

REQUEST FOR PROPOSALS

PARKING ACCESS AND REVENUE CONTROL SYSTEM (PARCS)

Date Issued: February 3, 2023

PUBLIC PARKING AUTHORITY OF PITTSBURGH 232 Boulevard of the Allies Pittsburgh, PA 15222

> DAVID G. ONORATO, CAPP EXECUTIVE DIRECTOR

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SUMMARY

1. INTRODUCTION

The Public Parking Authority of Pittsburgh ("Authority or PPAP") is soliciting Requests for Proposals for Professional Services (the "RFP") from qualified respondents to initially provide a complete turn-key upgrade to the existing Parking Access and Revenue Control System (PARCS) at five (5) of its ten (10) Authority-owned garage facilities. All respondents to this RFP must understand that the ultimate goal of the Authority is to eventually fund the same type of complete turn-key upgrade to the PARCS at its other remaining five (5) garage facilities in the near future so that its entire system of ten (10) garage facilities will be similarly equipped the same PARCS system technology and supported by same the vendor to be selected and awarded a contract to address the PARCS upgrades at the first five (5) Authority-owned garage facilities. In light of this objective, this RFP has been drafted to include descriptions and details about the PPAP's desired PARCS upgrades for all ten (10) of its garage facilities, even though this RFP seeks to award a contract for the scope of work and services required for only the first five (5) garage facilities.

All respondents to this RFP must declare that the same fundamental PARCS system upgrade solution (i.e., hardware, software and services, and professional support, etc.) it proposes for the first five (5) garages facilities can also be relied on and satisfactorily deployed to subsequently address the PPAP's desired upgrades to its other five (5) garages in the near future (i.e. within 2 calendars years after a PARCS contract for the first five (5) garage facilities has been awarded).

Qualified respondents are expected to demonstrate substantial experience in providing, installing, and servicing leading-edge and multi-faceted PARCS technology enhancement solutions to clients that own and operate multiple parking facilities in the United States.

2. ABOUT THIS DOCUMENT

This document is a Request for Proposals for Professional Services. It differs from an invitation for bid in that the Authority is seeking a solution, not a quotation meeting firm specifications for the lowest price. As such, the lowest price proposal does not guarantee an award recommendation. Instead, proposals will be evaluated based on the criteria set forth herein and factors such as quality, experience in the field, availability, and/or capability may figure into the evaluation.

The request for proposal process allows the Authority to negotiate with select respondents prior to awarding a contract. The Authority will thoroughly review all proposals received in a timely fashion and will utilize its best judgment when determining which respondents, if any, to schedule meetings with after receipt of all proposals. Subject to the other terms and conditions of this RFP, only those respondents that are qualified and responsible, as determined by the Authority, in its sole and absolute discretion, will be considered for an award of a contract hereunder.

3. PROJECT AND FACILITIES DESCRIPTION

A. Prospective respondents must understand the Authority's plan to implement the overall PARCS technology upgrade solution for all ten (10) of its garage facilities will be undertaken and implemented in two (2) separate project phases.

The **PHASE I PARCS Implementation Project** will entail all the equipment, systems, cloud-based FMS software, and support services required and specified herein for the following five (5) PPAP parking facilities. See the series of **Exhibits A1** through **A10** in this section of this

document for a description and an existing PARCS equipment listing for each of the following parking garage facilities that are included in the **PHASE I PARCS Implementation Project**.

- i. Fort Duquesne & Sixth Garage
- ii. Third Avenue Garage
- iii. Wood Allies Garage
- iv. Forbes Semple Garage
- v. Shadyside Garage

The Phase I PARCS Implementation Project which will address the above parking facilities will commence shortly after a PARCS vendor has been selected and a contract with the selected vendor has been executed.

The **PHASE II PARCS Implementation Project** will entail all the equipment, systems, the subsequent cloud-based FMS software connectivity, and support services that are specified for the second group of five (5) PPAP parking facilities listed below. See the series of **Exhibits B1** through **B10** in this section of this document for a description and an existing PARCS equipment listing for each of the following parking garage facilities that are included in the **PHASE II PARCS Implementation Project**.

- vi. First Avenue Garage
- vii. Grant Street Transportation Center Garage (i.e., Blue and Red Facilities)
- viii. Mellon Square Garage
- ix. Smithfield Liberty Garage
- x. Oliver Garage

The PPAP is anticipating that the same PARCS vendor selected and awarded the initial contract for the Phase I PARCS Implementation Project, will also be subsequently re-engaged to also provide the equipment, systems, cloud-based FMS software connectivity, and support services required and specified herein for this second group of five (5) PPAP parking facilities listed above and referenced as the PHASE II PARCS Implementation Project, however, proposer's are advised not to assume this anticipated action concerning the PHASE II PARCS Implementation Project by the PPAP will be a certainty.

Furthermore, it is important for all prospective respondents to this RFP to understand that the purchase and installation of PARCS upgrade solution (i.e., equipment unit quantities, system plan, cloud-based FMS software connectivity, support services, and warranty requirements, etc.) applicable to this second group of five (5) PPAP parking garage facilities might not happen, or might be postponed for up to two (2) years (i.e., 2024 or 2025).

4. SCOPE OF SERVICES/ PROJECT TIMELINE

A. Scope of Work: The scope of work described in this RFP document is organized to clearly delineate that which applies to the group of Phase I PARCS Implementation garages from the group of Phase II PARCS Implementation Project garages. A PARCS Equipment Deployment Matrix and accompanying series of PARCS Equipment Deployment Diagrams applicable to the scope of work for the PHASE I and the PHASE II PARCS Implementation Projects are included in the Appendix of this document. These appendixes are intended to provide the proposers clear breakdown of the basic PARCS hardware/device/component types, quantities, and install locations applicable to all ten (10) PPAP parking garages. For the PHASE I PARCS Implementation Project parking facilities refer to Appendixes B1 and B2.

B. Project Timeline: The actual scope, pricing, and contract terms applicable to the PHASE I PARCS Implementation Project shall be negotiated by Authority staff after the PPAP Board approves of the staff's selection of a preferred PARCS system solution and provider which is tentatively scheduled to occur on April 20, 2023. Work on the PHASE I PARCS Implementation Project will commence after the contact between the selected proposer and the PPAP has been finalized and executed. The selected PARCS contractor shall be required to the contract's scope of work by, or before December 15, 2023.

EVENT	TIME AND/OR DATE
RFP Issued	Friday, February 3, 2023
Mandatory Pre-Proposal Conference (via zoom)	Thursday, February 9, 2023 at 1:00 p.m. EST virtual via Zoom
Site Visits	Site visits will be offered when requested and must be coordinated with the Authority in advance.
Deadline for Respondents to Submit Questions and Requests for Clarification/Interpretation/ Modification Phase I ("Request for Clarification Due Date")	Thursday, February 16, 2023 by 3:00 pm EST
Projected date that the Authority will respond to Request for Clarifications for Phase I (Addendum)	Thursday, February 23, 2023 by 4:00 pm EST
Deadline for Respondents to Submit Questions and Requests for Clarification/Interpretation/ Modification Phase II ("Request for Clarification Due Date")	Thursday, March 2, 2023 by 3:00 pm EST
Projected date that the Authority will respond to Request for Clarifications Phase II (Final Addendum)	Thursday, March 9, 2023 At 4:00 pm EST
Deadline for Receipt of PARCS Proposals (Proposal Due Date)	Thursday, March 16, 2023 at 2:00 p.m. EST
Notification of Short-Listed Proposers	Tuesday, March 28, 2023
Oral Interviews for Short-listed Proposers	April 4th thru April 6th 2023
Anticipated Board Action	Thurs., April 20, 2023

5. SCHEDULE AND DEADLINES FOR RFP

6. ADMINISTRATIVE REQUIREMENTS AND RELATED INFORMATION

A. To be considered responsive, respondents must submit (a) one (1) electronic copy via email to cholt@pittsburghparking.com and tsowinski@pittsburghparking.com. This electronic copy of the proposal must be in a final PDF format and be presented as a complete document. The PPAP must receive one (1) electronic copy along with six (6) hard copies of the respondent's proposal (i.e., in a clearly marked envelope) by 2:00 PM EST, on Thursday, March 16, 2023 to the following address:

Christopher Holt, Director of Project Management Pittsburgh Parking Authority 232 Boulevard of the Allies Pittsburgh, PA 15222-1616 Project Reference: **PARCS-020323**

- B. Any proposals received after 2:00 PM EST, on Thursday, March 16, 2023 will be rejected.
- **C.** The Authority reserves the right to extend or postpone the date and time for accepting proposals through an addendum to this RFP.
- **D.** All proposals shall be signed by an individual authorized to bind the respondent and execute contracts on its behalf. A completed Contact Information Form shall be submitted with the proposal, **Exhibit C**, attached hereto, and a part hereof, details the **Contact Information Form**.
- **E.** All proposals, responses, inquiries, or correspondence relating to or in reference to this RFP, and all electronic media, reports, charts, and other documentation submitted by a respondent shall become the property of the Authority when received. Nothing submitted shall be considered confidential or proprietary.
- **F.** The Authority reserves the right to request additional information which, in the Authority's opinion, is necessary to assure that the respondent's competence, business organization, and/or financial resources are adequate to perform in accordance with this RFP and any resultant contract.
- **G.** The Authority may make such investigation as it sees fit to determine the ability of the respondent to perform the professional services specified herein, and the respondent shall furnish the Authority with all such information and data for this purpose as requested by the Authority. The Authority reserves the right to reject any proposal if the proposal submitted by, or investigation of, such respondent fails to satisfy the Authority that such respondent is properly qualified to carry out the obligations of a subsequent contract with the Authority and to satisfactorily perform the professional services specified herein.
- **H.** The Authority reserves the right to reject any or all proposals, waive any irregularities or defects in any proposal, and modify or postpone or terminate the project detailed herein in its entirety or with respect to any respondent, at any time, for any reason or no reason.
- I. All costs and expenses incurred by a respondent in the preparation and delivery of a proposal will be the sole responsibility of the respondent. The Authority will not be liable for any amounts to any respondent in any manner, under any circumstances, including without limitation, as a result of the termination of the RFP process.
- J. The receipt of proposals or other documents by respondents during any stage of the process will in no way obligate the Authority to enter into any contract with any respondent or make the Authority liable for any respondent costs. This RFP is a solicitation only and is not intended to be nor should it be construed to be an offer to enter into any contract or other agreement.
- K. No respondent, team member, employee, servant, agent, advisor, consultant, or representative of that respondent may communicate with any other respondent, team member, employee, servant, agent, advisor, consultant, or representative of any other respondent about the preparation of proposals. Each proposal shall be prepared without any connection, knowledge, comparison of information, or arrangement with any respondent, team member, employee, servant, agent, advisor, consultant, or representative of any other respondent. Each respondent is responsible to ensure that its participation in this RFP process is conducted fairly and without collusion or fraud.

7. CLARIFICATION OF REQUIREMENTS, ADDENDA & MODIFICATIONS

A. Any respondent in doubt as to the true meaning of any part of this RFP may request clarification, interpretation, and/or modification thereof from the Contact Person (as

hereinafter defined). At the request of the respondent, or in the event the Authority deems the response to the request to be substantive, the clarification, interpretation, and/or modification shall be made by an addendum. **Requests for clarification, interpretation, and/or modification concerning the parking facilities included in PHASE I PARCS Implementation Project must be submitted in writing to the Contact Person by Thursday, February 16, 2023, by 3:00 PM EST** and any request received after this deadline will not be considered. Responses to the Requests for Clarification concerning the PHASE I PARCS Implementation Project will be in the form of an Addendum on **Thursday, February 23, 2023, by 4:00 PM EST.**

Requests for clarification, interpretation, and/or modification concerning the parking facilities included in PHASE II PARCS Implementation Project must be submitted in writing to the Contact Person by Thursday, March 2, 2023, by 3:00, PM EST, and any request received after this deadline will not be considered. Responses to the Requests for Clarification concerning the PHASE II PARCS Implementation Project will be in the form of an Addendum on Thursday, March 9, 2023, by 4:00 PM EST.

- B. Inquiries regarding the RFP and all requests for clarification, interpretation, or modification of the RFP must be directed in writing via e-mail, to Christopher Holt at <u>cholt@pittsburghparking.com</u> and <u>tsowinski@pittsburghparking.com</u> (the "Contact Persons").
- **C.** If any alleged errors are noted in the RFP, a respondent should immediately notify the Contact Person and, if confirmed, an addendum shall be issued.
- **D.** The Authority will not accept telephone calls or any other forms of communication pertaining to this RFP, except as set forth in this Section 6.
- **E.** This RFP may be updated, supplemented, or amended at any time by the Authority. Any changes, additions, deletions, or clarifications to the RFP will be made by addendum issued by the Authority.
- **F.** Any addendum issued by the Authority shall be considered part of the RFP.
- **G.** Addenda will be sent via e-mail to the contact representative listed on the sign in sheet from the mandatory pre-proposal meeting. The Authority will make reasonable efforts to notify respondents in a timely manner of modifications to the RFP. Notwithstanding the foregoing, each respondent shall be responsible for ensuring that its proposal reflects all addenda issued by the Authority prior to the proposal due date deadline.
- **H.** Respondents must officially acknowledge in their proposal the receipt of every addendum issued by the Authority relating to this RFP.

8. CONTRACT REQUIREMENTS

Each respondent, in its proposal, must agree to be bound by the following requirements, should it be awarded a contract about this RFP:

A. Except for the gross negligence or willful misconduct of the Authority, the respondent shall indemnify and hold harmless the Authority, its successors and assigns, from and against any and all loss, damage, and liability and for any and all claims for damages on account of or by reason of bodily injury, including death, which may be sustained or claimed to be sustained by any person, including employees of the respondent, and from and against any and all damages to property, including the property of the Authority, its successors and assigns, caused by or arising out of or claimed to have been caused by or to have arisen out of any act or omission

in connection with the contract respecting this RFP, whether or not occasioned by the negligence of the Authority, respondent, or either party's agents, servants or employees. For purposes of enforcing this provision, the respondent hereby waives any or all immunities it may have under the Pennsylvania Workers' Compensation Act or otherwise. This indemnification obligation shall survive termination or expiration of the contract.

B. Respondent shall maintain, always until the termination of the contract, the following insurance.

ТҮРЕ	AMOUNT
Workers Compensation	Statutory (in conformance with Pennsylvania's Worker's Compensation Act)
Contractor's Public Liability including Bodily Injury and Property Damage	Per Occurrence \$1,000,000.00
Automotive Property Damage and Bodily Injury	Per Occurrence \$1,000,000.00
Professional Errors & Omissions	Per Occurrence \$1,000,000.00
Umbrella Liability	Annual Aggregate \$1,000,000.00
Cyber Liability – 1 st and 3 rd Party Coverage	Per Occurrence \$1,000,000.00

- **C.** Respondent shall include the Authority as an "Additional Insured" on the insurance described in this Section 7.
- **D.** Respondent waives all rights of subrogation against the Authority, its subsidiaries, agents, officers, directors, and employees for recovery of damages to the extent covered by any insurance applicable to the project and will secure appropriate waivers from the insurers providing coverage applicable to the project.
- **E.** Insurance will be written through financially responsible companies with an A.M. Best rating of A-VII or better.
- **F.** By specifying the above minimum insurance requirements, the Authority does not represent that coverage and limits will necessarily be adequate to protect the respondent, and such coverage limits will not be deemed as a limitation of the respondent's obligations hereunder.

9. PRE-PROPOSAL MEETING

A mandatory pre-proposal meeting via ZOOM will be held virtually at **1:00 PM EST, Thursday, February 9, 2023.** Prospective RFP respondents who wish to participate in the meeting are required to pre-register via email to <u>cholt@pittsburghparking.com</u> and <u>tsowinski@pittsburghparking.com</u> - meeting log-in instructions will be provided at that time.

Site visits by prospective respondents will be offered upon request however the scheduling of such visits must be pre-arranged. Proposers will have coordinated their visit with Authority.

10. PROPOSAL REQUIREMENTS

Generally, your proposal should describe in detail how you will provide a cloud-based PARCS upgrade solution and demonstrate how your approach and plan for delivering all the necessary hardware, software, and services to fulfill the performance specifications and scope of work detailed in this RFP. While the performance specifications and scope of work in this RFP represent what Authority believes to be a complete

representation of its needs and desires for this project, the proposers' response to this RFP must include all products, materials, devices, software, and services deemed to be required for successful operation and performance of their PARCS upgrade solution.

Proposers are required to provide an itemized listing and explanations on any and all cases whereby their proposed PARCS solution fails to comply in any way with the performance specifications and scope of work detailed in this RFP, and why it does so. Barring the inclusion of any such non-compliance declarations, the Authority will assume the proposers' submission to be fully compliant with this PARCS RFP and the proposers' will be held accountable for the same.

Proposers are encouraged to offer additional **Optional, or Alternative PARCS Program Element(s)** that will improve their PARCS proposal and better address the Authority's goals and desired outcomes for the project. Any such optional or alternative elements must be fully described, quantified, and specified. The benefits of such optional, or alternative program elements must be fully explained, and all added, or saved costs (i.e., including applicable unit acquisition, installation, and ongoing services costs) must be provided. Proposers must present the above information pertaining to their proposed optional or alternative PARCS project element(s) on **EXHIBIT G** titled as **PROPOSED OPTIONAL, OR ALTERNATIVE PARCS PROGRAM ELEMENT(S)**. Proposers may add pages to EXHIBIT G as needed, but all added pages must be numbered and labeled as "EXHIBIT G continued".

11. EVALUATION AND SELECTION

Each proposal should be in the format set forth below and will be rated on a 100-point scale. Rating will be according to the degree to which a respondent demonstrates their capacity to satisfy the requirements set forth herein. Please organize your proposal so that it addresses each of the following items. Each proposal should include the following parts, which will be assigned the indicated point values:

A. Cover Page, Letter & Contact Information Form (Total Possible Score: 5 points):

Please prepare a cover page similar to the one shown at the beginning of this RFP. Following the cover page include a cover letter that briefly identifies and describes the respondent's company and team. A principal or officer authorized to execute contracts or other similar documents must sign the letter. Name, mailing address, phone, fax, email, and website address should be included. The contact information form shall be filled out and signed by the contact representative.

Include a statement that the respondent's proposed solution will meet the requirements outlined in the RFP and/or a list of exceptions to the requirements in the RFP. (Note that the Authority reserves the right to reject any proposal containing such exceptions, or to require modifications before acceptance.)

If necessary, include a statement indicating what if any information contained in the proposal is proprietary information that should be kept confidential.

Include a statement that the Respondent's entire proposal, including proposed per garage and per unit pricing and fees for products, installations, services, and ongoing fees applicable to the garage facilities included in the **PHASE I PARCS Implementation Project** and applicable to the garage facilities included in the **PHASE II PARCS Implementation Project** will also remain valid for a 12 month period from the date of the contract is executed.

The Contact Information Form shall be filled out and signed by the proposer's authorized representative. Reference **Exhibit C Contact Information Form.**

B. Prior Experience & Qualifications (Total Possible Score: 10 points):

Prior work experience in designing, implementing, and supporting other turnkey cloud-based PARCS

systems for other organizations of comparable size and scope of business as outlined in this RFP; included but not limited to:

- i. Number of years of experience in this field
- ii. References: Provide at least three (3) different municipality or public parking authority client references that the Proposer has provided, installed, and is currently supporting the same types of products and services described in this RFP. Include the name, title, and contact information of each reference (i.e., a person with direct knowledge and oversight of the PARCS products and services the proposer provided) with each municipality or public parking authority client.
- iii. If applicable, provide descriptions, locational details, and client contact information for any similar PARCS cloud-based solution(s) within the greater Pittsburgh metropolitan area.
- iv. Total number of currently installed and supported cloud-based PARCS systems solutions of a similar nature to the subject PARCS project.
- v. Identify and describe the experience and role of each of the principal project team members the Proposer will be tasked with key responsibility for the planning, implementation, civil work coordination, PPAP staff training, and ongoing account service support. Include a team organization chart, and resumes.

C. Understanding of Project and Implementation (Total Possible Score: 10 Points):

Describe your company's project management approach to implementing your proposed PARCS system solution. This RFP provides outlines of each location for placement of desired systems along with specific minimal technical specs for each. Refer to the PHASE I PARCS Implementation Project Appendixes A1 and A2 and the PHASE II PARCS Implementation Project Appendixes B1 and B2 in this document. At a minimum, please describe the following:

- i. General project understanding and implementation plan, schedule, and project approach, including the following processes: education, development, approval and site surveying, any necessary programming, and an integration plan with our current infrastructure and software platforms.
- ii. Program items that include, but are not limited to, photos, drawings, etc. for the processes listed above.
- iii. Project management approach, communication strategies, and process for gaining Authority approval on necessary items.
- iv. Availability to expedite a PARCS system technology installation turnaround to meet the Authority's project timeline.

D. System Operation Solution and Management (Total Possible Score: 10 Points):

Provide a flow-chart diagram and brief narrative that describe the parking transaction processing of the proposed cloud-based PARCS System Solution. Include an explanation of how the Authority's transition to the Proposer's cloud-based solution will be beneficial from the standpoint of customer service, facility operations, data management/analytics, support service, maintenance, and procurement cost and ongoing account charges and the same differs from that which applies to the Authority's existing "on-premised" PARCS system. At a minimum, please describe the following:

- i. Licensing, if any
- ii. Networking infrastructure requirements for required cloud connectivity.

- iii. Setup requirements and day-to-day administration.
- iv. Transaction processing speed and latency.
- v. Cloud-based system security and connectivity redundancy
- vi. PARCS system software updates and system bug fixes
- vii. Enhancements to customer and client-facing processes
- viii. System and Facility Performance Analytics (i.e., Historical, Real-Time, and Predictive)
- ix. Technical and policy support for potential problems experienced by the Authority staff.
- x. Annual system maintenance and auditing

E. Customer/User Interface and Experience_(Total Possible Score: 10 Points):

Describe how the cloud-based PARCS system technology solution will offer existing and potential users and service providers (i.e., transient, monthly lease, special event parkers, validation program participants, and pay-by-cell service entities) new features to improve business operations. Please describe the features and ease of administration, etc. of the following experience elements. Provide screenshots of the actual process whenever possible:

- i. User account setup
- ii. User account management
- iii. Technical support process for system issues
- iv. System functionality and automation setup processes

Describe, the features and functionality to be available, and how users will be able to achieve Web interface navigation or mobile device connectivity.

F. Existing Infrastructure Configuration (Total Possible Score: 10 Points):

Describe how the vendor will work with the Authority for the configuration of its existing infrastructure. At a minimum, please describe the following:

- i. How the vendor will make network equipment configuration changes to support the respondent's proposed solution.
- ii. Provide a network topology diagram as an example of the proposed vendor solution.

G. Fee Proposal & Pricing Structure (Total Possible Score: 15 Points):

The Authority seeks clear and unambiguous pricing from the Proposers for all costs pertaining to the procurement, installation, training/activation, ongoing support services, and warranty coverage for their proposed PARCS solution. Pricing must be provided as described and formatted on the **EXHIBIT D PARCS SYSTEM PRICE & FEE PROPOSAL FORMS.** The Authority acknowledges that the descriptions of some line items on these forms are presented in a general way and might be considered by some respondents to be incomplete. In response to this possible concern, all respondents are instructed to provide line-item prices that will include the costs of any omitted, but necessary subcomponents, features, parts, etc. that are essential for the line item to work or perform as intended in the context of the respondent's proposed PARCS solution, and as specified in **SECTION 11 12 15** of this document.

Prices are required for all ten (10) of the subject parking facilities (i.e., PHASE I PARCS Implementation Project and PHASE II PARCS Implementation Project PARCS). Proposers are hereby instructed to fill in the dollar volumes per line item and per facility, as set forth on each of the EXHIBIT D forms without deviation, alteration, or footnoting of any kind, as the Authority wants to be able to create a clear side-by-side costs comparison of all proposer's submissions. To this end, prospective respondents will be provided an Excel file version of the price forms so proposers can fill in the dollar values in yellow highlighted cells on the EXHIBIT D forms. **Respondents must include both a printed and electronic version (i.e., Excel file) of their completed EXHIBIT D forms with their proposal submission.**

Each Proposer is hereby put on notice that, if awarded the Contract, Proposers will be required to pay to the workers employed in the performance of the Contract the general prevailing minimum wage rates, including contributions for employee benefits. For more information related to this requirement refer to the table below. Refer to **APPENDIX C** for applicable **Prevailing Wages Rates**.

H. <u>Value Added Items (Total Possible Score: 5 points):</u>

Provide a detailed list of value-added items that the respondent can offer (at no additional cost) that would enhance the goods or services, provided by the Authority, requested in this RFP.

I. <u>MBE/WBE Participation (Total Possible Score: 5 points)</u>:

The Authority is committed to providing equal employment opportunities to minorities and women and equal opportunities for business growth and development to minority and women entrepreneurs. To that end, the Authority requires that all contractors and subcontractors performing work for the Authority demonstrate a good faith effort to obtain the participation of minority and women business enterprises in the work to be performed for the Authority and to employ minorities and women during the performance of the work. It is the Authority's objective to obtain minority and women's participation in its contracts with the goal being 25% of the contract amount expended for minority participation and 10% of the contract amount expended for women's participation. The Authority promotes the full utilization of subcontracting activities to ensure a successful Minority and Women's Participation Plan. Provide tangible evidence that your organization has made a good-faith effort to satisfy these goals. Respondents can contact the Pennsylvania Unified Certification Program (PAUCP) at their website www.paucp.com for listings of certified professional services. Provide the required MBE/WBE Participation information on the form supplied by the Authority herein as **Exhibit F** of this RFP.

J. System Warranty & <u>Service Support Program (Total Possible Score: 10 points)</u>:

Respondent shall provide a detailed service agreement outlining levels of severity and their perspective response time.

L. Product Demonstration and Oral Interview (Total Possible Score: 10 points):

If selected for presentation a possible ten points can be awarded based on your performance.

11. EVALUATION AND SELECTION

- **A**. The Authority will form a selection committee (the "Selection Committee") to review and recommend proposals. The Board of Directors of the Authority has the final authority in its sole and absolute discretion, for authorizing a contract with the Authority.
- **B**. A shortlist of respondents may be scheduled for a structured oral presentation or interview and for discussions regarding best and final offers. Any such presentations shall be at no cost to the Authority. The Authority also reserves the right to visit the respondent's facilities. The

oral interview may be recorded or videotaped by the Authority. At the end of the oral presentation/interview process, if any, any shortlisted respondents may be required to submit revised proposals to be reviewed again in accordance with Section 9 and this Section 10. Subject to the other terms and conditions of this RFP, the successful respondent will be recommended for contract negotiation.

- **C.** The Authority anticipates executing a contract with the successful respondent within ten (10) days following the award of the contract.
- **D**. Respondents may be required to provide samples of their proposed products and materials and/or provide a demonstration of their PARCS Facility Management System (FMS) software platform for the selection committee.

END OF SUMMARY SECTION

EXHIBIT A1: EXISTING GARAGE DESCRIPTIONS (PHASE I PARCS IMPLEMENTATION PROJECT)

Ft. Duquesne & Sixth Garage 120 Sixth Street Pittsburgh, PA 15222



The Ft. Duquesne & Sixth Garage is in the downtown Pittsburgh area located on the corner of Ft. Duquesne Boulevard and Sixth Street. This six level self-park facility is comprised of one-half below grade basement level and five above-grade parking decks. The facility has a lined capacity of 920 spaces.

The facility provides entry access from both Ft. Duquesne Boulevard (one-way traffic east) and Sixth Street (two-way traffic north and south). Three entry lanes with PARCS equipment are situated inside the Sixth Street side of the facility. One entry lane accesses the Basement level of the facility and two entry lanes access upper levels 2 through 6 of the facility. The garage also has one entry lane equipped with PARCS equipment on the Ft. Duquesne Boulevard side of the facility. Vehicles exit the facility also via either Ft. Duquesne Boulevard or Sixth Street. There is a total of three exit lanes from the facility. Two exit lanes with PARCS equipment access the Sixth Street side of the garage and one exit lane accesses Ft. Duquesne Boulevard.

The garage lobby is located on the ground floor of the facility. The garage lobby is equipped with three (3) payon-foot stations (two cash/credit and one credit only). The garage's cashier office is equipped with two (2) fee computers.

In the heart of Pittsburgh's cultural district, the Ft. Duquesne & 6th Garage serves a variety of theater and concert venues including Heinz Hall, Benedum Center, and the Byham and O'Reilly theaters. The garage is also near several restaurants in the immediate area. The garage also provides variable event rate parking for two main sports venues including PNC Park (Pittsburgh Pirates) and Heinz Field (Pittsburgh Steelers). The garage also partners with the Renaissance Hotel, located directly across Sixth St. by providing exclusive basement parking for their valet parking program through a commercial lease agreement.

