00

- h. Type of transaction - “validation”
- 14. The Cashier Station sends vend signal to barrier gate to raise gate
- 15. Patron proceeds through exit lane, crossing over the closing loop.
- 16. The barrier gate lowers.

8.0 Ticket Out – Partial paid by credit card and partial paid by cash

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window.
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into PI/XS.
6. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
7. Cashier Station displays LPR entry data
8. LPR entry data and transaction data from the paper ticket match
9. Cashier Station calculates parking fee due and displays fee due on Cashier Station and patron fare display.
10. Patron explains to cashier the wish to pay partial payment by credit card and the rest by cash.
11. Patron inserts credit card into PI/XS and hands cashier cash.
12. Cashier enters the amount paid in cash and then designates the remaining fee to be paid by credit card.
13. Cashier inserts credit card in Cashier Station and enters the amount of payment to be paid by credit card.
14. Cashier Station sends the credit card information to the credit card host computer for processing.
15. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
16. Credit Card clearinghouse processes information and sends approval for credit card. (If invalid credit card, the process is as defined in the earlier scenario).
17. Cashier enters the amount of payment by cash.
18. Cashier Station receives approval from Credit Card Clearinghouse
19. Cashier Station sends a vend signal to the barrier gate to raise gate.
20. Cashier hits the “receipt” button on the Cashier Station to print a receipt
21. Cashier then hands the credit card and the receipt to the patron
22. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of fee paid – cash

- h. Amount of fee paid - Credit Card
- i. Type of transaction – Cash/Credit Card
- j. Type of credit card
- 23. Patron proceeds through exit lane, crossing over the closing loop.
- 24. The barrier gate lowers.

9.0 Ticket Out – ADA Process

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window.
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into PI/XS and explains they wish the ADA discount
6. Cashier pushes the ADA button on the Cashier Station
7. Cashier Station displays the “ADA” screen on the Cashier Station
8. The Cashier Station will print the appropriate ADA form showing the appropriate data such as: entry date, lane, and time, and the associated exit lane, date, time, and license plate information.
9. Cashier enters paper ticket into Cashier Station.
10. Cashier Station reads the entry transaction data on magnetic stripe of ticket.
11. Cashier Station displays LPR entry data
12. LPR entry data and transaction data from the paper ticket match
13. Cashier enters the drivers information into the Cashier Station
14. Cashier Station calculates parking fee due (the first 24 hours at no charge) and displays remaining fee due on Cashier Station and patron fare display.
15. Cashier Station prints the ADA Form
16. Cashier presents the ADA Form to the patron for signature
17. Patron signs the ADA Form and returns original to Cashier with payment (either cash or credit card process).
18. Once payment has been completed, Cashier hits the vend button on the Cashier Station to raise the barrier gate arm.
19. Cashier Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of parking fee
 - h. Type of transaction - “ADA”, “Cash or Credit Card” as appropriate
 - i. Type of Credit Card if used for payment
20. Patron proceeds through exit lane, crossing over the closing loop.
21. The barrier gate lowers.

10.0 Lost Ticket

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron tells cashier they lost the paper ticket.
6. Cashier Station displays LPR entry and exit data
7. Cashier Station calculates the parking fee due and displays this amount on the Cashier Station and the Patron Fee Display. The Cashier Station automatically generates a Lost Ticket Form for the patron to sign prior to completion of this transaction.
8. Patron either pays by cash or credit card
9. Once fee is paid, the Cashier Station records the transaction data,
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Amount of parking fee
 - h. Type of transaction - “cash” or “credit card”
 - i. Type of credit card
10. Cashier Station sends a vend signal to open the barrier gate.
11. The patron then proceeds to exit the lane, crossing over the closing loop which closes the barrier gate.

11.0 Ticket Out – Swapped ticket

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. “cash” or “cashier”
2. Patron stops with driver’s window aligned with cashier’s window
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts the cashier the paper ticket into the PI/XS.
6. Cashier Station reads the data from the magnetic stripe of the ticket
7. Cashier Station displays LPR entry and exit data
8. Cashier Station displays the data from the paper ticket and the entry record from the LPR entry transaction do not match
9. The LPR reviewer selects the appropriate entry transaction based upon the LPR image
10. Cashier Station displays the entry transaction and calculates the parking fee due and displays this amount on the Cashier Station and the Patron Fee Display

11. The Cashier Station instructs the Cashier to insert an exception ticket
12. Patron either pays by cash or credit card
13. Once fee is paid, the Cashier Station records the transaction data, sends a vend signal to open the barrier gate.
14. Once fee is paid, the Cashier Station records the transaction data:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle's license plate
 - g. Amount of parking fee
 - h. Type of transaction - "cash" or "credit card"
 - i. Type of credit card
15. Cashier Station sends a vend signal to open the barrier gate.
16. The patron then proceeds to exit the lane, crossing over the closing loop which closes the barrier gate.

12.0 Ticket Out – Unreadable Ticket

Exit Transaction:

1. Patron approaches open lane with cashier – lane sign shows status of lane, i.e. "cash" or "cashier"
2. Patron stops with driver's window aligned with cashier's window
3. LPR camera records digital image of vehicle's license plate
4. Host computer searches for LPR entry data
5. Patron inserts an unreadable ticket into the PI/XS cashier they lost the paper ticket.
6. The Cashier Station rejects the unreadable ticket
7. Cashier Station displays LPR entry and exit data
8. Cashier Station calculates the parking fee due and displays this amount on the Cashier Station and the Patron Fee Display
9. Patron either pays by cash or credit card
10. Once fee is paid, the Cashier Station records the transaction data,
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle's license plate
 - g. Amount of parking fee
 - h. Type of transaction - "cash" or "credit card"
 - i. Type of credit card
11. Cashier Station sends a vend signal to open the barrier gate.
12. The patron then proceeds to exit the lane, crossing over the closing loop which closes the barrier gate.

Non-Staffed Dedicated Exit Lane

The multi-use exit lanes at the Airport will have cashier booths installed, however, these lanes may also be used as a non-staffed lane to process exit transactions without a cashier. These lanes will be configured as follows:

1. 3 loops with detector
2. Cashier Station inside booth
3. PI/XS
4. Barrier gate
5. LPR camera(s)
6. Auxiliary lighting
7. Dynamic message sign
8. Proximity card reader

Non-Staffed (dedicated) Exit Lane

1	Ticket out – Credit/Debit Card out
2	Ticket out – 30 minute grace period
3	Ticket out – Bad Credit Card out
4	Pre-paid ticket out
5	Access card out
6	AVI out

1.0 Ticket Out - Credit Card Out

Exit Transaction:

1. Patron approaches open dedicated (no cashier) exit lane – lane sign shows status of lane, i.e. “NO CASH” or “Paid Ticket/Credit Card Only”
2. Patron stops with driver’s window aligned with standalone Exit Station
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into Exit Station.
6. Exit Station reads the entry transaction data on magnetic stripe of ticket
7. Exit Station calculates parking fee due and displays fee due on patron fare display.
8. Patron is instructed to insert a valid credit card into credit card reader.
9. Exit Station reads the credit card information from the magnetic stripe of the credit cards and ejects the credit card to the patron
10. Exit Station displays message, such as “Stand By” or “Processing Information” on patron fare display
11. Exit Station sends the credit card information to the credit card host computer for processing.
12. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
13. Credit Card clearinghouse processes information and sends approval for credit card
14. Exit Station receives approval for credit card and raises barrier gate arm
15. Exit Station prints paper receipt and ejects the receipt to the patron.

16. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Amount of fee paid
 - g. Type of transaction - "credit card"
 - h. Type of credit card used
17. Patron extracts the paper receipt and proceeds through exit lane, crossing over the closing loop.
18. The barrier gate lowers.

2.0 Ticket Out – Within 30 minute Grace Period

Exit Transaction:

1. Patron approaches open dedicated (no cashier) exit lane – lane sign shows status of lane, i.e. "NO CASH" or "Credit Card Only"
2. Patron stops with driver's window aligned with standalone Exit Station
3. LPR camera records digital image of vehicle's license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into Exit Station.
6. Exit Station reads the entry transaction data on magnetic stripe of ticket
7. Exit Station calculates the patron has exited within the 30-minute grace period
8. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Amount of fee paid
 - g. Type of transaction - "grace period"
9. Patron proceeds through exit lane, crossing over the closing loop.
10. The barrier gate lowers.

3.0 Ticket In/Bad Credit Card Out

Exit Transaction:

1. Patron approaches open dedicated (no cashier) exit lane – lane sign shows status of lane, i.e. "NO CASH" or "Credit Card Only"
2. Patron stops with driver's window aligned with standalone Exit Station
3. LPR camera records digital image of vehicle's license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into Exit Station.

6. Exit Station reads the entry transaction data on magnetic stripe of ticket
7. Exit Station calculates parking fee due and displays fee due on patron fare display.
8. Patron is instructed to insert a valid credit card into credit card reader.
9. Exit Station reads the credit card information from the magnetic stripe of the credit card and ejects the credit card to the patron
10. Exit Station displays message, such as “Stand By” or “Processing Information” on patron fare display
11. Exit Station sends the credit card information to the credit card host computer for processing.
12. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
13. Credit Card clearinghouse processes information and returns denial for credit card
14. Exit Station receives denial for credit card and displays message on patron fare display prompting patron to insert an alternate credit card
15. Patron inserts an alternate credit card into Exit Station
16. Exit Station reads the credit card information from the magnetic stripe of the credit card and ejects the credit card to the patron.
17. Exit Station displays message, such as “Stand By” or “Processing Information” on patron fare display
18. Exit Station sends the credit card information to the credit card host computer for processing.
19. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
20. Credit Card clearinghouse processes information and returns approval for alternate credit card * *See below for scenario where alternate credit card is denied.*
21. Exit Station prints paper receipt and ejects the receipt to the patron.
22. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle’s license plate
 - f. Amount of fee paid
 - g. Type of transaction - “credit card”
 - h. Type of credit card used
23. Patron extracts the paper receipt and proceeds through exit lane, crossing over the closing loop.
24. The barrier gate lowers.

*

19. If patron does not have another credit card, the patron will be instructed to press the intercom to speak with an office staff or supervisor.
20. Office staff/supervisor will then process the transaction according to business and operating rules assigned by the airport.

4.0 Ticket Out – Prepaid at Pay-on-Foot Station

Exit Transaction:

1. Patron approaches open dedicated (no cashier) exit lane – lane sign shows status of lane, i.e. “PAID Ticket” or “Credit Card Only” on a rotating basis
2. Patron stops with driver’s window aligned with Exit Station.
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron inserts paper ticket into Exit Station.
6. Exit Station reads the entry transaction data on magnetic stripe of ticket.
7. Exit Station calculates that the patron has paid the parking fee due and is exiting within the predetermined grace period. ** See below if patron has exceeded the predetermined grace period.*
8. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Cashier Number
 - f. Digital image of vehicle’s license plate
 - g. Type of transaction - “POF”
9. The Cashier Station sends vend signal to barrier gate to raise gate
10. Patron proceeds through exit lane, crossing over the closing loop.
11. The barrier gate lowers.

*

10. Exit Station determines the patron has exceeded the predetermined exit grace period.
11. Exit Station calculates the amount of fee due and displays this amount on the Exit Station and the patron fare display in instructs patron to insert credit card.
12. Patron is instructed to insert a valid credit card into credit card reader.
13. Exit Station reads the credit card information from the magnetic stripe of the credit cards and ejects the credit card to the patron
14. Exit Station displays message, such as “Stand By” or “Processing Information” on patron fare display
15. Exit Station sends the credit card information to the credit card host computer for processing.
16. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
17. Credit Card clearinghouse processes information and sends approval for credit card
18. Exit Station receives approval for credit card and raises barrier gate arm
19. Exit Station prints paper receipt and ejects the receipt to the patron.
20. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time

- c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Amount of fee paid
 - g. Type of transaction - "credit card"
 - h. Type of credit card used
21. Patron extracts the paper receipt and proceeds through exit lane, crossing over the closing loop.
 22. The barrier gate lowers.

* If the credit card is rejected

23. Exit Station reads the credit card information from the magnetic stripe of the credit card and ejects the credit card to the patron
24. Exit Station displays message, such as "Stand By" or "Processing Information" on patron fare display
25. Exit Station sends the credit card information to the credit card host computer for processing to find the corresponding entry transaction data for that credit card
26. The Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
27. Credit Card clearinghouse processes information and returns denial for credit card
28. Exit Station receives denial for credit card and displays message on patron fare display prompting patron to insert an alternate credit card
29. Patron inserts an alternate credit card into Exit Station
30. Exit Station reads the credit card information from the magnetic stripe of the credit card and ejects the credit card to the patron.
31. Exit Station displays message, such as "Stand By" or "Processing Information" on patron fare display
32. Exit Station sends the credit card information to the credit card host computer for processing.
33. Credit card host computer sends the credit card information and parking fee due to the credit card clearinghouse.
34. Credit Card clearinghouse processes information and returns approval for alternate credit card * *See below for scenario where alternate credit card is denied.*
35. Exit Station prints paper receipt and ejects the receipt to the patron.
36. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Amount of fee paid
 - g. Type of transaction - "credit card"
 - h. Type of credit card used

37. Patron extracts the paper receipt and proceeds through exit lane, crossing over the closing loop.
38. The barrier gate lowers.

*

30. If patron does not have another credit card, the patron will be instructed to press the intercom to speak with an Office Staff/Supervisor.
31. Office Staff/Supervisor will then process the transaction according to business and operating rules assigned by the airport

5.0 Access Card Out

Exit Transaction:

1. Patron approaches open dedicated (no cashier) exit lane – lane sign shows status of lane, i.e. “PAID Ticket” or “Credit Card Only” on a rotating basis
2. Patron stops with driver’s window aligned with standalone Exit Station
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data
5. Patron present proximity card to reader in Exit Station.
6. Exit Station reads the data on proximity card
7. Exit Station finds the corresponding entry transaction for that proximity card
8. Exit Station compares the data to the proximity card user file
9. Exit Station determines the proximity card is a valid card. If the proximity card is not valid or if there is an anti-passback problem, the patron is instructed to contact the cashier.
10. Exit Station sends a vend signal to the barrier gate to raise the gate arm
11. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle’s license plate
 - f. Type of transaction - “access card”
12. Patron extracts the paper receipt and proceeds through exit lane, crossing over the closing loop.
13. The barrier gate lowers.

6.0 AVI Out

Exit Transaction:

1. Patron approaches open dedicated (no cashier) exit lane – lane sign shows status of lane, i.e. “PAID Ticket” or “Credit Card Only” on a rotating basis
2. Patron stops with driver’s window aligned with standalone Exit Station
3. LPR camera records digital image of vehicle’s license plate
4. Host computer searches for LPR entry data

5. Patron present proximity card to reader in Exit Station.
6. Exit Station reads the data on proximity card
7. Exit Station finds the corresponding entry transaction for that proximity card
8. Exit Station compares the data to the proximity card user file
9. Exit Station determines the proximity card is a valid card. If the proximity card is not valid or if there is an anti-passback problem, the patron is instructed to contact the cashier.
10. Exit Station sends a vend signal to the barrier gate to raise the gate arm
11. Exit Station then creates the exit transaction associated with the entry transaction to include the following information:
 - a. Date
 - b. Time
 - c. Lane Number
 - d. Shift Number
 - e. Digital image of vehicle's license plate
 - f. Type of transaction - "access card"
12. Patron extracts the paper receipt and proceeds through exit lane, crossing over the closing loop.
13. The barrier gate lowers.

Entire Section 5.02.02 Read and Agree _____

5.02.03 General

All critical transactions shall be stored in memory for a minimum of 72 hours in the event of a system communications failure. In the event the system shall have a communications failure, the entrance data can be read and processed at the Cashier station with no loss of performance or revenue. Once the ticket has been processed in the Cashier station in the exit lane it is both magnetically voided, and voided within the central host computer, thereby preventing further use of that ticket.

Read and Agree _____

5.03 Training

The selected vendor shall develop and implement a comprehensive training program for all required city staff on the System installed at the Airport. Such training shall be implemented through the use of formal classroom training and/or other forms of training that the selected vendor shall propose.

The curriculum shall be designed so that each group of trainees shall be trained in the full repertoire of system commands which they may use in the course of performing their designated functions. This training shall be accomplished through the use of lectures, visual presentations, hands-on operation of the equipment and any materials necessary to perform the job. Each student shall be provided with a complete set of training materials and operating manuals for

their particular system during the training session, which he/she shall retain for use on the job at the completion of training.

The selected vendor shall conduct the required training at times and locations coordinated by the City. The full complement of training courses shall be conducted over a five (5) day period, as required to accommodate shift personnel. Additional schedule for the delivery of all training courses must be included in the submittal. If twenty (20) days or more elapses between training and availability of new equipment to operate, selected vendor must provide retraining of those involved. The training shall include, but not be limited to, the following groupings of staff (actual number of students shall be determined at a later date):

Cashiers

Supervisors

Maintenance Personnel and Supervisors

System Managers/Administrators

At the conclusion of maintenance training session(s), the selected vendor shall submit to the City a list naming qualified City/Operator maintenance personnel. The list shall detail the level of maintenance/repair functions each of City/Operator personnel is qualified to perform.