EXHIBIT A2: EXISTING PARCS EQUIPMENT DESCRIPTIONS (PHASE I PARCS IMPLEMENTATION PROJECT)

Ft. Duquesne & Sixth Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Readers	HID Maxi Prox	9	2009	Incl. Basement Area
Entry Stations	Zeag Orion XR LE	4	2009	Credit Card In/Out
Exit Stations	Zeag Orion XR	3	2009	Credit Card In/Out
Gate Box with Articulating Arm	Magnetic Parking Pro Microdrive	5		
Gate Box with Straight Arm	Magnetic Parking Pro Microdrive	3		Incl. Basement Area
Pay-On-Foot Stations	Zeag Orion XR APS	2	2009	Cash & Credit
	Zeag Orion XR APZG1	1	2015	Credit Card Only
Fee Computers	Zeag XR Pioneer POS with Touch Screen	1		Cash/Credit Card
Remote Fee Display, Validator, Receipt Printer and Drawer		1	2016	
Integrated "FULL" Sign		2		
Remote Validator	Zeag ValiMate (4- Button)	1	2013	Renaissance Hotel
PARCS Management Software	WebParcs 7.x	1	2015	
Intercom Stations	Commend	2		
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT A3: EXISTING GARAGE DESCRIPTIONS (PHASE I PARCS IMPLEMENTATION PROJECT)

Third Avenue Garage 238 Fourth Avenue Pittsburgh, PA 15222



The Third Avenue Garage is in the downtown Pittsburgh area located between Wood Street and Stanwix Street. This six level self-park facility is comprised of one below grade basement level and five above-grade parking decks. The facility has a lined capacity of 575 spaces and offers valet-assist parking on levels two through five.

The facility provides entry access from both Third Avenue (one-way traffic north) and Fourth Avenue (one-way traffic south). Two entry lanes with PARCS equipment are situated on the Fourth Avenue side of the facility. Vehicles exit the facility also via either Third Avenue or Fourth Avenue. Two exit lanes with PARCS equipment are situated on the Third Avenue side of the garage. The basement level is a reserved lease parking level nested via PARCS entry equipment.

The garage lobby is located on the ground floor of the facility. The garage lobby is equipped with two (2) pay-on-foot stations and one (1) fee computer.

The Third Avenue Garage is located adjacent to the PPG Place complex and the Market Square area, which contains a variety of restaurants, outdoor cafes, outdoor entertainment, and other events. The garage is also situated adjacent to the PPG Plaza and Wintergarden. In addition, the garage serves the Point Park University student and faculty patrons as well as various downtown residential customers.

EXHIBIT A4: EXISTING PARCS EQUIPMENT DESCRIPTIONS

(PHASE I PARCS IMPLEMENTATION PROJECT)

Third Avenue Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Readers	Indala Flex Pass	6	2004	1 - Reader on Secured Bike Area
Multi-throat Entry Stations	Amano AGP2031	2	2004	Intercoms required
Multi-throat Exit Stations	Amano AMG4570	2	2004	Credit Card Acceptance and intercoms required
Gate Box with Articulating Arm	Amano AGP1711	4	2004	
Gate Box with Articulating Arm	Amano AGP1711	1	2012	
Pay-On-Foot Stations	Amano AGP7811	2	2009	Intercoms required
Fee Computers	Amano AGP5200	1	2004	
Validator	Amano AGP5610	1	2004	
Cash Drawer	M-S EP-125KL	1	2004	
Receipt Printer	Citizen IDP 3210	1	2004	
Remote Fee Display	Amano AGP 5910	1	2004	
Integrated "FULL" Sign	Signal-Tech	2	2017	
PARCS Management Software	iParcProfessional - Build 19	1	2017	
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT A5: EXISTING GARAGE DESCRIPTIONS (PHASE I PARCS IMPLEMENTATION PROJECT)

Wood Allies Garage 228 Boulevard of the Allies Pittsburgh, PA 15222



The Wood Allies Garage is in the downtown Pittsburgh area located between Wood Street and Market Street. This ten level self-park facility is comprised of ten above-grade parking decks and has a lined capacity of 542 spaces.

The facility provides entry access from the Boulevard of the Allies only. One entry lane equipped with redundant PARCS equipment is situated at the bottom and top of the entry lane ramp. Vehicles exit the facility via either Boulevard of the Allies or First Avenue. Two exit lanes with PARCS equipment are situated on the Boulevard of the Allies side of the garage and one exit lane equipped with PARCS equipment is situated on the First Avenue side of the facility.

The garage lobby is located on the ground floor of the facility. The garage lobby is equipped with two (2) pay-on-foot stations and one (1) fee computer.

The Wood Allies Garage is situated adjacent to the man offices of the Pittsburgh Parking Authority (PPA) and supports PPA employee and fleet vehicle parking among other things. It serves parkers from Point Park University as well as many other smaller office buildings. As with the Third Avenue Garage, the garage is situated in close proximity to the PPG Plaza and Wintergarden and Market Square area and also provides parking for events at Point State Park.

EXHIBIT A6: EXISTING PARCS EQUIPMENT DESCRIPTIONS

(PHASE I PARCS IMPLEMENTATION PROJECT)

Wood Allies Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Readers	Indala Flex Pass	5	2004	
Multi-throat Entry Stations	Amano AGP2031	2	2004	2 nd Station Redundant. Intercoms required
Multi-throat Exit Stations	Amano AMG4570	3	2004	Credit Card Acceptance. Intercoms required
Gate Box with Articulating Arm	Amano AGP1711	5	2004	
Pay-On-Foot Station	Amano AGP7800	2	2004	Intercoms required
Fee Computers	Amano AGP5200	1	2004	
Validator	Amano AGP5610	1	2004	
Cash Drawer	M-S EP-125KL	1	2004	
Receipt Printer	Citizen IDP 3210	1	2004	
Remote Fee Display	Amano AGP 5910	1	2004	
Integrated "FULL" Sign	Unknown	1	2004	
PARCS Management Software	iParcProfessional - Build 19	1	2017	
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT A7: EXISTING GARAGE DESCRIPTIONS (PHASE I PARCS IMPLEMENTATION PROJECT)

Forbes Semple Garage 210 Meyran Avenue Pittsburgh, PA 15213



The Forbes Semple Garage is in the Oakland area of Pittsburgh located just off Forbes Avenue between Meyran Avenue and Semple Street. This eight level self-park facility is comprised of ½ level below grade and eight above-grade parking decks. The facility has a lined capacity of 449 spaces.

The facility provides entry access from the Meyran Avenue only. One entry lane with redundant PARCS equipment is situated at the middle of the entry lane ramp. Vehicles exit the facility via Meyran Avenue only via two exit lanes with PARCS equipment. The basement level is a reserved lease parking level nested via PARCS entry and exit equipment.

The garage lobby is located on the ground floor of the facility. The garage lobby is equipped with two (2) pay-on-foot stations and one (1) fee computer.

Due to its location in the heart of Oakland's Business and University District, the Forbes Semple Garage serves visitor and employee parking for the University of Pittsburgh, as well as the UPMC hospital system. The garage is one block from Forbes Avenue, which has a variety of shops, restaurants, specialty stores and businesses. The garage also provides Pitt sporting event parking overflow for the Petersen Events Center.

EXHIBIT A8: EXISTING PARCS EQUIPMENT DESCRIPTIONS

(PHASE I PARCS IMPLEMENTATION PROJECT)

Forbes Semple Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Reader	Indala Flex Pass	5	2004	
Multi-throat Entry Station	Amano AGP2011	1	2009	2 nd Station Redundant. Intercoms required
Multi-throat Entry Station	Amano AGP2031	1	2004	Intercoms required
Multi-throat Exit Station	Amano AMG4570	2	2004	Credit Card Acceptance. Intercoms required
Gate Box with Articulating Arm	Amano AGP1711	4	2004	
Pay-On-Foot Station	Amano AGP7800	2	2004	
Fee Computer	Amano AGP5200	1	2004	
Validator	Amano AGP5610	1	2004	
Cash Drawer	M-S EP-125KL	1	2004	
Receipt Printer	Citizen IDP 3210	1	2004	
Remote Fee Display	Amano AGP 5910	1	2004	
Integrated "FULL" Sign	Unknown	1	2004	
PARCS Management Software	iParcProfessional - Build 19	1	2017	

EXHIBIT A9: EXISTING GARAGE DESCRIPTIONS (PHASE I PARCS IMPLEMENTATION PROJECT)

Shadyside Garage 714 Bellefonte Street Pittsburgh, PA 15232



Shadyside Garage is in the Shadyside area of Pittsburgh area located on Bellefonte St. between Walnut Street and Ellsworth Avenue. This five level self-park facility is comprised of one below grade basement level and four above-grade parking decks. The facility has a lined capacity of 208 spaces.

The facility provides both entry and exit access from Bellefonte Street only. The garage is equipped with one entry lane and two exit lanes. The entry lane is equipped with redundant PARCS equipment. Vehicles exit the facility via two exit lanes with PARCS equipment.

The garage lobby is located on the ground floor of the facility. The garage lobby is equipped with two (2) pay-on-foot stations and one (1) fee computer.

This garage is situated one block from the Walnut Street Business District and provides convenient additional off-street parking for the various gourmet restaurants and specialty retailers. The garage also supports many local events during the year such as the Shadyside Arts Festival.

EXHIBIT A10: EXISTING PARCS EQUIPMENT DESCRIPTIONS

(PHASE I PARCS IMPLEMENTATION PROJECT)

Shadyside Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Reader	Amano AMT570	4	2011	Interior of Entry/Exit Stations
Multi-throat Entry Station	Amano AMG2570	2	2011	2 nd Station Redundant. Intercoms required
Multi-throat Exit Station	Amano AMG4570	2	2011	Credit Card Acceptance. Intercoms required
Gate Box with Articulating Arm	Amano AMG1750	3	2011	
Pay-On-Foot Station	Amano AGP7811	2	2009	Intercoms required
Fee Computer	Amano AGP5200	1	2004	
Validator	Amano AGP5610	1	2004	
Cash Drawer	M-S EP-125KL	1	2004	
Receipt Printer	Citizen IDP 3210	1	2004	
Remote Fee Display	Amano AGP 5910	1	2004	
Integrated "FULL" Sign	Unknown	1	2004	
PARCS Management Software	iParcProfessional - Build 19	1	2017	

EXHIBIT B1: EXISTING GARAGE DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

Mellon Square Garage 500 Smithfield Street Pittsburgh, PA 15222



The Mellon Square Garage is in the heart of Pittsburgh encompassed by Smithfield Street, Oliver Avenue, William Penn Place, and Sixth Avenue directly under the historic Mellon Square Park. The garage is open 24 hours a day, 7 days per week and is a below grade self-park facility. It is comprised of six parking decks. The facility has a lined capacity of 978 spaces and has historically provided valet-assist parking to increase parking capacity.

The facility provides entry/exit access from both Oliver Avenue and Sixth Avenue. The Oliver Avenue lanes entry are equipped with one (1) lane of PARCS entry equipment and two (2) lanes of exit equipment. The Sixth Avenue side of the facility is equipped with a total of three lanes with two entry and two exit lanes of PARCS equipment (the middle lane is entry/exit reversible). All lanes into and out of the facility are located on the ground floor/street level.

The garage lobby is located on the Second floor of the facility. The garage lobby is equipped with three (3) pay-on-foot stations (two cash/credit and one credit card only). The garage's cashier office is equipped with one (1) fee computer.

The garage is located across the street from three (3) Hotels (Omni Wm. Penn, Hotel Monaco, and Embassy Suites). The garage partners with the Omni Wm. Penn Hotel for their valet parking program and hotel guest parking validation needs. The garage is also near several restaurants in the immediate area.

EXHIBIT B2: EXISTING PARCS EQUIPMENT DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

Mellon Square Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Readers	HID Maxi Prox	7	2013	
Entry Stations	Zeag Orion XR LE	4	2013	Credit Card In/Out
Exit Stations	Zeag Orion XR	3	2013	Credit Card In/Out
Gate Box with Articulating Arm	Magnetic Parking Pro Microdrive	7	2010	
Pay-On-Foot Stations	Zeag Orion XR	2	2010	Cash & Credit
	Zeag APCZ1	1	2015	Credit Card Only
Fee Computers	Zeag ZG POS with Touch Screen	1	2018	Cash/Credit Card
Remote Fee Display, Validator, Receipt Printer and Drawer	Zeag ZG POS with Touch Screen	1	2018	
Integrated "FULL" Sign		2		
Remote Validator	Zeag ValiMate (4- Button)	1	2013	Omni Wm. Penn Hotel
PARCS Management Software	WebParcs 7.0.3.1	1	2017	
Intercom Stations	Commend	7		
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT B3: EXISTING GARAGE DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

Smithfield Liberty Garage 629 Smithfield Street Pittsburgh, PA 15222



The Smithfield Liberty Garage is in the downtown Pittsburgh area located between Smithfield Street and Liberty Avenue. This eight level self-park facility is comprised of a one-half below grade basement level and eight above-grade parking decks. The facility has a lined capacity of 587 spaces.

The facility provides entry/exit access from both Smithfield Street and Liberty Avenue and Third Avenue. The Smithfield Street is equipped with one singular entry lane and one singular exit lane from the Second floor of the facility. Both lanes are equipped with PARCS equipment. The Liberty Avenue side of the facility is equipped with one (1) entry lane to the nested Basement level of the facility (lease only), one entry lane to the upper levels and one exit lane just inside the facility. All lanes are equipped with PARCS equipment.

The garage lobby is located on the ground floor of the facility. The garage lobby is equipped with three (3) pay-on-foot stations (two cash/credit and one credit card only) and one (1) fee computer.

The Smithfield Liberty Garage is located adjacent to the Pittsburgh's Cultural District including venues such as the Benedum, Heinz Hall and O'Reilly theaters. The garage is also situated the several restaurant and boutique shops located on Penn Ave, Liberty Avenue and Smithfield Street. In addition. The garage has a bridge on its Sixth floor and provides various charge and validation parking programs to the exclusive Duquesne Club.

This facility also provides Electric Vehicle (EVSE) on the fourth floor of the facility. The area is equipped with four (4) Dual Connector Level II Commercial EV Chargers and is signed/marked for eight electric vehicles.

EXHIBIT B4: EXISTING PARCS EQUIPMENT DESCRIPTIONS

(PHASE II PARCS IMPLEMENTATION PROJECT)

Smithfield Liberty Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Readers	HID Maxi Prox	5	2005	
Entry Stations	Zeag ZG	2	2016	Credit Card In/Out
Exit Stations	Zeag ZG	2	2016	Credit Card In/Out
Gate Box with Articulating Arm	Magnetic Parking Pro Microdrive	6	2016	
Pay-On-Foot	Zeag APSZG1	2	2015	Cash & Credit
Stations	Zeag APC	1	2015	Credit Card Only
Fee Computers	Zeag ZG POS with Touch Screen	1	2015	Cash/Credit Card
Remote Fee Display, Validator, Receipt Printer and Drawer	Zeag ZG POS with Touch Screen	1	2015	
Remote Validator	Zeag ValiMate (4-Button)	1	2013	Duquesne Club
PARCS Management Software	WebParcs 7.0.3.1	1	2017	
Intercom Stations	Commend	4		
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT B5: EXISTING GARAGE DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

First Avenue Garage 600 First Avenue Pittsburgh, PA 15219



The First Avenue Garage is located on the fringe of the downtown Pittsburgh at the intersection of First Avenue and Municipal Courts Parkway. This six level self-park facility is comprised of six above-grade parking decks and has a lined capacity of 1,243 spaces.

The facility provides entry/exit access from Municipal Courts Parkway. The facility has a total of seven (7) lanes equipped with PARCS equipment. Lane 1 accesses the Ground level of the garage only and is equipped with PACRS entry lane equipment. Entry lanes 2 and 3 provide access to the upper levels 2 through 6 and are equipped with PARCS equipment. Lane 4 is a reversible lane equipped with both entry and exit lane PARCS equipment and provides access to and from Levels 2 through 6. Lanes 5 and 6 are equipped with exit lane PARCS equipment and provide access from Levels 2 through 6. Finally, Lane 7 is equipped with exit lane PARCS equipment and provide access from the Ground level only.

The main lobby is located on the ground floor of the facility and is equipped with a total of three (3) pay-on-foot stations (two cash/credit and one credit card only) and one (1) fee computer. There are also two (2) additional pay-on-foot stations located in the garage; one (1) on the Ground floor of the Northeast stairwell (cash/credit) and one (1) located on the Third floor T-Station Access Level (credit card only).

EXHIBIT B6: EXISTING PARCS EQUIPMENT DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

First Avenue Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Entry Stations	Zeag Orion XR LE	4	2014	Credit Card In/Out
Exit Stations	Zeag Orion XR LX	4	2014	Credit Card In/Out
Gate Box with Articulating Arm	Magnetic Parking Pro Microdrive	6	2016	
Pav-On-Foot Stations	Zeag Orion XR	3	2014	Cash & Credit
-,	Zeag Orion XR	2	2014	Credit Card Only
Fee Computers	Zeag ZG POS with Touch Screen	1	2016	Cash/Credit Card
Remote Fee Display, Validator, Receipt Printer and Drawer	Zeag ZG POS with Touch Screen	1	2016	
PARCS Management Software	WebParcs 7.0.3.1	1	2017	
Intercom Stations	Commend	8		
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT B7: EXISTING GARAGE DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

Grant Street Transportation Center Garage 11th Street Pittsburgh, PA 15222



The Grant Street Transportation Center is located on the fringe of the Central Business District and the Strip District area of Pittsburgh bordered by 11th Street, Liberty Avenue, 12th Street and Penn Avenue. The Center is comprised of two separate garages. The Blue Garage is a seven-level self-park garage with a lined capacity of 563 spaces. The Red Garage is also a seven-level self-park garage with 428 spaces. The total capacity of the Center is 991 spaces.

The Blue facility provides entry and exit access on 12th Street only. This garage has one entry lane with redundant PARCS equipment and one exit lane equipped with redundant PARCS equipment. The main lobby to the Blue Garage is located on the Ground Floor of the facility with access on Penn Avenue. The lobby is equipped with two (2) pay-on-foot stations (two cash/credit) and one (1) fee computer.

The Red facility provides entry and exit on Penn Avenue only. This garage has one entry lane with redundant PARCS equipment and one exit lane equipped with redundant PARCS equipment. The Red Garage lobby is located on the ground floor of the facility with access on the corner of 11th Street and Liberty Avenue. The garage lobby is also equipped with two (2) pay-on-foot stations and one (1) fee computer.

The Grant Street Transportation Center has two separate commercial tenants, Greyhound Bus Lines and Enterprise Car Rental. Enterprise Car Rental's space is in the lobby of the Blue Garage. The garage partners with Enterprise Car Rental for the parking of their rental vehicles in the Blue Garage.

EXHIBIT B8: EXISTING PARCS EQUIPMENT DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

Grant Street Transportation Center Garage

Equipment Type	Manufacturer/Model	Qty	Year	Comments
Proximity Card Readers	HID Maxi Prox	8	2008	
Entry Stations	Zeag Orion PE	4	2008	Credit Card In/Out
Exit Stations	Zeag Orion PA	4	2008	Credit Card In/Out
Gate Box with Articulating Arm	Magnetic MIB-30	8	2008	
Pay-On-Foot Stations	Zeag PK Orion	4	2008	Cash & Credit
Fee Computers	Zeag ZG POS with Touch Screen	1	2015	Cash/Credit Card
Remote Fee Display, Validator, Receipt Printer and Drawer	Zeag ZG POS with Touch Screen	1	2016	
PARCS Management Software	WebParcs 7.0.3.1	1	2017	
Intercom Stations	Commend	8		
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010	

EXHIBIT B9: EXISTING GARAGE DESCRIPTIONS (PHASE II PARCS IMPLEMENTATION PROJECT)

Oliver Garage 301 Fifth Avenue Pittsburgh, PA 15222



The Oliver Garage is in downtown Pittsburgh off Oliver Avenue underneath Piatt Place Building. This three-level below grade self-park facility is comprised of 476 lined spaces has historically provided valet-assist parking on the Level 1 of the garage to increase parking capacity.

The facility provides both entry and exit access from Oliver Avenue only. The garage is equipped with a total of three (3) lanes; one entry lane, one reversible lane, and one exit lane. All lanes are equipped with PARCS equipment.

The garage lobby is located on Level 1 of the facility. The garage lobby is equipped with two (2) pay-on-foot stations and one (1) fee computer.

The Piatt Place Building tenants include two restaurants, McCormick and Schmick's and The Capital Grille. The site also houses The Goddard School. The garage partners with The Capital Grille and Goddard School for their customer validation needs.

EXHIBIT B10 EXISTING PARCS EQUIPMENT DESCRIPTIONS

(PHASE II PARCS IMPLEMENTATION PROJECT)

Oliver Garage

Equipment Type	Manufacturer/Model	Qty Year		Comments				
Proximity Card Readers	HID Mini Prox	2	2011	Incl. Ext. Oliver Stairwell Access Door				
Entry Stations	Zeag Orion XR LE	2	2013	Credit Card In/Out				
Exit Stations	Zeag Orion XR LX	2	2013	Credit Card In/Out				
Gate Box with Articulating Arm	Magnetic Pro	4	2013					
Pay-On-Foot Stations	Zeag XR Orion	4	2011	Cash & Credit				
Fee Computers	Zeag ZG POS with Touch Screen	1	2018	Cash/Credit Card				
Remote Fee Display, Validator, Receipt Printer and Drawer	Zeag ZG POS with Touch Screen	1	2018					
PARCS Management Software	WebParcs 7.0.3.1	1	2017					
Intercom Stations	Commend	4						
ParkPGH	Pittsburgh Cultural Trust – Real Time Occupancy Web Site	1	2010					



EXHIBIT C

CONTACT INFORMATION FORM

PROJECT TITLE: _____

DUE DATE: ______ISSUE DATE: _____

____13301 DATE

DESCRIPTION: Proposal to provide ______to the Public Parking Authority of Pittsburgh.

The undersigned hereby offers to finish and deliver the articles or services as specified in strict accordance with the RFP and scope of proposal, all of which are made a part of this request. All correspondence will be issued to the undersigned listed as the contact representative.

FULL LEGAL COMPANY NAME:								
STREET ADDRESS:								
CITY, STATE AND ZIP CODE:								
AUTHORIZED SIGNATURE:								
PRINT NAME:								
TITLE OF AUTHORIZED SIGNER:								
TELEPHONE #:								
FAX #:								
E-MAIL ADDRESS:								
(OF CONTACT REPRESENTATIVE)								

EXHIBIT D

PARCS SYSTEM PRICE & FEE PROPOSAL FORM #1

PHASE I PARCS IMPLEMENTATION PROJECT											
PPAP PARCS Project Procurement Primary PARCS Equipment List	Per Unit Pricing	Units	FT. DUQUESNE & SIXTH GARAGE	Units	THIRD AVENUE GARAGE	Units	WOOD ALLIES GARAGE	Units	FORBES SEMPLE GARAGE	Units	SHADYSIDE GARAGE
Barrier Gates with Circuit Boards & Counters	\$0	8	\$0	6	\$0	5	\$0	5	\$0	3	\$0
Straight Gate Arms	\$0	3	\$0	0	\$0	3	\$0	0	\$0	2	\$0
Articluated Gate Arms	\$0	5	\$0	6	\$0	2	\$0	5	\$0	1	\$0
Directional Vehicle Detection Loops	\$0	8	\$0	6	\$0	5	\$0	5	\$0	4	\$0
Proximity Card Readers Free-Standing Long-Distance	\$0	2	\$0	2	\$0	0	\$0	2	\$0	0	\$0
w/ Pedestal and Mounting Bracket Push-to-Talk Intercom w/ Free-Standing Pedestal Audia Instruction macronian and call formation to collular	\$0	2	\$0	2	\$0	0	\$0	2	\$0	0	\$0
Addomstraction messaging and can jowariang to centary Entry Lane (Ticket Dispenser) Station/convertible to Pay-on-Entry w/ built-in Push to Talk Intercom, QR Code Scanner, Built-in Proximity Reader, Receipt Printer, High-Def. Camera, Color Messaging Display Screen, w/ insert and NIF EMV P2PE Credit Card Industra	\$0	4	\$0	2	\$0	2	\$0	2	\$0	2	\$0
Exit Lane (Credit Card Only/Transaction Verflier) Station w/ built-in Push to Talk Intercom, QR Code Scanner, built-in Proximity Reader, High-Def, Comera, Color Messaging Display Screen, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	3	\$0	2	\$0	3	\$0	2	\$0	2	\$0
POF (Credit Card Only) Station w/ built-in Push to Talk Intercom, QR Code Scanner, High-Def. Camera, Color Messaging Display Screen, Receipt Printer, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	1	\$0	1	\$0	1	\$0	1	\$0	5	\$0
POF (Cash and Credit Card) Station w/ built-in Push to Talk Intercom, QR Code Scanner, High-Def. Camera, Color Messaging Display Screen, Receipt Printer, Bill Acceptor, Bill Recycler, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	2	\$0	1	\$0	1	\$0	1	\$0	1	\$0
Facility Cashier Workstation FMS Linked Desktop, Laptop, Tablet PC and/or Cellular Device as appropriate (Please specify that which is to be provided)	\$0	5	\$0	1	\$0	1	\$0	1	\$0	1	\$0
Facility Cashier Workstation Peripherals w/ Cash Drawer, Receipt Printer, QR Code Reader, Ticket Encoder and Intercom Unit	\$0	5	\$0	1	\$0	1	\$0	1	\$0	1	\$0
Facility Signage Facility Full Sign (Garage Exterior)	\$0	2	\$0	2	\$0	1	\$0	1	\$0	1	ŚO
Direction Lane Signage	\$0	0	\$0	4	\$0	0	\$0	0	\$0	0	\$0
Variable Message Signage	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
Pedestrian Safety Alert Warning Device	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Facility Management Software License (per workstation)	\$0	2	\$0	2	\$0	1	\$0	1	\$0	1	\$0
Recommended Spare Parts (Specify Per Unit Price for One (1) of Each Item Below)											
(1) EV Credit Card Readers (for In-Lane Stations)	\$0										
(1) EV Credit Card Readers (POF Stations)	\$0										
(1) Bill Recycler (for POF Stations)	\$0										
(1) Articulated Gate Arms	\$0										
(1) Straight Aluminum Gate Arms	\$0										
(1) POF Bill collection vault	\$0										
	\$0										
	\$0										
Recommended Consumables											
Tickets (the equivalent of 5000 per garage facility)	\$0										
Proximity Cards (500 Per Garage Facility)	\$0										
Receipt Paper	\$0										
	\$0										
	\$0										
	\$0				,				,		
ACQUISITION SUBTOTAL (provide individual per Facility) INSTALL, CIVIL, ELEC. & FREIGHT (Provide per facility cost per			Ş0		Ş0		#REF!		Ş0		\$0
line items below)											
Installation, Implementation, Set-up, Training			\$0		\$0		\$0		\$0		\$0
			\$0		\$0		\$0		\$0		\$0
Liectrical (if applicable)			\$0		\$0		\$0		\$0		\$0
			\$0		\$0		\$0 #DEC!		\$0		\$0 \$0
TOTAL: PHASE I PARCS IMPLEMENTATION PROJECT			Ş0		\$0		#REF!		Ş0		Ş0

It is the responsibility of the PARCS vendor to ensure all formulas are correct.

EXHIBIT D continued

PARCS SYSTEM PRICE & FEE PROPOSAL FORM #2

PHASE II PARCS IMPLEMENTATION PROJECT											
PPAP PARCS Project Procurement Primary PARCS Equipment List	Per Unit Pricing	Units	FIRST AVENUE GARAGE	BLUE/ RED Units	GRANT ST. TRANS. CTR. GARAGES	Units	MELLON SQUARE GARAGE	Units	SMITHFIELD LIBERTY GARAGE	Units	OLIVER GARAGE
Barrier Gates with Circuit Boards & Counters	\$0	8	\$0	8	\$0	7	\$0	6	\$0	4	\$0
Straight Gate Arms	\$0	8	\$0	8	\$0	0	\$0	0	\$0	0	\$0
Articluated Gate Arms	\$0	0	\$0	0	\$0	7	\$0	6	\$0	4	\$0
Directional Vehicle Detection Loops	\$0	8	\$0 \$0	8	\$0 \$0	7	\$0 \$0	6	\$0	4	\$0 ¢0
Proximity Card Readers Free-Standing Long-Distance	ŞU	0	ŞU	0	ŞU	0	ŞU	2	\$0	0	ŞU
W/ Pedestal and Mounting Bracket Push-to-Talk Intercom w/ Free-Standing Pedestal Audio Instruction messaging and call forwarding to cellular	\$0	0	\$0	0	\$0	0	\$0	2	\$0	0	\$0
Entry Lane (Ticket Dispenser) Station/convertible to Pay-on-Entry w/ built-in Push to Talk Intercom, QR Code Scanner, Built-in Proximity Reader, Receipt Printer, High-Def. Camera, Color Messaging Display Screen, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	4	\$0	4	\$0	3	\$0	2	\$0	2	\$0
Exit Lane (Credit Card Only/Transaction Verifier) Station w/ built-in Push to Talk Intercom, QR Code Scanner, built-in Proximity Reader, High-Def. Camera, Color Messaging Display Screen, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	4	\$0	4	\$0	4	\$0	2	\$0	2	\$0
POF (Credit Card Only) Station w/ built-in Push to Talk Intercom, QR Code Scanner, High-Def. Camera, Color Messaging Display Screen, Receipt Printer, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	2	\$0	2	\$0	1	\$0	1	\$0	1	\$0
POF (Cash and Credit Card) Station w/ built-in Push to Talk Intercom, QR Code Scanner, High-Def. Camera, Color Messaging Display Screen, Receipt Printer, Bill Acceptor, Bill Recycler, w/ insert and NIF EMV P2PE Credit Card Reader	\$0	1	\$0	2	\$0	1	\$0	1	\$0	1	\$0
Facility Cashier Workstation FMS Linked Desktop, Laptop, Tablet PC and/or Cellular Device as appropriate (Please specify that which is to be provided)	\$0	1	\$0	2	\$0	1	\$0	1	\$0	1	\$0
Facility Cashier Workstation Peripherals w/ Cash Drawer, Receipt Printer, QR Code Reader, Ticket Encoder and Intercom Unit	\$0	1	\$0	2	\$0	1	\$0	1	\$0	1	\$0
Facility Signage Facility Full Sign (Garage Exterior)	\$0	0	\$0	2	\$0	2	\$0	2	\$0	1	\$0
Direction Lane Signage	\$0	1	\$0	0	\$0	1	\$0	0	\$0	1	\$0
Variable Message Signage	\$0	1	\$0	2	\$0	2	\$0	2	\$0	1	\$0
Pedestrian Safety Alert Warning Device	\$0	0	\$0	1	\$0	0	\$0	0	\$0	1	\$0
Facility Management Software License (per workstation)	\$0	1	\$0	2	\$0	1	\$0	1	\$0	1	\$0
Recommended Spare Parts (Specify Per Unit Price for One (1) of Each Item Below)											
(1) EV Credit Card Readers (for In-Lane Stations)	\$0										
(1) EV Credit Card Readers (POF Stations)	\$0										
(1) Bill Recycler (for POF Stations)	\$0										
(1) Articulated Gate Arms	\$0										
(1) Straight Aluminum Gate Arms	\$0										
(1) POF Bill collection vault	\$0										
	\$0										
	\$0										
Recommended Consumables											
Tickets (the equivalent of 5000 per garage facility)	\$0										
Proximity Cards (500 Per Garage Facility)	\$0										
Receipt Paper	\$0										
	\$0										
	\$0										
	\$0										
ACQUISITION SUBTOTAL (provide individual per Facility)			\$0		\$0		#REF!		\$0		\$0
INSTALL, CIVIL, ELEC. & FREIGHT (Provide per facility cost per line items below)											
Installation, Implementation, Set-up, Training			\$0		\$0		\$0		\$0		\$0
			\$0		\$0		\$0		\$0		\$0
Electrical (IT applicable)			\$0		\$0		\$0		\$0		\$0
TOTAL: PHASE II PARCS IMPLEMENTATION PROJECT			\$0 \$0		\$0 \$0		\$0 #REF!		\$0 \$0		\$0 \$0

It is the responsibility of the PARCS vendor to ensure all formulas are correct.
EXHIBIT D continued

PARCS SYSTEM PRICE & FEE PROPOSAL FORM #3

	Per Unit	IMPLFI	PHASE I PARCS	PHASE II PARCS		
PPAP PARCS Project Procurement	Pricing/ Monthly Costs	Units	Units PPAP ADMIN. OFFICE		PPAP ADMIN. OFFICE	
Master Intercom Station Audio Instruction messaging and call forwarding to cellular	\$0	1	\$0	0	\$0	
pnones Facility Management Software License (Per Workstation to be Located in PPAP Admin. Office)	\$0	6	\$0	0	\$0	
			\$0		\$0	
Facility Management Command Center Software						
Revenue Control Programming and Reporting Software	\$0	1	\$0	1	\$0	
Access Control Programming	\$0	1	\$0	1	\$0	
Count Control Programming and Reporting Software	\$0	1	\$0	1	\$0	
Credit Card Programming and Reporting Software	\$0	1	\$0	1	\$0	
Reporting Software	\$0	1	\$0	1	\$0	
Pay on Entry Software	\$0	1	\$0	1	\$0	
NFC Credit Card Feature (Apple, Google, Samsung)	\$0	1	\$0	1	\$0	
Validation Software Programing and Reporting Module	\$0	1	\$0	1	\$0	
Customer Facing Mobile Payment Software	\$0	1	\$0	1	\$0	
Rate Push Software	\$0	1	\$0	1	\$0	
Call Center Software	\$0	1	\$0	1	\$0	
Debit Program Software (Individual and Group)	\$0	1	\$0	1	\$0	
Advanced Carpool (Individual and Group)	\$0	1	\$0	1	\$0	
Count API - Park Pittsburgh, and Other Pay-by-Cell Apps	\$0	1	\$0	1	\$0	
2nd Party Interface to reservation services (ParkMobile, ParkWhiz, Spot Hero)	\$0	1	\$0	1	\$0	
ANNUALIZED RECURRING MONTHLY COSTS			\$0		\$0	

It is the responsibility of the PARCS vendor to ensure all formulas in theese FEE/PRICE PROPOSAL FORMS are correct

EXHIBIT D continued

PARCS SYSTEM PRICE & FEE PROPOSAL FORM #4

PHASE I PARCS IMPLEMENTATION PROJECT											
PPAP PARCS Project Procuremen On-Going PARCS Operations Costs	Per Unit Pricing	Units	FIRST AVENUE GARAGE	BLUE/ RED Units	GRANT ST. TRANS. CTR. GARAGES	Units	MELLON SQUARE GARAGE	Units	SMITHFIELD LIBERTY GARAGE	Units	OLIVER GARAGE
On-Going Cloud/Network Connectivity (specify Monthly or Annually)	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
Other On-Going System Operations Costs (itemize and specify as all Monthly or Annually)		1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
ON-GOING SYSTEM OPERATING COST TOTAL			\$0		\$0		\$0		\$0		\$0

PHASE II PARCS IMPLEMENTATION PROJECT											
PPAP PARCS Project Procurement On-Going PARCS Operations Costs	Per Unit Pricing	Units	FIRST AVENUE GARAGE	BLUE/ RED Units	GRANT ST. TRANS. CTR. GARAGES	Units	MELLON SQUARE GARAGE	Units	SMITHFIELD LIBERTY GARAGE	Units	OLIVER GARAGE
On-Going Cloud/Network Connectivity (specify Monthly or Annually)	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
Other On-Going System Operations Costs (itemize and specify as all Monthly or Annually)		1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
	\$0	1	\$0	1	\$0	1	\$0	1	\$0	1	\$0
ON-GOING SYSTEM OPERATING COST TOTAL			\$0		\$0		\$0		\$0		\$0

It is the responsibility of the PARCS vendor to ensure all formulas in theese FEE/PRICE PROPOSAL FORMS are correct

EXHIBIT D continued

RCS PRICE FORM #5

	Per Unit	IMPLE	PHASE I PARCS MENTATION PROJECT	PHASE II PARCS IMPLEMENTATION PROJECT		
PPAP PARCS Project Procurement	Monthly Costs	Units	PPAP ADMIN. OFFICE	Units	PPAP ADMIN. OFFICE	
Extended Warranty on PARCS (After MFG's based						
warranty covering first 24 months)						
Year 3	\$0	1	\$0	1	\$0	
Year 4	\$0	1	\$0	1	\$0	
Year 5	\$0	1	\$0	1	\$0	
Year 6	\$0	1	\$0	1	\$0	
Year 7	\$0	1	\$0	1	\$0	
Pay on Entry Software	\$0	1	\$0	1	\$0	
NFC Credit Card Feature (Apple, Google,			\$0		\$0	
Samsung)	\$0	1		1		
Validation Software Programing and Reporting Module	\$0	1	\$0	1	\$0	
Customer Facing Mobile Payment Software	\$0	1	\$0	1	\$0	
Rate Push Software	\$0	1	\$0	1	\$0	
Call Center Software	\$0	1	\$0	1	\$0	
<u>_</u>	\$0	1	\$0	1	\$0	
Debit Program Software (Individual and Group)						
Advanced Carpool (Individual and Group)	\$0	1	\$0	1	\$0	
Count API - Park Pittsburgh, and Other Pay-by- Cell Apps	\$0	1	\$0	1	\$0	
2nd Party Interface to reservation services (ParkMobile, ParkWhiz, Spot Hero)	\$0	1	\$0	1	\$0	
ANNUALIZED RECURRING MONTHLY			\$0		\$0	

It is the responsibility of the PARCS vendor to ensure all formulas are correct

EXHIBIT E

MWDBE PARTICIPATION COMMITMENT FORMS

IBE/WBE SOLICITATION STATEMENT
ESPONDENT:
DDRESS:
ELEPHONE:
ONTACT PERSON:
ROPOSAL FOR:

List the Certified MBE/WBE firms that you have solicited and those you have commitments to in reference to your Proposal. If the respondent's firm is an MBE/WBE, indicate that information on this provided form and attach a copy of your Certification Certificate.

Prepared	by:									
			М	W		Date Contacted		Type of Transaction		
Company Name &			В	В	Contact				Sub-	
Certification	Address	Telephone	E	E	Person	Mail	Phone	Joint Venture	Contractor	

EXHIBIT E continued

MINORITY AND WOMEN BUSINESS COMMITMENT STATEMENT

PROJECT: _____

RESPONDENT WILL UTILIZE THE SERVICES OF SUBCONTRACTOR(S) AND/OR SUPPLIER(S) FOR THE FOLLOWING CATEGORIES:

Subcontractor/	Certification Type		Certification # and Certifying		Estimated Dollar	
Supplier Name	MBE	WBE	Agency	Scope of Work	Amount	

I, the undersigned do hereby certify that this form contains no misrepresentations or falsifications, omissions, or concealment of material fact, and that the information given by me is true and complete to the best of my knowledge and belief. I am aware that all information on this form is subject to investigation.

Respondent's Name	 	
By (Signed)	 	
Title	 	
Date	 	

EXHIBIT F

PROPOSED OPTIONAL, OR ALTERNATIVE PARCS PROGRAM ELEMENT(S)

END OF SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. The extent of work referenced in this section is specified as follows:
 - 1. Cloud-Based Parking Control System (PCS): Fully operational Parking Access and Revenue Control System (PARCS) (the "System") including, but not limited to the following:
 - a. Facility Management System (FMS): Including, but not limited to, the Cloud-Based Server, Workstations, and Software.
 - Central PARCS Operations: FMS must be capable of being used to manage multiple parking venues as indicated in Part II of this Section. See System Configuration below for information pertaining to the venues to be managed. FMS must be capable of being expanded to manage multiple parking venues as indicated in Part II of this Section.
 - 2. System Design: Includes all hardware and software design as necessary for a fully-functional system complying with the requirements of this Section.
 - 3. Comply with Section 11 12 15 requirements for the following:
 - a. Field coordination on site prior to installation through Final Completion.
 - b. PARCS Operational and technical training of Owner's personnel.
 - c. Other Electrical Work for the complete parking control system.
- B. Cloud-based Parking Control System (PCS)
 - 1. The intent is to have a cloud-based PCS and eliminate the need for on-premise servers and have all Integrated Parking Equipment (Section 11 12 15) communicate with the PCS via a secures, high-bandwidth, low-latency TCP/IP connections and still have equivalent facilitation to the premise-based hardware, workstations, and software controlled by the FMS specified this Section.
 - a. Proposal must clearly indicate how all FMS data will be securely isolated and accessed by the Owner. All project-specific data must remain exclusively owned and controlled by the Owner.
 - b. Proposal must clearly indicate the extent of required networking and internet access infrastructure required for optional system performance and what portions of same are included in the Proposal.
 - c. Proposal must clearly indicate monthly or annual recurring charges associated with the cloud-based System services.
 - d. Proposal must clearly indicate that industry-leading cloud services providers (e.g., Amazon Web Services (AWS), Microsoft Azure, etc.) shall be chosen as the foundation of the proposed cloud-based FMS solution.

1.2 RELATED WORK

A. General: Comply with Section 11 12 15 requirements as applicable to the Summary above.

1.3 DEFINITIONS

A. General: See Section 11 12 15.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Comply with Section 11 12 15 requirements.
- 1.5 SUBMITTALS
 - A. General: Comply with Section 11 12 15 requirements.
- 1.6 QUALITY ASSURANCE
 - A. General: Comply with Section 11 12 15 requirements.
- 1.7 DELIVERY, STORAGE, AND HANDLING
 - A. General: Comply with Section 11 12 15 requirements.
- 1.8 COORDINATION AND SCHEDULING
 - A. General: Comply with Section 11 12 15 requirements.
- 1.9 LICENSING
 - A. General: Comply with Section 11 12 15 requirements

1.10 WARRANTY

- A. General: Comply with Section 11 12 15 requirements.
- 1.11 MAINTENANCE AND SERVICE
 - A. General: Comply with Section 11 12 15 requirements as applicable to the Summary above.

PART 2 - PRODUCTS

- 2.1 MANUFACTURERS
 - A. System and associated equipment required in this Section must be provided by the same manufacturer as for the Integrated Parking Control Equipment provided per Section 11 12 15.

2.2 SYSTEM CONFIGURATION

- A. General
 - 1. The primary components of the PARCS upgrade solution must consist of a Facility Management System (FMS) and any interconnected (networked) system equipment required to maintain System operations as specified in this Section.
 - a. System must be microprocessor-based, online, and must run on embedded real-time firmware.
 - b. System must automatically collect data activity reporting, access and space control, and equipment programming.
 - c. System must be capable of maintaining operations across multiple facilities.
 - 2. The System must consist of IBM-PC compatible (PC) software, computers, and peripherals.
 - a. System software must provide automatic facilities monitoring, supervision, and remote control of peripheral equipment from one or more selected locations.

- b. At a minimum, primary System computers must consist of a Central Computer and a System Workstation. System communication with all peripheral equipment distributed across multiple facilities must be capable from either the Central Computer or the System Workstation via switching hardware. See the EQUIPMENT Article below for specific equipment requirements.
- 3. System Design
 - a. Minimum requirements for System design are as follows:
 - 1) Comply with ANSI and ISO standards.
 - 2) The System must be state-of-the-art.
 - 3) The System must have mass validation capabilities.
 - 4) System must accommodate remote System access and management by users via a Web-Access Portal (internet).
 - 5) The System must be compatible with all of the Authority's existing Pay by Cell (PbC) vendor applications including ParkMobile, PaybyPhone, Meter Feeder, and Flowbird.
 - b. All software must be configurable in the field by qualified personnel.
 - c. All time-dependent functions must utilize real-time clock synchronization with a single central system clock.
 - d. Protect against interference or damage by lightning or other electrical influence; include fuse, over-voltage protection, flash-over protection, and line filter.
 - e. System must accommodate the functionality of all Integrated Parking Control Equipment. See Section 11 12 15 for required Theory of Operation requirements.
- B. Facility Management System (FMS)
 - 1. General: The Facility Management System must be cloud-based with centralized connectivity to PARCS lane equipment, payment stations, management workstations, peripherals, and software. System software must provide automatic facilities monitoring, supervision, and remote control of peripheral equipment at all locations, multiple selected locations, or at a single location. The FMS must automatically collect data from peripheral equipment for revenue and activity reporting (as applicable), access and space control, ticket tracking, and equipment programming.
 - 2. System Programming: The system must be completely PC programmable. Programming to all System equipment must be capable of being performed remotely through the cloudbased FMS software. All programming and/or reprogramming operations must be logged by the System. All System programming must be via user ID log-in and restricted by state-ofthe-art password protection.
 - 3. System Redundancy: The cloud-based FMS must support 3 levels of redundancy to support ongoing operation in case of a network or equipment failure. PARCS equipment must perform its redundancy workflow as the following:
 - a. Level 1 Server level All Equipment is online and up and running. If server connection failure occurs, the management of the PARCS equipment field devices must switch automatically to be managed by the parking system main controller.
 - b. Level 2 Main controller level PARCS field equipment is up and running and managed by the parking system main controller. All transactions and calculations are performed normally, including credit card acceptance. Credit card acceptance must depend on an online connection with a credit card server and credit card clearing house. Once the connection to the parking system server is re-established, all transaction data must pass to the FMS software.

- c. Level 3 Lane controlling level Equipment must be managed in an offline mode. If a total network failure occurs, the management of the lane devices will be done independently by each equipment controller. Ticket dispensing, Fee calculations, cash transactions, and monthly entry & exit must perform normally. Once the connection to the main controller and the parking system server is re-established, all transaction data must pass to the FMS software.
- 4. FMS Subsystems: The FMS must be enabled with various Subsystems as required to provide the functionality required by this Section. At a minimum, the FMS must be enabled with the following subsystems*:
 - a. System Programming
 - b. System Configuration
 - c. System Monitoring (Access Control and/or Revenue Control as applicable).
 - d. Monitoring of Occupancy
 - e. Monitoring and Control of System Equipment
 - * See SUBSYSTEMS CONFIGURATION below for detailed requirements.
- 5. System Expandability: The FMS must be capable of having additional parking venues added to the management interface. The FMS must be capable of accommodating the future expansion of the Authority's existing network of facilities. See Part I of this Section for additional information.
- 6. System Access: FMS must accommodate no less than six (6) simultaneous administrative log-ins (users) per garage. All System access must be via user ID log-in and restricted by state-of-the-art password protection (strict security protocols).
 - a. FMS must provide password protection to restrict access to individual functions of the FMS and each subsystem to authorized users.
- 7. System Communications
 - a. FMS standard communication must operate using a computer network. See Section 11 12 15 for computer network specifications.
 - b. FMS remote access must operate using TCP/IP connection access and a web browser. See Section 11 12 15 for local web-access connection specifications.
- 8. Cloud-Based PCS/Client Mode: The FMS must-have modes for client operation.
- 9. GUI Menus: User interface by means of a series of graphical menus that must meet or exceed the following functional requirements:
 - a. Main System Menu: A Main System Menu must allow access to the Subsystem Menus. Distribute software functionality amongst the Subsystem Menus.
 - 1) At a minimum, the following options must be available on the Main System Menu:
 - a) Access, Counts, Revenue, Ticket Tracking, Reports, Utilities, Sign On/Off, and Help.
 - b) A Menu Bar must be displayed to facilitate point-and-click operation.
 - c) A Status Bar must display the current time, date, and the user currently signed onto the system.
 - b. Subsystem Menus: Each subsystem indicated above must have a Subsystem Menu. Provide additional sub-menus as required to provide complete system access.
 - 1) At a minimum, the following Subsystem Menu functionality must allow authorized users to:

- a) Set up readers, program access groups and holidays, set up alarms, read card transactions, search for cards, and access and reconfigure the cardholder database;
- b) Access differential and non-resettable counts, monitor lanes in realtime, and remotely control lanes;
- c) Set up sites, program devices, and read fee transactions from devices;
- d) Set up system options and passwords, change the screen layout or search for a specific help topic.
- c. Reporting Sub-Menus: Each Subsystem Menu must include a Report Sub-Menu or equivalent functionality to facilitate the reporting and exporting of system data. The FMS must allow the user to display several reports on-screen at one time, facilitating report comparisons.
 - 1) The standard database format of the FMS report generator must allow users to generate standard and customized reports.
 - a) User must be able to organize data by performing up to three sorts on the available fields.
 - b) User must be able to select the fields to be displayed in the report. The available fields must appear in a list, allowing the user to select and deselect fields.
 - c) User must be able to specify report parameters for one or more of the fields by entering a number range, selecting the option from a dropdown list, selecting the desired option button, or by entering the appropriate text.
 - d) The report must display on a screen to allow the user to reformat/modify the order of report information, enter a report title or accept the default, edit column headings, move column headings, delete columns, and modify the width of columns.
 - e) User must be able to specify the report output destination: screen, printer, or file. The user must be able to preview the report, scroll through report pages, zoom a page, send a report to the printer, export a report to a wide variety of spreadsheet, database, word processing, and ASCII formats, and send a report to an E-mail address.

10. System Notifications

- a. The FMS must include a Notifications Feature to alert programmed recipients via email or text when user-designated alerts are triggered by a Subsystem Menu or any automatic reporting feature within the System.
- b. Features must at a minimum:
 - 1) Use a designated email system to send pertinent information to management anywhere.
 - 2) Allow the owner to program email/text alerts to be sent to individuals or groups.
 - 3) Email reports automatically by programmable time of day and recurrence, whether daily, weekly, monthly, or yearly, and a recurrence period range or a number of occurrences.
 - 4) Allow a hierarchal organization structure of groups to tailor the Notification service to the parking facility's specific needs.

- 5) Generate alarms programmed by the authorized user, including but not limited to canceled transactions, devices offline, back-out events with or without a ticket, and gate failures.
- 6) Provide the administrator the ability to select a report format as HTML, PDF, or another format supported by the report generator.
- C. Subsystems Configuration
 - 1. General: All Subsystems enabled within the FMS must comply with the System Programming requirements indicated above. If the FMS designer proposes Subsystems in addition to those indicated below, Submittal requirements must include a detailed description of the Subsystem purpose and user accommodation.
 - 2. System Programming Subsystem (SPS)
 - a. SPS must utilize the FMS designer's standard configuration.
 - 3. System Configuration Subsystem (SCS)
 - a. SPS must utilize the FMS designer's standard configuration.
 - 4. System Monitoring Subsystem (SMS)
 - a. Access Control
 - 1) The SMS must control access from one or more card readers, provide information on Cardholders (i.e. Lease Parkers), and display usage. The SMS must provide the following access control features (at a minimum):
 - a) Grant or deny cardholder access based on user-defined parameters,
 - b) Allow individual cards to be programmed to include a maximum of six access groups and one-holiday access group,
 - c) Provide the user the ability to set anti-passback by reader to None, True Soft, True Hard, Timed Soft, or Timed Hard,
 - d) Allow the user the ability to assign access groups, status, and mode for a single card, a group of cards, or all cards,
 - e) Provide a quick search option of the cardholder database for a specific card number to view, add, and edit access cards and stored card information,
 - f) Allow the user the ability to customize the cardholder database by adding, editing, or deleting fields,
 - g) Provide the user the ability to modify the status of one card, a group of cards, or all cards,
 - h) Allow auto-synch to set all cards to a neutral status at a specified time for each day of the week,
 - i) Provide the user the ability to assign holiday access groups to cards for days designated by the facility as holidays.
 - b. Revenue Control
 - 1) The SMS must track all activities related to the collection of revenue from installed devices connected to the system. The SMS must provide the following revenue control features (at a minimum):
 - a) Provide transaction sorting, consolidated report generation, communication status monitoring, attendant/cashier sign-on/sign-off, and validation summary reporting.

- b) Store all revenue transactional data within the FMS database for a complete historical audit trail and report generation.
- c) Display real-time transaction details for all Entry and Exit Stations and for Pay-On-Foot Stations.
- d) Provide device alarm monitoring that will let management select and view multiple levels of alarms.
- e) Display alarms to alert management with on-screen flashing text or audible notification.
- f) Track tickets with real-time access to outstanding and unreconciled ticket reports.
- g) Allow the user to create macros to perform tasks such as starting and halting transaction readings, clearing reports, and ending communications.
- 2) Credit Card Functionality
 - a) The SMS must facilitate unattended credit card use by patrons when used in conjunction with authorized devices and applications.
 - b) The functionality of this feature must allow for the control of access, programming of credit card rates, and the support of enhanced contract cardholder monthly and debit account credit card features including:
 - i. Transient credit card in/credit card out unless, on a location-bylocation basis, the proposer persuades Owner that "credit card in" would be of no practical benefit.
 - ii. Lease Contract cardholder pay-by-use with a credit card on file.
 - iii. Lease Contract cardholder debit replenishment with a credit card on file.
 - c) The features must allow authorized users to:
 - i. Add, edit and delete credit card access groups; program new, edit or delete existing rates; and program time schedules and readers that apply to the Group or credit card devices.
 - ii. Define the credit card parameters, types of cards allowed, and the maximum amount a contract patron can accumulate on the account.
 - iii. Set monthly due date preferences, including the day of the month, advance day of the month, and auto-recharge time.
 - iv. Program receipt header and footer for Universal Reader devices with receipt printer, installed in the exits of the parking facility.
 - v. Program user-definable welcome, thank you, approved, and denied display text messages on the Universal Reader display.
 - vi. Assign the Credit Card Access Group to patrons' cards in the cardholder database whose contract includes debit credit card transactions.
 - vii. View a list of transient credit card in/credit card out cards currently in the facility, including credit card type, hashed card number, and entry date and time.
- 5. Occupancy Monitoring Subsystem (OMS)
 - a. The OMS must control the equipment connected to the system and keep separate counts by designated patron type (transient, lease, etc.).

- b. The OMS must provide the following features (at a minimum):
 - 1) Accurately display and monitor space management statistics.
 - 2) Display both differential counts and non-resettable transaction counts.
 - 3) Provide count by facility, lane, device, cardholder, and transient.
 - 4) Allow users to remotely control devices.
 - 5) Provide multiple programmable occupancy level alerts, producing action alarms.
 - 6) Display occupancy percentages, resettable by the time of day.
 - 7) Display and record real-time lane activity as it occurs.
 - 8) Allow users to customize alarm messages, program controls, automatically reverse lanes where applicable, and open or close lanes at a pre-programmed time of day using a scheduling interface integrated into the OMS.
 - 9) Automatically illuminate facility traffic signs (FULL, OPEN, CLOSED, etc.) based on transient counts, cardholder counts, and or facility counts.]
- 6. System Equipment Monitoring and Control Subsystem (SEMCS)
 - a. General: The SEMCS must monitor and control all equipment connected to the System.
 - b. The SEMCS must provide the following monitoring features (at a minimum):
 - 1) Selection of Equipment: Allow selection of equipment to be monitored:
 - a) Equipment at one or all lanes.
 - b) Any individual device at one or all lanes.
 - c) One or all pay-on-foot stations.
 - d) One or all fee computers.
 - 2) Selection of Activity: Allow selection of activity to be monitored:
 - a) One Lane Only: At a minimum, monitor the following activities:
 - i. Presence B (Vehicle over B loop).
 - ii. Presence A (Vehicle over A loop).
 - iii. Ticket in Chute. (Ticket is issued. Maintain this status until the customer removes ticket.)
 - iv. Gate up. (Gate arm is in the up position.)
 - v. Frequency of B loop.
 - vi. Frequency of A loop.
 - vii. Sensitivity of B loop.
 - viii. Sensitivity of A loop.
 - ix. Total A input gate open counts.
 - x. Total B input gate open counts.
 - xi. Total remote input gate open counts.
 - xii. Monthly patrons disabled.
 - xiii. Transient patrons disabled.
 - xiv. Full sign on.
 - xv. Total illegal vehicles (tailgate).
 - xvi. Gate in over-ride (gate arm locked in up position.)
 - xvii. Safety edge (rebound) feature is on or off.

- xviii. Next ticket number to be dispensed from ticket dispenser.
- xix. Status of all devices in lane (include alarms, etc.).
- b) All Lanes: At a minimum, monitor the following activities:
 - i. Lane number.
 - ii. Vehicle in lane.
 - iii. Ticket in chute.
 - iv. Gate arm up.
 - v. Gate in over-ride (gate arm locked in up position).
 - vi. Monthly patrons disabled.
 - vii. Transient patrons disabled.
 - viii. Lot full sign-on.
 - ix. Lane online or offline.
 - x. Operating mode of each lane.
- c) Pay-on-Foot Stations: At a minimum, monitor the following activities:
 - i. SEMCS must utilize the FMS designer's standard configuration.
- d) Fee Computers: At a minimum, monitor the following activities:
 - i. SEMCS must utilize the FMS designer's standard configuration.
- c. The SEMCS must provide the following control features (at a minimum):
 - 1) SEMCS must utilize the FMS designer's standard configuration.

2.3 EQUIPMENT

- A. General: This Article includes requirements of basic System equipment and equipment-related components. Auxiliary items required for the proper functioning of the System, whether mentioned or not, must be included. It is the manufacturer's responsibility to provide every component necessary for a complete functional System.
 - 1. All System equipment must be provisioned and configured to accommodate System functionality as described in the SYSTEM CONFIGURATION Article above.
 - 2. See **Appendixes A1, A2, B1** and **B2** for PARCS equipment deployment details for each garage facility.
- B. Central FMS Computer System
 - 1. General: The Central FMS Computer System must reside on a cloud-based platform that can be accessed by multiple Workstations as required to meet the performance requirements of this Section.
 - a. Software: Design and configure the FMS software to meet or exceed the performance requirements of this Section while providing the functionality requirements indicated in the SYSTEM CONFIGURATION requirements above. Multiple software packages may be utilized to achieve System functionality. All software must utilize Graphical User Interface (GUI) technology.
 - b. Performance: All system power, components, and communications must be sized/rated to meet or exceed the performance requirements of this Section without slowing the system response times or causing delays at the user interfaces. In addition to the Performance requirements indicated in Part I of this Section, the Central FMS Computer System must meet the following minimum requirements:

- 1) FMS Computer System must be capable of meeting the multi-tasking needs of all assigned System and Subsystem processing.
- 2) Complete FMS backup in three hours or less.
- 2. The Cloud-based Central FMS Computer System must be capable of simultaneously linking to multiple computers running all necessary software and providing adequate data storage for the, including future growth and expansion, as described this Section. The Central FMS Computer System must be additionally equipped as follows:
 - a. Data Storage
 - 1) Data must be stored as actual data and archived in a format readable by the report generator. Data must not be stored in report format.
 - 2) Data archiving system must ensure that the Central FMS Computer System always has the most recent 12 months of data. In addition, the archiving system must:
 - a) Utilize industry-standard media.
 - b) Archive or restore transaction database in one hour or less.
 - c) Feature redundancy so that a component failure will not yield a loss in data.
 - b. Performance Requirements: In addition to the Performance requirements indicated in Part I of this Section, the following specific requirements are applicable to the Central FMS Computer System:
 - 1) Accommodate password-protected access.
 - 2) Accommodate audible system alarms.

PART 3 - EXECUTION

- 3.1 SYSTEM DEPLOYMENT
 - A. General: Comply withal Part 3 requirements of Section 11 12 15 as applicable to the Work of this Section to provide a fully functional, tested and demonstrated Parking Control System inclusive of all Integrated Parking Control Equipment.
- 3.2 SCHEDULES
 - A. General: Provide the following scheduled minimum quantities, unless a greater quantity is indicated on the Drawings.
 - B. Parking Control Equipment Schedule
 - Refer to Appendixes A1, A2, B1 and B2 for the PARCS equipment plan matrix and diagrams showing planned PARCS Equipment Deployment Plan for the Phase I and Phase II Implementation Projects. Final quantities to be procured will be determined by the Authority based on RFP Respondent's PARCS equipment and device pricing proposals for the same.