Training shall consist of the following:

- Cashiers shall be trained to operate the cashier terminal. Operation of the cashier terminal shall include the ability to process normal and exception transactions, and to understand any and all system messages provided by the cashier terminal.
- Supervisors shall be trained to:
 - Operate the cashier terminal.
 - Perform primary maintenance on Parking System components (trouble shoot/replenish supplies).
 - Understand any and all system messages provided by the Parking System, including but not limited to alarm messages, indications of attempts to compromise the Parking System and explanations of atypical lane activity displayed by the count system, System.
 - Be able to correlate tickets issued with vehicles present, time parked with revenue generated.
 - Be able to understand the purpose and data contained within any and all reports produced by the Parking Revenue Control and/or Facility Management System.
 - Be able to operate the Parking Revenue Control and/or Facility Management System.
- System Administrators shall have the same basic training as Supervisors. In addition to such training, System Administrators shall be trained to operate and perform appropriate programming for the Facility Management System and to understand statistical reports which reveal trends in revenue generation, facility utilization, and based on information available from the Facility Management System, to perform checks and balances over actions of Supervisors and their subordinates.
- Network/operating system position training shall be provided by a manufacturer's certified institute and courseware, and include independent certification test(s).

Read and Agree _____

6.0 OPERATIONS OF THE PARKING GUIDANCE SYSTEM (PGS)

6.01 General

The selected vendor shall provide and install all necessary equipment, signs, wiring, hardware and software necessary to provide fully automated monitoring and control of the space availability for the Hourly and Long-Term Garages. Many of the devices necessary for this purpose, such as Loops and Signs, shall serve a dual purpose in revenue control and space counting and monitoring. The purpose of this equipment shall be to:

1. Monitor the available spaces of the existing parking facilities
2. Provide space availability information at the entrance to the Long-Term Garage.
3. Provide parking availability information on electronic signs located on the airport terminal roadway in advance of the Hourly or Long-Term Garage
4. Provide guidance within the Long-Term Garage to available parking spaces.
5. Provide parking availability by area on the Airport's web site.

Read and Agree _____

6.02 Purpose

The overall purpose of the space monitoring and control system is to assist drivers in rapidly finding a place to park. Through the overall monitoring and control system, incoming drivers are provided with information stating there are remaining spaces available for parking.

Read and Agree _____

6.03 Operational Description

The differential counting system shall monitor space availability for a given area, as described below. For each vehicle entering onto an area, one space shall be subtracted from the spaces available. Each vehicle leaving an area shall add one space to the net available. The differential counter software shall monitor space availability and shall signify the total number of available spaces in that the area being monitored and illuminate electronic signs signifying that each area is either open or full.

The devices to be used for this module include loops and loop detectors and electronic message signs. Each parking facility, and in some cases each area within a parking facility, shall be monitored for utilization.

The devices to be used for this module include loops and loop detectors and electronic message signs. The locations for the installation of these devices are as follows and are shown on the accompanying PGS drawings:

Long-Term Garage

Inductive Loop Locations

Loop Number	Location
L1.1	First loop at entry to garage
L1.2	Second loop at entry to garage
L1.3	First loop at entry to Zone 1.2
L1.4	Second loop at entry to Zone 1.2
L1.5	First loop at exit from Zone 1.2 to Zone 1.1
L1.6	Second loop at exit from Zone 1.2 to Zone 1.1
L1.7	First loop at exit from Zone 1.1 to Zone 1.3
L1.8	Second loop at exit from Zone 1.1 to Zone 1.3
L1.9	First loop at exit from Zone 1.3 to Zone 1.1
L1.10	Second loop at exit from Zone 1.3 to Zone 1.1
L1.11	First loop at entry from Zone 1.2 to Zone 1.3
L1.12	Second loop at entry from Zone 1.2 to Zone 1.3
L1.13	First loop at exit from Zone 1.3 to Zone 1.2
L1.14	Second loop at exit from Zone 1.3 to Zone 1.2
L1.15	First loop at exit from Zone 1.3 to Zone 1.1 – Easternmost ramp
L1.16	Second loop at exit from Zone 1.3 to Zone 1.1 – Easternmost ramp
L1.17	First loop at north exit from Zone 1.3 to surface lot
L1.18	Second loop at north exit from Zone 1.3 to surface lot
L1.19	First loop at north entry from surface lot to Zone 1.3
L1.20	Second loop at north entry from surface lot to Zone 1.3
L1.21	First loop at east exit from Zone 1.3 to exit plaza
L1.22	Second loop at east entry from Zone 1.3 to exit plaza
L1.23	First loop at bottom of ramp from level 2 to level 1
L1.24	Second loop at bottom of ramp from level 2 to level 1
L2.1	First loop at entry to ramp from level 1 to level 2
L2.2	Second loop at entry to ramp from level 1 to level 2
L2.3	First loop at entry to Zone 2.2 from Zone 2.1
L2.4	Second loop at entry to Zone 2.2 from Zone 2.1
L2.5	First loop at exit from Zone 2.2 to Zone 2.1
L2.6	Second loop at exit from Zone 2.2 to Zone 2.1
L2.7	First loop at exit from Zone 2.1 to Zone 2.3
L2.8	Second loop at exit from Zone 2.1 to Zone 2.3
L2.9	First loop at exit from Zone 2.3 to Zone 2.1
L2.10	Second loop at exit from Zone 2.3 to Zone 2.1
L2.11	First loop at entry from Zone 2.2 to Zone 2.3
L2.12	Second loop at entry from Zone 2.2 to Zone 2.3
L2.13	First loop at exit from Zone 2.3 to Zone 2.2
L2.14	Second loop at exit from Zone 2.3 to Zone 2.2

L2.15	First loop at exit from Zone 2.3 to Zone 2.1 – Easternmost ramp
L2.16	Second loop at exit from Zone 2.3 to Zone 2.1 – Easternmost ramp
L2.17	First loop at bottom of ramp from level 2 to level 1
L2.18	Second loop at bottom of ramp from level 2 to level 1
L2.19	First loop at bottom of ramp from level 3 to level 2
L2.20	Second loop at bottom of ramp from level 3 to level 2
L3.1	First loop at entry to ramp from level 2 to level 3
L3.2	Second loop at entry to ramp from level 2 to level 3
L3.3	First loop at entry to Zone 3.2 from Zone 3.1
L3.4	Second loop at entry to Zone 3.2 from Zone 3.1
L3.5	First loop at exit from Zone 3.2 to Zone 3.1
L3.6	Second loop at exit from Zone 3.2 to Zone 3.1
L3.7	First loop at exit from Zone 3.1 to Zone 3.3
L3.8	Second loop at exit from Zone 3.1 to Zone 3.3
L3.9	First loop at exit from Zone 3.3 to Zone 3.1
L3.10	Second loop at exit from Zone 3.3 to Zone 3.1
L3.11	First loop at entry from Zone 3.2 to Zone 3.3
L3.12	Second loop at entry from Zone 3.2 to Zone 3.3
L3.13	First loop at exit from Zone 3.3 to Zone 3.2
L3.14	Second loop at exit from Zone 3.3 to Zone 3.2
L3.15	First loop at exit from Zone 3.3 to Zone 3.1 – Easternmost ramp
L3.16	Second loop at exit from Zone 3.3 to Zone 3.1 – Easternmost ramp
L3.17	First loop at bottom of ramp from level 3 to level 2
L3.18	Second loop at bottom of ramp from level 3 to level 2
L3.19	First loop at bottom of ramp from level 4 to level 3
L3.20	Second loop at bottom of ramp from level 4 to level 3
L4.1	First loop at entry to ramp from level 3 to level 4
L4.2	Second loop at entry to ramp from level 3 to level 4
L4.3	First loop at entry to Zone 4.2 from Zone 4.1
L4.4	Second loop at entry to Zone 4.2 from Zone 4.1
L4.5	First loop at exit from Zone 4.2 to Zone 4.1
L4.6	Second loop at exit from Zone 4.2 to Zone 4.1
L4.7	First loop at exit from Zone 4.1 to Zone 4.3
L4.8	Second loop at exit from Zone 4.1 to Zone 4.3
L4.9	First loop at exit from Zone 4.3 to Zone 4.1
L4.10	Second loop at exit from Zone 4.3 to Zone 4.1
L4.11	First loop at entry from Zone 4.2 to Zone 4.3
L4.12	Second loop at entry from Zone 4.2 to Zone 4.3
L4.13	First loop at exit from Zone 4.3 to Zone 4.2
L4.14	Second loop at exit from Zone 4.3 to Zone 4.2
L4.15	First loop at exit from Zone 4.3 to Zone 4.1 –

	Easternmost ramp
L4.16	Second loop at exit from Zone 4.3 to Zone 4.1 – Easternmost ramp
L4.17	First loop at bottom of ramp from level 5 to level 4
L4.18	Second loop at bottom of ramp from level 5 to level 4
L4.19	First loop at bottom of ramp from level 4 to level 3
L4.20	Second loop at bottom of ramp from level 4 to level 3
L5.1	First loop at entry to ramp from level 4 to level 5
L5.2	Second loop at entry to ramp from level 4 to level 5
L5.3	First loop at entry to Zone 5.2 from Zone 5.1
L5.4	Second loop at entry to Zone 5.2 from Zone 5.1
L5.5	First loop at exit from Zone 5.2 to Zone 5.1
L5.6	Second loop at exit from Zone 5.2 to Zone 5.1
L5.7	First loop at exit from Zone 5.1 to Zone 5.3
L5.8	Second loop at exit from Zone 5.1 to Zone 5.3
L5.9	First loop at exit from Zone 5.3 to Zone 5.1
L5.10	Second loop at exit from Zone 5.3 to Zone 5.1
L5.11	First loop at entry from Zone 5.2 to Zone 5.3
L5.12	Second loop at entry from Zone 5.2 to Zone 5.3
L5.13	First loop at exit from Zone 5.3 to Zone 5.2
L5.14	Second loop at exit from Zone 5.3 to Zone 5.2
L5.15	First loop at exit from Zone 5.3 to Zone 5.1 – Easternmost ramp
L5.16	Second loop at exit from Zone 5.3 to Zone 5.1 – Easternmost ramp
L5.17	First loop at bottom of ramp from level 5 to level 4
L5.18	Second loop at bottom of ramp from level 5 to level 4

Electronic Signs

Level One:

S1.1 Electronic sign at entrance to L-T garage

LEVEL 5	NNNN
LEVEL 4	NNNN
LEVEL 3	NNNN
LEVEL 2	NNNN
LEVEL 1	NNNN

Where NNNN is either numeric representing number of spaces available or “FULL”

S1.2 Electronic sign visible to Southbound Traffic

PARKING ↑ or X

An option might be as follows:

PARKING  or X

Note – The arrow is illuminated if parking is available in that direction. If no parking is available, then the X is illuminated.

S1.2 Electronic sign visible to Westbound Traffic

PARKING  or X

S1.3 Electronic sign visible to Northbound Traffic

PARKING  or X

S1.4A Electronic sign visible to Northbound Traffic

PARKING  or X

S1.4B Electronic sign visible to Southbound Traffic

PARKING  or X

S1.5A Electronic sign visible to Northbound Traffic

PARKING  or X

S1.5B Electronic sign visible to Southbound Traffic

PARKING  or X

S1.6 Electronic sign visible to Southbound Entering Traffic

PARKING  

S1.7 Electronic sign visible to Eastbound Traffic

PARKING  

S1.8 Electronic sign visible to Southbound Traffic

PARKING  or X

Level Two

S2.1 Electronic sign visible to Westbound Traffic entering ramp from level 1

PARKING ↑ or X

S2.2 Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S2.3 Electronic sign visible to Westbound Traffic

PARKING ↑ or X

S2.4A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S2.4B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S2.5A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S2.5B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S2.6 Electronic sign visible to Southbound Traffic

PARKING ← ↑

S2.7 Electronic sign visible to Eastbound Traffic

PARKING ← →

Level Three

S3.1 Electronic sign visible to Westbound Traffic entering ramp from level 2

PARKING ↑ or X

S3.2 Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S3.3 Electronic sign visible to Westbound Traffic

PARKING ↑ or X

S3.4A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S3.4B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S3.5A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S3.5B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S3.6 Electronic sign visible to Southbound Traffic

PARKING ← ↑

S3.7 Electronic sign visible to Eastbound Traffic

PARKING ← →

Level Four

S4.1 Electronic sign visible to Westbound Traffic entering ramp from level 3

PARKING ↑ or X

S4.2 Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S4.3 Electronic sign visible to Westbound Traffic

PARKING ↑ or X

S4.4A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S4.4B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S4.5A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S4.5B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S4.6 Electronic sign visible to Southbound Traffic

PARKING ← ↑

S4.7 Electronic sign visible to Eastbound Traffic

PARKING ← →

Level Five

S5.1 Electronic sign visible to Westbound Traffic entering ramp from level 4

PARKING ↑ or X

S5.2 Electronic sign visible to Westbound Traffic

PARKING ↑ or X

S5.3A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S5.3B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S5.4A Electronic sign visible to Northbound Traffic

PARKING ↑ or X

S5.4B Electronic sign visible to Southbound Traffic

PARKING ↑ or X

S5.5 Electronic sign visible to Southbound Traffic

PARKING ↑ or X

The following descriptions generally reflect the operation of the count and monitoring system at the various floor levels.

To ensure accurate counts, all loops shall be directional loops capable of indicating which direction a vehicle is moving and should be able to discern the difference between a vehicle crossing over the loops and luggage carts. This will also provide a check to ensure that luggage carts and other large bags are not counted as vehicles should they be moved over loops. When loops are designated as "L2.4/L2.5", that indicates that the count should be in the direction of the loops as they are located on the drawing. In this particular example, the loops would indicate a vehicle crossing over loop 2.4 first and then proceeding to cross over loop 2.5.

Long-Term Garage

1. Counters at Locations L1.1, L1.2, L1.17, L1.18, L1.19, L1.20, L1.21, and L1.22 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

- a. Counts to be monitored

$$\begin{aligned} & 1) \quad (L1.2/L1.1 + L2.20/L2.19 + L1.17/L1.18 + \\ & L1.21/L1.22) - (L1.1/L1.2 + L1.18/L1.17 + L1.19/L1.20 + L1.21/L1.22) \\ & = \text{total spaces available within the Long-Term Garage} \end{aligned}$$

The formula can be described as the total number of vehicles exiting from the Long-Term Garage minus the total number of vehicles entering the Long-Term Garage.

- b. Operating status - Parking available

- 1) Signs

Sign at Entrance (S2.1)	"XXX Spaces" illuminated for Level 1
"XXX Spaces" illuminated for Level 2	
"XXX Spaces" illuminated for Level 3	
"XXX Spaces" illuminated for Level 4	
"XXX Spaces" illuminated for Level 5	

- c. Operating Status – Long-Term Garage Full

- 1) Signs

Sign at Entrance (S2.1)	"FULL" illuminated for Level 1
-------------------------	--------------------------------

“FULL” illuminated for Level 2
 “FULL” illuminated for Level 3
 “FULL” illuminated for Level 4
 “FULL” illuminated for Level 5

Level 1

1. Counters at Locations L1.1, L1.2, L1.17, L1.18, L1.19, L1.20, L1.21, L1.22, L1.23, L1.24, L2.1, and L2.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) \quad (L1.2/L1.1 + L2.20/L2.19 + L1.17/L1.18 + L1.21/L1.22 + L24/L23 + L2.1/L2.2) - (L1.1/L1.2 + L1.18/L1.17 + L1.19/L1.20 + L1.22/L1.21 + L23/L24 + L2.2/L2.1) = \text{total spaces available on Level 1}$$

The formula can be described as the total number of vehicles exiting Level 1 from either the UP ramp or the exit lanes minus the total number of vehicles entering Level 1 by either the entry lanes or the DOWN ramp.

b. Operating status - Parking available, Level 1

1) Signs

Sign at Entrance (S2.1)	“XXX Spaces” illuminated for Level 1
“XXX Spaces” illuminated for Level 2	
“XXX Spaces” illuminated for Level 3	
“XXX Spaces” illuminated for Level 4	
“XXX Spaces” illuminated for Level 5	

c. Operating Status – Level 1 Full

1) Signs

Sign at Entrance (S1.1)	“FULL” illuminated for Level 1
“XXX Spaces” illuminated for Level 2	
“XXX Spaces” illuminated for Level 3	
“XXX Spaces” illuminated for Level 4	
“XXX Spaces” illuminated for Level 5	

Nested Areas/Zones within Level 1

Zone 1.1

1. Counters at Locations L1.1, L1.2, L1.3, L1.4, L1.5, L1.6, L1.7, 1.8, L1.9, L1.10, L1.15, L1.16, L1.23, L1.24, L2.1, and L2.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L1.2/L1.1 + L2.1/L2.2 + L1.24/L1.23 + L1.3/L1.4 + L1.6/L1.5 + L1.7/L1.8 + L1.10/L1.09 + L1.16/L1.15) - (L1.1/L1.2 + L1.4/L1.3 + L1.5/L1.6 + L1.8/L1.7 + L1.9/L1.10 + L1.15/L1.16 + L1.23/L1.24 + L2.2/L2.1) = \text{total spaces available on Level 1}$$

The formula can be described as the total number of vehicles exiting Level 1.1 Zone to other Level 1 Zones or to the UP ramp to level 2 or the exit lanes minus the total number of vehicles entering Zone 1.1 by either the drive aisle lanes or the ramps.