END OF SECTION 11 12 11

SECTION 11 12 15 - INTEGRATED PARKING CONTROL EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. The extent of work referenced in this section is specified as follows:
 - 1. Integrated Parking Control Equipment (IPCE): Fully operating parking control equipment integrated with the Project's Parking Access and Revenue Control System (PARCS) including, but not limited to the following:
 - a. Automatic Barrier Gates (with either straight or articulated gate arms).
 - b. Vehicle Detection Systems.
 - c. Access Control Units. (Proximity Card Readers)
 - d. Freestanding Device Housings and Stanton ("goosenecks").
 - e. Automatic Lane Stations.
 - f. Automatic Pay Stations (pay-on-foot).
 - g. Remote Ticket Validators.
 - h. Illuminated Signage Systems (including Illuminated Lane Controller and Facility Full Signs where applicable.)
 - i. Pedestrian Alert Systems.
 - j. VoIP Intercom System.
 - k. Fee Computers (i.e., the equivalency applicable for a cloud-based FMS).
 - 2. Furnishing of extra materials and Owner's operating stock as scheduled in **Part III of this** Section In accordance with Division 1 requirements.
 - 3. Equipment and Systems (as Subsystems) Design Requirements
- a. As required for compliance with the functioning requirements of this Section, parking control equipment devices must:
 - 1) Be state-of-the-art.
 - 2) Be fully integrated with the PARCS provided for the Project. See Section 11 12 11 for additional information.
 - 3) Utilize machine-readable crosswise barcode, swipe card (magnetic stripe) technology, 'smart' card (computer chip) near field (NF) technology, proximity card technology with 13 MHz, read-write capabilities, and machine scanning of printed or electronically displayed barcode validations.
 - 4) Operate in on-line and off-line modes.
 - 5) Comply with ANSI, ISO, and PCI standards.
 - b. All devices must be configurable in the field by qualified personnel.
 - c. All time-dependent functions must utilize real-time clock synchronization with a single central system clock.
 - d. Protect against interference or damage by lightning or other electrical influence; include fuse, over-voltage protection, flash-over protection, and line filter.
 - 4. Field coordination on site prior to installation through Final Completion.
 - 5. IPCE Operational and Technical training of Owner's personnel.

- 6. All electrical wiring required for IPCE control/data/communications and NOT indicated on the Electrical Drawings.
- 7. All electrical wiring required for the IPCE power and NOT indicated on the Electrical Drawings.
- 8. All electrical conduits required for the IPCE and NOT indicated on the Electrical Drawings.
- B. Design Intent and Implementation: As described in SECTION 11-12-11 PART I General 1.1 Summary,
 B. Design Intent, and Implementation.

1.2 RELATED WORK

- A. Attachment of Equipment Components to Building
 - 1. Should any of the equipment provided in this Section require special or proprietary inserts or embeds, these must be furnished under this Section.

B. Electrical

- 1. Power Supply: Refer to Division 26 Sections & Electrical Drawings for current characteristics of power supplied for the PCS and the IPCE including fused disconnect switches or circuit breakers for power supply line disconnect.
- 2. Communications System: Refer to Division 27 Sections & Electrical Drawings for characteristics of data, voice, and audio-video communications supplied for the PCS/IPCE including pathways and cabling.
- 3. Conduits and Wiring: As indicated below and as additionally shown on the Electrical Drawings, the Electrical Subcontractor must furnish and install IPCE electrical conduits and power wiring to the parking control equipment and empty conduits for PCS/IPCE control/data/communication wiring. Coordinate with the Electrical Subcontractor as required to ensure proper conduit/wire sizes and locations. Should the Electrical Drawings not include all electrical wiring and conduit required for the operation of the PCS and the IPCE, they must be supplied and installed by the IPCE Contractor at no additional cost to the Owner.
 - a. Typical Conduit Points to Equipment
 - 3 Conduits to the central lane device or junction box for each lane (1-power and 2-data/communication to dedicated Data Closet or Parking Office).
 - 2) 3 Conduits between the gate and the central lane device (1-power and 2-data).
 - 3) 2 Conduits between each stand-alone reader and the central lane device (1-power and 1-data).
 - 4) 2 Conduits to pay-on-foot stations (1-power and 1-data to dedicated Data Closet or Parking Office).
 - 5) 1 Conduit between each loop and gate.
 - 6) 2 Conduits to pay-on-foot stations (including future locations shown) (1-power and 1-data to dedicated Data Closet or Parking Office).
 - 7) 1 Conduit between each illuminated "FULL" sign and the nearest gate.
 - 8) 1 Conduit to each ILLUMINATED SIGNAGE SYSTEM ZONE from the Parking Office. All signs within an ILLUMINATED SIGNAGE SYSTEM ZONE must be interconnected via a conduit path.
 - 9) 1 Conduit between each Pedestrian Alert System device at an exit and one conduit from one said device to the activating gate.
 - b. Conduit Sizes

- 1) Minimum conduit size must be a minimum ³/₄" U.N.O.
- 2) Conduit runs to central lane junction boxes to **dedicated Data Closet or Parking Office**) must be a minimum 1" U.N.O.
- 3) Conduits to loops must be ½".

1.3 DEFINITIONS

- A. Automatic Lane Station: An electrically-powered automatic machine housed within a weatherproof cabinet enclosure that serves as a parker interface for the purposes of revenue control at a mechanically regulated vehicle lane.
- B. Automatic Pay-On-Foot Station: An electrically-powered automatic machine housed within a weatherproof cabinet enclosure that serves as a patron interface for the purposes of revenue control for patrons prior to returning to their vehicle.
- C. Redundant Lane Station: A Redundant Lane Station, is a lane station located adjacent to an Entrance Station or an Exit Station, that serves as an emergency backup unit in cases when the primary lanes station happens to fail. Redundant Lane Stations must additionally accommodate any lane-station-specific features required per this Section that are otherwise provided at the adjacent primary lane station.
- D. Barcode Validation: A visual method of representing data in a machine-readable form that is subsequently acknowledged by the PARCS as a valid system response. Two-dimensional matrix barcodes (a.k.a. Quick Response codes/QR-codes) must be utilized for this Project.
- E. Entrance Station: An Automatic Lane Station at an entry lane. Entrance Stations may include, but are not limited to, the following:
 - 1. Visual display.
 - 2. Audible prompts.
 - 3. Patron interface button(s).
 - 4. Intercom.
 - 5. Proximity card reader.
 - 6. Barcode Scanner.
 - 7. Ticket dispenser with integral printer.
 - 8. Credit card/debit card reader.
 - 9. See Part II of this Section for Entrance Station requirements specific to this project.
- F. Exit Station: An Automatic Lane Station at an exit lane. Exit Stations may include, but are not limited to, the following:
 - 1. Visual display.
 - 2. Audible prompts.
 - 3. Patron interface button(s).
 - 4. Intercom.
 - 5. Proximity card reader.
 - 6. Barcode Scanner.
 - 7. Exit verifier.
 - 8. Credit card/debit card reader.

- 9. See Part II of this Section for Exit Station requirements specific to this project.
- G. Facility Management System: The Cloud-Based Central FMS System software, depending on Section 11-12-11 requirements, controls all integrated parking control equipment (specified in this Section) from the same location (Local Operations), from a remote location (Remote Operations), or through on-line service accessed via the Internet.
- H. FMS Access Workstations: The Cloud-Base Central FMS System user interface shall be accessible via any desktop personal computer (PC) workstation located on-premise, via a portable PC tablet, and via any properly authorized mobile cellular device.
- I. Parker: A patron that is navigating or has navigated a vehicle through the parking control equipment environment.
- J. Patron: Any user of the parking control equipment.
- K. Personal Computer (PC): A multi-purpose computer designed for individual use by an end user. All PC units provided in this Section must have architecture and functionality that complies with current industry standards and allows for complete compatibility with all other computers in the FMS provided in this Section.
- L. Satisfactory Station Payment: For the purposes of this Section, the term "Satisfactory Station Payment" includes the following:
 - 1. Credit/Debit Card Payment: For locations scheduled to accept credit/debit card payments, the patron will insert the desired card into a parking control unit configured to accept such payment. "Satisfactory Station Payment" is achieved when the subject card has been verified for the transaction.
 - 2. Cash Payment: For locations scheduled to accept cash payment, the patron will insert the cash into a parking control unit configured to accept such payment. "Satisfactory Station Payment" is achieved when sufficient cash has been inserted into the unit.
- M. Web-Access Portal: A System user interface accessed via a compatible Web-enabled device.
- N. List of abbreviations:
 - 1. PCS: Parking Control System
 - 2. FMS: Facility Management System
 - 3. IPCE: Integrated Parking Control Equipment
 - 4. VoIP: Voice over Internet Protocol

1.4 PROJECT DESCRIPTION

- A. General
 - 1. The PCS and the IPCE will be used to control the Parking Control Equipment in up to 10 (ten) different parking facilities. The Owner's tentative plan is to procure new FMS and PCS equipment according to a 2-Phased Implementation Strategy. The first phase of the strategy calls for five (5) of the 10 (ten) parking garages to receive new PARCS technology initially and while PARCS technology implementation for the other five (5) garages is to be postponed until some yet to be specified future date.

The **Phase I Implementation Group** of parking facilities includes the following:

- a. Fort Duquesne & Sixth Garage
- b. Third Avenue Garage
- c. Wood Allies Garage
- d. Forbes Semple Garage
- e. Shadyside Garage

The Phase II Implementation Group of parking facilities includes the following:

- a. First Avenue Garage
- b. Grant Street Transportation Center Garage (Blue & Red Facilities)
- c. Mellon Square Garage
- d. Smithfield Liberty Garage
- e. Oliver Garage
- 2 The PCS and the IPCE that will be used to eventually control the new Parking Control Equipment to be installed and deployed in all ten (10) of the Owner's parking facilities as follows and further detailed in Appendixes A and B:
 - a. Fort Duquesne & Sixth Garage Facility
 - 1) The Fort Duquesne & Sixth Garage provides a total of approximately 920 spaces within the facility which has 5 and ½ levels of parking including one ½ parking level below the ground level.
 - 2) Description of Existing Facility and Lanes
 - Parking Entrance Lanes: 4 (four) lanes numbered #1, #4, #5, and #6 serve Transient/Lease Parkers. #1 entrance lane is accessible from Fort Duquesne Blvd. and entrances #4, #5 and #6 lanes are accessible from Third Avenue.
 - b) Parking Exit Lanes: 3 (three) lanes numbered #2, #7, and #8 serve Transient/Lease Parkers. 2 (two) exit lanes to Third Avenue and 1 (one) exit lane to Fort Duquesne Blvd.
 - c) Reversible Lane: 1 (one) lane numbered #3 serves Valet Parkers that use the nested basement parking area which has access to and from Fort Duquesne Blvd.
 - d) Attendant Booths: 3 (three) Parking attendant booths 1 (one) booth is located at the Fort Duquesne Blvd. entrance and 2 (two) booths numbered #5a and #6a are located in the 2 (two) interior entrance lanes numbered #5 and #6, respectively, which provide access to the upper parking levels of the garage.
 - e) Pay-on-Foot Pay Stations: 2 (two) Pay Stations accept "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and all three stations are located in the elevator lobby of the garage.
 - f) Parking Office with two Cashier Windows: 2 (two) fee computers (i.e., cloud-based system equivalent) with peripherals.
 - b. Third Avenue Garage Facility
 - 1) The Third Avenue Garage provides a total of approximately 575 spaces within the facility which has 6 levels of parking including 1 parking level below the ground level.
 - 2) Description of Existing Facility and Lanes

- a) Parking Entrance Lanes: 2 (two) lanes numbered #1 and #2 serve Transient/Lease/Valet Parkers and are accessible from both Third and Fourth Avenues.
- b) Basement Parking Gated Entrance Lane: 1 (one) lane numbered #3 that serves Only Valet/Reserved Parkers is located at the entrance to the one-way down ramp to the basement parking level.
- c) Parking Exit Lanes: 2 (two) lanes numbered #4 and #5 serve Transient/Lease/Valet Parkers allow exiting to both Third and Fourth Avenues.
- d) Future Basement Parking Exit Lane: 1 (one) lane numbered #6 serves Only Valet/Reserved Parkers exiting the basement parking level from the oneway up ramp.
- e) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby of the garage.
- f) Parking Office with one Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- c. Wood Allies Garage Facility
 - 1) The Wood Allies Garage provides a total of approximately 542 spaces within the facility which has 10 levels of parking.
 - 2) Description of Existing Facility and Lanes
 - a) Parking Entrance Lane: 1 (one) lane numbered #1 serves Transient/Lease Parkers and is accessible from the Blvd. of the Allies. This entrance lane is equipped with 1 (one) redundant entry station numbered #1a located approximately 60 feet from the primary entry station located in the garage entrance lane from the Blvd. of the Allies.
 - b) Parking Exit Lanes: 3 (three) lanes numbered #2 and #3 serve Transient/Lease Parkers exiting to the Blvd. of the Allies and 1 (one) lane numbered #4 serves Transient/Lease Parkers exiting to First Avenue.
 - c) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby of the garage.
 - d) Cashier Booth: 1 (one) cashier booth #6 located in the elevator lobby of the garage has 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- d. Forbes Semple Garage Facility
 - 1) The Forbes Semple Garage provides a total of approximately 449 spaces within the facility which has 8 and ½ levels of parking including one ½ level of parking below the ground level.
 - 2) Description of Existing Facility and Lanes
 - a) Parking Entrance Lane: 1 (one) lane numbered #1 serves Transient/Lease Parkers and is accessible from Meyan Avenue. This entrance lane is equipped with 1 (one) redundant entry station numbered #1a located approximately 15 feet past the primary entry station located in the garage entrance lane from Meyan Avenue.

- b) Reversible Lane: 1 (one) lane numbered #2 serves Lease Parkers on a first come first served basis seeking access to the basement parking area which has access from and to Meyan Avenue.
- c) Parking Exit Lanes: 2 (two) lanes numbered #3 and #4 serve Transient/Lease Parkers exiting on to Meyan Avenue.
- d) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby of the garage.
- e) Cashier Booth: 1 (one) cashier booth #6 located in the elevator lobby of the garage has 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- e. Shadyside Garage Facility
 - 1) The Shadyside Garage provides a total of approximately 208 spaces within the facility which has 6 levels of parking including 1 parking level below the ground level.
 - 2) Description of Existing Facility and Lanes
 - a) Parking Entrance Lane: 1 (one) lane numbered #1 serves Transient/Lease Parkers and is accessible from Bellefonte Street. This entrance lane is equipped with 1 (one) redundant entry station numbered #1a located approximately 3 feet past the primary entry station located in the garage entrance lane from Bellefonte Street.
 - b) Parking Exit Lanes: 2 (two) lanes numbered #2 and #3 serve Transient/Lease Parkers exiting to Bellefonte Street
 - c) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby of the garage.
 - d) Parking Office with one Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- f. First Avenue Garage Facility
 - 1) The First Avenue Garage provides a total of approximately 1243 spaces within the facility. The garage also has a direct pedestrian connection via an escalator to and from an adjoining elevated light rail T-Station boarding platform.
 - 2) Description of Existing Facility and Lanes
 - a) All access lanes equipment is situated outside on the east side of the First Avenue Garage structure in the 7 (seven) separately configured entry/exit lanes leading to and from the garage.
 - b) Parking Entrance Lanes: 3 (three) lanes numbered #1, #2, and #3 serve Transient/Lease Parkers. #1 entrance lane provides direct access to the ground level of the garage while entrance lanes #2 and # 3 provide direct access to the ramp leading to the upper parking levels of the garage.
 - c) Parking Exit Lanes: 3 (three) lanes numbered #5, #6, and #7 serve Transient/Lease Parkers.
 - d) Reversible Lane: 1 (one) lane numbered #4 serves Transient/Lease Parkers.

- e) Pay-on-Foot Pay Stations: A total of three (3) Pay Stations are located at this garage. Two (2) of the stations (one "Cash and Credit Card" and one "Only Credit Card") are located in the ground floor elevator lobby location #8 at the northwest corner of the garage and one (1) station ("Only Credit Card") is located on the third level of the garage pedestrian walkway location #9 that leads to the Pittsburgh Regional Transit (PRT) light rail station platform connection to the garage.
- f) Parking Office with one Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals located at the northwest corner of the garage at location #10.
- g. Grant Street Transportation Center Garage Facility
 - 1) The Grant Street Transportation Center Garage provides a total of approximately 991 spaces. The facility, which is bifurcated by the Norfolk Southern Railroad lines, is comprised of two separate parking structures. The "Blue" parking structure is north of the railroad tracks and the "Red" parking structure is south of the railroad tracks. A Greyhound Lines Bus Terminal is located on the ground level along the southern length of both parking structures. The terminal can be entered via Eleventh Street and exited via Twelfth Street.
 - 2) Description of the Existing "Blue" Facility and Lanes
 - a) Parking Entrance Lane: 1 (one) lane numbered #1 serves Transient/Lease Parkers and is accessible from Eleventh Street. This entrance lane is also equipped with 1 (one) redundant entry station numbered #1a located approximately 15 feet past the primary entry station located in the garage entrance lane from Eleventh Street.
 - b) Parking Exit Lane: 1 (one) lane numbered #2 serves Transient/Lease Parkers exiting onto Eleventh Street. This exit lane is also equipped with 1 (one) redundant entry station numbered #2a located approximately 15 feet past the primary entry station located in the garage exit lane to Eleventh Street.
 - c) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby located at the northwest corner of the Blue facility.
 - d) Parking Office with one Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals located at the northwest corner of the Blue facility.
 - e) Pedestrian Alert System: An audible and visual alert alarm device designed to warn pedestrians approaching the exit lane at Twelfth Street that a vehicle is exiting the garage. The alarm must be activated whenever a in the exit lane vehicle approaches the sidewalk.
 - 3) Description of the Existing "Red" Facility and Lanes
 - a) Parking Entrance Lane: 1 (one) lane numbered #1 serves Transient/Lease Parkers and is accessible from Penn Avenue. This entrance lane is also equipped with 1 (one) redundant entry station numbered #1a located approximately 35 feet past the primary entry station located in the garage entrance lane from Penn Avenue.
 - Parking Exit Lane: 1 (one) lane numbered #2 serves Transient/Lease
 Parkers exiting onto Penn Avenue. This exit lane is also equipped with 1 (one) redundant entry station numbered #2a located approximately 35

feet past the primary entry station located in the garage exit lane to Penn Avenue.

- c) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby located at the southwest corner of the Red Facility.
- d) Parking Office with one Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals located at the southwest corner of the Red Facility.
- h. Mellon Square Garage Facility
 - 1) The Mellon Square Garage provides a total of approximately 978 spaces within the facility which has 6 levels of parking including 5 parking levels below the ground level. The garage is accessible from both Oliver Avenue and Sixth Avenue.
 - 2) Description of Existing Facility and Lanes
 - a) Parking Entrance Lanes: 2 (two) lanes numbered #1 from Sixth Avenue and #4 from Oliver Avenue and both lanes serve Transient/Lease/Valet Parkers.
 - b) Reversible Lane: 1 (one) lane numbered #2 from Sixth Avenue serves Transient/Lease/Valet Parkers.
 - c) Parking Exit Lanes: 3 (three) lanes numbered #3 to Sixth Avenue and numbered #5 and #6 to Oliver Avenue serve Transient/Lease/Valet Parkers.
 - Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby (on the 2nd level) of the garage.
 - e) Elevator Lobby (2nd level) Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- i. Smithfield Liberty Garage Facility
 - 1) The Smithfield Liberty Garage provides a total of approximately 587 spaces within the facility which has 8 and ½ levels of parking including ½ parking level below the ground level. The garage is accessible from both Smithfield Street and Liberty Avenue.
 - 2) Description of Existing Facility and Lanes
 - a) Parking Entrance Lanes: 2 (two) lanes number #1 from Smithfield Avenue and number #3 from Liberty Avenue, and both lanes serve Transient/Lease Parkers.
 - b) Gated Entrance Lane to the Basement Parking Area: 1 (one) lane numbered #3a from Liberty Avenue, and the lane serves Reserved Parkers allowed access to the basement parking level.
 - c) Parking Exit Lanes: 2 (two) lanes numbered #2 exits to Smithfield Avenue and number #4 exits to Liberty Street and both lanes serve Transient/Lease Parkers.
 - Gated Exit Lane from the Basement Parking Area: 1 (one) lane numbered #5 that serves Reserved Parkers allowed access to the basement parking level.

- e) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the elevator lobby of the garage.
- f) Parking Office with one Cashier Window: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- j. Oliver Garage Facility
 - 1) The Oliver Garage provides a total of approximately 476 spaces within the facility which has 3 parking levels below the street level of Oliver Avenue.
 - 2) Description of Existing Facility and Lanes
 - a) Parking Entrance Lanes: 1 (one) lane numbered #1 from Oliver Avenue Transient/Lease/Valet Parkers.
 - b) Reversible Lane: 1 (one) lane numbered #2 from Oliver Avenue serves Transient/Lease/Valet Parkers.
 - c) Parking Exit Lane: 1 (one) lane numbered #3 to Oliver Avenue serves Transient/Lease/Valet Parkers.
 - d) Pay-on-Foot Pay Stations: 1 (one) Pay Station accepts "Cash and Credit Card" payments, and 1 (one) Pay Station accepts "Only Credit Card" payments, and both stations are located in the level elevator lobby on the first parking level below grade which is accessible from the street level entrance to building from Fifth Avenue.
 - e) Elevator Lobby Cashier Window on the first parking level of the garage: 1 (one) fee computer (i.e., cloud-based system equivalent) with peripherals.
- 3. The PCS and the IPCE will be used for transient, lease, and event parking.
 - a. The transient parkers will either present a credit card at entry or be issued a parking ticket, satisfy the fee payment requirement in the exit lanes or at pay stations located in the Elevator Lobby of the parking garage by using credit/debit card, cash, or validation and will surrender presented at entry and exit lane for a ticket-less transaction) the ticket upon exit (unless a credit card was presented at the entry and exit lane for a ticketless transaction).
 - b. The lease parkers (i.e., Owner's Staff, City employees, and monthly lease patrons, etc.) will utilize either a proximity card reader for entry to, and exit from the parking facility.
 - c. Event parkers will either present a credit card, cash, or a valid pre-paid parking reservation credential at the entry lane, a cashier attendant deployed at the entry lane during special events will process special event payments made with credit cards and cash using fee computer or a cellphone-based cashiering FMS module and print an event parking ticket and receipt using a portable printer device. When any Pre-Paid Special Event Parking Reservation credentials are presented during special events, the attendant cashier will scan to verify the bar-coded reservation credential and print an event parking ticket and receipt using a portable printer device. All event parkers will surrender the paid special event ticket issued by the cashier attendant at the entry to be scanned or inserted into the exit lane verifier station in order to exit the parking facility.
- B. Patron Access: Patron access interface with the IPCE must include:

- 1. Tickets: Tickets will be issued to the patron upon entry to the facility and will be scanned for verification of payment upon exit.
- 2. Credit Cards: A valid credit card may be used as a "ticketless" credential ("Credit Cardin/Credit Card out").
- 3. Cards: Plastic proximity cards with read-write capabilities for lease parking use. The card will be issued to the patron by prior arrangement with the Owner.
- C. Fee Payment
 - 1. Transient Parking: Pay at Exit Lane Stations or at Automatic Pay-on-Foot Stations.
 - 2. Lease Parking: Prepaid monthly or per Owner's arrangement.
 - 3. Special Event Parking: Pay at Entrance Lane Station, or in the case of the Fort Duquesne & Sixth Garage, pay the cashier attendants to be stationed in the attendant booths that will be retained at entry lanes number #1, #5, and #6.
 - 4. PPAP Employee Parking: No fee.
- D. Theory of Operation: Various modes of interfacing with the PARCS/IPCE are included below. The listing is generic in nature. For applicability to any single facility, see clarifications in Part 3 of this document.
 - 1. Entrance Lanes
 - a. Transient Parker Entrance Use upon Lane Activation
 - 1) The Entrance Station will visually instruct the user to take a ticket, insert a credit card, or scan an entry code.
 - 2) A credit card or a valid barcode validation may be presented, or the ticket dispenser will issue one (1) and only one (1) ticket to each patron when the patron waves at the hands-free sensor device.
 - a) Should a patron wish to use "credit card in", the patron will insert or hold their credit card into, or position near the card reader. If a credit card is valid, the card will be returned to the patron and the entry gate will be activated and the gate arm will rise to allow the vehicle passage into the parking area. If a credit card is invalid, the card will be returned to the patron, the display must read "INVALID" and the lane equipment will reset.
 - b) Should a patron wish to scan a barcode validation from a paper print or from a mobile phone, the patron will place the barcode image underneath the optical scanner. Should the barcode validation be valid, the entry gate will be activated, and the gate arm will rise to allow the vehicle passage into the parking area. Should the barcode validation be invalid, the display must read "INVALID" and the lane equipment will reset.
 - c) Should a patron choose to take a ticket, skip to "Through-Entrance Operations" below.
 - 3) If a vehicle does not enter the parking area after the system raises the entrance gate, the gate will return to the down position within a preset period of time. Once the gate is down, the Entrance Station and all lane equipment will reset to issue a valid ticket or accept a lease parker card/transponder from the next patron. If the parker requires assistance at this point, the necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system.

- b. Lease (Monthly) Parker Entrance Use upon Lane Activation
 - 1) If the monthly (lease patrons/employees) card is valid and the entry/exit sequence is correct, the gate will be activated, and the gate arm will rise to allow passage of the vehicle into the facility. The ticket dispenser will not be operative if the exit gate has been raised using a lease card/ transponder until the gate has closed and reset the equipment.
 - 2) If the monthly lease card I.D. number fails validity or anti-pass-back checks, the card will be rejected the FMS will log the occurrence with date, time, card reader location, user I.D. number, and type of invalid access. The gate will not be activated (the gate arm will not rise to allow passage of the vehicle through the lane) and the in-lane display must read "INVALID". The Entrance Station and all lane equipment will reset for processing the next vehicle and the necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system.
- c. Through-Entrance Operations
 - 1) Entrance Station will prompt the parker to request a ticket.
 - 2) Once a parker requests a ticket, the Entrance Station will print the ticket, and a ticket will be presented to the parker.
 - 3) Upon pulling a ticket, a valid credit card read, a valid lease parkers access, and/or a valid employee card read, the gate will be opened automatically.
 - 4) When the vehicle passes over the gate inductive loop, the gate will close, and the Entrance Station and all lane equipment will reset to repeat the operation for the next vehicle.
 - 5) In the event of a System malfunction, the necessary steps to correct the situation shall be determined by the parker using of the push-to-call intercom system for assistance from remote PPAP staff.
- 2. Dedicated Access Lanes Lease Parker Use Only (Entry or Exit Lanes)
 - a. Lane Activation
 - 1) The entering vehicle will be automatically detected as it passes over the inductive loop in the pavement and the card readers will be activated.
 - b. Lease (Monthly) Parker Use upon Lane Activation
 - 1) The patron will wave his/her proximity card at the card reader will automatically identify the vehicle as belonging to a lease parker.
 - If the lease card is valid and the entry/exit sequence is correct, the gate will be activated, and the gate arm will rise to allow passage of the vehicle into the facility.
 - 3) When the vehicle passes over the gate inductive loop, the gate will close, and the lane equipment will reset to repeat the operation for the next vehicle.
 - 4) If the I.D. number fails validity or anti-passback checks, the card will be rejected, the FMS will log the occurrence with date, time, card reader location, user I.D. number, and type of invalid access. The gate will not be activated (the gate arm will not rise to allow passage of the vehicle through the lane), and the in-lane display must read "INVALID". The lane equipment will reset for processing the next vehicle and the necessary steps to correct the situation shall be determined by the parker using the push-to-call intercom system for assistance from remote PPAP staff.
- 3. Exit Lanes

- a. Inactive Lane: The Exit Station will not be operative if a vehicle is not present in the lane.
 - 1) The Exit Station's ticket reader will not be operative if the exit gate has been raised by the use of a lease parker card until the gate has closed and reset the equipment.
 - 2) If the parker finds the above action satisfactory or in the event of a System malfunction, the necessary steps to correct the situation shall be determined by use of the push-to-call intercom system for assistance from remote PPAP staff.
- b. Transient Parker Exit Use upon Lane Activation
 - 1) The Exit Station will visually instruct the user to scan their ticket by holding it near an optical scanner, or for the user to insert into or hold their credit card near the reader,
 - a) If a ticket is optically scanned by the reader, skip to "Ticket Functionality" below).
 - b) If a credit/debit card is then inserted into or held near the reader, skip to "Payment Operations" below.
 - c) If a valid barcode validation is then presented to the scanner, skip to "Payment Operations" below.
 - 2) Ticket Functionality
 - a) Should a pre-pay, validated, or free exit ticket be used, the Exit Station will automatically read the pre-pay, validation, or free exit ticket and automatically open the exit gate.
 - b) Should an unpaid ticket be used, the patron will be informed of the amount of the unpaid fee. Once informed of the parking fee amount, the patron will be allowed to pay with an approved method.
 - c) Should an invalid or unreadable ticket be used, the ticket will be rejected, and the FMS will log the occurrence with date, time, card/tag reader location, ticket number/last four digits of card number and type of invalid access. The gate will not be activated (the gate arm will not rise to allow passage of the vehicle through the lane) and the in-lane display must read "INVALID". The Exit Station and all lane equipment will reset for processing the next vehicle and the necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system for assistance from remote PPAP staff.
 - 3) Payment Operations
 - a) See the definition of "Satisfactory Station Payment" above for information pertaining to patron options for completing the payment process.
 - b) Should the patron complete the payment process with an approved method, skip to "Through-Exit Operations" below.
 - c) Should the method of payment selected by the patron prove invalid the gate will not be activated (the gate arm will not rise to allow passage of the vehicle through the lane) and the in-lane display must read "INVALID". The Exit Station and all lane equipment will reset for processing the next vehicle and the necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system for assistance from remote PPAP staff.