b. Operating status - Parking available, Zone 1.1

1) Signs will have arrows illuminated pointing to Zone 1.1

c. Operating Status – Zone 1.1 Full

1) Signs will have X's illuminated towards Zone 1.1

Zone 1.2

1. Counters at Locations L1.3, L1.4, L1.5, L1.6, L1.11, L1.12, L1.13, and L1.14 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L1.4/L1.3 + L1.5/L1.6 + L1.12/L1.11 + L1.13/L1.14) - (L1.3/L1.4 + L1.6/L1.5 + L1.11/L1.12 + L1.14/L1.13) = \text{total spaces available in Zone 1.2}$$

The formula can be described as the total number of vehicles exiting Zone 1.2 to other Level 1 Zones.

b. Operating status - Parking available, Zone 1.2

1) Signs will have arrows illuminated pointing to Zone 1.2

c. Operating Status – Zone 1.2 Full

- 1) Signs will have X's illuminated towards Zone 1.2

Zone 1.3

1. Counters at Locations L1.7, 1.8, L1.9, L1.10, L1.11, L1.12, L1.13, L1.14, L1.15, L1.16, L1.17, L1.18, L1.19, L1.20, L1.21, and L1.22 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

- 1) $(L2.1/L2.2 + L1.12/L1.11 + L1.3/L1.4 + L1.6/L1.5 + L1.8/L1.7 + L1.9/L1.10 + L1.13/L1.14 + L1.15/L1.16 + L1.17/L1.18 + L1.20/L1.19 + L1.21/L1.22) - (L1.1/L1.2 + L1.4/L1.3 + L1.5/L1.6 + L1.7/L1.8 + L1.10/L1.9 + L1.11/L1.12 + L1.14/L1.13 + L1.16/L1.15 + L1.18/L1.17 + L1.19/L1.20 + L1.22/L1.21) = \text{total spaces available in Zone 1.3}$

The formula can be described as the total number of vehicles exiting Zone 1.3 to other Level 1 Zones or to the exit lanes minus the total number of vehicles entering Zone 1.3 by either the drive aisle lanes or from the surface lots.

b. Operating status - Parking available, Zone 1.3

- 1) Signs will have arrows illuminated pointing to Zone 1.3

c. Operating Status – Zone 1.3 Full

- 1) Signs will have X's illuminated towards Zone 1.3

Level 2 - General

1. Counters at Locations L2.1, L2.2, L2.17, L2.18, L2.19, L2.20, L3.1 and L3.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

- 1) $(L3.1/L3.2 + L2.2/L2.1 + L2.17/L2.18 + L2.20/L2.19) - (L3.2/L3.1 + L2.1/L2.2 + L2.18/L2.17 + L2.19/L2.20) = \text{total spaces available on Level 2}$

The formula can be described as the total number of vehicles exiting Level 2 from either the UP ramp or the DOWN ramp minus the total number of vehicles entering Level 2 by either the UP ramp or the DOWN ramp.

b. Operating status - Parking available, Level 2

Sign at Entrance (S2.1) “XXX Spaces” illuminated for Level 1
 “XXX Spaces” illuminated for Level 2
 “XXX Spaces” illuminated for Level 3
 “XXX Spaces” illuminated for Level 4
 “XXX Spaces” illuminated for Level 5

c. Operating Status – Level 2 Full

Sign at Entrance (S2.1) “XXX Spaces” illuminated for Level 1
 “FULL” illuminated for Level 2
 “XXX Spaces” illuminated for Level 3
 “XXX Spaces” illuminated for Level 4
 “XXX Spaces” illuminated for Level 5

Nested Areas/Zones within Level 2

Zone 2.1

1. Counters at Locations L2.1, L2.2, L2.3, L2.4, L2.5, L2.6, L2.7, L2.8, L2.9, L2.10, L2.15, L2.16, L2.17, L2.18, L2.19, L2.20, L3.1, and L3.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

1) $(L2.2/L2.1 + L2.3/L2.4 + L2.6/L2.5 + L2.7/L2.8 + L2.10/L2.09 + L2.16/L2.15 + L2.17/L2.18 + L2.20/L2.19 + L3.1/L3.2) - (L2.1/L2.2 + L2.4/L2.3 + L2.5/L2.6 + L2.8/L2.7 + L2.9/L2.10 + L2.15/L2.16 + L2.18/L2.17 + L2.19/L2.20 + L3.2/L3.1) = \text{total spaces available in Zone 2.1}$

The formula can be described as the total number of vehicles exiting Zone 2.1 to other Level 2 Zones or to the UP ramp to level 3 or to the DOWN ramp to level 1.

b. Operating status - Parking available, Zone 2.1

1) Signs will have arrows illuminated pointing to Zone 2.1

c. Operating Status – Zone 2.1 Full

- 1) Signs will have X's illuminated towards Zone 2.1

Zone 2.2

1. Counters at Locations L1.3, L2.4, L2.5, L2.6, L2.11, L2.12, L2.13, and L2.14 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

- 1) $(L2.4/L2.3 + L2.5/L2.6 + L2.12/L2.11 + L2.14/L2.13) - (L2.3/L2.4 + L2.6/L2.5 + L2.11/L2.12 + L2.13/L2.14) = \text{total spaces available in Zone 2.2}$

The formula can be described as the total number of vehicles exiting Zone 2.2 to other Level 1 Zones.

b. Operating status - Parking available, Zone 2.2

- 1) Signs will have arrows illuminated pointing to Zone 2.2

c. Operating Status – Zone 2.2 Full

- 1) Signs will have X's illuminated towards Zone 2.2

Zone 2.3

1. Counters at Locations L2.7, L2.8, L2.9, L2.10, L2.11, L2.12, L2.13, L2.14, L2.15, and L2.16 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

- 1) $(L2.8/L2.7 + L2.9/L2.10 + L2.12/L2.11 + L2.13/L2.14 + L2.15/L2.16) - (L2.7/L2.8 + L2.10/L2.9 + L2.11/L2.12 + L2.14/L2.13 + L2.16/L2.15) = \text{total spaces available in Zone 2.3}$

The formula can be described as the total number of vehicles exiting Zone 2.3 to other Level 2 Zones or to the exit lanes minus the total number of vehicles entering Zone 2.3 by either the drive aisle lanes or from the surface lots.

b. Operating status - Parking available, Zone 2.3

- 1) Signs will have arrows illuminated pointing to Zone 2.3
- c. Operating Status – Zone 2.3 Full
 - 1) Signs will have X's illuminated towards Zone 2.3

Level 3 - General

1. Counters at Locations L3.1, L3.2, L3.17, L3.18, L3.19, L3.20, L4.1 and L4.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.
 - a. Counts to be monitored
 - 1) $(L3.2/L3.1 + L2.17/L2.18 + L2.20/L2.19 + L4.1/L4.2) - (L3.1/3.2 + L2.18/L2.17 + L2.19/L2.20 + L4.2/L4.1) = \text{total spaces available on Level 3}$
 The formula can be described as the total number of vehicles exiting Level 3 from either the UP ramp or the DOWN ramp minus the total number of vehicles entering Level 3 by either the UP ramp or the DOWN ramp.
 - b. Operating status - Parking available, Level 3

Sign at Entrance (S2.1)	“XXX Spaces” illuminated for Level 1
“XXX Spaces” illuminated for Level 2	
“XXX Spaces” illuminated for Level 3	
“XXX Spaces” illuminated for Level 4	
“XXX Spaces” illuminated for Level 5	

- c. Operating Status – Level 2 Full

Sign at Entrance (S2.1)	“XXX Spaces” illuminated for Level 1
“XXX Spaces” illuminated for Level 2	
“FULL” illuminated for Level 3	
“XXX Spaces” illuminated for Level 4	
“XXX Spaces” illuminated for Level 5	

Nested Areas/Zones within Level 3

Zone 3.1

1. Counters at Locations L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.15, L3.16, L3.17, L3.18, L3.19, L3.20, L4.1, and L4.2 are to be used to provide the following information and upon

reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L3.2/L3.1 + L3.3/L3.4 + L3.6/L3.5 + L3.7/L3.8 + L3.10/L3.9 + L3.16/L3.15 + L3.17/L3.18 + L3.20/L3.19 + L4.1/L4.2) - (L3.1/L3.2 + L3.4/L3.3 + L3.5/L3.6 + L3.8/L3.7 + L3.9/L3.10 + L3.15/L3.16 + L3.18/L3.17 + L3.19/L3.20 + L4.2/L4.1) = \text{total spaces available in Zone 3.1}$$

The formula can be described as the total number of vehicles exiting Zone 3.1 to other Level 3 Zones or to the UP ramp to level 4 or to the DOWN ramp to level 2.

b. Operating status - Parking available, Zone 3.1

- 1) Signs will have arrows illuminated pointing to Zone 3.1

c. Operating Status – Zone 3.1 Full

- 1) Signs will have X's illuminated towards Zone 3.1

Zone 3.2

1. Counters at Locations L3.3, L3.4, L3.5, L3.6, L3.11, L3.12, L3.13, and L3.14 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L3.4/L3.3 + L3.5/L3.6 + L3.11/L3.12 + L3.14/L3.13) - (L3.3/L3.4 + L3.6/L3.5 + L3.12/L3.11 + L3.13/L3.14) = \text{total spaces available in Zone 3.2}$$

The formula can be described as the total number of vehicles exiting Zone 3.2 to other Level 3 Zones.

b. Operating status - Parking available, Zone 3.2

- 1) Signs will have arrows illuminated pointing to Zone 3.2

c. Operating Status – Zone 3.2 Full

- 1) Signs will have X's illuminated towards Zone 3.2

Zone 3.3

1. Counters at Locations L3.7, L3.8, L3.9, L3.10, L3.11, L3.12, L3.13, L3.14, L3.15, and L3.16 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L3.8/L3.7 + L3.9/L3.10 + L3.12/L3.11 + L3.13/L3.14 + L3.15/L3.16) - (L3.7/L3.8 + L3.10/L3.9 + L3.11/L3.12 + L3.14/L3.13 + L3.16/L3.15) = \text{total spaces available in Zone 3.3}$$

The formula can be described as the total number of vehicles exiting Zone 3.3 to other Level 2 Zones or to the exit lanes minus the total number of vehicles entering Zone 3.3 by either the drive aisle lanes or from the surface lots.

b. Operating status - Parking available, Zone 3.3

1) Signs will have arrows illuminated pointing to Zone 3.3

c. Operating Status – Zone 3.3 Full

1) Signs will have X's illuminated towards Zone 3.3

Level 4 - General

1. Counters at Locations L4.1, L4.2, L4.17, L4.18, L4.19, L4.20, L5.1 and L5.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L4.2/L4.1 + L4.18/L4.17 + L4.19/L4.20 + L5.1/L5.2) - (L4.1/L4.2 + L4.17/L4.18 + L4.20/L4.19 + L5.2/L5.1) = \text{total spaces available on Level 4}$$

The formula can be described as the total number of vehicles exiting Level 4 from either the UP ramp or the DOWN ramp minus the total number of vehicles entering Level 4 by either the UP ramp or the DOWN ramp.

b. Operating status - Parking available, Level 4

Sign at Entrance (S2.1) “XXX Spaces” illuminated for Level 1
 “XXX Spaces” illuminated for Level 2
 “XXX Spaces” illuminated for Level 3
 “XXX Spaces” illuminated for Level 4
 “XXX Spaces” illuminated for Level 5

c. Operating Status – Level 4 Full

Sign at Entrance (S2.1) “XXX Spaces” illuminated for Level 1
 “XXX Spaces” illuminated for Level 2
 “XXX Spaces” illuminated for Level 3
 “FULL” illuminated for Level 4
 “XXX Spaces” illuminated for Level 5

Nested Areas/Zones within Level 4

Zone 4.1

1. Counters at Locations L4.1, L4.2, L4.3, L4.4, L4.5, L4.6, L4.7, L4.8, L4.9, L4.10, L4.15, L4.16, L4.17, L4.18, L4.19, L4.20, L5.1, and L5.2 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

1) $(L4.2/L4.1 + L4.3/L4.4 + L4.6/L4.5 + L4.7/L4.8 + L4.10/L4.9 + L4.16/L4.15 + L4.18/L4.17 + L4.19/L4.20 + L5.1/L5.2) - (L4.1/L4.2 + L4.4/L4.3 + L4.5/L4.6 + L4.8/L4.7 + L4.9/L4.10 + L4.15/L4.16 + L4.17/L4.18 + L4.20/L4.19 + L5.2/L5.1) = \text{total spaces available in Zone 4.1}$

The formula can be described as the total number of vehicles exiting Zone 4.1 to other Level 4 Zones or to the UP ramp to level 5 or to the DOWN ramp to level 3.

b. Operating status - Parking available, Zone 4.1

1) Signs will have arrows illuminated pointing to Zone 4.1

c. Operating Status – Zone 4.1 Full

1) Signs will have X's illuminated towards Zone 4.1

Zone 4.2

1. Counters at Locations L4.3, L4.4, L4.5, L4.6, L4.11, L4.12, L4.13, and L4.14 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L4.4/L4.3 + L4.5/L4.6 + L4.11/L4.12 + L4.14/L4.13) - (L4.3/L4.4 + L4.6/L4.5 + L4.12/L4.11 + L4.13/L4.14) = \text{total spaces available in Zone 4.2}$$

The formula can be described as the total number of vehicles exiting Zone 4.2 to other Level 4 Zones.

b. Operating status - Parking available, Zone 4.2

1) Signs will have arrows illuminated pointing to Zone 4.2

c. Operating Status – Zone 4.2 Full

1) Signs will have X's illuminated towards Zone 4.2

Zone 4.3

1. Counters at Locations L4.7, L4.8, L4.9, L4.10, L4.11, L4.12, L4.13, L4.14, L4.15, and L4.16 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L4.8/L4.7 + L4.9/L4.10 + L4.12/L4.11 + L4.13/L4.14 + L4.15/L4.16) - (L4.7/L4.8 + L4.10/L4.9 + L4.11/L4.12 + L4.14/L4.13 + L4.16/L4.15) = \text{total spaces available in Zone 4.3}$$

The formula can be described as the total number of vehicles exiting Zone 4.3 to other Level 4 Zones or to the exit lanes minus the total number of vehicles entering Zone 4.3 by either the drive aisle lanes or from the surface lots.

b. Operating status - Parking available, Zone 4.3

1) Signs will have arrows illuminated pointing to Zone 4.3

c. Operating Status – Zone 4.3 Full

- 1) Signs will have X's illuminated towards Zone 4.3

Level 5 - General

1. Counters at Locations L5.1, L5.2, L5.17, L5.18, L5.19, and L5.20 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

- a. Counts to be monitored

$$1) (L5.2/L5.1 + L5.18/L5.17) - (L5.1/L5.2 + L5.17/L5.18) = \text{total spaces available on Level 5.}$$

The formula can be described as the total number of vehicles exiting Level 5 from either the UP ramp or the DOWN ramp minus the total number of vehicles entering Level 5 by either the UP ramp or the DOWN ramp.

- b. Operating status - Parking available, Level 5

Sign at Entrance (S2.1)	"XXX Spaces" illuminated for Level 1
"XXX Spaces" illuminated for Level 2	
"XXX Spaces" illuminated for Level 3	
"XXX Spaces" illuminated for Level 4	
"XXX Spaces" illuminated for Level 5	

- c. Operating Status – Level 5 Full

Sign at Entrance (S2.1)	"XXX Spaces" illuminated for Level 1
"XXX Spaces" illuminated for Level 2	
"XXX Spaces" illuminated for Level 3	
"XXX Spaces" illuminated for Level 4	
"FULL" illuminated for Level 5	

Nested Areas/Zones within Level 5

Zone 5.1

1. Counters at Locations L5.1, L5.2, L5.3, L5.4, L5.5, L5.6, L5.7, L5.8, L5.9, L5.10, L5.15, L5.16, L5.17, and L5.18 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

- a. Counts to be monitored

$$1) (L5.2/L5.1 + L5.3/L5.4 + L5.6/L5.5 + L5.7/L5.8 + L5.10/L5.09 + L5.16/L5.15 + L5.17/L5.18) - (L5.1/L5.2 + L5.4/L5.3 + L5.5/L5.6 +$$

$L5.8/L5.7 + L5.9/L5.10 + L5.15/L5.16 + L5.18/L5.17$ = total spaces available in Zone 5.1

The formula can be described as the total number of vehicles exiting Zone 5.1 to other Level 5 Zones or to the DOWN ramp to level 4.

b. Operating status - Parking available, Zone 5.1

1) Signs will have arrows illuminated pointing to Zone 5.1

c. Operating Status – Zone 5.1 Full

1) Signs will have X's illuminated towards Zone 5.1

Zone 5.2

1. Counters at Locations L5.3, L5.4, L5.5, L5.6, L5.11, L5.12, L5.13, and L5.14 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

1) $(L5.4/L5.3 + L5.5/L5.6 + L5.11/L5.12 + L5.14/L5.13) - (L5.3/L5.4 + L5.6/L5.5 + L5.12/L5.11 + L5.13/L5.14)$ = total spaces available in Zone 5.2

The formula can be described as the total number of vehicles exiting Zone 5.2 to other Level 5 Zones.

b. Operating status - Parking available, Zone 5.2

1) Signs will have arrows illuminated pointing to Zone 5.2

c. Operating Status – Zone 5.2 Full

1) Signs will have X's illuminated towards Zone 5.2

Zone 5.3

1. Counters at Locations L5.7, L5.8, L5.9, L5.10, L5.11, L5.12, L5.13, L5.14, L5.15, and L5.16 are to be used to provide the following information and upon reaching the pre-set thresholds, activate the described signs and equipment.

a. Counts to be monitored

$$1) (L5.8/L5.7 + L5.9/L5.10 + L5.12/L5.11 + L5.13/L5.14 + L5.15/L5.16) - (L5.7/L5.8 + L5.10/L5.9 + L5.11/L5.12 + L5.14/L5.13 + L5.16/L5.15) = \text{total spaces available in Zone 5.3}$$

The formula can be described as the total number of vehicles exiting Zone 5.3 to other Level 5 Zones or to the exit lanes minus the total number of vehicles entering Zone 5.3 by the drive aisle lanes.

b. Operating status - Parking available, Zone 5.3

1) Signs will have arrows illuminated pointing to Zone 5.3

c. Operating Status – Zone 5.3 Full

1) Signs will have X's illuminated towards Zone 5.3

Read and Agree _____

6.04 Count and Monitoring

Statistical count reports shall be available through a display on the computer monitor or printed in a graphical or standard report format. These reports may be generated to reflect Garage, monthly, and yearly activity. The following report descriptions shall be the minimum provided by the System:

Read and Agree _____

6.05 Edit Parameters

The user may, subject to password access, manually modify the following parameters:

- Counter values
- Threshold limit values
- Source for each counter
- Facility lot limits and occupancy status.
- Actions taken when limits and thresholds are reached.
- Messages sent when values are under or over threshold limits.