- d) Should a patron wish to scan a barcode validation ("coupon") from a paper print or from a mobile phone prior to making payment, the patron will place the barcode image underneath the optical scanner. Should the barcode validation be valid, the fee will be re-calculated based on the coupon amount, and the patron will be informed of the amount of unpaid fee if any. Once informed of the parking fee amount, the patron shall pay with an approved method.
- e) Validations: Should a patron wish to have the fee recalculated by use of a validation prior to making payment, the patron will either scan a barcode validation ("coupon") or insert a "chaser ticket" validation into the reader. Should the patron wish to use a barcode validation from a paper print or from a mobile phone, the patron will place the barcode image underneath the optical scanner.
 - i. Should the validation be valid, the fee will be re-calculated based upon the coupon amount, and the patron will be informed of the amount of unpaid fee if any. Once informed of the parking fee amount, the patron shall pay with an approved method. Upon Satisfactory Station Payment, the exit gate will be opened automatically.
 - ii. Should the validation be invalid, the display must read "INVALID". The Exit Station will display the last valid fee calculation and the patron must be directed to either insert payment or use the intercom to determine the necessary steps to correct the situation.
 - iii. If the transaction is canceled after the coupon was processed, the entry ticket must be re-encoded to include the discount information, and the canceled ticket returned to the patron.
- f) If no action is taken by the patron after a preset period, the gate will not be activated (the gate arm will not rise to allow passage of the vehicle through the lane) and the Exit Station and all lane equipment will reset for processing the next vehicle and the necessary steps to correct the situation shall be determined by use of the intercom system.
- 4) Transaction Completion
 - a) Upon completing the payment process, the exit gate will be opened automatically. If the transaction is canceled after a validation was processed, the entry ticket must be re-encoded to include the discount information, and the canceled ticket returned to the patron.
 - b) Patron will be offered the option of a printed receipt.
- c. Lease (Monthly) Parker Exit Use Upon Lane Activation
 - 1) If the I.D. number fails the validity check, or if the entry/exit sequence is incorrect, the card will be rejected and the FMS will log the occurrence with the date, time, card, user I.D. number, and type of invalid access. The gate will not be activated (the gate arm will not rise to allow passage of the vehicle through the lane) and the in-lane reader display must read "INVALID". The Exit Station and all lane equipment will reset for processing the next vehicle and the necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system for assistance from remote PPAP staff.
- d. Through-Exit Operations
 - 1) Upon Satisfactory Station Payment and/or valid lease patron access, the gate will be opened automatically.

- 2) When the vehicle passes over the gate inductive loop, the gate will close, and the lane will reset to repeat the operation for the next vehicle.
- 4. Exit Lanes Free Out
 - a. The exiting vehicle will be automatically detected as it passes over the inductive loop in the pavement and the gate will be activated (the gate arm will rise to allow passage of the vehicle through the lane).
 - b. When the vehicle passes over the gate inductive loop, the gate will close, and the exit lane equipment will reset to repeat the operation for the next vehicle.
- 5. Exit Lanes with Pedestrian Alert System
 - a. Exit lane operation must be as described above. The Pedestrian Alert System must operate as long as the gate is not in the fully down position.
- 6. Automatic Pay-on-Foot Station (POFS) Transient Parkers
 - a. POFS Activation
 - 1) The patron will proceed to a POFS prior to retrieving their vehicle. POFS must be equipped with a motion detector that activates the POFS when the presence of movement is detected. POFS must be idle during periods of inactivity.
 - 2) Movement must activate the voice announcement, graphics display, and enable reader functions.
 - b. POFS Use Upon Activation
 - The POFS will audibly instruct the user to insert a validated ticket or credit card. If a ticket is then inserted into the reader, it will be processed by the FMS as described below. If a credit/debit card is used, skip to "Payment Operations" below.
 - 2) Ticket Functionality
 - a) Should a pre-pay, validated, or free exit ticket is used, the POFS will automatically read the pre-pay, validation or free exit ticket and the ticket must be returned to the patron to be used to exit the facility using an inlane Exit Station.
 - b) Should an unpaid ticket be used, the patron will be informed of the amount of the unpaid fee. Once informed of the parking fee amount, the patron will be allowed to pay with an approved method.
 - c) Should an invalid or unreadable ticket be used, the display must read "INVALID" and the ticket will be rejected and the FMS will log the occurrence with date, time, card/tag reader location, ticket number/last four digits of card number and type of invalid access. The POFS will reset for processing the next patron and the necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system.
 - 3) Payment Operations
 - a) See the definition of "Satisfactory Station Payment" above for information pertaining to patron options for completing the payment process.
 - b) Should the patron complete the payment process with an approved method, the entry ticket must be validated and returned to the patron to be used to exit the facility using an in-lane Exit Station.
 - c) Should the method of payment selected by the patron prove invalid, the display must read "INVALID". The POFS will display the last valid fee

calculation and the patron must be directed to either insert payment or use the intercom to determine the necessary steps to correct the situation.

- d) Should the patron wish to pre-pay the full amount of their calculated charge (as in the case of special event fixed fee charge, or in the case of the "All Day Maximum" charge) in advance well before the customer intends to exit the garage, the FMS and all POF stations must provide for customer-facing instructs and functionality to execute this type of prepayment option.
- e) Validations: Should a patron wish to have the fee recalculated using a validation prior to making payment, the patron will either scan a barcode validation ("coupon") or insert a 'chaser ticket' validation into the reader. Should the patron wish to use a barcode validation from a paper print or from a mobile phone, the patron will place the barcode image underneath the optical scanner.
 - i. Should the validation be valid, the fee will be re-calculated based upon the coupon amount, and the patron will be informed of the amount of unpaid fee, if any. Once informed of the parking fee amount, the patron shall pay with an approved method. Upon Satisfactory Station Payment, the entry ticket must be validated and returned to the patron to be used to exit the facility using an in-lane Exit Station.
 - ii. Should the validation be invalid, the display must read "INVALID". The POFS will display the last valid fee calculation and the patron must be directed to either insert payment or use the intercom to determine the necessary steps to correct the situation.
 - iii. If the transaction is canceled after the coupon was processed, the entry ticket must be re-encoded to include the discount information, and the canceled ticket returned to the patron.
- f) If no action is taken by the patron after a preset period, the ticket will be rejected and the POFS will reset for processing the next patron, and necessary steps to correct the situation shall be determined by the use of the push-to-call intercom system.
- 4) Transaction Completion
 - a) Upon completing the payment process, the POFS will re-encode the parking ticket as having been paid (the ticket is useable to exit the facility using an in-lane Exit Station).
 - b) Patron will be offered the option of a printed receipt.
 - c) Validated tickets will be dispensed (patron takes ticket).
- 7. Remote Ticket Validator
 - a. Validation Process
 - Upon completing their paid shopping, restaurant, or theater visit, customers (parkers) may have their parking tickets validated within the retailer's store. Remote validation units can be installed in each of the checkout lanes, or if desired, at a centralized location such as a Customer Service Desk.
 - 2) To validate a customer's parking ticket, the store clerk would insert or scan the parking ticket into their validation unit, select the appropriate validation type, and

remove the ticket from the unit (as applicable). The ticket is then given back to the patron.

1.5 PERFORMANCE REQUIREMENTS

- A. All electrical equipment must be approved by Underwriters Laboratories, Inc. (UL) where such approval is standard in the industry. Where required by Code or as otherwise indicated in the Contract Documents, provide electrical enclosures complying with applicable NEMA standards.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.6 SUBMITTALS

- A. Product Data: Manufacturer's data, specifications, recommendations, and standard details for all items specified in this Section including accessories and other components of the Work. Include the manufacturer's instructions for installation and maintenance for each type of parking equipment required.
 - 1. Provide templates for anchor bolts and other items encased in concrete or below finished surfaces in sufficient time so as not to delay the Work.
- B. Shop Drawings: Show complete layout including plan views, elevations, sections, details of components, and attachments to other work. Detail equipment assemblies and indicate dimensions, required clearances, method of field assembly, components, location and size of each field connection.
 - 1. Wiring Diagrams: The Contractor must supply three sets of wiring diagrams and maintenance manuals for each of the major components of the system, as well as the entire as-built system wiring diagrams.
- C. Operation and Maintenance Data: Provide the Owner with Manuals and Record Drawings for all aspects of the PCS. Manuals should clearly delineate the day-to-day operation and maintenance of the equipment. As a minimum, the following must be provided:
 - 1. Supervisor Manual (3 copies): Operations manual describing data collection processing and transmission systems and equipment for supervisory personnel.
 - 2. Maintenance Manuals (3 copies)
 - a. Include first-line and preventative procedures.
 - b. Software programming manuals describing each item of software in the lane equipment and all report programs.
 - c. Equipment electrical circuitry diagram.
 - d. As-built equipment wiring diagram.
- e. See **Section 01 77 00 Division 1** for additional requirements.
 - 3. Indicate at least two sources for purchasing parking tickets.
- D. Closeout Submittals
 - 1. Provide the Owner with two sets of all unique keys for equipment locks.
- E. Quality Control Submittals

- 1. Qualification Data
 - a. Supplier.
 - b. Installer: The installer must be approved by the manufacturer in writing on company letterhead. The manufacturer must certify that the installer is sufficiently versed on the latest technology enhancements that are applicable to the planned IPCE installation.
 - c. Servicing Contractor(s). If service is to be provided by the manufacturer, supplier, or installer, provide clarification of same in the submittal.
- 2. Coordination Shop Drawings: Drawings must be sufficient to indicate coordination with adjacent work.
- 3. Warranty: Sample warranty form.

1.7 QUALITY ASSURANCE

- A. Source Quality Control: Except where specified otherwise, obtain parking control equipment and accessories from a single manufacturer or from manufacturers which are acceptable to the parking control equipment manufacturer.
- B. All equipment must be new. Rebuilt, reconditioned, or used parts are not acceptable.
- C. Qualifications
 - 1. Supplier must have at least ten (10) years of experience in the parking control field and maintain a stock of replacement parts for the equipment specified. The equipment supplier must have a service outlet within 100 miles of the project.
- a. Contractor must supply a list of anticipated times to replace any piece of equipment.
 - 2. Installer: Installer must have previously worked successfully with the equipment manufacturer and must submit names, locations, contacts, and telephone numbers for the five (5) most recently installed, completed projects.
 - 3. Servicing Contractor(s): Servicing Contractor(s) must have at least three (3) years of experience with the manufacturer's equipment and must have serviced at least five (5) sites for a minimum if two (2) years within a 75-mile radius of the Service Provider's office.

1.8 OWNER'S INVENTORY

- A. The Owner will maintain an inventory of items related to the IPC. The Contractor must obtain necessary Owner approvals of inventory items and coordinate the delivery schedule with the Owner. Inventory must include the following:
 - 1. See Article 3.9 below for requirements related to the provision of extra materials.
 - 2. See Part 4 of this Section for requirements related to the provision of additional expendable items.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver equipment to the Project site packaged to prevent damage and marked for easy identification of each component. Sequence deliveries to avoid delays and minimize on-site storage.
- B. The equipment must be stored in a clean, dry location. Protect from all possible damage. Damaged equipment must be replaced at no cost to the Owner.

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1.10 OPERATING CONDITIONS

- A. Equipment must be designed, fabricated, and installed to operate effectively under the climate and exposure conditions to which the equipment will be exposed. All equipment located within the parking areas is for exterior, exposed-to-weather use.
 - 1. If any System heating or cooling devices do not operate to the Owner's satisfaction within the warranty period, they must be repaired and/or replaced by the manufacturer.
- B. It is recognized that certain solid state and computer-type control equipment may require special electrical power and grounding considerations; if so, required for this Project, the Contractor must:
 - 1. Include in the bid amount, the cost to provide and install voltage stabilization modules or devices to protect each component from normal voltage variations.
 - 2. Advise the Owner in writing at the time of the award of the contract of any special electrical power and grounding requirements.

1.11 COORDINATION AND SCHEDULING

- A. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- B. Coordinate placement of conduit, accessories, and power wiring to equipment.
- C. Coordinate installation of anchorages for all parking control equipment. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in the concrete or other substrate. Deliver such items to the Project site(s) in time for installation and as required to prevent delaying the Work.
- D. Supplier of the parking control equipment must provide an experienced field representative to meet with the installer and the Electrical Subcontractor, before any rough-in work begins, to review building plans as they relate to the IPCE and must do the following:
 - 1. Explain details or precautions necessary to assure that all System control equipment, and in particular, the detector loops will work properly.
 - 2. Determine that all required conduits and wiring are properly laid out.
 - 3. Coordinate with the Contractor to determine appropriate depths for detector loop installation and, based on the structural system, insure depth does not affect the slab reinforcing steel.

1.12 LICENCING

- A. All required operating system and application software licenses must be supplied in sufficient quantities to accommodate the number of users and all of the equipment per the requirements of this Section.
 - 1. If any required licenses will require the payment of fees the annual or monthly fees for such must be disclosed at the time proposals are submitted.

1.13 WARRANTY

A. All PCS and IPCE equipment are to be covered by a manufacturer's warranty for all parts and labor for a two-year period, excluding misuse or vandalism.

- 1. Include, the cost to extend the warranty for a third, fourth, fifth, sixth, and seventh year as presented on the PARCS PRICE FORM #3
- 2. All warranties commence when the respective equipment is totally operational and is accepted in writing as such by the Owner.
- B. All illuminated signage is to be covered by a manufacturer's warranty covering all parts and labor for a five (5) year period, excluding misuse or vandalism.

1.14 MAINTENANCE AND SERVICE

- A. General Requirements
 - 1. PCS and IPCE Maintenance must be inclusive of both preventative maintenance and remedial maintenance for all PCS equipment, systems, communications subsystems, host computer systems hardware, and software in accordance with the requirements of this Section.
 - a. PCS/IPCE must be maintained to perform to the design specifications as approved by the Owner.
 - 2. PCS and IPCE Service (remedial maintenance) must include all repairs, adjustments, and/or replacement of any or all PCS/IPCE components as necessary to ensure continuous operation of the entire PCS including all integrated equipment.
- B. PCS/IPCE Maintenance Plan
 - 1. General
 - a. The PCS/IPCE Maintenance Plan (Maintenance Plan) must be included in the Maintenance Manual as described in the "Submittals" Article above.
 - b. The Maintenance Plan must be approved by the Owner prior to installation of the PCS/IPCE and must address the overall maintenance procedures as required to meet the requirements of this Specification. Any modifications to the Maintenance Plan must be submitted for prior approval by the Owner.
 - 2. The Maintenance Plan must include:
 - a. The manufacturer's recommended procedures and checks are necessary for preventive maintenance of the PCS/IPCE. This must be specified for pre-operation, periodic, and "as required" checks as necessary to assure reliable PCS/IPCE operation.
 - b. Servicing Contractor's recommended procedures for repair and maintenance of the PCS/IPCE and all devices during the warranty period. Include maintenance program requirements for the PCS/IPCE for one-year, five-year, and ten-year durations.
 - c. Detailed instructions must include specific references to show where failure to follow special procedures would result in damage to the PCS/IPCE, improper operation, danger to operating or maintenance personnel, consumption of excessive man-hours, etc.
 - 3. The Maintenance Plan must also:
 - a. Establish who-what-when-where maintenance responsibilities.
 - b. Establish reporting procedures.
 - c. Incorporate maintenance into sub-contractor/vendor equipment and service contracts (as applicable).
 - d. Provide names, addresses, and contacts for potential secondary sources of supply.
- C. Operations Contract: The Work under this Section must include all labor, materials, transportation, and support services needed to maintain all systems and equipment (PCS/IPCE) in accordance with the approved Maintenance Plan for the duration of the warranty period.
 - 1. General Requirements
 - a. Maintain locally an adequate stock of parts for replacement or emergency purposes. Only genuine parts and supplies used in the manufacture and installation of the original equipment must be provided.
 - b. Replace or repair materials and parts which become defective or deteriorate for any reason except through misuse or vandalism.
 - c. Furnish competent and trained experts to check, adjust, lubricate (as applicable) and otherwise maintain the PCS/IPCE in operation without defects or deterioration. Provide all necessary spare parts, inventory, tools, cabinets, and test equipment as required for maintenance coverage.
 - d. Local service must be provided to maintain the PCS/IPCE during the warranty period with regularly scheduled maintenance. Avoid performing regularly scheduled maintenance work during peak traffic periods.
 - e. Emergency call-back service for minor repairs and adjustments to return the PCS/IPCE to service must be available on demand, 24 hours per day, seven days per week. In the case of any malfunction, the response time for repair must be limited to two (2) hours, and no equipment, system, or component must be left non-operable after the next business day following notification by the Owner.
 - 2. Contract Duration: Starting at the time of acceptance of the PCS/IPCE by the Owner, provide complete systematic inspection, preventative maintenance, and remedial maintenance of the PCS/IPCE for the duration of the warranty period (inclusive of any extended warranty periods). Extension of warranty and the associated Operations Contract(s) must be at the option of the Owner. Servicing Contractor(s) will notify the Owner of a request to extend sixty (60) days prior to the expiration of the base term. The Increase in cost must be limited to the percentage increase in the cost of living for that year.

1.15 PARCS SYSTEM SUPPLIER/INSTALLER'S QUALITY CONTROL SYSTEM

- A. General: In accordance with Division 1 requirements, the PARCS system supplier/installer (i.e., the Contractor) must establish a Quality Control System for the work of this Section. Controls must be adequate to cover all installation operations.
- B. The Contractor's control system must include, but not be limited to, the following:
 - 1. Review of existing conditions, requirements of related work, installation instructions, storage and handling procedures, and protection measures.
 - 2. Coordination with the PPAP's parking operations unit.
 - 3. Coordination with any other planned or in-progress garage facility repair and/or restoration work.
 - 4. Scheduling and convening a Pre-Installation Conference.
- C. Pre-Installation Conference: A pre-installation conference must be held prior to the commencement of field installation to establish procedures to maintain required working conditions and to coordinate this work with related and adjacent work.
 - 1. The Contractor must require responsible representatives of each party concerned with a portion of the work to attend the conference, including but not limited to the following:

- a. Contractor's Superintendent and Project Manager
- b. Equipment supplier.
- c. Installation Subcontractor(s).
- d. Electrical Subcontractor(s).
- 2. Contractor must have a copy of all approved Shop Drawings and Submittals applicable to the Work present at the pre-construction conference.
- 3. The Owner or owner's agent must be invited to attend the conference at their election and must be notified by the Contractor at least fifteen (15) working days prior to the scheduled date of the conference.
- 4. Minutes of each conference must be recorded by the General Contractor and must be distributed by him/her in typed or printed form to each party in attendance within five (5) working days of the meeting. One copy of these minutes must also be transmitted to the Owner and the Owner's agent for information.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products and Basis-of-Design: All products must be state-of-the-art in meeting the System requirements. Where a Basis-of-Design component is indicated, provide the named product configured and equipped as required to meet IPCE requirements or a comparably configured and equipped product meeting the requirements of this Section.

2.2 MATERIALS

- A. General: Utilize materials indicated below in the manufacture and installation of the IPCE. The use of alternative materials is subject to Owner's approval. All proposed alternative materials must be clearly identified in the Submittals for this Section.
- B. Generic Products
 - 1. Aluminum: Alloy and temper recommended by aluminum producer/manufacturer for type of use and as compatible with specified finish, and as follows:
 - a. Sheet: ASTM B 209
 - b. Extruded Shapes: ASTM B 221
 - 2. Cold-Rolled Steel Sheet: ASTM A 1008/A, Commercial Steel (CS), Type B.
 - 3. Iron and Steel Hardware: ASTM A153 (hot-dip galvanized), includes anchor bolts.
 - 4. Stainless Steel: ASTM A240, Type 304.
 - 5. Bituminous Mastic: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat per ASTM D1187. Provide inert-type noncorrosive compounds free of asbestos fibers, sulfur components, and other deleterious impurities.
- C. Manufactured Products
 - 1. Access Tickets: High-quality ticket paper suitable for production tickets and receipts with applied printable barcode technology. Tickets must be custom printed with text and graphics as determined by the Owner. Ticket size and paper type must be as required by the ticket dispenser and reader requirements.

2.3 SYSTEM (PCS) CONFIGURATION

A. General: See Section 11 12 11 – Parking Control System.

2.4 EQUIPMENT

- A. General
 - 1. The following equipment list consists of basic System components. Auxiliary items required for the proper functioning of the System, whether mentioned or not, must include but not be limited to: heaters, coolers, wiring, transformers, relays, pedestals, etc. It is the manufacturer's responsibility to provide every component necessary for a complete functional System.
 - a. See Integrated Parking Control Equipment Configuration Schedule in Part 3 of this Section for scheduled quantities of the basic System components for various locations within the facility.
 - 2. Equipment must be located as shown on the Drawings. Adjustments may be necessary due to field conditions and may be permitted following consultation with the Owner.
 - 3. Fee Computer: The term "Fee Computer" referenced throughout this RFP document is used to generally address the functionality of parking facility cashiering stations and PCS facility management workstations that will cloud-connected. The Authority recognizes that the same processes and functionality that have traditionally been performed using actual Fee Computers will be performed via a cloud-connected PC (Desktop/Laptop/Tablet) or Cellular device. The proposers are required to explain and provide a PCS cloud-based solution that takes the place of the traditional on-premise server-based Fee Computers but delivers an equivalency of the functionality and performance of Fee Computer devices. Stations (i.e., The cloud-based equivalence of a Fee Computer (i.e. a virtual Cashier Station) to be connected to the FMS platform must be capable of monitoring, and controlling all necessary software through the cloud connection to all the PARCS hardware, devices, and all peripherals as described in this Section. Such Fee Computer stations must be additionally equipped as follows:
 - a. Operation
 - 1) All Fee Computer programming and report generation must be done via FMS Workstation. See Section 11 12 11 for requirements.
 - b. Programming
 - 1) The Fee Computer must be user programmable.
 - 2) Provide a means to program up to 72 cashiering stations.
 - 3) Cashiers will log on to operate the Fee Computer by entering up to a 6-digit alphanumeric code and cashier letter.
 - 4) Refer to the SYSTEM CONFIGURATION part of the specification for further programming features.
 - c. Peripherals
 - 1) Inputs
 - a) Keyboard; Wired (USB port interface) with numeric keypad.
 - b) Computer Mouse: Wired (USB port interface), optical, with center/third button with scroll.
 - 2) Outputs
 - a) Computer Display: Color, 19" flat touchscreen, 0.28 dot pitch or less.
 - b) 1 Ethernet 100/1000 Mbps Networking Port (min.).
 - c) Printers

- d) scanners
- d. Performance Requirements: In addition to Performance requirements indicated in Part I of this Section, the following specific requirements are applicable to Fee Computers:
 - 1) Accommodate password-protected access.
 - 2) Accommodate audible system alarms.
 - 3) Fee Computer Reporting: Each fee computer must be capable of providing the following reports:
 - a) Cash Report: This report will list all revenue received by the cashier. Break down the report as follows:
 - i. Type of report.
 - ii. Date and time of report.
 - iii. Lane number.
 - iv. Lane name.
 - v. Cashier name.
 - vi. Time and date report was last cleared.
 - vii. Quantity and amount of parking fees charged by fee structure.
 - viii. Quantity and amount of preset fees charged (provide 5 preset keys).
 - ix. Quantity and amount of miscellaneous charges.
 - x. Quantity and amount of lost tickets.
 - xi. Quantity and amount of surcharges.
 - xii. Total amount of charges.
 - xiii. Quantity and amount of department validations.
 - xiv. Quantity and amount of debits (unpaid charges).
 - xv. Total amount of credits.
 - xvi. Average parking fee computed.
 - xvii. Number of times the no-sale key was used.
 - xviii. Total number of transactions.
 - xix. Total number of cars that exited.
 - xx. Time card. Supply a time card printout for the cashier. Include the following: time and date cashier logged on, time and date cashier logged off, total time cashier was on shift in hours and minutes, starting transaction number and ending transaction number.
 - b) Lane Report: This report will list all revenue received by all cashiers using the Fee computer. Break down the report as follows:
 - i. Type of report.
 - ii. Date and time of report.
 - iii. Date and time last report was taken.
 - iv. Lane number.
 - v. Lane name.
 - vi. Quantity and amount of parking fees charged by fee structure.
 - vii. Sub-total of quantity and amount of parking fees charged.
 - viii. Quantity and amount charged by each preset key.
 - ix. Quantity and amount of all surcharges.

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- x. Sub-total of quantity and amount of surcharges.
- xi. Quantity and amount of miscellaneous charges.
- xii. Quantity and amount of lost tickets
- xiii. Sub-total of miscellaneous and lost tickets.
- xiv. Total amount of charges.
- xv. Total quantity and amount of debits.
- xvi. Total quantity and amount of merchant validations.
- xvii. Total amount of all credits.
- xviii. Average fee.
- xix. Total no sales.
- xx. Total voids.
- xxi. Total transactions.
- xxii. Total resets. Number of times power for the Fee Computer was turned on.
- c) Time Card Report: This report must include the last time the report was cleared and list the log-on and log-off times and dates for each cashier. This report must also list the starting and ending transaction number of each cashier.
- d) Validation Report: List all validations by user groups as follows:
 - i. User key.
 - ii. Name of user group.
 - iii. Type of validation. Partial-dollar amount, flat-fixed dollar amount, Time-partial time amount and full-total validation of ticket.
- e) Entry/Exit Report: This report will list ticket IN times in one-hour increments or as programmed by the user. User may program up to 24 time segments to track in and out time statistic in the facility.
- f) Length of stay Report: This report will track the length of time a vehicle stays in the facility. The user may program up to 24 time segments to track average time of tickets.
- g) Dollar Statistics Report: This report is the same as the Length of Stay Report except the report will list the time a vehicle stays in the facility by dollar amount.
- h) Refer to the SYSTEM CONFIGURATION part of the specification for further report features.