Read and Agree _____

6.06 Counter Limits Configuration

This report/function shall provide the source for all configured counters within the specific station. When an event occurs at a selected station, which meets selected parameters, a counter

will be automatically incremented or decremented. Each configured station shall have up to 8 definable types of transactions that can be programmed.

Read and Agree _____

6.07 Counter Analysis

The System shall provide the reporting capability to observe the vehicular activity into and out of the parking facility. Transaction events shall be stored on the host computer in a minimum of hourly increments. Statistical reports shall be available to be viewed by monitor or printed on demand in either numeric or graphic form and may be selectable by the user. These statistical reports shall be available for specific groups, such as Hourly and Economy.

Read and Agree _____

6.08 Reports

At a minimum, and in addition to previous required reports, the System shall have the capability of producing the following reports in either electronic format to be viewed on a computer monitor or in printed form, printable on demand.

1. Shift Report Statistics
 - a) Total calculated costs
 - b) Total amount paid
 - c) Amount paid with contract and or value card
 - d) Amount paid with credit/debit card
 - e) Amount overpaid and not refunded
 - f) Amount not returned after reset
 - g) Number of payments
 - h) Number of failures during payment
 - i) Ticket statistics
2. Group Station Statistics
 - a) Total amount paid
 - b) Number of payments
 - c) Average amount of payments
3. Length of Stay Statistics
 - a) Parking duration time interval - These statistics shall be prepared for all stations (with totals for each station and System wide use) or for any number of stations (1 - n) to be designated by the user. Another selection criteria shall be by day or by range of dates.

Read and Agree _____

6.09 Configuration Command Module

The System shall provide the ability for a user to view complete configuration information for all of the peripheral stations (this shall be user defined from 1 - n stations). The user shall have the ability to view the current on-line status and statistics status of all the peripheral devices from any workstation on the network. This command module shall also provide the capability for the user to perform remote control functions to a selected group or to individual peripheral devices in order to perform such functions as open/close lanes, open/close gates, activate signage, etc.

Read and Agree _____

6.10 Security

Access to the system shall be restricted through the use of password protection and shall be provided for at least three levels: main menu, edit screens, and facility/station configuration.

Read and Agree _____

7.0 SYSTEM HOST COMPUTER SYSTEM

The Work under this section shall include all labor, materials and support services to complete the design, installation, programming, testing, and acceptance of the host computer(s) in accordance with the requirements of these Technical Specifications.

The following specifications are intended to define the general functionality of the host computer(s). The Respondent shall propose a configuration adequate to meet performance requirements. Similarly, if a different performance component (within the computer system architecture defined herein) is proposed to meet the performance requirements, the Respondent shall detail and justify this variation in the proposal.

Read and Agree _____

7.01 Operating System

The operating system of the Central Processing System, shall be adequate to control, monitor and maintain the selected Relational Database Management System (RDBMS) while allowing for increased scalability, reliability and performance. The proposed operating system shall be fully compatible with the desired RDBMS and support seamless functionality in a distributed computing environment.

Windows XP, or newer, shall be the operating system user interface. Windows 2003 Server or a more recent operating system should serve as the host for System. Client computers (workstations) should support Windows Vista OS.

The selected vendor shall submit the method and equipment to be used to provide communications between the host computer and the remote workstations.

The Relational Database Management System (RDBMS) shall be one of the following: Microsoft SQL Server 2003-2005 or Oracle 9i

Read and Agree _____

7.02 Hardware Requirements

The server architecture shall be capable of performing the following functions:

- Utilize a multi-node architecture with multiple processors per node to support required functionality (server mirroring and redundancy).
- Each node will be located in separate physical locations to allow for redundancy.
- Utilize no less than the fastest processor available in a similar server at a time thirty days prior to installation.
- The nodes shall conduct constant system and self-monitoring and allow for graceful degradation.

The server technical specifications include:

- Sufficient hard disk space to support a Raid 5 configuration with a total user space of 100 Gb after software installation and configuration.
- Support for external disk storage: Up to 45TB SSA storage recommended
- 32X DVD RW Drive
- Internal tape drive required
- 3 additional PCI and Hard Disk Drives (hot swappable) for upgrades
- Built for a 24x7x365 workload

Read and Agree _____

7.03 Application Software

The management server shall optimize the use of the facility by providing management with statistical information and the command structure to obtain activity data from all peripheral stations within the System. The software shall perform all tasks specified in this section.

Read and Agree _____

7.03.01 Retrieve Transactions

The management server shall continually communicate to each of the peripheral devices in the System to retrieve entry events, exit events, alarm events, and revenue transaction records. This communication shall be on an on-line, real time basis.

Read and Agree _____

7.03.02 Transaction Transfer

Each transaction shall include data specific to the environment for which the peripheral device is designed to function. There shall be certain information consistent to all devices with the configuration information separated into the following:

- Common parameters for all station types
- Parameters unique to the specific peripheral station (Entry, Exit, or Payment)
- Text messages
- Fee parameters
- Alarm data
- Remote Control (open gate, open/close lane, issue tickets, etc.)

Read and Agree _____

7.03.03 Count and Monitoring

Vehicular lane activity as well as specific event occurrences may be monitored and counted within the parking facilities. Counts and alarms shall be field configurable.

Facility based counters shall be defined by transaction activities within each of the peripheral stations, loop detectors, and various other I/O devices. The system shall be capable of monitoring and counting separate Sub-Areas within the facility and will automatically carry these subtotals forward for accumulated facility totals.

Statistical count reports shall be available through a display on the workstation monitor or printed on user demand in either a graphical or standard report format. These reports shall be available in daily, monthly, or yearly activity.

The City requires the ability to display parking availability on the City's web site. Therefore, the selected vendor shall provide parking availability data in html format to the City so that the City can import this data into its web site.

Read and Agree _____

7.03.04 Coding Practice and Applicable Standards

The selected vendor shall make necessary modifications as described during design meetings with the City. At a minimum, the modifications will include headings and titles on all reports, custom billing tables and fee calculations, and equipment locations. The City shall retain ownership of all software provided by the selected vendor.

Read and Agree _____

7.03.05 Administrative Clerk Interface

The Administrative Clerk interface shall be implemented utilizing a graphical user interface (GUI) on the workstations. This interface shall provide for secured access to various fields and portions of the database based upon employee privilege.

Read and Agree _____

7.04 Maintenance Monitoring and Reporting System

The System host computer(s) shall provide a Maintenance Monitoring and Reporting System (MMRS). The MMRS shall monitor and log all maintenance messages, equipment alarms, and related hardware and software status conditions within the System. All messages, alarms, etc. shall be prioritized into at least the following categories:

- Critical Failure (transaction records being lost or delayed more than 2 minutes),
- Severe Failure (transaction records being delayed less than 2 minutes),
- Important (system operating in a mode where another problem could result in a Severe or Critical Failure),
- Warning, and
- Information.

All information logged by the MMRS shall be loaded into the RDBMS for purposes of reporting, summarizing, and tracking maintenance activities. The selected vendor shall submit to the System monthly reports of all maintenance activities.

Read and Agree _____

7.05 Power

All power circuits shall contain Underwriters Laboratories' approved manually re-settable or replaceable over-current protection devices for all circuits to protect the equipment. All circuit breakers shall be sized to protect both the equipment and the minimum size of wire in the circuit. The entire electrical installation and wiring shall be in strict compliance with the latest approved edition of the National Code and all state, city, county and local codes and ordinances.

Read and Agree _____

7.05.01 Uninterruptible Power Supply

The selected vendor shall provide an uninterruptible, regulated power supply (UPS) for all System host computer(s), communications equipment, and ancillary equipment required to sustain the connection between all revenue control devices and the Host computer. The UPS shall be sized to provide power for a minimum of 60 minutes for the connected loads.

Read and Agree _____

7.05.01.01 EMI Suppression

Electromagnetic effects must be identified and successful vendor must minimized Electromagnetic Interference to ensure that the host computer(s), and all related equipment must neither adversely affect nor be adversely affected by the any other system nor UPS.

Read and Agree _____

7.05.01.02 Components

All active electronic devices shall be solid state. All semiconductor devices shall be sealed. All relays shall be provided with contact dust covers.

Read and Agree _____

7.05.01.03 Materials

All materials and parts comprising the UPS shall be new, of current manufacture, and shall not have been in prior service except as required during factory testing.

Read and Agree _____

7.06 Reports

The Respondent shall provide in their proposal, sample copies of all standard reports provided by their System. The selected vendor shall provide the capability of exporting data from the SQL database into other software applications. The selected vendor shall provide the City the database tables and transaction locations and nomenclature in order for the City to access data located with the database for export. The selected vendor shall provide access to Crystal Reports as well as the database schema and data storage and access locations within the System database for access by City staff to develop new custom reports, as necessary.

Read and Agree _____

8.0 GROUND TRANSPORTATION MANAGEMENT SYSTEM (GTMS) AND TAXI DISPATCH

At a minimum, the proposed system shall meet the following system requirements:

The selected vendor shall provide a turnkey end-to-end solution that includes the following components and services:

1. AVI transponders, antenna, and reader systems
2. Integration of all AVI hardware and third-party software applications (see requirements within these specifications) required for the system
3. Software to meet the functions and specifications described herein

4. Installation and commissioning services
5. selected vendor shall install, integrate, implement, and test the system to ensure components and software performs as required and as designed.
6. selected vendor shall provide a minimum of 40 hours of system operations and maintenance training and all necessary documentation to the airport staff.
7. selected vendor shall provide system warranty and maintenance services for a minimum of one year and an optional five-year maintenance program.
8. selected vendor shall install and test the AVI system while the existing system, if applicable, at the airport continues to function with minimal or no downtime to prevent the airport from experiencing loss of transaction data or transaction revenue.
9. selected vendor shall be responsible to obtain all required permits, licenses, insurance, and performance bonds to accomplish this project.
10. The AVI system shall have the capability of reading and accurately identifying no less than 99.8% of properly mounted tags that pass through the read zone for each antenna.
11. The AVI system shall provide continual uploading of data to the main computer system in an online, real-time basis as soon as the system completes the decoding process for the tag.
12. The lane controller shall buffer up to 10,000 transactions if there is a failure in communication with the main server.
13. Upon restoration of the main server or communications, the reader system shall automatically transmit previously un-transmitted, buffered data to the main computer.
14. selected vendor shall make provisions to ensure that any weather impact on radio frequency (RF) signal strength is considered in the installation design.
15. Software shall interface with existing SPS financial software for accounts receivable and billing.
16. Lightning protection shall be provided for all exterior equipment.
17. selected vendor shall provide account replenishment workstation in the supervisors office located in the PMO.

The selected vendor shall provide the technical plan and cost for the following services:

- Project management to include the development of a detailed implementation plan and schedule
- Technical specifications of system
- System design services
- System installation and demolition

- System training
- System warranty and maintenance, including technical support services and recommended spare parts list
- Other services to ensure system installation are in accordance with the functional specifications provided.
- selected vendor shall provide a preliminary design document (PDD) of the system for City review and approval within 60 days of contract award and a detailed design document (DDD) within thirty (30) days thereafter.

In keeping with this, the Ground Transportation Management System shall be designed to meet the overall goals of the City.

The Respondent may propose additional options, additions, and alternatives as deemed beneficial to the City. These alternatives shall be clearly delineated and shall be proposed as options, in addition to the base design, and shall clearly explain advantages over the design requested herein. These items shall be priced separately. The system shall, to the greatest extent possible, use off-the-shelf systems (software and hardware components) and shall incorporate systems and technologies that have been developed and successfully implemented. The proposed system shall be subject to approval by the City staff.

Read and Agree _____

8.1 SYSTEM SPECIFICATIONS

The AVI system shall meet the following specifications:

- A. The AVI system shall have the capability of reading multiple lanes.
- B. The AVI system shall deal properly with one or more tagged vehicles passing near the reader simultaneously.
- C. The AVI system shall have the capability of reading and accurately identifying no less than 99.8% of properly mounted tags that pass through the read zone for each antenna.
- D. For high-speed, open-road locations, the AVI system shall have a minimum read range of 20 feet and be capable of reading vehicles moving at speeds up to fifty (50) mph.
- E. The AVI system shall normally provide continual uploading of data to the main computer system in an online, real-time basis as soon as the system completes the decoding process for the tag.
- F. The AVI system shall be capable of processing tag reads at multiple locations, as required, to create a completed transaction. Completed tag transactions shall be compiled once per day to create actual revenue transactions. Incomplete tag reads, i.e., unmatched read transactions, shall be buffered in the system and remain unprocessed until the host computer receives the matching transactions.
- G. The reader system shall buffer a minimum of 2,000 transactions per reader or a minimum of sixty (60) days, whichever is less, if there is a failure of an in-lane controller.

- H. The lane controller shall buffer a minimum of 10,000 transactions or a minimum of sixty (60) days, whichever is less, if there is a failure in communication with the main server.
- I. Upon restoration of the main server or communications, the reader system shall automatically transmit previously untransmitted, buffered data to the main computer.
- J. selected vendor shall make provisions to ensure that any weather impact on radio frequency (RF) signal strength is considered in the installation design.
- K. The AVI system shall be designed to use the 915 MHz bandwidth for RFID as designated by the Federal Communication Commission (FCC). Systems employing 2.45 GHz, 5.8 GHz, and 5.9 GHz frequencies are not acceptable.
- L. The Vendor shall include in their submittal a list of all built-in features offered within their system.

Read and Agree _____

8.2 TRANSPONDER (TAG) DESIGN

The selected vendor shall provide windshield mounted transponders. The transponders shall be RF passive, beam-powered devices. They shall encode the signal received from the AVI reader with a unique identification number or data message. The encoded signal shall be reflected (backscattered) back to the AVI reader. Unit parameters for the windshield mounted transponders shall include the following:

- Frequency Range – 902 to 928 MHz
- Typical Working Range – 3.5m – 9.6m (11.5 ft to 31.5 ft)
- Polarization – Linear, horizontal
- Service Life – Indefinite
- Weight – < 1.0 oz
- Mounting Surface – Attached by a semi-permanent adhesive to interior of a nonmetallic windshield 0.190 to 0.230 in. in thickness.
- Mounting Location – Vehicle interior
- Operating Temperature - -40°C to +85°C (-40°F to +185°F)

selected vendor shall provide a minimum of fifteen-hundred (1,500) transponders. .

The transponder shall be compatible with the TxTAG transponders currently issued by TxDOT.

The GTMS shall be capable of reading the TxTAG transponders currently issued by TxDOT.

Read and Agree _____

8.3 READER SYSTEM

The AVI readers shall meet the following specifications:

- A. All reader components shall be housed in waterproof, rodent-proof, and vandal-proof harsh environment NEMA 4X enclosures and shall be fully operable in the temperature range of -29⁰ C (-20⁰ F) to 65.6⁰ C (150⁰ F) with a relative humidity of 15 to 100 percent, condensing.
- B. Externally mounted antennas shall be housed in a highly durable, UV- and corrosion-resistant case.

Read and Agree _____

8.4 SYSTEM EXPANDABILITY

- A. The AVI system shall use modular components and the off-the-shelf technology to the extent possible and use open standards associated with dedicated short-range communications (DSRC).
- B. The Respondent must describe potential changes or modifications that may be required in the AVI system hardware and software as more vehicles and reader zones are added to the system. Software shall allow table entry expansion of such items as read zones, number of readers, number of tags, messaging signs, etc. The installed system shall support modular, plug-in expansion. Database sizing must include support for 100% expansion of the AVI user population in terms of accounts, tags, and reader locations. The Respondent shall identify any limits on system hardware or software expansion that, if exceeded, would require the replacement or significant reconfiguration of system components.
- C. To expand the AVI system by adding read zones, database fields, database partitions, reports, security levels, or other system parameters, the City shall not be required to make changes in the application source codes. Further, the selected vendor shall certify that 100% expansion of reader locations can be accomplished through the addition of the field hardware and support communications only.