B. Automatic Barrier Gates

- 1. General: Each automatic barrier gate unit must consist of an operator and controller housed in a cabinet enclosure with a gate arm. Include the following features:
 - a. Operation Modes: On-line communication to FMS with automatic switch to standalone mode if communications are interrupted.
 - b. Field programmable with built-in service diagnostics.
- 2. Performance Requirements: In addition to Performance requirements indicated in Part I of this Section, Automatic Barrier Gate units must have the following minimum requirements:
 - a. Units must be capable of the following:

- 1) Provide the unit with all necessary control logic for activation by a signal from the card or transponder tag reader, exit station, entry station, remote switch, or the Vehicle Detection System.
- 2) Report generation for exception events.
- b. Controller: The controller must contain logic for one-way lanes, two-way lanes, operations with automatic and push button entry/exit stations, and be easily field programmable through the use of easily accessible DIP type switches or by keypad buttons. All gate logic controllers must be removable and interchangeable with the logic controllers of all other gates on this project. Provide output signals for the following counts: Total monthly, total transient, total vehicle, e and total illegal vehicles (see illegal vehicle counts below). These counts must be taken directly from the control logic and not from detector loops. Provide a momentary contact any time a vehicle illegally passes through the lane by tailgating the previous vehicle. Provide two vehicle detectors inside the control logic (see Vehicle Detection System in this Section). The logic controller must send and receive information from the FMS.
- c. Automatic Barrier Gate Reporting: Automatic barrier gate units must provide full reporting functionality including, but not limited to, the following:
 - 1) Gate off line/powered off, online.
 - 2) Gate manually raised or manually lowered.
 - 3) Gate manually raised and a vehicle crossed over the loop detector.
 - 4) Gate opened remotely via a command from the controller.
 - 5) Communication failure.
 - 6) Device Malfunction.
- d. Mechanical: Gate motor minimum 1/3 HP, heavy duty, high output torque, accepting single-phase 115 VAC power input, instant reversing with duty cycle match to a load in excess of 10,000 operations per day.
- e. Electrical: Self-contained, replaceable components. Include wiring for control units. Supply a cadmium-plated connection box for all external connections.
 - 1) All external inputs must be low voltage controlled.
- 3. Fabrication Requirements
 - a. Cabinet: Manufacturer's standard construction.
 - 1) Cabinet Finish: See Finishes section below.
 - 2) Keys: Locks must be keyed to the Owner's current keycode.
 - b. Gate Arm: Fiberglass or Aluminum construction with breakaway gate arm flange for straight arms. Provide folding gate arm where specified or if required by low height clearance. Height of arm is approximately 36 inches in the down position.
- C. Automatic Lane Stations (LS)
 - 1. General: Automatic Lane Station units must be configured to operate as either Lane Entry Station (LSE) Units or Lane Exit Station (LSX) Units as required by the Contract Documents.
 - a. At a minimum, all LS units must be capable of the following:
 - 1) Communicating with the FMS in online mode.
 - 2) Vaulting voided tickets.
 - 3) Scanning barcode validations.
 - b. At a minimum, LSE units must additionally be capable of the following:

- Accepting credit cards for "credit card in" functionality unless, on a location-bylocation basis, the proposer persuades the Owner that "credit card in" would be of no practical benefit.
- c. At a minimum, LSX units must additionally be capable of the following:
 - 1) Reading encoded tickets issued by an Entrance Station.
 - 2) Reading validation tickets generated by a Remote Ticket Validator.
 - 3) Accepting credit/debit cards.
 - 4) Computing parking fees based on the applicable fee schedule for the transaction period and applying validation ticket credits.
 - 5) Allowing transient parkers to pay for parking fees (single ticket at one time) using a valid form of payment and, upon Satisfactory Station Payment,
 - 6) Providing a lost ticket payment option.
 - 7) Issuing a paid transaction receipt (at the patron's option).
- d. Access Configuration: LS units must allow for easy frontal access for patrons seated in a vehicle. Comply with all applicable local, State and ADA accessibility requirements including but not limited to reach of all slots and buttons and sound for all audible and verbal cues.
- 2. Product Options
 - a. Each LS unit must have the following:
 - 1) Color graphic backlit liquid crystal display to display time, date, and messages.
 - 2) Controller(s).
 - 3) Integral proximity card reader.
 - 4) Built-in intercom with a push-to-call button.
 - 5) See Performance requirements below for additional option-related requirements.
 - b. Additional Options for LSE Units
 - 1) Illuminated ticket request button.
 - 2) Ticket Dispenser/Reader Unit: See the Components Article below for additional configuration requirements.
 - 3) Ticket magazines with low ticket alarms.
 - 4) Ticket Reserve: Provide a removable ticket tray, to be located in the base of the cabinet, with a capacity for at least 5000 tickets.
 - 5) Buzzer unit to momentarily sound each time a ticket is issued.
 - 6) Ticket Vault: Vault to accommodate no less than 500 validated tickets.
 - c. Additional Options for LSX Units
 - 1) Exit Verifier/Reader Unit: See Components Article below for additional configuration requirements.
 - 2) Ticket Vault: Vault to accommodate no less than 1000 validated tickets.
 - d. Each LSX Unit must:
 - 1) Process tickets using barcode technology.
 - 2) Process credit/debit cards for payment of parking fees.
- 3. Operation
 - a. On-Line Functionality: When in operation, Automatic Lane Station units must maintain sufficient on-line communication with the FMS to ensure operational functionality including, but not limited to, real time monitoring of the following:

- 1) Transaction data.
- 2) Event notifications and alarms.
- 3) Unit reports.
- b. Patron Interface: Configure LS units to operate as either Entry Station Units or Exit Station Units as required by the THEORY OF OPERATION in Part 1 of this Section.
 - 1) Each LS unit must provide concise customer user instructions with graphic ques where appropriate for user-friendly operation. Patron guidance lights and/or graphics must activate when appropriate and indicate to the patron where to insert appropriate payment.
 - 2) Invalid Operation Indication: If an unreadable, invalid, or expired ticket or credit card is inserted, it must be returned to the patron accompanied by a display message. If applicable, ticket or credit/debit card must be returned to the patron.
- c. Configuration and Service Interface: LS units must be capable of being fully configured and serviced in the field. Units must also be programmable on-line through the FMS.
- d. LS Unit Reporting: Units must provide full reporting functionality including, but not limited to, the following:
 - 1) Ticket Jam.
 - 2) Ticket in Throat.
 - 3) Low Tickets.
 - 4) No Tickets.
 - 5) Encoding Not Read.
 - 6) Back-Out Ticket.
 - 7) Tickets Issued and/or Read.
 - 8) Tickets Read.
 - 9) Arming Loop Activated.
 - 10) Closing Loops Activated.
 - 11) Gate Opened.
 - 12) Tickets Vaulted.
 - 13) Device Malfunction.
 - 14) Standard Reports must include, but not by way of limitation, the following: Totals, inventory status, inventory maintenance activities, transaction journal report, event journal report, and validation/discount report.
- 4. Performance Requirements: In addition to Performance requirements indicated in Part I of this Section, LS units must have the following minimum requirements:
 - a. All Units
 - 1) LS units must operate automatically (completely unstaffed).
 - 2) Field programmable with built-in service diagnostics.
 - 3) Programmable timer for closing automatic barrier gate.
 - 4) Using ticket data stored by the FMS.
 - 5) Controller(s) must not lose any data if power supply is interrupted and must restart automatically upon restoration of power.
 - 6) On-line communication to FMS with automatic switch to standalone mode if communications are interrupted. Provide off-line transaction buffer for 1000 transactions minimum.

- 7) Provide Real-time clock synchronization with FMS for automatic daylight savings time adjustment.
- 8) Report generation for events and exception events.
- 9) All LS units must be in compliance with PCI-Security Standards Council (PCI-SSC) including the Data Security Standard (PCI DSS), Payment Application Data Security Standard (PA-DSS), and PIN Transaction Security (PTS) requirements. Specifically, the payment application used by the machines and software must be listed on the PCI Security Standards Council's website as possessing a Validated Payment Application.
- b. Entry Station Units (LSE)
 - 1) Switchable automatic ticket issuance mode to cause the unit to issue a ticket when a vehicle is detected in-lane. Once a ticket is automatically issued, the ticket request button must be disabled until the lane is automatically reset for the next entering vehicle.
- c. Exit Station Units (LSX)
 - 1) Fee Calculation
 - a) Calculate and display the amount owed on unpaid or insufficiently paid ticket based on current exit time and system rate schedules.
 - b) Accept the exit grace period programmed at the central computer.
- d. Mechanical
 - 1) General: The internal mechanisms must be of quality constructed material with rust protective coating on exposed parts and removable as a unit.
 - Reader Unit: The reader mechanism must interface with the ticket vault in the Lane Station and must be removable as a unit. See Components Article below for additional Reader Unit requirements.
 - 3) Receipt Printer Unit (LSX Units Only): The unit must be equipped with a thermal receipt printer that has a low paper sensor and must be capable of reporting low paper to the FMS software.
- e. Electrical
 - 1) Provide unit with all necessary control logic for activation by a Vehicle Detection System.
 - 2) All components must be replaceable, plug-in and self-contained.
 - 3) All electrical connections must be keyed plug.
 - 4) Supply a cadmium-plated connection box for all external connections and provide a 115 V.A.C. grounded convenience outlet, 60-watt heater, heater on/off switch, preset heater thermostat, dispense on/off power switch and clock on/off switch.
 - 5) Provide surge protection for data lines.
- f. Operating System Functionality: LS units must provide full operating system functionality including, but not limited to, the following (as applicable):
 - 1) General
 - a) Rate structures must be customizable to include variable rates and free parking hours.
 - b) LSX Units Only: Receipts must be issued with the following information: Facility name, date, time in, time out, amount, transaction number, unit I.D. number, and rate selected.
 - 2) Validation Accounts

- a) Store IDs (validation accounts) must be assignable to participating merchants that will be validating parking patron's valid entry tickets with a Remote Ticket Validator.
- b) Each Store ID must be programmable in the automatic LS with its own unique ID.
- c) Validations at a minimum must be by time, fee, percent, flat fee, and surcharge.
- d) LSX Units Only: Units must read the Store ID encoded on the ticket and automatically apply the discount or surcharge to the parking fee.
- 3) Taxes (LSX Units Only)
 - a) Units must be programmable to include or exclude tax, multiple tax rates.
 - b) Tax must be programmable to apply before or after validation is applied.
 - c) Each calculation mode must have the capability to apply a programmable tax (0.00 percent to 99.99 percent).
 - d) The tax total must be reported in each total of Total Tax/True Government Take (T/TGT).
- 4) Cancellation of a Transaction (LSX Units Only)
 - a) A transaction may be cancelled at any time prior to completed payment of the parking fee.
 - b) Once full parking fee payment is completed or credit card approval process has started, transaction cancellation cannot be performed and refunds must not be available.
- 5. Fabrication Requirements
 - a. Cabinet: Cabinet must be durable, vandal resistant, and weather resistant in accordance to the environmental conditions indigenous to the area in which it is installed.
 - 1) Units must be sized/configured to contain all necessary internal components in a readily serviceable arrangement.
 - 2) Units must have lock system and appropriate alarm contacts to discourage tampering.
 - 3) The face plate on POFS units must include illuminated buttons to facilitate operation.
 - 4) Keys: For each key type, furnish two (2) keys for each cabinet. Each cabinet must be uniquely keyed.
 - 5) Cabinet Finish: See Finishes section below.
- D. Automatic Pay-On-Foot Stations (POFS)
 - 1. General
 - a. At a minimum, POFS Units must be capable of the following:
 - Allowing transient parkers to pay for parking fees (single ticket at one time) using a valid form of payment and, upon Satisfactory Station Payment, issuing a validated ticket to allow the patron to return to their vehicle and exit the facility within a preprogrammed grace period (pursuant to the Theory of Operation requirements of Part I of this Section).
 - 2) Communicating with the FMS in online mode.

- 3) Computing parking fees based on the applicable fee schedule for the transaction period and applied validation ticket credits.
- 4) Accepting credit/debit cards.
- 5) Reading encoded tickets issued by an Entrance Station.
- 6) Reading validation tickets generated by a Remote Ticket Validator.
- 7) Vaulting voided tickets.
- 8) Providing a lost ticket payment option.
- 9) Issuing a paid transaction receipt (at patron's option).
- 10) Additional Requirements for Units Scheduled to Accept Cash Payments (POFS+C)
 - a) Units must additionally accept banknotes as payment, supplying change in banknote currencies.
 - b) Units must additionally include a lockable banknote vault.
- b. Access Configuration: POFS units must allow for easy frontal access. Comply with all applicable local, State, and Federal ADA accessibility requirements including but not limited to the reach of all slots and buttons and sound for all audible and verbal cues.
- 2. Product Options
 - a. Each POFS unit must have the following:
 - 1) Color graphic backlit liquid crystal display to display time, date and messages.
 - 2) Controller(s).
 - 3) Built-in intercom.
 - 4) Exit Verifier/Reader Unit: See Components Article below for additional configuration requirements.
 - 5) Ticket Vault: Vault to accommodate no less than 1000 validated tickets.
 - 6) For Units Scheduled to Accept Cash Payments (POFS+C): Provide the following additional options:
 - a) Vaults for banknotes.
 - 7) All options as required to meet the operation, performance, and fabrication requirements of this Section.
 - b. Each POFS unit must:
 - 1) Process tickets using barcode technology.
 - 2) Process credit/debit cards for payment of parking fees.
 - 3) For Units Scheduled to Accept Cash Payments (POFS+C) (no coins)
 - a) Be capable of accepting 1, 5, 10, and 20-dollar (US) banknotes in any combination for payment of parking fees. Units must automatically reject any counterfeit and/or unauthorized foreign currency.
 - b) Return change (banknotes) and have self-replenisher/recycler for Banknotes.
- 3. Operation
 - a. On-Line Functionality: When in operation, POFS units must maintain sufficient on-line communication with the FMS to ensure operational functionality including, but not limited to, real time monitoring of the following:
 - 1) Transaction data.
 - 2) Event notifications and alarms.
 - 3) Unit reports.

- b. Patron Interface: Configure POFS units to operate as required by the THEORY OF OPERATION in Part 1 of this Section.
 - Front panel must include a graphic monitor to display all user information and include operational buttons to select and respond to program prompts. User operation must include at a minimum:
 - a) Cancel.
 - b) Lost ticket.
 - c) Receipt.
 - d) Help (intercom).
 - e) Three other assignable function buttons.
 - 2) Each POFS unit must provide concise customer user instructions with voice and graphic ques where appropriate for user-friendly operation. Patron guidance lights and/or graphics must activate when appropriate and indicate to the patron where to insert appropriate payment.
 - 3) Invalid Operation Indication: If an unreadable, invalid, or expired ticket or credit card is inserted, it must be returned to the patron accompanied by a display message. If applicable, ticket or credit/debit card must be returned to the patron.
- c. Configuration and Service Interface: POFS units must be capable of being fully configured and serviced in the field. Units must also be programmable on-line through the FMS.
- d. Unit Notifications: POFS units must provide event notifications including but not limited to the following:
 - 1) CPU error.
 - 2) Door alarm.
 - 3) Door open.
 - 4) Shutter error.
 - 5) Reader error.
 - 6) Credit/debit card server error.
 - 7) Credit/debit card processing error.
 - 8) Time out error.
 - 9) Receipt paper out.
 - 10) For Units Scheduled to Accept Cash Payments (POFS+C): Units must provide additional event notifications including but not limited to the following:
 - a) Bank note vault full.
 - b) Bank note reader error.
 - c) Bank note vault error.
 - d) Out of change; operation stopped.
- e. POFS Unit Reporting: Units must provide full reporting functionality including, but not limited to, the following (as applicable):
 - 1) Ticket Jam.
 - 2) Ticket in Throat.
 - 3) Encoding Not Read.
 - 4) Tickets Read.
 - 5) Tickets Vaulted.
 - 6) Device Malfunction.

- 7) Standard Reports must include, but not by way of limitation, the following: Totals, inventory status, inventory maintenance activities, transaction journal report, event journal report, and validation/discount report.
- 4. Performance Requirements: In addition to the Performance requirements indicated in Part I of this Section, the following specific requirements are applicable to all POFS units:
 - a. General
 - 1) POFS units must operate automatically (completely unstaffed).
 - 2) Field programmable with built-in service diagnostics.
 - 3) Using ticket data stored by the FMS.
 - 4) Controller(s) must not lose any data if the power supply is interrupted and must restart automatically upon restoration of power.
 - 5) On-line communication to FMS with automatic switch to standalone mode if communications are interrupted. Provide an off-line transaction buffer for 1000 transactions minimum.
 - 6) Provide Real-time clock synchronization with FMS for automatic daylight savings time adjustment.
 - 7) Report generation for events and exception events.
 - 8) POFS units must be in compliance with PCI-Security Standards Council (PCI-SSC) including the Data Security Standard (PCI DSS), Payment Application Data Security Standard (PA-DSS), and PIN Transaction Security (PTS) requirements. Specifically, the payment application used by the machines and software must be listed on the PCI Security Standards Council's website as possessing a Validated Payment Application.
- b. Mechanical
- 1) General: The internal mechanisms must be of quality constructed material with rust protective coating on exposed parts and removable as a unit.
- 2) Reader Unit: The reader mechanism must interface with the ticket vault in the POFS unit and must be removable as a unit. See the Components Article below for additional Reader Unit requirements.
- Receipt Printer Unit: The unit must be equipped with a thermal receipt printer that has a low paper sensor and must be capable of reporting low paper to the FMS software.
- c. Electrical
 - 1) Provide the unit with all necessary control logic for activation upon approach by a patron to the front of the unit.
 - 2) All components must be replaceable, plug-in, and self-contained.
 - 3) All electrical connections must be keyed plug.
 - 4) Supply a cadmium-plated connection box for all external connections and provide a 115 V.A.C. grounded convenience outlet, heater, heater on/off power switch, preset heater thermostat, dispense on/off power switch, and clock on/off power switch.
 - 5) Provide surge protection for data lines.
 - 6) Provide a UPS power module.
- d. Operating System Functionality (All POFS Units): Units must provide full operating system functionality including, but not limited to, the following (as applicable):
 - 1) General

- a) Field programmable with built-in service diagnostics.
- b) Rate structures must be customizable to include variable rates and free parking hours.
- c) Receipts must be issued with the following information: Facility name, date, time in, time out, amount, transaction number, unit I.D. number, and rate selected.
- 2) Validation Accounts
 - a) Store IDs (validation accounts) must be assignable to participating merchants that will be validating parking patron's valid entry tickets with a Remote Ticket Validator.
 - b) Each Store ID must be programmable in the POFS with its own unique ID.
 - c) Validations at a minimum must be by time, fee, percent, flat fee, and surcharge.
 - d) Units must read the Store ID encoded on the ticket and automatically apply the discount or surcharge to the parking fee.
- 3) Taxes
 - a) Units must be programmable to include or exclude tax, and multiple tax rates.
 - b) Tax must be programmable to apply before or after validation is applied.
 - c) Each calculation mode must have the capability to apply a programmable tax (0.00 percent to 99.99 percent).
 - d) The tax total must be reported in each total of Total Tax/True Government Take (T/TGT).
- 4) Cancellation of a Transaction
 - a) A transaction may be canceled at any time prior to the completed payment of the parking fee.
 - b) Once full parking fee payment is completed or the credit card approval process has started, transaction cancellation cannot be performed and refunds must not be available.
- e. Additional Operating System Functionality for POFS+C Units:
 - 1) Out of Change
 - a) Units must be programmable to stop operation.
 - b) Display a closed message to the patron.
 - c) Issue a claim check for the amount of change due to the patron.
 - 2) Bank Note Full Operation: When the note vault is full, credit/debit cards must still be accepted. An alarm must be signaled through the FMS when the note vault is full.
 - 3) Off-line Credit/Debit Card Control
 - a) Off-line with the system server, the POFS must continue to accept payment in cash (banknote).
- 5. Fabrication Requirements
 - a. Cabinet: The cabinet must be durable, vandal resistant, and weather resistant in accordance with the environmental conditions indigenous to the area in which it is installed.
 - 1) Units must be sized/configured to contain all necessary internal components in a readily serviceable arrangement.

- 2) Units must have a lock system and appropriate alarm contacts to discourage tampering.
- 3) The face plate on POFS units must include illuminated buttons to facilitate operation.
- 4) Keys: For each key type, furnish two (2) keys for each cabinet. Each cabinet must be uniquely keyed.
- 5) Signage: Each POFS unit must have an easily readable "Please Insert Ticket" sign on the approach side of the machine.
- 6) Cabinet Finish: See Finishes Article below.
- b. Security: POFS should contain the following security features at a minimum:
 - 1) Concealed hinges.
 - 2) Multiple locks to access the front cabinet door.
 - 3) Password protection (interface).
 - 4) Alarm siren.
 - 5) For Units Scheduled to Accept Cash Payments (POFS+C): Units must provide additional security features including but not limited to the following:
 - a) Vault units must be designed such that one key is required to remove the vault unit and a separate key (including keyway) is required to unlock the vault unit.
 - b) Lock to access the banknote vault.
 - c) Lock to access the drawer of the bank note vault.
- E. Remote Ticket Validators (Merchant Validation Readers)
 - 1. Operation
 - a. General
 - 1) Remote Ticket Validator units must be compact standalone desktop units for remote use by authorized entities (merchants, theaters, offices, etc.) to offer a parking discount to their customers.
 - 2) Units must allow the authorized entity to validate the parking ticket with a predefined rate or to select a different validation type.
 - Units must be programmable for up to four validation configurations on one device. Validation types must include, but not be limited to, the following:
 - a) Flat Rate
 - b) Discounted Rate
 - c) Hours Discount
 - d) Percentage Discount
 - b. Monitoring (Online Operation)
 - 1) Transaction and all events monitored on FMS software in real time.
 - 2. Product Options
 - a. Each Remote Ticket Validation entity shall be provided by account code established on the FMS cloud platform for validation program terms negotiated by program participants.
 - b. Program must provide means for program participants to obtain and distribute prepurchased validation stickers or packages of chaser tickets for distribution customers.

- 3. Performance Requirements: In addition to Performance requirements indicated in Part I of this Section, Remote Ticket Validator units must have the following minimum requirements:
 - a. General
 - 1) Field programmable with built-in service diagnostics.
 - 2) Support for RS-485 or TCP/IP communication.
 - b. Electrical
 - 1) Voltage 100-240V AC 50-60 HZ.
 - 2) Data line surge suppressor.
 - 3) UL rated.
 - c. Operating System Functionality: Remote Ticket Validator units must provide functionality including, but not limited to, the following (as applicable):
 - 1) Multiple time increments (i.e., 1-hour, 2-hour, 3-hour).
 - 2) Adjustable grace periods (i.e., 15 minutes, 20 minutes, 25 minutes).
 - 3) Time restrictions (good only between a specified time and/or day of the week).
- 4. Fabrication Requirements
 - a. Cabinet: The cabinet must be durable and vandal resistant.
 - 1) Rugged steel housing for durability.
 - 2) Units must be sized/configured to contain all necessary internal components in a readily serviceable arrangement.
 - 3) Units must have lock system and appropriate alarm contacts to discourage tampering.
 - 4) Keys: For each key type, furnish two (2) keys for each cabinet. Each cabinet must be uniquely keyed.
 - 5) Cabinet Finish: Manufacturer's standard durable finish/color.
- F. Illuminated Signage Systems
 - 1. General Illuminated variable message signage systems must be the parking control equipment manufacturer's standard manufacture and/or integrated product providing it is electrically-powered and meets or exceeds the basis-of design product(s) indicated.
 - a. Provide direct view LED illuminated signs suitable for outdoor use.
 - b. All signs must be single faced unless noted otherwise.
 - 2. Operation
 - a. "Full" Signs
 - 1) Basis of Design: Signal-Tech TCL718R-135DS (www.signal-tech.com) or approved equivalent.
 - 2) General
 - a) Signs must have double stroke "FULL" (red) display copy.
 - b) Signs must be capable of being activated either manually or automatically from the facility management software system.
 - 3) Locations: Provide one sign at each vehicular entrance to the facility.
 - 4) Mounting Configuration: Dual Angle 30º/45º Wall Mount (0.125" bent plate), post mount, or pedestal mount, unless shown otherwise in the Drawings.
 - b. Remote Fee Indicators

- General: Remote Fee Indicators must be freestanding pedestal mounted devices connected to the fee computer and must indicate the following utilizing a digital display:
 - a) Amount due
 - b) Change
 - c) Time
- 2) Product Options
 - a) Pedestal mount must be factory finished.
 - b) The cabinet must be weatherproof with a clear impact proof window.
 - c) A connection cable must be provided for connection to the fee computer.
 - d) See requirements for Illuminated Signage Systems for additional product options.
- 3) Mounting Configuration: Wall mount unless shown otherwise in the Drawings.
- c. Illuminated Lane Controllers
 - 1) Where indicated in Part 3 of this Section, select one of the following, on a locationby-location basis:
 - a) "X" and Down Arrow Display
 - i. Basis of Design: Signal-Tech TCL1212RG-175DS or TCL1818RG-175DS (www.signal-tech.com) or approved equivalent.
 - ii. General: Signs must have double stroke "arrow" (green)/ "X" (red) display copy.
 - iii. Cabinet Size: Minimum 12"x12". Provide larger if space permits.
 - b) Open-Closed Display
 - I. Basis of Design: Signal-Tech TCL718GR-100 or TCL1026GR-100 (www.signal-tech.com) or approved equivalent.
 - II. General: Signs must have a single stroke "open" (green)/ "closed" (red) display copy.
 - III. Cabinet Size: Minimum 7"x 18". Provide larger if space permits.
 - 2) Mounting Configuration: Full-width ceiling mount, side mount, angle mount, swivel-mount, double-post mount, or single-post mount unless shown otherwise in the Drawings. Include all required brackets for complete installation.
- 3. Accessories: Provide the following accessories meeting the sign manufacturer's requirements.
 - a. Switching
 - 1) Provide multi-gang switches installed in a standard electrical box of appropriate configuration. For locations where electrical boxes are surface mounted, provide additional enclosure, provide additional enclosure as required to accommodate the manufacturer's standard switch plates.
- 4. Performance Requirements
 - a. LED lamps must be industry-standard super-bright with a wide viewing angle.
 - b. The failure of an LED string must not cause the failure of any other LED string.
 - c. Operational temperature range: -30°F to +165°F.
 - d. Humidity range: 0% to 99% (non-condensing).
 - e. Electrical
 - 1) Factory wired complete (field connection for line-in only).

- 2) Integrated solid-state power supply.
- 3) UL approved for wet locations.
- 4) LED Circuitry
 - a) The circular base of the discrete LEDs must be soldered so that they are flush. All LEDs must be perpendicular to the circuit board.
 - b) All exposed metal on both sides of the LED circuit board (except connector contacts) must be protected from water and humidity by an application of conformal coating. The conformal coating must contain a UV brightener to aid in visual inspection.
 - c) The presence of ambient radio signals, magnetic interference, and electromagnetic interference must not impair the performance of the sign system. Interference includes power lines, transformers, and motors. The sign will not radiate electromagnetic signals that adversely affect any other electronic device, including those located in vehicles passing underneath or near the sign and its' controller.
- 5) Electrical Characteristics: 120 volts AC
 - a) Low Voltage Signage Option: At Contractor's option, low voltage signage may be provided. All conductors and transformers must be enclosed in metallic conduits and/or enclosure and must be suitable for exterior exposure in areas open to the elements.
- 5. Fabrication Requirements
 - a. Cabinet: Cabinet must be durable and weather resistant in accordance to the environmental conditions indigenous to the area in which it is installed.
 - 1) All cabinet components must be manufactured from corrosion-resistant material. All seams must be weather-tight. All-hardware must be tamper-proof type.
 - 2) Face panel to be smoke tinted polycarbonate (1/8" min. thickness) so that message blanks-out when sign in off.
 - 3) Mounting: Configure cabinet to meet mounting type indicated in the Contract Documents.
 - 4) Cabinet Color: Manufacturer's standard bronze color.
 - b. Mounting: All cabinets to be provided with mountings manufactured from corrosionresistant material compatible with sign cabinet. All mountings must be provided by the illuminated signage manufacturer.
 - 1) Finish: Match sign cabinet finish.
- G. Pedestrian Alert Systems
 - 1. General: Pedestrian Alert Systems must consist of two weatherproof strobes and one weatherproof sounder located at each gate-controlled vehicular exit from the garage.
 - 2. Strobe Light
 - a. Basis of Design: Cooper Industries XB13 Series "Uncertified" or approved equivalent.
 - b. Materials
 - 1) Glass-reinforced polyester housing.
 - 2) UV stable polycarbonate lens.
 - 3) Stainless steel cover screws.
 - 4) Stainless steel lens guard.
 - c. Tube Type: Xenon Discharge.

- d. Tube Energy: 10 joules (second flash 7.5 joules).
- e. Tube Life: >1 x 106 flashes.
- f. Dual Flash Rate
 - 1) Time Between Dual Flashes: 0.5 second.
 - 2) Charging Time: 1 second.
 - 3) Cycle: Repeats every 1.5 seconds
- g. Operating Temperature: -67 °F to 158°F.
- h. Voltage: 24V DC.
- i. Label: None.
- j. Finish: Color epoxy coated to match Owner's selected color sample.
- k. Lens Color: Amber.
- 3. Sounder
 - a. Basis of Design: Cooper Industries DB7 "Uncertified" or approved equivalent.
 - b. Materials
 - 1) Glass-reinforced polyester housing.
 - c. Stainless steel cover screws.
 - d. Sound Output
 - 1) Up to 110dB(A) output.
 - e. 27 tones, user selectable.
 - f. Operating Temperature: -67 °F to 158°F.
 - g. Voltage: 24V DC.
 - h. Label: None.
 - i. Finish: Color epoxy coated to match Owner's selected color sample.
- 4. Power Supply: Provide low voltage power supply/supplies as required. If power supply/supplies cannot be housed within the Pedestrian Alert System devices or within the cabinet of the activating gate, provide an additional enclosure suitable for exterior conditions.
- 5. Fabrication Requirements: All components must be durable, vandal resistant, and weather resistant in accordance with the environmental conditions indigenous to the area in which it is installed.

2.5 COMPONENTS

- A. Freestanding Device Housings (Pedestals)
 - 1. General: Pre-engineered "gooseneck" pedestal for single device housing, standard 42 inches off vehicle grade (unless shown otherwise in the Drawings) with weatherproof housing sufficiently sized to accommodate required devices.
 - 2. Fabrication Requirements
 - a. Weatherproof housing and mounting hardware must be durable, vandal resistant, and weather resistant in accordance with the environmental conditions indigenous to the area in which it is installed.
 - 1) Provide a hinged faceplate with an integral lock.
 - 2) Keys: For each key type, furnish two (2) keys for each cabinet. Each cabinet must be uniquely keyed.
 - 3) Manufacturer's standard construction and finishes.

- b. Pedestal
 - 1) Heavy-gauge steel with baseplate for bolt-down attachment.
 - 2) Mounting hardware to be hot-dip galvanized. All exposed threads for acorn nuts.
 - 3) Factory Finish: See the Finishes section below.
- B. Vehicle Detection Systems
 - General: Each vehicle detection system must consist of a digital detector module and one or more inductance loops (sensing loops) working in conjunction to detect the presence of a vehicle as it passes over the loop(s) and generate an electric signal to operate other control equipment.
 - 2. Detector Modules
 - a. General: Unless indicated otherwise, vehicle detector modules must be installed within adjacent parking equipment cabinetry serving the same lane (no separate enclosure required). Installation must be shielded to prevent Radio Frequency Interference (RFI), allowing for vehicle detector operation within an electrically noisy environment typically found in parking systems.
 - b. Required Features/Functions
 - 1) Compact Plug-In Design
 - 2) Loop Frequency Selection
 - 3) Self-Tuning
 - 4) Selectable Permanent Presence
 - 5) Automatic Sensitivity Boost
 - 6) Detection Filter (Small or Fast-Moving Objects)
 - c. Electrical Requirements
 - 1) LED Indicators for all Functions
 - 2) Low Voltage Loop Interface
 - 3) Loop Isolation Protection
 - 4) Contacts must be capable of switching 1 Ampere of current 24 VAC, 15 VDC.
 - 5) All relay output lines must terminate in a weatherproof terminal block.
 - 3. Inductance Loops
 - a. General: Inductance loops must provide a vehicle detection height of 20 inches.
 - b. Loop Wire: 14 gage, XHWN or THWN copper; loop size as required to meet functional requirements listed above.
 - c. Loop Groove Fill: Loop sealant and backer rod, as recommended by the manufacturer, must be compatible with loop wire, substrate, and all substrate sealants/coatings. Contractor to coordinate.
 - 4. Performance Requirements: In addition to Performance requirements indicated in Part I of this Section, the following specific requirements are applicable to vehicle detection systems:
 - a. Systems must be designed to operate in temperature range of -40 to 160 °F.
- C. Reader Units
 - 1. General: Reader units must be configured to operate as either Ticket Dispenser/Reader Units (R/TD) or Exit Verifier/Reader Units (R/EV) as required by the Contract Documents.
 - a. At a minimum, all Reader Units must be capable of the following:

- 1) Reader mechanism must be of quality constructed material with rust protective coating on exposed parts.
- 2) The reader mechanism must be removable as a unit.
- 3) Provide single slot operation for tickets/cards. The ticket/card slot must be illuminated.
- 4) Functionality: All readers must:
 - a) Must read all accepted tickets, management cards, and credit cards.
 - b) Erase encoding from all vaulted tickets.
 - c) Print and vault all paid tickets with transaction data including at a minimum month, day, year, time of payment, fee, and calculated rate.
- 2. Product Options
 - a. Reader Units must have the following:
 - 1) Controller(s).
 - 2) Ticket printing and issuing mechanisms.
 - 3) Thermal printer.
 - 4) Program timer for closing barrier gate.
 - 5) Vault and magazine interfaces as required by host equipment.
- 3. Operation, General
 - a. Configuration and Service Interface: Reader Units must be capable of being fully configured and serviced in the field. Units must also be programmable on-line through the FMS.
- 4. Operation for Ticket Dispenser/Reader Units (R/TD)
 - a. Reader Functionality
 - 1) Unit will reject any attempted ticket insertions.
 - 2) Inserting Credit Card into the unit results in the following actions unless, on a location-by-location basis, the proposer persuades the Owner that "credit card in" would be of no practical benefit:
 - a) Valid Credit Card: The unit captures and sends card information to the FMS, sends a programmed display message to the Entrance Station, returns the card, and automatically sends a signal to raise the barrier gate.
 - b) Invalid Credit Card: The unit sends a programmed display message to the Entrance Station, rejects the card, and sends an alarm signal to the FMS. Once the credit card is removed, the system resets.
 - 3) For locations where "credit card in" is not required Unit will reject any attempted credit card insertions.
 - b. Ticket Dispenser
 - 1) Ticket Dispenser Functionality: Units must provide functionality including, but not limited to, the following:
 - a) Print a unique six-digit identification number on the ticket to be used in the event the ticket encoding cannot be read.
 - b) Be user-definable for applying validation to a ticket and be able to distinguish between concurrent rates and rate structures for specific areas or purposes.

- c) Detect when a ticket is issued but not taken and void the ticket so that it will be retracted and retained in the internal bin.
- d) Detect when a ticket is taken but the car does not cross over the closing loop (a back-out ticket) and void the ticket as such so that it will be rejected at a cashiering device.
- e) Assign, in real-time, a non-resettable sequence number for each successful ticket issuance for audit purposes.
- f) Be capable of incrementing or decrementing occupancy counters.
- g) Be capable of disabling the ticket issue function when occupancy counter limits are reached (and enable the ticket issue function when the occupancy drops below the limit).
- h) Be capable of activating a "lot full" sign when occupancy counter limits are reached (and deactivating the lot full sign when the occupancy drops below the limit).
- i) Print the time and date on all tickets issued.
- j) Not permit any duplicated ticket usage.
- k) Disabling the card reader when occupancy counter limits are reached (and enable the card reader when the occupancy drops below the limit).
- I) Disabling the ticket dispensing mechanism upon a successful card read.
- 5. Operation for Exit Verifier/Reader Units (R/EV)
 - a. Reader Functionality
 - 1) Inserting exit ticket into the unit results in the following actions:
 - a) Valid Exit Ticket: Unit captures ticket and automatically sends signal to raise barrier gate.
 - b) Invalid Exit Ticket: Unit rejects ticket.
 - 2) Inserting Credit/Debit Card into the unit results in the following actions:
 - a) Valid Credit/Debit Card: Unit captures and sends card information to the FMS and waits for completed transaction signal. Upon completed transaction signal, offers receipt option, sends programmed display message to the Exit Station, returns card and automatically sends signal to raise barrier gate.
 - b) Invalid Credit/Debit Card: Unit sends programmed display message to the Exit Station, rejects card, and sends alarm signal to the FMS. Once debit/credit card is removed, the system resets.
 - b. Exit Verifier
 - 1) Fee Calculation
 - a) Calculate and display amount owed on unpaid or insufficiently paid ticket based on current exit time and system rate schedules.
 - b) Accept the exit grace period programmed via the FMS.
 - 2) Using ticket data stored by the FMS.
- 6. Performance Requirements
 - a. General: In addition to Performance requirements indicated in Part I of this Section, the following specific requirements are applicable to ticket dispenser/card reader units:
 - 1) Field programmable with built-in service diagnostics.

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- 2) Provide the unit with all necessary control logic for activation by a Vehicle Detection System.
- 3) Report generation for events and exception events.
- Mechanical: Units must be of quality constructed material with rust protective coating on exposed parts. Each unit must be field removable, and all electrical connections must be keyed plug. Units must be capable of activation by Vehicle Detection System. The unit must use perforated fanfold tickets. At the moment a ticket is issued, it must be imprinted with the hour, minute, month, and date of issuance.
- c. Electrical: All components must be replaceable, plug-in, and self-contained.
- D. Intercom System
 - 1. General
 - a. VoIP Intercoms will be located at patron-interface equipment locations as indicated in the "System Configuration" list in Part 3 of this section.
 - b. Master Intercom Operations: On a location-by-location basis, the proposer must include the following options and shall provide any recommendations for the Owner to select one:
 - 1) Master Intercom Station
 - a) The master intercom station will be located in the Parking Office.
 - b) Intercom master station located in the Parking Office must include call forwarding to a land phone or cell phone.
 - 2) Web Functionality
 - a) The FMS will host (or cooperate with) a virtual master intercom software application.
 - b) Master intercom functionality must include call forwarding to a land phone or cell phone.
 - c. Where remote intercoms cannot be integrated into an automatic lane station or similar device, coordinate intercom installation on an Auxiliary Lane Station meeting the requirements of this Section.
- E. Access Control Units
 - 1. Proximity Card Reader Units
 - a. General: Each Proximity Card Reader Unit must consist of a self-contained, compact reader/controller combination device that is equipped to send activation signals to the PCS/IPCE and related equipment when an authorized card is presented. Include the following features:
 - 1) Operation Modes: On-line communication to FMS with automatic switch to standalone mode if communications are interrupted. Provide an off-line transaction buffer for 1000 transactions minimum.
 - 2) Real-time clock synchronization with FMS with programmable daylight savings time adjustment.
 - 3) Field programmable with built-in service diagnostics.
 - b. Operation
 - 1) Reader/Controller
 - a) Reader: Proximity type for proximity cards; read range of up to 18 inches.

- b) Reader must buffer a minimum of 255 messages in memory to assure that information will not be lost if the reader is in an off-line mode and not communicating with the FMS.
- c) Provide one master 24-hour level and 5-time programmable levels for time zones.
- d) Provide a flash memory for the transaction buffer.
- e) Void a card or group of cards out of memory.
- f) Make valid a card or group of cards in memory.
- g) Provide the following programmable anti-passback features:
- h) Full anti-passback will not allow a card to be used in the same mode (entry or exit) two times in a row and the gate will not open.
- i) Passive anti-passback will allow a card to be used more than once in the same mode (entry or exit) and occurred and will allow access in or out.
- j) Sync Mode will automatically operate every time Full or Passive antipassback is programmed. The Sync Mode will allow all cards to be used one time in an entry or exit operation before the anti-passback mode takes effect.
- 2) Provide all necessary software and hardware to communicate with the FMS.
- Access Control Unit Reporting: Access control unit must provide full reporting functionality for events and exception events including, but not limited to, the following:
 - a) Communication failure.
 - b) Device Malfunction.
- c. Performance Requirements
 - 1) In addition to Performance requirements indicated in Part I of this Section, the following specific requirements are applicable to Proximity Card Reader Units.
 - a) Provide unit with all necessary control logic for activation by a Vehicle Detection System.
 - b) Electrical: Primary power must be 115 VAC. Secondary Power must be 24 VAC (24 VDC) or less.

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations pertaining to the designating and applying of finishes.
- B. Durable Color Finish: Provide Manufacturer's standard baked-enamel or powder coat finish as most appropriate for exposure conditions anticipated.
 - 1. Finish interiors and exteriors of cabinets.
 - 2. Colors to be Manufacturer's standard. Colors to be selected by Owner.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, structural support, sleeves, anchorage, and conditions under which the work of this Section is to be performed before installation, with installer present, for compliance with

requirements for installation tolerances and other conditions affecting performance and timely completion of the Work.

- 1. Prior to beginning installation, examine areas to receive parking control equipment. Verify that critical dimensions are correct and that conditions are acceptable.
- 2. Verify that anchor bolts and conduit stub-up locations are ready to receive work and are as indicated in the approved Shop Drawings.
- B. Report all deviations from the Contract Documents and/or conditions detrimental to performance of the Work to the Architect in writing.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide templates for anchor bolts and other items encased in concrete or below finished surfaces in sufficient time so as not to delay work.
- B. Illuminated Signage
 - 1. Signs must be free from sharp edges, burrs, and other defects. Sawed edges must be smooth and properly finished.
 - 2. All exposed sign surfaces must be free of glue, fingerprints, dirt, grease, or any other imperfections upon completion of installation.

3.3 INSTALLATION

- A. General
 - 1. Coordination: Sequence, coordinate, and integrate the various elements of the PCS/IPCE with other building components to facilitate an optimized installation.
 - 2. Rough-In: Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected. Refer to equipment specifications and produce data for rough-in requirements.
 - a. Anchor Bolts: Furnish anchor bolts and other connectors required for securing equipment to in-place work.
 - b. Detector Loops: Cut 1/4-inch x 1 1/2 inch (max.) deep slots in concrete to the configuration shown on shop drawings. The corners of all rectangular loops must have 45-degree cuts to prevent sharp corners from puncturing loop wire.
 - 3. Install systems, materials, wiring, and equipment to conform with the manufacturer's instructions and approved Submittal data, including coordination drawings, to the greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer the conflict to the Owner.
- a. Detector Loops: Install loops in accordance with the manufacturer's instructions. After testing loop wires, seal slots with the manufacturer's recommended sealant.
 - 4. Install materials, and equipment level and plumb, parallel and perpendicular to other building systems and components.

- 5. All products mounted on concrete must have faying surfaces coated with bituminous mastic to prevent corrosion due to cathodic action or, subject to Architect approval, suitable gasket/gasket washers must be provided.
- 6. Install equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with a minimum of interference with other installations.
- B. Illuminated Signage
 - 1. Provide anchorage devices and fasteners where necessary for securing signs; including threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors as required.
 - 2. Locate sign units and accessories where shown or scheduled, using mounting methods of the type described and in compliance with the manufacturer's instructions, unless otherwise indicated.
 - 3. Install sign units level, plumb and at heights indicated, with sign surfaces free from distortion or other defects of appearance.
 - 4. All metal signs and supports mounted on concrete must have faying surfaces coated to prevent corrosion due to cathodic action or suitable gasket/gasket washers must be provided.
 - 5. Touch up of finish surfaces damaged during installation must be done with materials furnished by manufacturer and used according to direction from manufacturer.
- C. Pedestrian Alert Systems
 - 1. Provide anchorage devices and fasteners where necessary for securing components; including threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors as required.
 - 2. Locate components and accessories must be install where shown or scheduled, using manufacturer-approved mounting methods.
 - 3. Install components units must be level, plumb and at heights indicated.
 - 4. All components mounted on concrete must have faying surfaces coated to prevent corrosion due to cathodic action or suitable gasket/gasket washers must be provided.
 - 5. Touch up of finish surfaces damaged during installation must be done with materials furnished by manufacturer and used according to direction from manufacturer.

3.4 TESTING/ACCEPTANCE

- A. All equipment is to be tested for compliance with the manufacturer's performance standard and compliance with the performance requirements specified in this RFP.
- B. In addition, before acceptance of the complete installation, the following performance standards must be met:
 - 1. All mechanical components must be operational without downtime for a period of ten (10) working days.
 - 2. All electronic equipment must be operational without downtime or programming problems for a complete monthly report cycle.
 - 3. For each downtime period of four hours or more on the mechanical equipment one working day will be added to the acceptance cycle.

- 4. On electrical equipment, each downtime period of eight hours or programming problem that delays the daily report cycle will add two working days to the acceptance cycle.
- 5. Upon completion of system testing and before beginning the acceptance cycle, submit all Operation and Maintenance Data required under Part 1 of this section.
- C. Remedial action deemed necessary by the Architect and resulting from non-compliance with the Contract requirements must be addressed as described in Article 1.9 "Corrective Measures" of Section 01 45 00 of these Specifications.
- 3.5 ADJUSTING OF EQUIPMENT
 - A. Adjust all equipment provided this Section so that it operates smoothly, easily and properly. Confirm that locks engage accurately and securely without forcing or binding.
 - B. Lubricate hardware and other moving parts as required within the manufacturer's installation procedures to assure proper operation.
- 3.6 REPAIR, CLEANING, AND PROTECTION
 - A. Repair minor damage to eliminate all evidence of repair.
 - B. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned.
 - 1. Remove excess lubricants and/or adhesives immediately.
 - 2. Immediately upon completion of work, clean all exposed surfaces, remove excess materials and equipment, and repair any damage to other work.
 - 3. Re-clean all exposed surfaces one day prior to the Date of Substantial Completion.
 - 4. Remove and replace work that cannot be successfully repaired or cleaned to the satisfaction of the Architect.
 - C. Provide temporary protection and maintain conditions, in a manner acceptable to the manufacturer and installer to ensure work is being done without damage or deterioration at the time of final acceptance. Remove protections and re-clean as necessary immediately before final acceptance.
 - 1. Remove barrier-gate arms during the construction period to prevent damage, and install them immediately before Substantial Completion.

3.7 INSTRUCTION AND SERVICE TRAINING

- A. Operational training classes for all levels of Owner personnel including attendants, cashiers, shift supervisors, managers, administrators, and PARCS equipment service personnel must be provided as part of the Work. The manufacturer must also provide technical training classes for servicing the equipment at the facility where the equipment is manufactured or the manufacturer's nearest service location. The Owner will select two service personnel to attend the classes for a two to three-week period.
- B. Training must include, but not be limited to the following:
 - 1. PARCS equipment installation, start-up, operations, adjustments, replacement of parts and consumables, and basis troubleshooting

- 2. Programming rates, access control, generation of standard and user-defined reports, performance analytics, processing validations,
- 3. Monitoring garage facilities and systems etc.
- C. Proposer must provide planned training program for Authority staff, including agenda topics, time allotment, and training manuals.
- D. Training session should be video-recorded and provided to the Authority.
- E. At the conclusion of the training, all trainees shall be a test on training session presentation.
- 3.8 MAINTENANCE RECORDS
 - A. Servicing Contractor(s) must maintain accurate and up-to-date records of service calls, preventive maintenance operations and equipment failures for each component and sub-system. Records in the form of a log are to become the property of the Owner at the end of the warranty period.
 - B. The Supplier must submit a list of spare parts for review. The Owner will approve spare parts list.
- 3.9 SCHEDULES
 - A. General: Provide and deploy the following PARCS equipment and devices in accordance with Appendixes A1 and B1 the PARCS Equipment Deployment Matrix. Also refer to Appendixes A2 and B2 for PARCS Equipment Deployment Location Diagrams.
 - B. Parking Control Equipment Lane Equipment for
 - 1. Entry (Standard) Lanes:
 - a. Entrance Lane Equipment and Devices
 - 1) Barrier Gate Unit with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detector
 - 3) Detector Loops
 - 4) Entry Station
 - a) Ticket Dispenser
 - b) Optical Bar Code Scanner
 - c) Proximity Card Reader
 - d) High Def. Camera
 - e) Display Screen
 - f) Push-to-Talk Intercom
 - g) NF Credit/Debit Card Reader
 - 5) Full Sign
 - 2. Entry (Redundant) Lanes
 - a. Entrance Lane Equipment and Devices
 - 1) Barrier Gate Unit with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detector
 - 3) Detector Loops
 - 4) Entry Station
 - a) Ticket Dispenser

- b) Optical Bar Code Scanner
- c) Proximity Card Reader
- d) High Def. Camera
- e) Display Screen
- f) Push-to-Talk Intercom
- g) NF Credit/Debit Card Reader
- 3. Entry (Reserved) Lanes (to Nested Basement Parking Areas)
 - a. Entrance Lanes Equipment and Devices
 - 1) Barrier Gates Units with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detectors
 - 3) Detector Loops
 - 4) Proximity Card Reader with Push-to-Talk Intercom and Pedestal
- 4. Entry Lanes (with Attendant Cashier Booths at Fort Duquesne & Sixth Garage)
 - a. Attendant Booth Equipment and Devices
 - 1) Fee Computer
 - 2) Portable Receipt Printer
 - 3) Fee Display Unit
- 5. Reversible (Standard) Lanes:
 - a. Entry (Mode) Lane Equipment and Devices
 - 1) Barrier Gate Unit with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detector
 - 3) Detector Loops
 - 4) Entry Station
 - a) Ticket Dispenser
 - b) Optical Bar Code Scanner
 - c) Proximity Card Reader
 - d) High Def. Camera
 - e) Display Screen
 - f) Push-to-Talk Intercom
 - g) NF Credit/Debit Card Reader
 - 5) Full Sign
 - b. Exit (Mode) Lane Equipment and Device
 - 1) Barrier Gate Unit with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detector
 - 3) Detector Loops
 - 4) Exit Station (Exit Verifier/Pay Station)
 - a) Optical Bar Code Scanner
 - b) Receipt Printer
 - c) Proximity Card Reader
 - d) High Def. Camera
 - e) Display Screen
 - f) Push-to-Talk Intercom

- g) NF Credit/Debit Card Reader
- 6. Reversible (Special) Lanes
 - a. Entry/Exit (Mode) Lane Equipment and Device
 - 1) Barrier Gate Units with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detectors
 - 3) Detector Loops
 - 4) Two (2) Proximity Card Reader with Push-to-Talk Intercom and Pedestal
 - 5) Full Sign (only at Forbes Semple Garage)
 - 7. Exit (Standard) Lanes:
 - a. Exit Lane Equipment and Device
 - 1) Barrier Gate Unit with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detector
 - 3) Detector Loops
 - 4) Exit Station (Exit Verifier/Pay Station)
 - a) Optical Bar Code Scanner
 - b) Receipt Printer
 - c) Proximity Card Reader
 - d) High Def. Camera
 - e) Display Screen
 - f) Push-to-Talk Intercom
 - g) NF Credit/Debit Card Reader
- 8. Exit (Redundant) Lanes
 - a. Exit Lane Equipment and Device
 - 1) Barrier Gate Unit with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detector
 - 3) Detector Loops
 - 4) Exit Station (Exit Verifier/Pay Station)
 - a) Optical Bar Code Scanner
 - b) Receipt Printer
 - c) Proximity Card Reader
 - d) High Def. Camera
 - e) Display Screen
 - f) Push-to-Talk Intercom
 - g) NF Credit/Debit Card Reader
- 8. Exit (Reserved) Lanes (form Nested Basement Parking Areas)
 - a. Entrance Lanes Equipment and Devices
 - 1) Barrier Gates Units with straight/articulated gate arm
 - 2) Digital Self-Tuning Vehicle Detectors
 - 3) Detector Loops
 - 4) Proximity Card Reader with Push-to-Talk Intercom and Pedestal
- 9. Garage Elevator Lobby
 - a. Elevator Lobby Equipment (Number of units as specified at each garage)

- 1) Pay-on-Foot (POF) Credit and Cash Station
 - a) Optical Bar Code Scanner
 - b) Receipt Printer
 - c) High Def. Camera
 - d) Display Screen
 - e) Push-to-Talk Intercom
 - f) NF Credit/Debit Card Reader
 - g) Bill Recycler
 - h) Bill Vault
 - i) Security Locks & Alarms
- 2) Pay-on-Foot (POF) Credit/Debit/Wallet Only Station
 - a) Optical Bar Code Scanner
 - b) Receipt Printer
 - c) High Def. Camera
 - d) Display Screen
 - e) Push-to-Talk Intercom
 - f) NF Credit/Debit Card Reader
 - g) Security Locks & Alarms
- 10. Cashier Booth/Window in Garage Elevator Lobby or in Garage Office
 - a. Cashier Station Equipment and Devices
 - 1) Fee Computer or Mobile Cashier on Cellular Device
 - 2) Printer (Stationary or Portable)
 - 3) Intercom Station
 - 4) Ticket Printer
 - 5) Ticket Validator
 - 6) Cashier Drawer
 - 7) Fee Display
- 11. Garage Office
 - a. Garage Office Equipment and Devices
 - 1) PC Workstation
 - 2) Printer (Stationary)
 - 3) Master Intercom Station
- 12. Pedestrian Safety Alert System with Exterior Structure Mounting Brackets
 - a. Audio/Video Warning Device (Only for the specifically chosen garages)
- C. Extra Materials: Furnish the following extra materials from the same production run as the materials installed and in the quantities referenced on Appendix A. Package with protective covering for storage and identify with labels describing contents including part name, the serial number and safe storage conditions. Deliver extra materials to Owner.
 - 1. IPCE Equipment
 - (1) Spare Articulated Gate Arm Per Barrier Gate specified to have such arm type
 - (2) Spare Straight Gate Arms Per Barrier Gate specified to have such arm type
 - (1) Spare Bill Vault per POF station

- (2) Spare Bill Recycler Unit
- (4) Comm/Port Controllers
- 2. Miscellaneous
 - (2) Replacement tubes for Pedestrian Alert System strobe light.
- D. Additional Expendable Items: The Contractor must provide the following additional items as part of the work included in this Section, as requested by Owner:
 - 1. Owner's Operating Stock: Furnish the following operating stock to the Owner prior to initiating system testing. Contractor must obtain Owner approval of stock items prior to obtaining any operating stock.
 - a. Access Cards and Tickets
 - 1) 5000 per garage facility500 Proximity Cards per garage facility.
 - b. Remote Ticket Validators
 - 1) Six (6) remote ticket validators for distribution to local cinema, retail and restaurant establishments including installation and training.

PART 4 - MEASUREMENT AND PAYMENT

- 4.1 BASIS OF PROPSOAL
 - A. Proposals must be based on the scope of Work as shown on the Drawings or as otherwise Scheduled in the Contract Documents.

4.2 UNIT PRICES

- A. General: Unit prices must be provided on the **EXHIBIT C PARCS SYSTEM PRICE & FEE PROPOSAL FORMS** as instructed on the SUMMARY Section G. of this RFP document
- B. Proposers are requested to list unit prices for the following items:
 - 1. Lane Equipment
 - a. Automatic Barrier Gate Unit
 - 1) Articulate Gate Arm
 - 2) Straight Gate Arm
 - b. Replacement Barrier Gate Arm
 - 1) Articulated Gate Arm
 - 2) Straight Gate Arm
 - c. Automatic Entry Station Unit
 - 1) Ticket Dispenser
 - 2) Bar Code Scanner
 - 3) Credit/debit card functionality only (no cash)
 - 4) Push-to-Call Intercom
 - 5) Camera
 - d. Access Control Units
 - 1) Proximity Card
 - 2) Proximity Card Reader

- e. Automatic Exit Station Unit
 - 1) Ticket Verifier
 - 2) Bar Code Scanner
 - 3) Credit/debit card functionality only (no cash)
 - 4) Push-to-Call Intercom
 - 5) Receipt Printer
 - 6) Camera
- 2. Parking Office Equipment
 - a. Controller/Processor Terminals
 - b. Printer Unit
 - c. Mass Ticket Validator
 - d. Master Intercom Station
- 3. Cashier Booths
 - a. Fee Computer or Cellular Cashier for Cloud-Base Platform
 - b. Stationary Printer Unit or Portable Printer Unit
 - c. Fee Display Unit
 - d. Cash Drawer
- 4. Cashier Window
 - a. Fee Computer
 - b. Printer Unit
 - c. Fee Display Unit
 - d. Ticket Validator
 - e. Receipt Printer
 - f. Ticket Scanner
 - g. Cash Drawer
- 5. Automatic Pay-On-Foot Stations
 - a. Credit/debit card functionality only (no cash)
 - b. Credit/debit card plus cash functionality
- 6. Full Sign (Entry Lane Deployment)
- 7. Pedestrian Alert System
- 8. Illuminated Lane Controller Sign
- 9. Variable Message (Rate) Display Signs
- 10. Remote Ticket Validator

END OF SECTION 11 12 15

APPENDIX A1

PARCS EQUIPMENT DEPLOYMENT MATRIX: (PHASE I IMPLEMENTATION PROJECT)

PITTSBURGH PARKING AUTHORITY Loc. PARCS EQUIPMENT DEPLOYMENT & # INSTALLATION MATRIX	Barrier Gate Systems	Directional Loops/ Counters	Articul'd Gate Arms	Straight Gate Arms	Entry Stations	Exit Stations	Prox. Readers w/ Pedestals	Push to Call Intercoms	Intercom Terminals	POF Stations Credit Card Only	POF Stations Credit Card/ Cash	Facility Cashier Workstations, PC Tablets, Desktops or Cellular Device	Workstation Peripherals Fee Display, Bar Code Scanner, Ticket Encoder, Intercom	Direction Lane Signs	Ped. Alert Systems (Gar. Exterior)	Full Signs (Gar. Exterior)
FORT DUQUESNE & SIXTH GARAGE												• •				
1 Entry (Standard) Lane: Transient/Lease (< Ft. Duquesne)	1	1	1		1											1
1a Entry Lane Attendant Booth												1	1			
2 Exit (Standard) Lane: Transient/Lease (> Ft. Duquesne)	1	1		1		1										
3 Reversible (Special) Lane: Valet Nest (Ft. Duquesne)	1	1		1			2	2								
4 Entry (Standard) Lane: Transient/Lease (< Sixth)	1	1		1	1											1
5 Entry (Standard) Lane: Transient/Lease (< Sixth)	1	1	1		1											
5a Entry Lane Attendant Booth												1	1			
6 Entry (Standard) Lane: Transient/Lease (< Sixth)	1	1	1		1											
6a Entry Lane Attendant Booth												1	1			
7 Exit (Standard) Lane: Transient/Lease (> Sixth)	1	1	1			1										
8 Exit (Standard) Lane: Transient/Lease (> Sixth)	1	1	1			1										
9 Elevator Lobby:										1	2					
10 Garage Office and (2) Cashier Windows:									1			2	2			
THIRD AVENUE GARAGE																
1 Entry (Standard) Lane: Transient/Lease/Valet (< Fourth)	1	1	1		1									1		1
2 Entry (Standard) Lane: Transient/Lease/Valet (> Third)	1	1	1		1									1		1
3 Entry (Reserved) Lane: (< Basement Parking Areas)	1	1	1				1	1								
4 Exit (Standard) Lane: Transient/Lease/Valet (> Fourth)	1	1	1			1								1		
5 Exit (Standard) Lane: Transient/Lease/Valet (> Third)	1	1	1			1								1		
6 Future Exit (Reserved) Lane: (> Basement Parking Areas)	1	1	1				1	1								
9 Elevator Lobby:										1	1					
10 Cashier Window and Garage Office:									1			1	1			
WOOD ALLIES GARAGE																
1 Entry (Standard) Lane: Transient/Lease (< Blvd. of Allies)	1	1		1	1											1
1a Entry (Redundant) Lane: Trans./Lease (< Blvd. of Allies)	1	1	1		1											
2 Exit (Standard) Lane: Transient/Lease (> Blvd. of Allies)	1	1		1		1										
3 Exit (Standard) Lane: Transient/Lease (> Blvd. of Allies)	1	1		1		1										
4 Exit (Standard) Lane: Transient/Lease (> Blvd. of Allies)	1	1	1			1										
5 Elevator Lobby:										1	1					
6 Cashier Booth in Elevator Lobby:												1	1			
7 Garage Office:									1							
FORBES SEMPLE GARAGE																
1 Entry (Standard) Lane: Transient/Lease (< Meyan)	1	1	1		1											1
1a Entry (Redundant) Lane: Transient/Lease (< Meyan)	1	1	1		1											
2 Reversible (Special) Lane: Reserved Only (Meyan)	1	1	1				2	2								
3 Exit (Standard) Lane: Transient/Lease (> Meyan)	1	1	1			1										
4 Exit (Standard) Lane: Transient/Lease (> Meyan)	1	1	1			1										
5 Elevator Lobby:										1	1					
6 Cashier Booth in Elevator Lobby:												1	1			
7 Garage Office:									1							
SHADYSIDE GARAGE																
1 Entry (Standard) Lane: Transient/Lease (< Bellefonte)	1	1	1		1											1
1a Entry (Redundant) Lane: Transient/Lease (< Bellefonte)		1			1											
2 Exit (Standard) Lane: Transient/Lease (> Bellefonte)	1	1		1		1										
3 Exit (Standard) Lane: Transient/Lease (> Bellefonte)	1	1		1		1										
4 Elevator Lobby:										1	1					
5 Garage Office with Cashier Window:									1			1	1			
PHASE I GARAGES: PARCS Unit Totals	27	28	19	8	12	12	6	6	5	5	6	9	9	4	0	7

APPENDIX A2:

PARCS EQUIPMENT DEPLOYMENT DIAGRAMS

(PHASE I IMPLEMENTATION PROJECT)

Fort Duquesnes & 6th Garage



APPENDIX A2: continued

PARCS EQUIPMENT DEPLOYMENT DIAGRAMS

(PHASE I IMPLEMENTATION PROJECT)