Read and Agree _____

8.5 FCC LICENSING

The selected vendor, based on coordination with the City, shall be responsible to recommend the operating radio frequency for the AVI system. The AVI frequency shall be compliant with FCC standards and not interfere with any frequencies used for air traffic control, navigation, aviation communications, or other airport-based functions. The selected vendor shall provide all required FCC licenses in the name of the City.

8.6 AVI System Operation

In general there is one primary application of the proposed Ground Transportation Management Systems (GTMS). This application is the tracking and accounting system for all commercial vehicles such as off-airport shuttles, hotel shuttles, rental car shuttles, taxis, etc.

General Operation of the Commercial Vehicle Application

1. Terminal Entrance

The six (6) entrance lanes to the terminal area, shall be equipped with AVI equipment. The AVI system shall generate an RF signal that is reflected from a compatible RF identification tag mounted in the vehicle. The reader unit shall then decode the tag data carried by the reflected signal. This data shall be transmitted to the central computer for processing. This location shall not be equipped with a driver feedback device. It is at this location that each commercial vehicle shall be recorded as entering the terminal area and record the following minimum information:

- Date of transaction
- Time of transaction
- Vehicle ID
- Account Number

2. Terminal Exit

The six (6) lanes of the outbound terminal roadway shall be equipped with AVI equipment. The AVI system shall generate an RF signal that is reflected from a compatible RF identification tag mounted in the vehicle. The reader unit shall then decode the tag data carried by the reflected signal. This data shall be transmitted to the central computer for processing. This location shall not be equipped with a driver feedback device. It is at this location that each commercial vehicle shall be recorded as exiting the terminal area and record the following information, at a minimum:

- Date of transaction
- Time of transaction
- Vehicle ID
- Account Number

Using the information identified above, the AVI system shall determine the total amount of time each vehicle was present at the terminal curbside. The AVI system shall calculate the amount of elapsed time between the entry transaction and the exit transaction (dwell

time) and record that data within the database. The AVI system shall then charge the appropriate fees for the commercial vehicles. The selected vendor shall coordinate with the airport staff to develop the appropriate business rules and fee schedule for the commercial vehicles application. The fee schedule and dwell time shall be parameter driven and airport staff shall have the ability to modify these schedules at any time, given appropriate rights and privileges within the system. The AVI system shall be capable of identifying the location (Terminal) each commercial vehicle accesses and assessing appropriate charges and/or penalties based upon the location the vehicle and the time elapsed within each location.

3. Database information

All commercial vehicles permitted to operate within the airport shall be assigned an in-vehicle transponder or license plate mounted transponder. The identification number of the tag shall be associated with a database containing information corresponding to the vehicle for which the tag is assigned. The proposal should identify all fields, the format and character size for each field. This database shall contain, at a minimum, the following information for each vehicle assigned a tag:

-
- Company name, address, and telephone number
-
- Driver name, license permit number, address, and telephone number
 - License permit expiration date
 - Vehicle fleet number
 - Vehicle license plate number
 - Vehicle make and model
 - Vehicle identification number
 - Owner of vehicle
 - Insurance information – company and expiration date
 - Vehicle type (wagon, van, sedan, bus, etc.)
 - Current status (on/off facility)
 - Total number of trips by day, week, month, etc.
-

Software and Hardware Reliability

a. Fault-Tolerance and Redundancy

The AVI system shall be designed to provide fault-tolerant service in high-traffic environments. The AVI solution shall include hardware with internal fault tolerance, such as a server with multiple processors, power supplies, and fans. If any individual component fails, the server shall automatically switch to a backup component. At the hardware level, the disk storage system shall include a redundant array of independent disks (RAID) Level (1-5) capability.

b. System Backup and Archive

The AVI system shall support unattended scheduled full data backup and provide the ability to store online the previous twenty-four (24) months of daily transaction data. The Windows NT operating system shall be capable of transferring all or any portion of the disk to backup media. Additionally, the system shall allow the airport to schedule online backups of the database. These online backups shall run without interference to the application and be capable of backing up all data stored in the database. The Authority will provide the tapes.

c. Access Data

Upon installation and acceptance of the AVI system, the airport shall have the training to easily access all archived data on the server.

d. Backup Power

All proposed readers and the host computer must have dedicated, managed, uninterruptible power supplies (UPSs) to protect the readers and the host computer from power surges and power outages for up to 10 minutes. Each UPS shall provide a loss of line power signal to the server. The loss of power signal shall be indicated as an alarm at the central server and at the workstation.

4. Software Specifications

a. Real-Time Processing

The AVI system shall provide real-time and continuous recording of data transmitted from the tags and readers to the database server. The data will be held until a predetermined end-of-day processing time. During the end-of-day processing time, the final rate calculation will be completed.

b. Circuit Counts

All lane activity is to be recorded in the relational database on the AVI database server and shall be accessible via Crystal Reports and standard SQL queries. The system shall allow the airport to retrieve any required date and time ranges and sort and group as desired.

At a minimum, the reports shall provide the following data:

- Total trip/circuit counts per hour, day, month, and year for each vehicle
- Total trip/circuit counts per hour, day, month, and year for each operator
- Grand totals of all vehicle trip/circuit counts of each category and subcategory of ground transportation at the airport per hour, day, month, and year

e. Dwell Time

The AVI system shall measure dwell time and produce reports on the amount of dwell time in the airport by vehicle and operator per hour, day, month, and year.

The definition of dwell time is the total time, in minutes that a vehicle is in a particular portion of a facility during any one trip, from its initial entrance at a reader location to its final exit at a reader location. The AVI system shall define dwell point configurations based on the installed hardware locations. The software shall allow the user to identify a minimum of 10 different dwell time thresholds for different classes of vehicles. Minutes will be the smallest unit of time measured by the database.

6. Management Reporting

The AVI system shall produce management reports on demand with output either displayed on the workstation monitor or sent to any authorized printer on the network. The system shall allow the airport to schedule any or all of the pre-defined/pre-loaded reports for processing on any day or at any time. The selected vendor shall provide Seagate Crystal Reports or Seagate Info, an industry-standard reporting package, to generate reports. Reports must be able to be exported to popular formats, including Microsoft Word and Microsoft Excel, HTML, or e-mail. The system shall allow the airport to generate management reports on one or more separate workstations connected to the AVI system. The system shall allow the airport to select any information that is stored in the database to be included on a report and allow the City to create customized reports.

The proposed solution shall provide menu-driven report generation and allow the airport to generate a report that contains information about different vehicle operators for a specific day and time period.

The system shall also allow the airport to select information for multiple operators and provides summary reports on selected operators to include, but not limited to, the following information:

- Customer Identification Number – Same number as generated on current airport's Finance/accounting system
- Operator number and name
- Operator billing address
- Contract contact person
- Contract telephone and fax numbers
- Permit number
- Vehicle count (updated when a vehicle ID number is added)
- Vehicle identification number
- Current monthly circuit count

The system shall allow the airport to enter and update information concerning operator's vehicles, rates, etc., using a GUI. Reports using this data shall reflect any updates the next time they are generated.

Circuit reports shall contain the daily trip report by operator with monthly and daily totals and cumulative summary reports by operator with columns for current month, calendar year-to-date, 12 months-to-date, and 24 months-to-date.

The AVI system shall allow the following exception reports to be generated automatically (as scheduled) or on demand:

- Operator suspended or operation of suspended vehicles
- Operator reinstated

The AVI system shall allow users to automatically schedule reports for a specific day of the week within a specific month, such as all Sundays in March.

The following list includes reports that shall be provided with the proposed system. Selected vendor shall meet with airport personnel to verify report requirements – fields, etc. – for each of the reports in the following list.

Required Reports	
• Billing Detail	• Operator Violation Summary
• Billing Summary	• Lot Service
• Billing Type	• Non-Terminal Service
• Circuits by Category	• Tag Receipt
• Circuit Totals by Category	• Suspended Operator Detail
• Circuit Totals by Operator	• Suspended Operator Summary
• Excessive Circuit and Dwell Time	• Tag List
• Hourly Circuits by Category	• Vehicle Activity Detail
• Hourly Circuits by Operator	• Vehicle Activity Summary
• Hourly Dispatch – Van Lot Exits	• Vehicle Schedule Detail
• Hourly Taxi Stand	• Vehicle Circuits by Operator
• Invoice	• Yearly Dispatch
• Lot Avoidance	• Yearly Taxi Stand
• Monthly Dispatch – Van Lot Exits	• Landside Operations Reader Report
• Monthly Taxi Stand	• Tags Not Read within Last 30 Days
• Vehicle List (sorted by category, tag or permit #)	• Tags Issued Daily and Monthly

Required Reports	
• Operator Summary	• Daily Summary of Tags Read
• Operator Tag Detail	• Number of Tags Reissued
• Circuits by Operator	• Occupancy by Privilege
• Hourly Circuits by Class	• Tag Inventory by License Plate
• Operator Tag Summary	• Invoice Summary
• Tags Returned Daily and Monthly (with status for operating, non-operating, and missing/stolen)	

Read and Agree _____

9.00 SPARE PARTS REQUIREMENTS

This Work shall consist of furnishing spare parts, as a part of the selected vendor's Proposed Lump Sum Total Base Bid, to be used to maintain and repair the equipment components of all Systems throughout the Warranty Period as required in Section 11 below. The selected vendor shall guarantee that all specified spare parts shall be available through the Warranty Period. The selected vendor shall include a statement regarding this requirement in all sub-contracts. Spare parts will not be used for System expansion.

Read and Agree _____

9.01 Quality of Materials

The spare parts shall be equal to or better than the originally installed materials. If new materials are necessary, new specifications must be provided for prior approval by the City.

Read and Agree _____

9.02 Requirements

The Respondent shall prepare and submit a list of recommended spare parts and the quantity of each spare part that will be kept in stock at the selected vendor's local office. For each spare part recommended, the Respondent shall provide the rationale for the recommended number of spare parts being proposed.

Read and Agree _____

9.03 Emerging Technology

Should spare parts become available in a newer, updated technology that will prolong the life of the System or perform more efficiently, the newer spare part will be required to be provided by the selected vendor.

Read and Agree _____

10.0 SPARE EQUIPMENT REQUIREMENTS

This Work shall consist of furnishing spare equipment, as a part of the selected vendor's Proposed Lump Sum Total Base Bid, to be used to replace defective, faulty, or worn equipment in all Systems throughout the Warranty Period as required in Section 11 below. The selected vendor shall guarantee that all specified spare equipment shall be available through the Warranty Period. The selected vendor shall include a statement regarding this requirement in all sub-contracts. Spare equipment will not be used for System expansion.

Read and Agree _____

10.01 Quality of Materials

The spare equipment shall be equal to or better than the originally installed equipment. If new equipment is necessary, new specifications must be provided for prior approval by the City.

Read and Agree _____

10.02 Requirements

The Respondent shall prepare and submit a list of recommended spare equipment and the quantity of each item listed that will be kept in stock at the selected vendor's local office. For each item recommended, the Respondent shall provide the rationale for the recommended number to be kept in inventory. In preparing its recommendation, the Respondent shall estimate spare equipment requirements based on a System life of 10 years. At a minimum, the Respondent shall recommend one additional TD, fee computer, Pay-on-Foot device, and booth mounted exit station.

Read and Agree _____

10.03 Spare Equipment for System Life

A minimum inventory of spare equipment shall be maintained on-site at the selected vendor's local office, sufficient to maintain the System on a 24 hour basis and to repair or replace all

components of the System without excessive delay. The spare equipment inventory and usage records will be made available to the City to verify that spare equipment levels are being maintained.

Read and Agree _____

10.04 Emerging Technology

Should spare parts become available in a newer, updated technology that will prolong the life of the System or perform more efficiently, the newer spare part will be required to be provided by the selected vendor.

Read and Agree _____

11.0 MAINTENANCE REQUIREMENTS

The Work under this section shall include all labor, materials, transportation and support services as may be necessary to maintain the System through Date of Final Acceptance and the required one (1) year warranty period.

Read and Agree _____

11.01 Description

The selected vendor will be responsible for all preventive, routine, corrective and emergency maintenance required to assure the availability of the System in accordance with the required maintenance program and plan.

The maintenance requirements specified in these technical specifications include all in-lane equipment, communications subsystems, host computer systems hardware and software, network operating systems, and associated communications subsystems.

Read and Agree _____

11.02 Warranty

The selected vendor shall provide not less than one (1) year warranty on all equipment, parts, and labor. The one (1) year warranty period shall start upon the "Date of Final Acceptance." This project includes multiple facilities and the Respondent shall state within their response that they understand that the project will be phased with graduated "Dates of Beneficial Occupancy." Service under the one (1) year warranty period shall include all parts and labor to maintain the equipment and system in good working order and condition. Should a specific part or piece of equipment require repair three (3) or more times within any thirty (30) day period or have accumulated down time of forty-eight (48) or more hours during the thirty (30) day period, then that piece of equipment shall be replaced in its entirety with a new device.

Read and Agree _____

11.03 Maintenance Program and Plan

The selected vendor shall establish a System Maintenance Program and Plan. Respondents must submit the proposed maintenance concept in their proposal. The Maintenance Program and Plan shall recognize the type and complexity of the System and individual items of equipment and shall not adversely impact the overall operation of the Airport.

At a minimum, the Maintenance Program and Plan shall incorporate maintenance staffing, management and scheduling to be sufficient to support the System Host Computer, System Communications and the System Equipment and Systems for a schedule of 24 hours per day, 7 days per week (including holidays) and adhering to the maintenance periods and not exceeding the minimum downtime or response times as defined herein. The maintenance plan shall include a schedule of personnel on site, as necessary, and personnel on-call to support the maintenance of equipment and system within the timeframes described.

The selected vendor shall be responsible for maintaining the System equipment to be operational with no lane downtime for more than eight (8) hours due to maintenance or equipment failure. The selected vendor shall provide a telephone response within two (2) hours from the original page or telephone call and the repairs shall be made within an additional six (6) hours. Repairs shall be made within eight (8) hours from the initial contact by the City.

In the proposal, the Respondent must state the number of qualified customer engineers Respondent has available in the San Antonio, Texas area and provide a statement of qualifications addressing the background of technical support personnel including their specialized training on any of the System equipment and peripheral devices proposed by the Respondent.

The maintenance offices shall include a test bed that includes a minimum of one of each major device such as one (1) TD, one (1) CT, one (1) AVI reader, etc. This test bed shall be designed to test and certify for deployment at least one fully functional major device. All software upgrades will be initially implemented on the test bed and be certified by the City prior to installation on the "live system."

Read and Agree _____

11.04 Preventive Maintenance

The selected vendor shall develop preventive maintenance schedules designed to ensure optimum maintenance of the System to meet the performance standards and reliability requirements of these Technical Specifications. The proposed maintenance schedules shall be submitted as part of the Maintenance Program and Plan. Selected vendor shall maintain an ongoing log of all repairs and preventive maintenance activity. This log shall be made available to City personnel upon request, oral or written.

Read and Agree _____

11.05 Corrective and Emergency Maintenance

The Selected vendor shall develop a corrective and emergency schedule designed to ensure optimum maintenance of the System to meet the reliability and maintainability requirements. The corrective and emergency schedule shall be included in the Maintenance Program and Plan. In addition, the selected vendor will be required to provide a monthly schedule of on-call service personnel to Airport Parking Manager.

Read and Agree _____

11.06 Reporting and Access Requirements

The selected vendor shall maintain current and accurate records for all field and shop maintenance work. The selected vendor shall prepare a service report each time service is performed for corrective or emergency work. The report shall include, but not be limited to equipment item number, location, work or service performed, reported fault, parts used and the time the service was started and completed. One copy of all service reports and records and all preventive maintenance work shall be forwarded to the Airport Parking Manager monthly.

Monthly reports shall be prepared and shall include, but not be limited to, an inventory of all spare equipment, average response and repair times, failure statistics, total down time of the equipment and other summary information for all classes of equipment. All reports shall be submitted to the Airport Parking Manager. The City shall have access to all service records at all times.

From time to time, the selected vendor shall permit on-site inspection of their facilities by the City or designee to verify the up-to-date technical qualifications of their staff.

Read and Agree _____

12.0 DOCUMENTATION

The Work under this section shall include all labor and materials necessary to complete the writing, editing, assembling materials, packaging and delivery of Installation Documentation, Record Drawings, Maintenance Documentation, and User Manuals in accordance with the requirements of these Technical Specifications.

Read and Agree _____

12.01 Description

All documentation shall be provided in English. The documentation to be provided consists of four (4) general categories:

- Installation Documentation
- Record Drawings
- Maintenance Documentation
- User Manuals

The selected vendor shall provide documentation in the categories and quantities specified. Documentation that is prepared for each of these four categories shall recognize the differences required for each category and the audience and usage of each. Each item of documentation shall be designed and written to meet the needs of the specific users of that item.

Read and Agree _____

12.02 General Requirements

All documentation (text, graphics, illustrations, etc.) shall be delivered in both disk (cd) and hardcopy forms. The textual documentation shall be produced in Microsoft Word for Windows 7.X or higher, and Microsoft Office 2007. The electronic documentation shall be delivered such that the document “reads” as though the document were in printed form. All graphics, spreadsheets, demonstrations, etc. shall be integrated into the textual documentation.

Any special software required to produce scaleable typefaces or other graphics shall be provided as part of the documentation deliverables.

All documentation produced for this Contract in the form of drawings, graphs, charts, illustrations, etc. shall be produced by CADD. The deliverable media shall be in the most current version of AutoCAD format.

The documentation and drawings consisting of the submittal, working, Record and related drawings shall meet the requirements of the Technical Specifications.

Read and Agree _____

12.03 Record Drawings

The selected vendor shall provide one (1) complete set of reproducible transparencies and four (4) complete sets of blue line prints for the System. The set shall include, but not be limited to the following list for all mechanical parts designed or modified and installation details so as to provide a complete record of the as-built status of the System.

- all schematics,
- logic diagrams,
- layouts,
- wiring diagrams,

- assembly drawings, and
- parts detail drawings

Drawings contained in standard catalogs and manuals for commercial products are not required as part of the as-built drawing set. All drawings for revisions to standard commercial assemblies or components in the System shall be included in the as-built drawing set. Any modifications to those drawings resulting from design or field revisions shall be incorporated by the selected vendor to accurately reflect as-built conditions.

The Record drawing set shall consist of a title sheet as provided by the City, an index sheet and the various Record drawings. The index sheet shall include a listing of all drawings with headings for drawing number, drawing title, and the type of material list, wiring diagram, wire list, specification control drawing or similar categories.

Read and Agree _____

12.04 Maintenance Documentation

The Maintenance Documentation shall consist of the documentation required for development, review and approval of the Maintenance Program and Plan.

Read and Agree _____

12.05 User Manuals Requirements

All User Manuals submitted by the selected vendor which are not standard commercial catalogs or manuals shall meet the following requirements. Draft copies of all manuals shall be submitted for approval prior to final printing. Whenever possible, all information shall be printed on 8-1/2" sheets. Foldouts are not desired, but if required, they shall be 11" x 17".

Read and Agree _____

12.06 Submittals

The selected vendor shall submit shop drawings and/or approval drafts for all manual artwork, formats, layouts, text, facsimiles, etc. in a preliminary form for review and approval by the City for all required documentation. Each submittal shall be identified as specified in the "Installation Requirements" section of these Technical Specifications. The selected vendor shall submit one original Mylar, or equivalent reproducible, and five blue line copies of all drawings submitted for review.

Read and Agree _____

12.07 Quantities

The selected vendor shall provide the following quantities of manuals, drawings and support documentation:

<u>Description</u>	<u>Quantities</u>
Maintenance Program and Plan	4 sets
Parts Lists and Catalogs	4 sets
Record Drawings:	
As-Built Drawings – Transparencies	1 set
As-Built Drawings - Blue Line Copies	4 sets
Masters/Artwork for all Documents	As Req'd
Installation Documentation	4 sets

Read and Agree _____

12.10 Delivery

All documentation, including drawings, manuals, masters and original artwork which are necessary for the installation and maintenance of the system shall be provided not less than thirty (30) days prior to the scheduled installation date. Record Drawings shall be provided not more than thirty (30) days after the Date of Final Acceptance of the System by the City.

Read and Agree _____

13.0 PROJECT PHASES, SCHEDULES, TESTING, AND ACCEPTANCE

The Work under this section shall include all labor and materials necessary to assist in the layout, installation, testing and implementation of the installation work in accordance with the requirements of these Technical Specifications and provides an overall summary of project phases and schedule. The Respondent shall review the following phases and submit a project plan in their written proposal that best satisfies the criteria and schedule. Should Respondent's proposed schedule vary for the estimated dates below, Respondent shall provide an explanation in the proposal.

Read and Agree _____

13.01 Project Phases

The development program under this Contract shall be divided into four overall phases, generally delineated by successful completion of major test milestones. These phases include:

Phase I – Design, Manufacturing, Factory Test – This phase includes the design, development, fabrication and pre-test of components of the entire Parking System up to and

including successful conduct of a full and detailed Factory Acceptance Test of all System equipment in accordance with a pre-approved Test Plan.

Phase II – Installation and on-site Testing – This phase includes field equipment installation, including on-site testing and debugging by the selected vendor and City testing and approval for use of the complete system, with all components integrated for system operation.

Phase III – Final Acceptance – Final Acceptance testing shall consist of a performance evaluation period of thirty (30) days consisting of three (3) ten (10) day testing periods under actual operation without a hardware or software component failure must be met. Failure to meet these requirements within any ten day testing period will result in starting over that ten day testing period from the beginning. Final acceptance by the City shall occur upon the date of successful completion of the Final Acceptance Testing and issuance by the City of its acceptance letter.

Phase IV – Warranty Period – Provision of full maintenance and system support by the selected vendor during a Warranty Period extending one (1) year after the Date of Final Acceptance.

Estimated completion deadlines required for each major phase of the work are shown in the table below:

PROJECT PHASE	COMPLETION DEADLINE
Phase I – Design, Manufacturing, Factory System Test	January 31, 2009
Phase II – Installation and Testing	May 31, 2009
Phase III – Final Acceptance Testing	June 30, 2009
Phase IV – Warranty Period	June 30, 2010

It should be clearly understood that the above described schedule requires that the System be fully installed and operational by July 1, 2009.

Read and Agree _____

13.02 Factory System Test

The selected vendor shall conduct factory tests to demonstrate the function and satisfactory operation of the System. The factory test shall only be initiated if each and every component or equipment provided under this contract is available and an integral part of the factory test. The City may elect to send a representative to witness the factory tests. If a representative of the City is not present for the factory test, the selected vendor shall document the performance of these tests and provide this documentation to the City. The documentation shall include a description of all test procedures, the results of each test, and any corrective action taken by the selected vendor to resolve problems identified during these tests. The selected vendor shall be responsible for all costs associated with the factory acceptance test, including the cost of travel,

lodging, and transportation for City staff. It is anticipated there will be up to four (4) City Staff members attending including the Assistant Director, Parking Manager, and one IT staff member. In addition, a member of the consulting team will be present at the FAT.

Acceptance of factory tests by the Owner shall not relieve the selected vendor of responsibility for the complete system meeting the requirements of these Specifications after installation.

All System Factory test procedures shall be conducted to demonstrate specific activities and for simultaneous operation of multiple subsystems and equipment at the same time, under normal and emergency conditions, without loss of data or control of the complete system or its individual subsystems or components. Each function and operation of the equipment shall be demonstrated and tested. At a minimum, the factory test shall include at least two (2) entry lanes and two (2) exit lanes, fully configured, and one (1) POF station (cash and credit card). The host computers shall be fully stress tested to include a database of at least 90% capacity (several years of data) while transactions are simultaneously processed through the entry and exit lanes.

The selected vendor shall furnish four (4) sets of system documentation, including all manuals, hardware and software documentation and drawings for the factory tests. The documentation shall reflect the final copy for reference purposes.

All documentation and drawing changes necessary due to the factory testing shall be incorporated into the final copies and as-built drawings.

The original Factory Test and any subsequent "re-test" of the Factory Test that is deemed necessary by the City shall be conducted at the selected vendor's designated facilities that shall have been approved by the City prior to any Factory Test.

Read and Agree _____

13.03 On-Site Field Tests

The selected vendor shall demonstrate the ability of the system, as a whole, to function and operate as a total integrated System. All software shall be demonstrated to be fully operational as a total system. All report generation and visual displays on the CRT workstations shall be tested.

The selected vendor shall correct all deficiencies discovered during the On-site Field Test, whether hardware or software related.

These Field Tests shall be conducted for a total period of ten (10) days. Failure at any time during these tests shall result in the ten day period starting over.

Field test acceptance will be granted subsequent to the successful completion of the Field Tests, as documented by the City's approval of the test reports submitted by the selected vendor.

Read and Agree _____

13.04 Field Test Procedures

The selected vendor shall prepare a complete set of Acceptance Test Procedures (ATPs) for the field test program.

The ATPs shall be submitted to the City for review and approval not less than forty-five (45) days prior to the scheduled start date for the field tests. The City will review the ATPs and return the document within fifteen (15) days with appropriate comments, if any. The selected vendor shall revise the ATPs within fifteen (15) days and resubmit to the City for review and approval. The selected vendor will not be permitted to start the field tests without an approved set of ATPs.

Any delay by the selected vendor for not having the ATPs completed and approved by the date for start of field testing shall not be cause for extending the completion date as stated in the Contract.

Read and Agree _____

13.05 30-Day Acceptance Test

A 30-day acceptance test, consisting of three 10-day periods, shall be required to demonstrate and ensure that the hardware and software meet the assurance, reliability, maintainability, accuracy and operational functions as required by these specifications. The acceptance test period shall begin on the day that the hardware and software is on-line for testing.

Read and Agree _____

13.06 Evaluation and Test Criteria

The 30-day Acceptance Test will be conducted in accordance with the approved test plan that will specify the method and performance standards to be used in verifying the System assurance.

Read and Agree _____

13.07 Final Acceptance Test Records

Final Acceptance Test records will be maintained by the selected vendor and the City to document the system performance and any malfunctions as may occur during the 30-day test and shall be reconciled daily.

Read and Agree _____

13.08 Final Acceptance

When all Final Acceptance Testing has been successfully demonstrated by the selected vendor, the City shall provide written notification to the selected vendor of final acceptance.

Read and Agree _____

EXHIBIT B
INSURANCE REQUIREMENTS

If selected to provide the services described in this RFP, Respondent shall be required to comply with the insurance requirements set forth below:

INSURANCE

A) Prior to the commencement of any work under this Agreement, the selected Respondent shall furnish copies of all required endorsements and an original completed Certificate(s) of Insurance to the City's Purchasing & Contract Services Department, which shall be clearly labeled "Parking System" in the Description of Operations block of the Certificate. The original Certificate(s) shall be completed by an agent and signed by a person authorized by that insurer to bind coverage on its behalf. The City will not accept Memorandum of Insurance or Binders as proof of insurance. The original certificate(s) or form must have the agent's original signature, including the signer's company affiliation, title and phone number, and be mailed, with copies of all applicable endorsements, directly from the insurer's authorized representative to the City. The City shall have no duty to pay or perform under this Agreement until such certificate and endorsements have been received and approved by the City's Purchasing & Contract Services Department. No officer or employee, other than the City's Risk Manager, shall have authority to waive this requirement.

B) The City reserves the right to review the insurance requirements of this Article during the effective period of this Agreement and any extension or renewal hereof and to modify insurance coverages and their limits when deemed necessary and prudent by City's Risk Manager based upon changes in statutory law, court decisions, or circumstances surrounding this Agreement. In no instance will City allow modification whereupon City may incur increased risk.

C) A Respondent's financial integrity is of interest to the City; therefore, subject to Respondent's right to maintain reasonable deductibles in such amounts as are approved by the City, Respondent shall obtain and maintain in full force and effect for the duration of this Agreement, and any extension hereof, at Respondent's sole expense, insurance coverage written on an occurrence basis, by companies authorized and admitted to do business in the State of Texas and with an A.M Best's rating of no less than A- (VII), in the following types and for an amount not less than the amount listed:

<u>TYPE</u>	<u>AMOUNTS</u>
1. Workers' Compensation 2. Employers' Liability	Statutory \$1,000,000/\$1,000,000/\$1,000,000
3. Commercial General Liability Insurance to include coverage for the following: a. Premises operations b. Independent Contractors c. Products/completed operations d. Personal Injury e. Contractual Liability *f. Environmental Impairment/ Impact – sufficiently broad to cover disposal liability. g. Broad form property damage, to include fire legal liability	For <u>Bodily Injury</u> and <u>Property Damage</u> of \$1,000,000 per occurrence; \$2,000,000 General Aggregate, or its equivalent in Umbrella or Excess Liability Coverage

D) The City shall be entitled, upon request and without expense, to receive copies of the policies, declaration page and all endorsements thereto as they apply to the limits required by the City, and may require the deletion, revision, or modification of particular policy terms, conditions, limitations or exclusions (except where policy provisions are established by law or regulation binding upon either of the parties hereto or the underwriter of any such policies). Respondent shall be required to comply with any such requests and shall submit a copy of the replacement certificate of insurance to City at the address provided below within 10 days of the requested change. Respondent shall pay any costs incurred resulting from said changes.

City of San Antonio
Attn: Purchasing & Contract Services Department
P.O. Box 839966
San Antonio, Texas 78283-3966

E) Respondent agrees that with respect to the above required insurance, all insurance policies are to contain or be endorsed to contain the following provisions:

- Name the City, its officers, officials, employees, volunteers, and elected representatives as additional insureds by endorsement, as respects operations and activities of, or on behalf of, the named insured performed under contract with the City, with the exception of the workers' compensation and professional liability policies;
- Provide for an endorsement that the "other insurance" clause shall not apply to the City of San Antonio where the City is an additional insured shown on the policy;
- Workers' compensation and employers' liability policies will provide a waiver of subrogation in favor of the City.
- Provide thirty (30) calendar days advance written notice directly to City of any suspension, cancellation, non-renewal or material change in coverage, and not less than ten (10) calendar days advance notice for nonpayment of premium.

F) Within five (5) calendar days of a suspension, cancellation or non-renewal of coverage, Respondent shall provide a replacement Certificate of Insurance and applicable endorsements to City. City shall have the option to suspend Respondent's performance should there be a lapse in coverage at any time during this contract. Failure to provide and to maintain the required insurance shall constitute a material breach of this Agreement.

G) If Respondent fails to maintain the aforementioned insurance, or fails to secure and maintain the aforementioned endorsements, the City may obtain such insurance, and deduct and retain the amount of the premiums for such insurance from any sums due under the agreement; however, procuring of said insurance by the City is an alternative to other remedies the City may have, and is not the exclusive remedy for failure of Respondent to maintain said insurance or secure such endorsement. In addition to any other remedies the City may have upon Respondent's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, the City shall have the right to order Respondent to stop work hereunder, and/or withhold any payment(s) which become due to Respondent hereunder until Respondent demonstrates compliance with the requirements hereof.

H) Nothing herein contained shall be construed as limiting in any way the extent to which Respondent may be held responsible for payments of damages to persons or property resulting from Respondent's or its subcontractors' performance of the work covered under this Agreement.

I) It is agreed that Respondent's insurance shall be deemed primary with respect to any insurance or self insurance carried by the City of San Antonio for liability arising out of operations under this Agreement.

J) It is understood and agreed that the insurance required is in addition to and separate from any other obligation contained in this Agreement.

EXHIBIT C

INDEMNIFICATION REQUIREMENTS

If selected to provide the services described in this RFP, Respondent shall be required to comply with the indemnification requirements set forth below:

INDEMNIFICATION REQUIREMENTS

RESPONDENT covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, the CITY and the elected officials, employees, officers, directors, volunteers and representatives of the CITY, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death and property damage, made upon the CITY directly or indirectly arising out of, resulting from or related to RESPONDENT's activities under this CONTRACT, including any acts or omissions of RESPONDENT, any agent, officer, director, representative, employee, consultant or subcontractor of RESPONDENT, and their respective officers, agents, employees, directors and representatives while in the exercise of performance of the rights or duties under this CONTRACT, all without however, waiving any governmental immunity available to the CITY under Texas Law and without waiving any defenses of the parties under Texas Law. IT IS FURTHER COVENANTED AND AGREED THAT SUCH INDEMNITY SHALL APPLY EVEN WHERE SUCH COSTS, CLAIMS, LIENS, DAMAGES, LOSSES, EXPENSES, FEES, FINES, PENALTIES, ACTIONS, DEMANDS, CAUSES OF ACTION, LIABILITY AND/OR SUITS ARISE IN ANY PART FROM THE NEGLIGENCE OF CITY, THE ELECTED OFFICIALS, EMPLOYEES, OFFICERS, DIRECTORS, VOLUNTEERS AND REPRESENTATIVES OF CITY, UNDER THIS CONTRACT.

It is the EXPRESS INTENT of the parties to this CONTRACT, that the INDEMNITY provided for in this section, is an INDEMNITY extended by RESPONDENT to INDEMNIFY, PROTECT and HOLD HARMLESS, the CITY from the consequences of the CITY'S OWN NEGLIGENCE, provided however, that the INDEMNITY provided for in this section SHALL APPLY only when the NEGLIGENT ACT of the City is a CONTRIBUTORY CAUSE of the resultant injury, death, or damage, and shall have no application when the negligent act of the City is the sole cause of the resultant injury, death, or damage. RESPONDENT further AGREES TO DEFEND, AT ITS OWN EXPENSE and ON BEHALF OF THE CITY AND IN THE NAME OF THE CITY, any claim or litigation brought against the CITY and its elected officials, employees, officers, directors, volunteers and representatives, in connection with any such injury, death, or damage for which this INDEMNITY shall apply, as set forth above.

The provisions of this INDEMNIFICATION are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

RESPONDENT shall advise the CITY in writing within 24 hours of any claim or demand against the CITY or RESPONDENT known to RESPONDENT related to or arising out of RESPONDENT's activities under this contract, and shall see to the investigation and defense of such claim or demand at RESPONDENT's cost. The CITY shall have the right, at its option and at its own expense, to participate in such defense without relieving RESPONDENT of any of its obligations under this paragraph.

EXHIBIT D

PREVAILING WAGE RATES

(a) Definitions.

(1) Prevailing Wage Rate – that rate which has been determined by City to be the applicable prevailing wage rate, including the per diem rate and the rate for legal holiday and overtime pay, as set forth in Exhibit D-1, attached hereto and fully incorporated herein, for each category of worker.