Third Avenue Garage


APPENDIX A2: continued PARCS EQUIPMENT DEPLOYMENT DIAGRAMS (PHASE I IMPLEMENTATION PROJECT)

Wood Allies Garage



228 Boulevard of the Allies

Forbes Semple Garage



210 Meyran Avenue

Shadyside Garage



APPENDIX B1

PARCS EQUIPMENT DEPLOYMENT MATRIX: (PHASE II IMPLEMENTATION PROJECT)

PITTSBURGH PARKING AUTHORITY Loc. PARCS EQUIPMENT DEPLOYMENT & # INSTALLATION MATRIX	Barrier Gate Systems	Directional Loops/ Counters	Articul'd Gate Arms	Straight Gate Arms	Entry Stations	Exit Stations	Prox. Readers w/ Pedestals	Push to Call Intercoms	Intercom Terminals	POF Stations Credit Card Only	POF Stations Credit Card/ Cash	Facility Cashier Workstations, PC Tablets, Desktops or Cellular Device	Workstation Peripherals Fee Display, Bar Code Scanner, Ticket Encoder, Intercom	Direction Lane Signs	Ped. Alert Systems (Gar. Exterior)	Full Signs (Gar. Exterior)
FIRST AVENUE GARAGE																
1 Entry (Standard) Lane: Transient/Lease (< Ground Lv.)	1	1		1	1											
2 Entry (Standard) Lane: Transient/Lease (< Upper Lvs.)	1	1		1	1											
3 Entry (Standard) Lane: Transient/Lease (< Upper Lvs.)	1	1		1	1											
4 Reversible (Standard) Lane: Transient/Lease	2	2		2	1	1								1		
5 Exit (Standard) Lane: Transient/Lease (> Upper Lvs.)	1	1		1		1										
6 Exit (Standard) Lane: Transient/Lease (> Upper Lvs.)	1	1		1		1										
7 Exit (Standard) Lane: Transient/Lease (> Ground Lv.)	1	1		1		1										
8 Elevator Lobby:										1	1					
9 PRT Light Rail Station Platform (Third Pkg Lv.)										1						
10 Garage Office with Cashier Window:									1			1	1			
GRANT STREET TRANSPORTATION CENTER GARAGE	- BLUE	FACILITY	,	1	1	1						I	1			
1 Entry (Standard) Lane: Transient/Lease (< Twelfth)	1	1		1	1	[1
1a Entry (Redundant) Lane: Transient/Lease (< Twelfth)	1	1		1	1											
2 Exit (Standard) Lane: Transient/Lease (> Tewlfth)	1	1		1		1										
2a Exit (Redundant) Lane: Transient/Lease (< Twelfth)	1	1		1		1										<u> </u>
3 Elevator Lobby: (Penn Ave.)		-		-		+-				1	1					-
4 Garage Office with Cashier Window: (Penn Ave.)									1	-	-	1	1			
5 Pedestrian Safety Alert System: (Twolfth St. Eacade)									<u> </u>			-	-		1	<u> </u>
GDANT STREET TRANSDORTATION CENTER GARAGE		EACILITY		I	I	<u> </u>			<u> </u>						-	<u> </u>
GRANT STREET TRANSPORTATION CENTER GARAGE				1	1	I			1	[[1
1 Entry (Standard) Lane: Transient/Lease (< Penn)	1			1	1											-
2 Sub (Condend) Lane: Translent/Lease (< Penn)	1			1	1											
2 Exit (Standard) Lane: Transient/Lease (> Penn)	1	1		1		1										
2a Exit (Redundant) Lane: Transient/Lease (< Penn)	1	1		1		1										
3 Elevator Lobby: (Eleventh St.)										1	1					
4 Garage Office with Cashier Window: (Eleventh St.)									1			1	1			
MELLON SQUARE GARAGE	1	1		1	1	1	1	[1		[1	1	[
1 Entry (Standard) Lane: Transient/Lease/Valet (< Sixth)	1	1	1		1											1
2 Reversible (Standard) Lane: Transient/Lease/Valet (< Sixth)	2	2	2		1	1								1		
3 Exit (Standard) Lane: Transient/Lease/Valet (> Sixth)	1	1	1			1										
4 Entry (Standard) Lane: Transient/Lease/Valet (< Oliver)	1	1	1		1											1
5 Exit (Standard) Lane: Transient/Lease/Valet (> Oliver)	1	1	1			1										
6 Exit (Standard) Lane: Transient/Lease/Valet (> Oliver)	1	1	1			1										
7 Elevator Lobby: (Parking Lv 2)										1	1					
8 Garage Office with Cashier Window: (Parking Lv 2)									1			1	1			
SMITHFIELD LIBERTY GARAGE																
1 Entry (Standard) Lane: Transient/Lease (< Smithfield)	1	1	1		1											1
2 Exit (Standard) Lane: Transient/Lease (> Smithfield)	1	1	1			1										
3 Entry (Standard) Lane: Transient/Lease (< Liberty)	1	1	1		1											1
3a Entry (Reserved) Lane: (< Basement Parking Areas)	1	1	1				1	1								
4 Exit (Standard) Lane: Transient/Lease (> Liberty)	1	1	1			1										
5 Exit (Reserved) Lane: (> Basement Parking Areas)	1	1	1				1	1								
6 Elevator Lobby:										1	1					
7 Garage Office with Cashier Window:									1			1	1			
OLIVER GARAGE				1	1			I					1	I		
1 Entry (Standard) Lane: Transient/Lease/Valet (< Oliver)	1	1	1		1											1
Reversible (Standard) Lane: Transient/Lease/Valet	2	2	2		1	1								1		
(Oliver) 3 Exit (Standard) Lane: Transient/Lease/Valet (> Oliver)	1	1	1			1										
4 Elevator Lobby: (Eirst Pkg Ly.)	-		_			_				1	1					
5 Cashier Window in Elevator Lobby: (First Pkg Lv.)									1	-	-	1	1			
6 Pedestrian Safety Alert System: (Oliver Ave.)															1	<u> </u>
PHASE I GARAGES: PARCS Unit Totals	27	28	19	8	12	12	6	6	5	5	6	9	9	4	0	7
	22	22	17	10	15	10	2	2	6	7	6	6	6	2	2	7
	55	55	1/	10	15	10	2	2	0	12	10	0	0	3	2	10
TOTAL ALL PARCS COMPONENT UNITS	60	61	36	24	27	28	8	8	11	12	12	15	15	/	2	14

First Avenue Garage



Grant Street Transportation Center Garage (Blue & Red Facilities)



12th Street



 Grant Street Transportation Center Garage (RED)

 Image: Comparison of the street of the stre

Mellon Square Garage



Sixth Street

PUBLIC PARKING AUTHORITY OF PITTSBURGH

Smithfield Liberty Garage



Oliver Garage



Oliver Garage

APPENDIX C

COMMONWEALTH OF PENNSYLVANIA Department of Labor & Industry 2023 Prevailing Wage Rates

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES						
Project Name:	Parking Access and Revenue Control Installation					
Award Agency:	Public Parking Authority of Pittsburgh					
Contact Award Date:	4/20/2023					
Serial Number:	23-00764					
Project Classification:	Building/Heavy/Highway					
Determination Date:	1/26/2023					
Assigned Field Office:	Pittsburgh					
Field Office Phone Number:	(412) 565-5300					
Toll Free Phone Number:	(877) 504-8354					
Project County:	Allegheny County					

Project: 23-00764 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	8/1/2021		\$40.05	\$27.86	\$67.91
Asbestos & Insulation Workers	8/1/2022		\$41.40	\$28.51	\$69.91
Boilermakers	6/1/2016		\$40.90	\$27.61	\$68.51
Bricklayer	6/1/2021		\$35.15	\$23.84	\$58.99
Bricklayer	6/1/2022		\$36.34	\$24.60	\$60.94
Bricklayer	12/1/2022		\$36.99	\$24.95	\$61.94
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2021		\$36.23	\$19.31	\$55.54
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	7/1/2022		\$37.67	\$19.93	\$57.60
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2023		\$39.69	\$19.93	\$59.62
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2024		\$41.49	\$19.93	\$61.42
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2025		\$43.34	\$19.93	\$63.27
Cement Mason/Concrete Finisher	6/1/2019		\$31.27	\$19.39	\$50.66
Cement Masons	6/1/2021		\$31.77	\$21.89	\$53.66
Cement Masons	6/1/2022		\$32.57	\$22.59	\$55.16
Drywall Finisher	6/1/2021		\$31.00	\$21.39	\$52.39
Drywall Finlsher	6/1/2022		\$32.00	\$21.89	\$53.89
Electricians & Telecommunications Installation Technician	12/26/2021		\$45.86	\$29.29	\$75.15
Electricians & Telecommunications Installation Technician	12/26/2022		\$48.31	\$29.29	\$77.60
Elevator Constructor	1/1/2018		\$47.22	\$33.00	\$80.22
Glazier	9/1/2021		\$32,61	\$27,19	\$59.80
Glazier	9/1/2023		\$34.05	\$28.65	\$62.70
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2017	•	\$33.54	\$30,24	\$63.78
Iron Workers	6/1/2022		\$38.39	\$34.27	\$72.66
Laborers (Class 01 - See notes)	1/1/2021		\$22.82	\$19.32	\$42.14
Laborers (Class 01 - See notes)	1/1/2022		\$24.82	\$19.46	\$44.28
Laborers (Class 01 - See notes)	1/1/2023		\$25.82	\$19.46	\$45.28
Laborers (Class 01 - See notes)	1/1/2024		\$26.82	\$19.46	\$46.28
Laborers (Class 01 - See notes)	1/1/2025		\$27.32	\$19.96	\$47.28
Laborers (Class 01 - See notes)	1/1/2026		\$27.82	\$20.46	\$48.28
Laborers (Class 02 - See notes)	1/1/2021		\$22.97	\$19.32	\$42.29
Laborers (Class 02 - See notes)	1/1/2022		\$24.97	\$19.46	\$44.43
Laborers (Class 02 - See notes)	1/1/2023		\$25.97	\$19.46	\$45. 43
Laborers (Class 02 - See notes)	1/1/2024		\$26.97	\$19.46	\$46.43
Laborers (Class 02 - See notes)	1/1/2025		\$27.47	\$19.96	\$47.43
Laborers (Class 02 - See notes)	1/1/2026		\$27.97	\$20.46	\$48.43
Laborers (Class 03 - See notes)	1/1/2021		\$23.10	\$19.32	\$42.42
Laborers (Class 03 - See notes)	1/1/2022		\$26.47	\$19.46	\$45.93
Laborers (Class 03 - See notes)	1/1/2023		\$28.97	\$19.46	\$48.43
Laborers (Class 03 - See notes)	1/1/2024		\$29.97	\$19.46	\$49.43

Commonwealth of Pennsylvania Report Date: 1/26/2023

Project: 23-00764 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 03 - See notes)	1/1/2025		\$30.47	\$19.96	\$50.43
Laborers (Class 03 - See notes)	1/1/2026		\$30.97	\$20,46	\$51.43
Laborers (Class 04 - See notes)	1/1/2021		\$23,57	\$19.32	\$42.89
Landscape Laborer (Skilled)	1/1/2020		\$21.64	\$16.98	\$38.62
Landscape Laborer (Tractor Operator)	1/1/2020		\$21.94	\$16.98	\$38.92
Landscape Laborer	1/1/2020		\$21.22	\$16.98	\$38.20
Millwright	6/1/2020		\$41.68	\$20.32	\$62.00
Operators (Class 01 - see notes)	6/1/2021		\$37.09	\$23.35	\$60.44
Operators (Class 01 - see notes)	6/1/2022		\$38.89	\$23,69	\$62.58
Operators (Class 01 - see notes)	6/1/2023		\$40.69	\$23,89	\$64,58
Operators (Class 01 - see notes)	6/1/2024		\$41.69	\$24.39	\$66.08
Operators (Class 02 -see notes)	6/1/2021		\$31.02	\$23.35	\$54.37
Operators (Class 02 -see notes)	6/1/2022		\$32.82	\$23.69	\$56.51
Operators (Class 02 -see notes)	6/1/2023		\$34.62	\$23.89	\$58.51
Operators (Class 02 -see notes)	6/1/2024		\$35.62	\$24.39	\$60.01
Operators (Class 03 - See notes)	6/1/2021		\$29.23	\$23.35	\$52.58
Operators (Class 03 - See notes)	6/1/2022		\$30.03	\$23.69	\$53.72
Operators (Class 03 - See notes)	6/1/2023		\$31.83	\$23.89	\$55.72
Operators (Class 03 - See notes)	6/1/2024		\$32.83	\$24.39	\$57.22
Painters Class 6 (see notes)	6/1/2021		\$29.15	\$21.89	\$51.04
Painters Class 6 (see notes)	6/1/2022		\$29.50	\$22.82	\$52.32
Pile Driver Divers (Building, Heavy, Highway)	1/1/2021		\$54.75	\$20.10	\$74.85
Pile Driver Divers (Building, Heavy, Highway)	1/1/2022		\$56.40	\$20.50	\$76.90
Piledrivers	1/1/2021		\$36.50	\$20.10	\$56.60
Piledrivers	1/1/2022		\$37.60	\$20.50	\$58.10
Plasterers	6/1/2021		\$30.69	\$19.09	\$49.78
Plasterers	6/1/2022	·····	\$31.44	\$19.74	\$51.18
plumber	6/1/2021	, <u>,,,,,,,,,,,,,,,,,,,,,,</u> ,	\$47.25	\$21.77	\$69.02
plumber	6/1/2022	······································	\$49.35	\$21.77	\$71.12
Pointers, Caulkers, Cleaners	6/1/2021		\$33.70	\$20.22	\$53.92
Pointers, Caulkers, Cleaners	6/1/2022		\$35.00	\$20.53	\$55.53
Pointers, Caulkers, Cleaners	12/1/2022		\$35.47	\$20.88	\$56.35
Roofers	6/1/2022		\$36.04	\$19.13	\$55.17
Sheet Metal Workers	7/1/2021		\$38.76	\$30.00	\$68.76
Sign Makers and Hangars	7/17/2021		\$29.49	\$23.90	\$53.39
Sign Makers and Hangars	7/15/2022	_ ·	\$30.54	\$24.35	\$54.89
Sprinklerfitters	7/1/2020		\$38.91	\$23.23	\$62.14
Steamfitters	6/1/2021		\$42.75	\$26.72	\$69.47
Steamfitters	6/1/2022		\$44,15	\$27.32	\$71.47
Stone Masons	6/1/2021		\$36.37	\$22.85	\$59,22
Stone Masons	6/1/2022		\$37.91	\$23.26	\$61.17
Stone Masons	12/1/2022		\$38.56	\$23.61	\$62.17
Terrazzo Finisher	6/1/2021		\$34.00	\$17.46	\$51.46
Terrazzo Finisher	6/1/2022		\$35.33	\$17.68	\$53.01

Commonwealth of Pennsylvania Report Date: 1/26/2023

BUREAU OF	LABOR LAW	COMPLIANCE
PREVAILING	WAGES PRO	JECT RATES

Project: 23-00764 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Terrazzo Finisher	12/1/2022		\$36.13	\$18.03	\$54.16
Terrazzo Mechanics	6/1/2021		\$33.30	\$19.71	\$53.01
Terrazzo Mechanics	6/1/2022		\$34.69	\$19.97	\$54.66
Terrazzo Mechanics	12/1/2022		\$35.49	\$20.32	\$55,81
Tile Finisher	6/1/2021		\$27.19	\$16.71	\$43.90
Tile Finisher	6/1/2022		\$28.35	\$16.99	\$45.34
Tile Finisher	12/1/2022		\$28.76	\$17.34	\$46.10
Tile Setter	6/1/2021		\$33.58	\$21.12	\$54.70
Tile Setter	6/1/2022		\$35.04	\$21.46	\$56.50
Tile Setter	12/1/2022		\$35.64	\$21.81	\$57,45
Truckdriver class 1(see notes)	1/1/2021		\$30.68	\$20.96	\$51.64
Truckdriver class 1(see notes)	1/1/2022		\$31.43	\$21.71	\$53.14
Truckdriver class 2 (see notes)	1/1/2021		\$31.14	\$21.27	\$52.41
Truckdriver class 2 (see notes)	1/1/2022		\$31.89	\$22.02	\$53.91
Truckdriver class 3 (see notes)	1/1/2016		\$28.23	\$16.98	\$45.21
Window Film / Tint Installer	10/1/2019		\$25.00	\$2.63	\$27.63

Project: 23-00764 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2021		\$36.12	\$19.32	\$55.44
Carpenter	1/1/2022		\$37.10	\$19.84	\$56.94
Carpenter	1/1/2023		\$38.60	\$20.59	\$59.19
Carpenter	1/1/2024		\$40.10	\$21.34	\$61.44
Carpenter	1/1/2025		\$41.35	\$22.09	\$63.44
Carpenter	1/1/2026		\$42.60	\$22.84	\$65.44
Carpenter Welder	1/1/2021		\$37.07	\$19.32	\$56.39
Carpenter Welder	1/1/2022		\$38.05	\$19.84	\$57.89
Carpenter Welder	1/1/2023		\$40.10	\$20.59	\$60.69
Carpenter Welder	1/1/2024		\$41.60	\$21.34	\$62.94
Carpenter Welder	1/1/2025		\$42.85	\$22.09	\$64.94
Carpenter Welder	1/1/2026		\$44.10	\$22.84	\$66,94
Cement Finishers	1/1/2021		\$32.84	\$22.60	\$55.44
Cement Finishers	1/1/2022		\$33.14	\$23.80	\$56.94
Cement Finishers	1/1/2023		\$34.14	\$25.05	\$59.19
Cement Finishers	1/1/2024		\$35.14	\$26.30	\$61.44
Cement Finishers	1/1/2025		\$35.94	\$27,50	\$63.44
Cement Masons	1/1/2020		\$32.84	\$21,10	\$53.94
Electric Lineman	5/31/2021		\$50.33	\$27,73	\$78.06
Electric Lineman	5/30/2022		\$51,42	\$28,85	\$80.27
Electric Lineman	5/29/2023		\$52.56	\$29.99	\$82.55
Electric Lineman	6/3/2024		\$53.97	\$31.05	\$85.02
Electricians & Telecommunications Installation Technician	12/1/2021		\$45.86	\$29.29	\$75.15
Electricians & Telecommunications installation Technician	12/26/2022		\$48.31	\$29,29	\$77.60
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2020		\$37.29	\$32.87	\$70.16
Laborers (Class 01 - See notes)	1/6/2021		\$26.90	\$24.80	\$51.70
Laborers (Class 01 - See notes)	1/6/2022		\$27.70	\$25.50	\$53.20
Laborers (Class 01 - See notes)	1/1/2023		\$29.95	\$25.50	\$55.45
Laborers (Class 01 - See notes)	1/1/2024		\$32.20	\$25.50	\$57.70
Laborers (Class 01 - See notes)	1/1/2025		\$33.70	\$26.00	\$59.70
Laborers (Class 01 - See notes)	1/1/2026		\$34.70	\$27.00	\$61.70
Laborers (Class 02 - See notes)	1/6/2021		\$27,06	\$24.80	\$51.86
Laborers (Class 02 - See notes)	1/6/2022		\$27,86	\$25.50	\$53.36
Laborers (Class 02 - See notes)	1/1/2023		\$30.11	\$25.50	\$55.61
Laborers (Class 02 - See notes)	1/1/2024		\$32.36	\$25.50	\$57.86
Laborers (Class 02 - See notes)	1/1/2025	· · · · · · · · · · · · · · · · · · ·	\$33.86	\$26.00	\$59.86
Laborers (Class 02 - See notes)	1/1/2026		\$34.86	\$27.00	\$61.86
Laborers (Class 03 - See notes)	1/6/2021		\$27.45	\$24.80	\$52.25
Laborers (Class 03 - See notes)	1/6/2022		\$28.25	\$25.50	\$53.75
Laborers (Class 03 - See notes)	1/1/2023		\$30.50	\$25.50	\$56.00
Laborers (Class 03 - See notes)	1/1/2024		\$32.75	\$25.50	\$58.25
Laborers (Class 03 - See notes)	1/1/2025		\$34.25	\$26.00	\$60.25

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Project: 23-00764 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 03 - See notes)	1/1/2026		\$35.25	\$27.00	\$62.25
Laborers (Class 04 - See notes)	1/6/2021		\$27.90	\$24.80	\$52.70
Laborers (Class 04 - See notes)	1/6/2022		\$28.70	\$25.50	\$54.20
Laborers (Class 04 - See notes)	1/1/2023		\$30.95	\$25.50	\$56,45
Laborers (Class 04 - See notes)	1/1/2024		\$33.20	\$25.50	\$58.70
Laborers (Class 04 - See notes)	1/1/2025		\$34.70	\$26.00	\$60.70
Laborers (Class 04 - See notes)	1/1/2026		\$35.70	\$27.00	\$62.70
Laborers (Class 05 - See notes)	1/6/2021		\$28.31	\$24.80	\$53.11
Laborers (Class 05 - See notes)	1/6/2022		\$29.11	\$25.50	\$54.61
Laborers (Class 05 - See notes)	1/1/2023		\$31.36	\$25.50	\$56,86
Laborers (Class 05 - See notes)	1/1/2024		\$33.61	\$25.50	\$59.11
Laborers (Class 05 - See notes)	1/1/2025		\$35.11	\$26.00	\$61.11
Laborers (Class 05 - See notes)	1/1/2026		\$36.11	\$27.00	\$63.11
Laborers (Class 06 - See notes)	1/6/2021		\$25.15	\$24.80	\$49.95
Laborers (Class 06 - See notes)	1/6/2022		\$25.95	\$25.50	\$51.45
Laborers (Class 06 - See notes)	1/1/2023		\$28.20	\$25.50	\$53.70
Laborers (Class 06 - See notes)	1/1/2024		\$30.45	\$25.50	\$55.95
Laborers (Class 06 - See notes)	1/1/2025		\$31.95	\$26.00	\$57.95
Laborers (Class 06 - See notes)	1/1/2026		\$32.95	\$27,00	\$59.95
Laborers (Class 07 - See notes)	1/6/2021		\$27.90	\$24.80	\$52.70
Laborers (Class 07 - See notes)	1/6/2022		\$28.70	\$25.50	\$54.20
Laborers (Class 07 - See notes)	1/1/2023	·····	\$30.95	\$25.50	\$56.45
Laborers (Class 07 - See notes)	1/1/2024		\$33.20	\$25.50	\$58.70
Laborers (Class 07 - See notes)	1/1/2025		\$34.70	\$26.00	\$60.70
Laborers (Class 07 - See notes)	1/1/2026		\$35.70	\$27.00	\$62.70
Laborers (Class 08 - See notes)	1/6/2021	· · · · · · · · · ·	\$29.40	\$24.80	\$54.20
Laborers (Class 08 - See notes)	1/6/2022		\$30.20	\$25.50	\$55.70
Laborers (Class 08 - See notes)	1/1/2023	· · · · · · · · · · · · · · · · · · ·	\$32.45	\$25.50	\$57.95
Laborers (Class 08 - See notes)	1/1/2024		\$34.70	\$25.50	\$60.20
Laborers (Class 08 - See notes)	1/1/2025		\$36.20	\$26.00	\$62,20
Laborers (Class 08 - See notes)	1/1/2026		\$37.20	\$27.00	\$64.20
Millwright	6/1/2020		\$41.68	\$20.32	\$62.00
Operators (Class 01 - see notes)	1/1/2021	••••••	\$33.89	\$22.73	\$56.62
Operators (Class 01 - see notes)	1/1/2022		\$34.79	\$23.33	\$58.12
Operators (Class 01 - see notes)	1/1/2023		\$36.79	\$23.58	\$60.37
Operators (Class 01 - see notes)	1/1/2024		\$38.59	\$24.03	\$62,62
Operators (Class 01 - see notes)	1/1/2025		\$40.39	\$24.23	\$64.62
Operators (Class 02 -see notes)	1/1/2021		\$33.63	\$22.73	\$56.36
Operators (Class 02 -see notes)	1/1/2022		\$34.53	\$23.33	\$57.86
Operators (Class 02 -see notes)	1/1/2023		\$36.53	\$23,58	\$60,11
Operators (Class 02 -see notes)	1/1/2024		\$38,33	\$24.03	\$62.36
Operators (Class 02 -see notes)	1/1/2025		\$40.13	\$24,23	\$64.36
Operators (Class 03 - see notes)	1/1/2021		\$29.98	\$22.73	\$52.71
Operators (Class 03 - See notes)	1/1/2022		\$30.88	\$23.33	\$54.21

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Project: 23-00764 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Class 03 - See notes)	1/1/2023		\$32.88	\$23,58	\$56.46
Operators (Class 03 - See notes)	1/1/2024		\$34.68	\$24.03	\$58.71
Operators (Class 03 - See notes)	1/1/2025		\$36.48	\$24.23	\$60.71
Operators (Class 04 - See notes)	1/1/2021		\$29.52	\$22.73	\$52.25
Operators (Class 04 - See notes)	1/1/2022		\$30.42	\$23.33	\$53.75
Operators (Class 04 - See notes)	1/1/2023		\$32.42	\$23.58	\$56.00
Operators (Class 04 - See notes)	1/1/2024		\$34.22	\$24.03	\$58.25
Operators (Class 04 - See notes)	1/1/2025		\$36.02	\$24.23	\$60.25
Operators (Class 05 - See notes)	1/1/2021		\$29.27	\$22.73	\$52.00
Operators (Class 05 - See notes)	1/1/2022		\$30,17	\$23,33	\$53.50
Operators (Class 05 - See notes)	1/1/2023		\$32.17	\$23.58	\$55.75
Operators (Class 05 - See notes)	1/1/2024		\$33.97	\$24.03	\$58.00
Operators (Class 05 - See notes)	1/1/2025		\$35.77	\$24.23	\$60.00
Operators Class 1-A	1/1/2021		\$36.89	\$22.73	\$59.62
Operators Class 1-A	1/1/2022		\$37.79	\$23.33	\$61,12
Operators Class 1-A	1/1/2023		\$39.79	\$23.58	\$63.37
Operators Class 1-A	1/1/2024		\$41.59	\$24.03	\$65.62
Operators Class 1-A	1/1/2025		\$43.39	\$24.23	\$67.62
Operators Class 1-B	1/1/2021		\$35.89	\$22.73	\$58.62
Operators Class 1-B	1/1/2022		\$36.79	\$23.33	\$60.12
Operators Class 1-B	1/1/2023	· · · · · · · · · · · · · · · · · · ·	\$38.79	\$23.58	\$62.37
Operators Class 1-B	1/1/2024		\$40.59	\$24.03	\$64.62
Operators Class 1-B	1/1/2025		\$42.39	\$24.23	\$66.62
Painters Class 1 (see notes)	6/1/2021		\$34.00	\$21.89	\$55.89
Painters Class 1 (see notes)	6/1/2022		\$34.45	\$22,82	\$57.27
Painters Class 2 (see notes)	6/1/2019		\$35.25	\$20.06	\$55.31
Painters Class 3 (see notes)	6/1/2021		\$36.25	\$21.89	\$58.14
Painters Class 3 (see notes)	6/1/2022		\$36.77	\$22.82	\$59.59
Painters Class 4 (see notes)	6/1/2019		\$28.20	\$20.06	\$48.26
Painters Class 5 (see notes)	6/1/2019		\$22.91	\$20.06	\$42.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2021		\$54.75	\$20.10	\$74.85
Pile Driver Divers (Bullding, Heavy, Highway)	1/1/2022		\$56.40	\$20.50	\$76.90
Pile Driver Divers (Building, Heavy, Highway)	1/1/2023		\$58.70	\$21,22	\$79.92
Pile Driver Divers (Bullding, Heavy, Highway)	1/1/2024		\$60.95	\$21.97	\$82.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		\$62,82	\$22.72	\$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		\$64.70	\$23.47	\$88.17
Piledrivers	1/1/2021		\$36.54	\$20.06	\$56.60
Piledrivers	1/1/2022		\$37.63	\$20.47	\$58.10
Piledrivers	1/1/2023		\$39.13	\$21,22	\$60.35
Piledrivers	1/1/2024		\$40,63	\$21.97	\$62.60
Piledrivers	1/1/2025		\$41.88	\$22.72	\$64.60
Piledrivers	1/1/2026		\$43.13	\$23.47	\$66.60
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		\$48.43	\$40.28	\$88.71
Truckdriver class 1(see notes)	1/1/2021		\$30.68	\$20.96	\$51.64

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Project: 23-00764 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Truckdriver class 1(see notes)	1/1/2022		\$31.43	\$21.71	\$53.14
Truckdriver class 1(see notes)	1/1/2023		\$33,18	\$22.21	\$55.39
Truckdriver class 1(see notes)	1/1/2024		\$34.93	\$22.71	\$57.64
Truckdriver class 1(see notes)	1/1/2025		\$36.43	\$23.21	\$59.64
Truckdriver class 1(see notes)	1/1/2026		\$37.93	\$23.71	\$61.64
Truckdriver class 2 (see notes)	1/1/2021		\$31.14	\$21.27	\$52.41
Truckdriver class 2 (see notes)	1/1/2022		\$31.89	\$22.02	\$53.91
Truckdriver class 2 (see notes)	1/1/2023		\$33.04	\$22.13	\$55.17
Truckdriver class 2 (see notes)	1/1/2024		\$34.79	\$22.63	\$57.42
Truckdriver class 2 (see notes)	1/1/2025		\$36.29	\$23.13	\$59.42
Truckdriver class 2 (see notes)	1/1/2026		\$37.79	\$23.63	\$61.42
Truckdriver class 3 (see notes)	1/1/2019		\$29.59	\$19.82	\$49.41