(2) Worker - person employed by Contractor or a Subcontractor in the execution of this contract. A worker includes, but is not limited to, laborers and mechanics.

(b) Payment of Prevailing Wage Rate – the selected Contractor shall pay to its workers not less than the prevailing wage rate for that class of worker as described in said Exhibit D-1. Further, the selected Contractor shall stipulate in all contracts with subcontractors engaged by Contractor in furtherance of the execution of this contract that said subcontractors pay not less than the prevailing wage rate for its workers, and shall attach as an exhibit to said contracts a copy of Exhibit D-1.

(c) Penalty for Non-payment - A selected Contractor or Subcontractor who pays less than the prevailing wage rate to its workers, shall pay to City Sixty Dollars (\$60.00) for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in this contract. The selected Contractor shall stipulate in all contracts with subcontractors engaged by Contractor in furtherance of the execution of this contract that Subcontractor is subject to this \$60.00 penalty if Subcontractor fails to pay said prevailing wage rates to its workers.

In accordance with Chapter 2258, TEX. GOV'T CODE, City shall be entitled to withhold payment from the selected Contractor under the contract to satisfy this penalty, even if the party incurring the penalty is a Subcontractor of Contractor. If City withholds payment from the selected Contractor as a result of a Subcontractor's violation, Contractor may withhold payment from said Subcontractor in accordance with said Chapter 2258. Further, release or disbursement of funds withheld as a penalty hereunder shall be governed by said Chapter 2258.

(d) Records – The selected Contractor and Subcontractor shall keep a record showing: (1) the name and occupation of each worker employed by the Contractor or Subcontractor; and (2) the actual per diem wages, including legal holiday and overtime wages, paid to each worker. These records shall be open at all reasonable hours to inspection by the officers and agents of City. The selected Contractor shall stipulate in all contracts with subcontractors engaged by Contractor in furtherance of the execution of this contract that Subcontractors must maintain and make available for inspection the records as described in this article.

(e) The selected Contractor shall submit certified payrolls directly to the City's Wage and Hour Office by mail or hand-delivery. Electronic transmissions are not acceptable.

Mailing Address for Payroll and Pertinent Documents:

City of San Antonio
Capital Improvements Management Department
Contract Services
Wage and Hour Compliance
P.O. Box 839966
San Antonio, Texas 78283-3966

Attention: Thomas Nixon

Physical Address for Payroll and Pertinent Documents:

City of San Antonio
Capital Improvements Management Department
Capital Programs Division
Wage and Hour Compliance
114 W. Commerce, 8th Floor
San Antonio, Texas 78283-3966

Attention: Thomas Nixon

EXHIBIT D-1

General Decision Number: TX070003 08/31/2007 TX3

Superseded General Decision Number: TX20030003

State: Texas

Construction Type: Building

County: Bexar County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including 4 stories). (Use current heavy & highway general wage determination for Paving & Utilities Incidental to Building Construction).

Modification Number	Publication Date
0	02/09/2007
1	05/11/2007
2	07/20/2007
3	08/31/2007

Effective Date 08/31/2007

ASBE0087-001 01/01/2006

	Rates	Fringes
Asbestos/Insulator Worker (Includes application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems.).....	\$ 19.67	6.37

BRTX0001-004 05/01/2007

	Rates	Fringes
BRICKLAYER.....	\$ 23.50	1.50

* ELEC0060-001 12/04/2006

	Rates	Fringes
Cable splicer.....	\$ 21.85	7.60
ELECTRICIAN (Including pulling and installing cable through conduit for low voltage).....	\$ 21.60	7.60

ELEV0081-001 01/01/2005

	Rates	Fringes
Elevator Constructor MECHANIC.....	\$ 26.885	12.115+A

FOOTNOTE; A = UNDER 5 YEARS EMPLOYMENT, 6% BHR; OVER 5 YEARS
EMPLOYMENT, 8% BHR. PAID HOLIDAYS : New Year's Day,
Memorial Day, Independence Day, Labor Day, Thanksgiving
Day, Friday after Thanksgiving Day and Christmas Day.

ENGI0450-001 04/01/1994

	Rates	Fringes
Power equipment operators: Cranes.....	\$ 12.95	3.30

* IRON0066-001 06/01/2007

	Rates	Fringes
IRONWORKER (Excluding metal building erectors) Structural.....	\$ 17.40	5.00

* MARB0002-001 07/01/2005

	Rates	Fringes
TILE SETTER.....	\$ 18.50	6.10

PLUM0142-001 07/01/2005

	Rates	Fringes
Plumbers and Pipefitters (Including HVAC WORK).....	\$ 26.18	6.16

* SFTX0669-001 01/01/2005

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 22.62	10.50

SHEE0067-001 04/01/2007

	Rates	Fringes
Sheet metal worker (Including HVAC Duct Work).....	\$ 23.70	9.74

* SUTX1988-002 11/01/1988

	Rates	Fringes
Acoustical Ceiling Installer.....	\$ 12.26	
CARPENTER (Excluding Acoustical Ceiling Installer & Drywall Hanger).....	\$ 10.64	
CEMENT MASON/CONCRETE FINISHER...	\$ 11.46	
DRYWALL HANGER.....	\$ 11.88	
GLAZIER.....	\$ 10.78	1.40
IRONWORKER (Excluding Metal Building Assemblers) Reinforcing.....	\$ 10.19	3.57
Laborers:		
Mason Tenders.....	\$ 8.36	1.78
Mortar Mixers.....	\$ 8.99	
PLASTERER'S TENDERS.....	\$ 8.68	
Unskilled.....	\$ 7.06	
LATHER.....	\$ 15.25	
PAINTER (Excluding Tapers/Finishers).....	\$ 8.01	
PLASTERER.....	\$ 15.25	
Power equipment operators:		
Front End Loader.....	\$ 7.36	
Roofers:		
Kettlemen.....	\$ 8.85	
Roofers.....	\$ 8.14	

Waterproofers.....\$ 6.88

Sheet Metal Worker
Other Work.....\$ 11.62

Taper/Finisher.....\$ 7.99

TRUCK DRIVER.....\$ 7.10

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates
listed under the identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on
a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the
Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an
interested party (those affected by the action) can request
review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

EXHIBIT D-2

General Decision Number: TX070043 02/09/2007 TX43

Superseded General Decision Number: TX20030043

State: Texas

Construction Types: Heavy and Highway

Counties: Bell, Bexar, Brazos, Comal, Coryell, Guadalupe, Hays, McLennan, Travis and Williamson Counties in Texas.

Heavy (excluding tunnels and dams) and Highway Construction Projects (does not include building structures in rest area projects). *NOT TO BE USED FOR WORK ON SEWAGE OR WATER TREATMENT PLANTS OR LIFT/PUMP STATIONS IN BELL, CORYELL, McLENNAN AND WILLIAMSON COUNTIES.

Modification Number	Publication Date
0	02/09/2007

Effective 02/09/2007

	Rates	Fringes
Air Tool Operator.....	\$ 16.00	0.00
Asphalt Distributor Operator...	\$ 12.09	0.00
Asphalt paving machine operator	\$ 11.82	0.00
Asphalt Raker.....	\$ 9.96	0.00
Asphalt Shoveler.....	\$ 10.56	0.00
Broom or Sweeper Operator.....	\$ 9.74	0.00
Bulldozer operator	\$ 11.04	0.00
Carpenter.....	\$ 12.25	0.00
Concrete Finisher, Paving.....	\$ 10.53	0.00
Concrete Finisher, Structures..	\$ 10.95	0.00
Concrete Paving Curbing Machine Operator.....	\$ 14.00	0.00
Concrete Paving Finishing Machine Operator.....	\$ 12.00	0.00
Concrete Rubber.....	\$ 10.88	0.00
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel Operator.....	\$ 13.66	0.00
Electrician.....	\$ 24.11	0.00
Flagger.....	\$ 9.49	0.00
Form Builder/Setter, Structures	\$ 10.88	0.00
Form Setter, Paving & Curb.....	\$ 9.89	0.00
Foundation Drill Operator, Truck Mounted.....	\$ 15.00	0.00
Front End Loader Operator.....	\$ 11.36	0.00
Laborer, common.....	\$ 9.34	0.00
Laborer, Utility.....	\$ 10.12	0.00
Mechanic.....	\$ 14.74	0.00
Mixer operator, Concrete Paving	\$ 15.25	0.00
Mixer operator.....	\$ 10.83	0.00
Motor Grader Operator, Fine Grade.....	\$ 15.26	0.00
Motor Grader Operator, Rough...	\$ 12.96	0.00
Oiler.....	\$ 14.71	0.00
Painter, Structures.....	\$ 11.00	0.00
Pavement Marking Machine Operator.....	\$ 11.52	0.00
Pipelayer.....	\$ 10.49	0.00
Planer Operator.....	\$ 17.45	0.00
Reinforcing Steel Setter, Paving.....	\$ 15.50	0.00
Reinforcing Steel Setter, Structure.....	\$ 14.00	0.00
Roller Operator, Pneumatic, Self-Propelled.....	\$ 9.34	0.00
Roller Operator, Steel Wheel, Flat Wheel/Tamping.....	\$ 9.60	0.00
Roller Operator, Steel Wheel, Plant Mix Pavement.....	\$ 10.24	0.00
Scraper Operator.....	\$ 9.93	0.00
Servicer.....	\$ 11.41	0.00
Sign Installer (PGM).....	\$ 14.85	0.00
Slip Form Machine Operator.....	\$ 15.17	0.00
Spreader Box operator.....	\$ 10.39	0.00
Structural Steel Worker.....	\$ 13.41	0.00
Tractor operator, Crawler Type.	\$ 11.10	0.00

Traveling Mixer Operator.....	\$ 10.04	0.00
Trenching machine operator, Heavy.....	\$ 14.22	0.00
Truck Driver Tandem Axle Semi- Trailer.....	\$ 10.95	0.00
Truck driver, lowboy-Float.....	\$ 15.30	0.00
Truck driver, Single Axle, Heavy.....	\$ 11.88	0.00
Truck driver, Single Axle, Light.....	\$ 9.98	0.00
Wagon Drill, Boring Machine, Post Hole Driller Operator.....	\$ 14.65	0.00
Welder.....	\$ 14.26	0.00
Work Zone Barricade Servicer...	\$ 11.15	0.00

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

EXHIBIT E

WORKERS' COMPENSATION

(a) Definitions:

- (1) Certificate of coverage ("certificate")- A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Division, or a coverage agreement (DWC-81, DWC-82, DWC-83, or DWC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.
 - (2) Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the City.
 - (3) Persons providing services on the project ("subcontractor" in §406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
- (b) The selected contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.
- (c) The selected contractor must provide a certificate of coverage to the City prior to being awarded the contract.
- (d) If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the selected contractor must, prior to the end of the coverage period, file a new certificate of coverage with the City showing that coverage has been extended.
- (e) The selected contractor shall obtain from each person providing services on a project, and provide to the City:
- (1) a certificate of coverage, prior to that person beginning work on the project, so the City will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (2) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- (f) The selected contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- (g) The selected contractor shall notify the City in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- (h) The selected contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Division, informing all persons providing services on the project

that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

- (i) The selected contractor shall contractually require each person with whom it contracts to provide services on a project, to:
 - (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - (2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
 - (3) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (4) obtain from each other person with whom it contracts, and provide to the contractor:
 - (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (6) notify the City in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.
- (j) By signing the contract or providing or causing to be provided a certificate of coverage, the selected contractor is representing to the City that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the Division's section of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- (k) The selected contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the City to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the City.

ATTACHMENTS

ATTACHMENT 1

RESPONDENT QUESTIONNAIRE

PART A - GENERAL INFORMATION

1. **Respondent Information:** Provide the following information regarding the Respondent.

(NOTE: Co-Respondents are two or more entities proposing as a team or joint venture with each signing the contract, if awarded. Sub-contractors are not Co-Respondents and should not be identified here. If this proposal includes Co-Respondents, provide the required information in this Item #1 for each Co-Respondent by copying and inserting an additional block(s) before Item #2.)

Respondent Name: _____

(NOTE: Give exact legal name as it will appear on the contract, if awarded.)

Principal Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No. _____ Fax No: _____

Social Security Number or Federal Employer Identification Number: _____

Texas Comptroller's Taxpayer Number, if applicable: _____

(NOTE: This 11-digit number is sometimes referred to as the Comptroller's TIN or TID.)

Business Structure: Check the box that indicates the business structure of the Respondent.

☐ Individual or Sole Proprietorship If checked, list Assumed Name, if any: _____

☐ Partnership

☐ Corporation If checked, check one: ☐ For-Profit ☐ Nonprofit
Also, check one: ☐ Domestic ☐ Foreign

☐ Other If checked, list business structure: _____

Printed Name of Contract Signatory: _____

(NOTE: This RFCSP solicits proposals to provide services under a contract which has been identified as "High Profile". Therefore, Respondent must provide the name of person that will sign the contract for the Respondent, if awarded.)

2. **Contact Information:** List the one person who the City may contact concerning your proposal or setting dates for meetings.

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No. _____ Fax No: _____

Email: _____

3. Does Respondent anticipate any mergers, transfer of organization ownership, management reorganization, or departure of key personnel within the next twelve (12) months?

Yes ☐ No ☐

4. Is Respondent authorized and/or licensed to do business in Texas?

Yes ☐ No ☐ If "Yes", list authorizations/licenses.

5. Where is the Respondent's corporate headquarters located? _____

6. **Local Operation:** Does the Respondent have an office located in San Antonio, Texas?

Yes ☐ No ☐ If "Yes", respond to a and b below:

a. How long has the Respondent conducted business from its San Antonio office?

Years _____ Months _____

b. State the number of full-time employees at the San Antonio office. _____

7. **County Operation:** If the Respondent does not have a San Antonio office, does the Respondent have an office located in Bexar County, Texas?

Yes ☐ No ☐ If "Yes", respond to a and b below:

a. How long has the Respondent conducted business from its Bexar County office?

Years _____ Months _____

b. State the number of full-time employees at the Bexar County office. _____

8. **Debarment/Suspension Information:** Has the Respondent or any of its principals been debarred or suspended from contracting with any public entity?

Yes ☐ No ☐ If "Yes", identify the public entity and the name and current phone number of a representative of the public entity familiar with the debarment or suspension, and state the reason for or circumstances surrounding the debarment or suspension, including but not limited to the period of time for such debarment or suspension.

9. **Surety Information:** Has the Respondent ever had a bond or surety canceled or forfeited?

Yes ☐ No ☐ If "Yes", state the name of the bonding company, date, amount of bond and reason for such cancellation or forfeiture.

10. **Bankruptcy Information:** Has the Respondent ever been declared bankrupt or filed for protection from

creditors under state or federal proceedings?

Yes ☐ No ☐

If "Yes", state the date, court, jurisdiction, cause number, amount of liabilities and amount of assets.

11. Provide any other names under which Respondent has operated within the last 10 years.

PART B - REFERENCES - Provide three (3) references. The references must be for projects Respondent has listed in response to Question #1 in Part C of this Respondent Questionnaire.

Reference No. 1:

Firm/Company Name: _____

Contact Name: _____ Title: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No. _____ Fax No: _____

Email: _____

Reference No. 2:

Firm/Company Name: _____

Contact Name: _____ Title: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No. _____ Fax No: _____

Email: _____

Reference No. 3:

Firm/Company Name: _____

Contact Name: _____ Title: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No. _____ Fax No: _____

Email: _____

PART C - EXPERIENCE, BACKGROUND, QUALIFICATIONS - Prepare and submit narrative responses to address the following items. If Respondent is proposing as a team or joint venture, provide the same information for each member of the team or joint venture.

1. Describe Respondent's experience relevant to the Scope of Services requested by this RFCSP. List and describe three relevant projects of similar size and scope performed over the past four years. Identify associated results or impacts of the project/work performed.
2. Indicate the number of years Respondent has been in the business of providing PRCS and GTMS, respectively. Indicate if this is the Respondent's primary line of business. If not, state the Respondent's primary line of business.
3. List all PRCS and GTMS projects that the Respondent has completed in the last four years.
4. List all PRCS and GTMS projects that Respondent has in progress as of the proposal due date. For each project listed, give the target date of completion, and the contact name, phone number, and email address for the Authority or Airport project manager.
5. Describe Respondent's specific experience with public entities clients, especially large municipalities or authorities. If Respondent has provided services for the City in the past, identify the name of the project and the department for which Respondent provided those services.
6. If Respondent is proposing as a team or joint venture or has included sub-contractors, describe the rationale for selecting the team and the extent to which the team, joint ventures and/or sub-contractors have worked together in the past.
7. Provide an organizational chart showing how the Respondent proposes to staff the project. For each position reflected on the organizational chart:
 - identify the number and professional qualifications (to include licenses, certifications, associations)
 - identify relevant experience on projects of similar size and scope
 - state the primary work assignment and the percentage of time to be devoted to the project.
8. Additional Information. Identify any other relevant information about the Respondent's qualifications.

ATTACHMENT 2
City of San Antonio Discretionary Contracts Disclosure

For use of this form, see [Section 2-59 through 2-61 of the City Code \(Ethics Code\)](#)

Attach additional sheets if space provided is not sufficient.

(1) Identify any individual or business entity³ that is a **party** to the discretionary contract:

(2) Identify any individual or business entity which is a **partner, parent** or **subsidiary** business entity, of any individual or business entity identified above in Box (1):

☐ No partner, parent or subsidiary; or

List partner, parent or subsidiary of each party to the contract and identify the corresponding party:

(3) Identify any individual or business entity that would be a **subcontractor** on the discretionary contract.

☐ No subcontractor(s); or

List subcontractors:

(4) Identify any **lobbyist** or **public relations firm** employed by any party to the discretionary contract for purposes related to seeking the discretionary contract.

☐ No lobbyist or public relations firm employed; or

List lobbyists or public relations firms:

³ A *business entity* means a sole proprietorship, partnership, firm, corporation, holding company, joint-stock company, receivership, trust, unincorporated association, or any other entity recognized by law. A sole proprietor should list the name of the individual and the d/b/a, if any.

(5) Political Contributions

List all political contributions totaling one hundred dollars (\$100) or more within the past twenty-four (24) months made to any *current* or *former member* of City Council, any *candidate* for City Council, or to any *political action committee* that contributes to City Council elections, by any individual or business entity whose identity must be disclosed under Box (1), (2), (3) or (4) above, or by the officers, owners of any business entity listed in Box (1), (2) or (3):

☐ No contributions made; If contributions made, list below:

By Whom Made:	To Whom Made:	Amount:	Date of Contribution:

(6) Disclosures in Proposals

Any individual or business entity seeking a discretionary contract with the city must disclose any known facts which, reasonably understood, raise a question⁴ as to whether any city official or employee would violate [Section 2-43 of the City Code \(Ethics Code\)](#), (“conflicts of interest”) by participating in official action relating to the discretionary contract.

☐ Party not aware of facts which would raise a “conflicts-of-interest” issue under Section 2-43 of the City Code; or

Party aware of the following facts:

This form is required to be supplemented in the event there is any change in the information before the discretionary contract is the subject of council action, and no later than five (5) business days after any change about which information is required to be filed, whichever occurs first.

Signature:	Title: Company or D/B/A:	Date:
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⁴ For purposes of this rule, facts are “reasonably understood” to “raise a question” about the appropriateness of official action if a disinterested person would conclude that the facts, if true, require recusal or require careful consideration of whether or not recusal is required.

ATTACHMENT 3

LITIGATION DISCLOSURE

Failure to fully and truthfully disclose the information required by this Litigation Disclosure form may result in the disqualification of your proposal from consideration or termination of the contract, once awarded.

1. Have you or any member of your Firm or Team to be assigned to this engagement ever been indicted or convicted of a felony or misdemeanor greater than a Class C in the last five (5) years?

Circle One

YES

NO

2. Have you or any member of your Firm or Team to be assigned to this engagement been terminated (for cause or otherwise) from any work being performed for the City or any other Federal, State or Local Government, or Private Entity?

Circle One

YES

NO

3. Have you or any member of your Firm or Team to be assigned to this engagement been involved in any claim or litigation with the City or any other Federal, State or Local Government, or Private Entity during the last ten (10) years?

Circle One

YES

NO

If you have answered “Yes” to any of the above questions, please indicate the name(s) of the person(s), the nature, and the status and/or outcome of the information, indictment, conviction, termination, claim or litigation, as applicable. Any such information should be provided on a separate page, attached to this form and submitted with your proposal.

ATTACHMENT 4

SMALL BUSINESS ECONOMIC DEVELOPMENT ADVOCACY (SBEDA) POLICY

1. **Small Business Participation**

Pursuant to Ordinance No. 2007-04-12-0396, it is the policy of the City of San Antonio to involve Small, Minority, Women and African-American Owned Business Enterprises (S/M/W/AABE) to the greatest extent feasible in the City's discretionary contracts. The intent and purpose of the policy is to ensure that S/M/W/AABE firms have the opportunity to compete for City contracts without discrimination on the basis of race, color, religion, national origin, age, sex or handicap. To accomplish the objectives of the Small Business policy, the City has established specific goals for local S/M/W/AABE participation in this contract.

2. **DEFINITIONS** related to the Small Business Program Provisions:

- a. **Small Business Program**: the Small Business Economic Development Advocacy (SBEDA) Program governed by this ordinance and managed by the SMALL BUSINESS Program Office.
- b. **Small Business Enterprises (SBE)**: a corporation, partnership, sole proprietorship or other legal entity, for the purpose of making a profit, which is independently owned and operated and which meets the U.S. Small Business Administration (SBA) size standard for a small business. All firms meeting these thresholds will be considered an SBE.
- c. **Local Business Enterprise (LBE)**: a corporation, partnership, sole proprietorship, or other legal entity which is headquartered within Bexar County for at least one year. For a branch office of a non-headquartered business to qualify as an LBE, the branch office must be located in Bexar County for at least one year and employ a minimum of ten (10) residents of Bexar County for use at the local branch office.
- d. **Minority Business Enterprise (MBE)**: a sole proprietorship, partnership, or corporation owned, operated, and controlled by a minority group member(s) who has at least 51% ownership. The minority group member(s) must have operational and managerial control, interest in capital, expertise and earnings commensurate with the percentage of ownership and be legal residents or citizens of the United States or its territories. To qualify as an MBE, the enterprise shall be headquartered in Bexar County or the San Antonio Metropolitan Statistical Area (SAMSA) for any length of time, or shall be doing business in a locality or localities from which the City regularly solicits, or receives bids on or proposals for, City contracts within the MBES's category of contracting for at least one year.
- e. **Woman Business Enterprise (WBE)**: a sole proprietorship, partnership, or corporation owned, operated and controlled by women who have at least 51% ownership. The woman or women must have operational and managerial control, interest in capital, expertise and earnings commensurate with the percentage of ownership and be legal residents or citizens of the United States or its territories. To qualify as a WBE, the enterprise shall be headquartered in Bexar County or the SAMSA for any length of time or shall be doing business in a locality or localities from which the City regularly solicits or receives bids on or proposals for, City contracts within the WBE's category of contracting for at least one year.
- f. **African-American Business Enterprise (AABE)**: a sole proprietorship, partnership, or corporation owned, operated and controlled by an African-American group member(s) who has at least 51% ownership. The African-American group member(s) must have operational and managerial control, interest in capital, expertise and earnings commensurate with the percentage of ownership and be legal

residents or citizens of the United States or its territories. To qualify as an AABE, the enterprise shall be headquartered in Bexar County or the SAMSA for any length of time or shall be doing business in a locality or localities from which the City regularly solicits, or receives bids on or proposals for, City contracts within the AABE’s category of contracting for at least on year.

3. Goals for Small Business Participation

The goals for the utilization and participation of SBE-MBE-WBE-AABE businesses on this contract are as follows:

MBE	15%
WBE	10%
AABE	3%
SBE	50%

Please note that a small business could be classified in multiple categories and thus their utilization could in theory be counted in each category of goals. For example, **Prime Contractor X** submits a proposal, which specifies that they intend to subcontract with Subcontractor A for 10% of the contract. Subcontractor A is certified by the City as an SBE and MBE (a male-owned Hispanic Business owner can be certified as an SBE and MBE). **Prime Contractor X** also intends to subcontract with Subcontractor B for 13% of the contract. Subcontractor B is certified by the City as SBE, MBE and a WBE (a female-owned Hispanic Business owner can be certified as SBE, MBE and WBE). In addition, **Prime Contractor X** also intends to subcontract 10% of the contract to Subcontractor C—a City-certified SBE, MBE and AABE (a male-owned African-American business owner can be certified as both a MBE and as an AABE Business). **Prime Contractor X** is also classified as a local SBE. **Prime Contractor X’s** compliance with the Small Business goals under this scenario would be as follows:

	City’s Small Business Goals	Prime Contractor X’s Compliance
MBE	15%	33%
WBE	10%	13%
AABE	3%	10%
SBE	50%	100%

Under this scenario, the contractor would be in full compliance with the Small Business policy.

Another example regarding compliance with the policy is as follows: **Prime Contractor Y** submits a proposal, which specifies that they intend to partner through a joint-venture agreement with Company D. Company D is certified by the City as both an SBE and MBE (a male-owned Hispanic Business—certified as an SBE and MBE). As part of their joint-venture agreement, Company D will perform on 32.5% of the contract. **Prime Contractor Y** also intends to subcontract 13% of the contract with Subcontractor F. Subcontractor F is a City certified SBE/MBE/WBE and AABE business. **Prime Contractor Y** is also classified as a local SBE.

Prime Contractor Y compliance with the Small Business goals would be as follows:

	City's Small Business Goals	Prime Contractor Y's Compliance
MBE	15%	45.5%
WBE	10%	13%
AABE	3%	13%
SBE	50%	100%

Under this scenario, the contractor would be in full compliance with the Small Business policy.

4. Good Faith Effort Required

Proposals shall include a Good Faith Effort Plan (GFEP—ATTACHED). The GFEP shall include specific documentation to utilize local, small, MBE-WBE-AABE businesses in a percentage, which equals or exceeds the above goals. **Any proposal that does not include the GFEP form shall be declared non-responsive, and excluded from consideration.**

5. MBE-WBE-AABE Certification Required

Only companies certified as MBE, WBE or AABE through the South Central Texas Regional Certification Agency (SCTRCA), or as approved by the City of San Antonio Director of Economic Development, can be applied towards the contracting goals. Proof of certification must be submitted.

6. Small Business Program Information

Interested contractors/respondents are encouraged to contact the Small Business Outreach Office for information regarding the City's Small Business Program Policy in accordance with the City's Communication Policy outlined in the solicitation document. Please call (210) 207-3900 or FAX: (210) 207-3909.

GOOD FAITH EFFORT PLAN

**NAME OF
PROJECT:** _____

BIDDER/RESPONDENT INFORMATION:

Name of Bidder/Respondent: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ E-mail Address: _____

Is your firm certified? ____ Yes ____ No (If yes, please submit Certification Certificate.)

1. List all subcontractors/suppliers that will be used for this contract. (Indicate all MBEs-WBEs-AABEs-SBEs. Use additional sheets as needed.)

NAME AND ADDRESS OF SUBCONTRACTOR'S/SUPPLIER'S COMPANY	CONTRACT AMOUNT	% LEVEL OF PARTICIPATION	MBE-WBE-AABE- SBE CERTIFICATION NUMBER

Only companies certified as an MBE, WBE, AABE or SBE by the City of San Antonio or its certifying organization can be applied toward the contracting goals. All MBE-WBE-AABE-SBE subcontractors or suppliers must submit a copy of their certification certificate through the Prime Contractor. Proof of certification must be attached to this form. If a business is not certified, please call the Small Business Program Office at (210) 207-3900 for information and details on how subcontractors and suppliers may obtain certification.

It is understood and agreed that, if awarded a contract by the City of San Antonio, the Contractor will not make additions, deletions, or substitutions to this certified list without consent of the Director of Economic

Development and Director of the appropriate contracting department (through the submittal of the Request for Approval of Change to Original Affirmed List of Subcontractors/Suppliers form).

NOTE: If MBE-WBE-AABE-SBE contracting goals were met, skip to #9.

2. If MBE-WBE-AABE-SBE contracting goals were not achieved in a percentage that equals or exceeds the City's goals, please give explanation.

3. List all MBE-WBE-AABE-SBE Listings or Directories utilized to solicit participation.

4. List all contractor associations and other associations solicited for MBE-WBE-AABE-SBE referrals.

5. Discuss all efforts aimed at utilizing MBE-WBE-AABE-SBE's.

6. Indicate advertisement mediums used for soliciting bids from MBE-WBE-AABE-SBEs.

7. List all MBE-WBE-AABE-SBE bids received but rejected. (Use additional sheets as needed.)

COMPANY NAME	MBE-WBE-AABE-SBE CERTIFICATION NUMBER	REASON FOR REJECTION

8. Please attach a copy of your company's MBE-WBE-AABE-SBE policy.
9. Name and phone number of person appointed to coordinate and administer the Good Faith Efforts of your company on this project.

10. This Good Faith Effort Plan is subject to the Economic Development Department's approval.

AFFIRMATION

I HEREBY AFFIRM THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER UNDERSTAND AND AGREE THAT, IF AWARDED THE CONTRACT, THIS DOCUMENT SHALL BE ATTACHED THERETO AND BECOME A BINDING PART OF THE CONTRACT.

SIGNATURE OF AUTHORIZED OFFICIAL

TITLE OF OFFICIAL

DATE PHONE

FOR CITY USE

Plan Reviewed By: _____

Recommendation: Approval_____ Denial_____

Action Taken: Approved_____ Denied_____

DIRECTOR OF ECONOMIC DEVELOPMENT

ATTACHMENT 5

PRICING SCHEDULE

Base Bid:

- a) Provide a proposed lump sum fee for the PRCS and GTMS as proposed by the Respondent, including all materials, labor, training and One-Year Warranty.

Total Base Bid Lump Sum: \$_____

- b) Separately note the portion of the proposed Total Base Bid Lump Sum that is dedicated to the GTMS.

GTMS Cost (included in Total Base Bid Lump Sum above): \$_____

Unit Prices: Provide unit costs that Respondent will guarantee for the following System parts and equipment up to the Date of Final Acceptance should the City elect to expand the System beyond the Technical Specifications stated in the RFCSP.

- | | | |
|----|--|---------|
| a) | TD - Ticket Dispenser | \$_____ |
| b) | CS – Fee Computer (w/monitor) | \$_____ |
| c) | POF – Full Service (Cash & Credit) | \$_____ |
| d) | POF – Credit Only | \$_____ |
| e) | PI/XS – Booth-Mounted Exit Lane Validator (Credit Accepting) | \$_____ |
| f) | PI/XS – Free-Standing Exit Lane Validator (Credit Accepting) | \$_____ |
| g) | AVI Reader – Fixed Location | \$_____ |
| h) | AVI Reader – Roadway Location | \$_____ |
| i) | Proximity Reader | \$_____ |
| j) | Control Gate | \$_____ |
| k) | LPR Camera w/Auxiliary Lighting | \$_____ |
| l) | Lane UPS | \$_____ |
| m) | LPI Handheld Computer and Charging Cradle | \$_____ |
| n) | Additional PRCS Software License | \$_____ |

- o) **Standard 10' Gate Arm** \$_____
- p) **Extended Gate Arm, specify length**
Length _____ ft. \$_____
- q) **Cantilevered Gate Arm** \$_____
- r) **Additional Maintenance Coverage** (Years 1-4 after expiration of Warranty)
\$_____ Monthly
- s) **Additional Maintenance Coverage** (Years 5-8 after expiration of Warranty)
\$_____ Monthly
- t) **AVI Transponders** (Lot of 1,000 pre-programmed) \$_____
- u) Labor Rates for additional work (outside of that defined in the RPCSP) at San Antonio International Airport prior to Date of Final Acceptance:
- 1) **Service Technician** \$_____/hour
 - 2) **Software Programmer** \$_____/hour
 - 3) **System Engineer** \$_____/hour

ATTACHMENT 6

SIGNATURE PAGE

The undersigned certifies that (s)he is authorized to submit this Proposal on behalf of the entity named below:

Respondent Entity Name

Signature: _____

Printed Name: _____

Title: _____

(NOTE: If Proposal is submitted by Co-Respondents, an authorized signature from a representative of each Co-Respondent is required. Add additional signature blocks as required.)

Co-Respondent Entity Name

Signature: _____

Printed Name: _____

Title: _____

By signature(s) above, Respondent(s) agrees to the following:

1. If Respondent is a corporation, Respondent will be required to provide a certified copy of the resolution evidencing authority to enter into the contract, if other than an officer will be signing the contract.
2. If awarded a contract in response to this RFCSP, Respondent will be able and willing to comply with the requirements set out Exhibit B, Exhibit C, Exhibit D, Exhibit D-1, and Exhibit E to the RFCSP.
3. If awarded a contract in response to this RFCSP, Respondent will be able and willing to comply with all representations made by Respondent in Respondent's Proposal and during Proposal process.
4. Respondent has fully and truthfully submitted a Litigation Disclosure form with the understanding that failure to disclose the required information may result in disqualification of proposal from consideration.
5. Respondent agrees to fully and truthfully submit a Respondent Questionnaire and understands that failure to fully disclose requested information may result in disqualification of proposal from consideration or termination of contract, once awarded.
6. To comply with the City's Ethics Code, particularly Section 2-61 that prohibits a person or entity seeking a City contract - or any other person acting on behalf of such a person or entity - from contacting City officials or their staff prior to the time such contract is posted as a City Council agenda item.

ATTACHMENT 7

PROPOSAL CHECKLIST

This checklist is to help the Respondent ensure that all required documents have been included in its proposal.

Tab in Proposal	Document	Check or Initial to Indicate Document is Attached To Proposal
	Table of Contents	
A	Respondent Questionnaire	
B	*Discretionary Contracts Disclosure	
C	Litigation Disclosure	
D	*Good Faith Effort Plan	
E	Pricing Schedule	
F	Proof of Insurability 1. Insurance Certificate 2. Broker Letter	
G	Proposal Bond (\$10,000.00) and Power of Attorney	
H	Technical Specifications 1. Agreed Technical Specifications 2. Technical Specifications Narrative	
I	*Signature Page	
J	Proposal Checklist	
	One (1) Original and Thirteen (13) Copies of the Proposal	

***Documents marked with an asterisk on this checklist require a signature. Be sure they are signed prior to submittal of proposal.**