

THE PORT AUTHORITY OF NY & NJ

PROCUREMENT DEPARTMENT

ATTN: BID/PROPOSAL CUSTODIAN

4 WORLD TRADE CENTER

150 GREENWICH STREET, 21ST Floor

NEW YORK, NY 10007

REQUEST FOR PROPOSALS

ISSUE DATE: November 16, 2015

**TITLE: ADMINISTRATION AND MAINTENANCE OF THE
GROUND TRANSPORTATION INFORMATION
SYSTEM AT JOHN F. KENNEDY
INTERNATIONAL AIRPORT, NEWARK LIBERTY
INTERNATIONAL AIRPORT, LAGUARDIA
AIRPORT AND STEWART INTERNATIONAL
AIRPORT**

RFP NO.: 44310

**SUBMIT PROPOSALS NO LATER THAN THE DUE DATE AND TIME TO THE
ABOVE ADDRESS**

SITE INSPECTION: December 3, 2015 TIME: 10:00 A.M.

QUESTIONS DUE BY: December 5, 2015 TIME: 2:00 P.M.

PROPOSAL DUE DATE: December 17, 2015 TIME: 2:00 P.M.

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**STANDARD FORM OF RFP
DOCUMENT**

COVER PAGE

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1. INFORMATION FOR PROPOSERS ON THIS REQUEST FOR PROPOSALS

A. General Information: The Port Authority of New York and New Jersey

The Port Authority of New York and New Jersey (the “Port Authority” or the “Authority”) is an agency of the States of New York and New Jersey, created and existing by virtue of the Compact of April 30, 1921, made by and between the two States, and thereafter consented to by the Congress of the United States. It is charged with providing transportation, terminal and other facilities of trade and commerce within the Port District. The Port District comprises an area of about 1,500 square miles in both States, centering about New York Harbor. The Port District includes the Cities of New York and Yonkers in New York State, and the cities of Newark, Jersey City, Bayonne, Hoboken and Elizabeth in the State of New Jersey, and over 200 other municipalities, including all or part of seventeen counties, in the two States. The Port Authority manages and/or operates all of the region’s major commercial airports (Newark Liberty International, John F. Kennedy International, Teterboro, LaGuardia and Stewart International Airports), marine terminals in both New Jersey and New York (Port Newark and Elizabeth, Howland Hook and Brooklyn Piers); and its interstate tunnels and bridges (the Lincoln and Holland Tunnels; the George Washington, Bayonne, and Goethals Bridges; and the Outerbridge Crossing), which are vital “Gateways to the Nation.”

In addition, the Port Authority operates the Port Authority Bus Terminal in Manhattan, the largest facility of its kind in the world, and the George Washington Bridge and Journal Square Transportation Center bus stations. A key link in interstate commuter travel, the Port Authority also operates the Port Authority Trans-Hudson Corporation (PATH), a rapid rail transit system linking Newark, and the Jersey City and Hoboken waterfronts, with midtown and downtown Manhattan. A number of other key properties are managed by the agency including but not limited to a large satellite communications facility (the Teleport) in Staten Island, and a resource recovery co-generation plant in Newark. Prior to September 11, 2001, the Port Authority’s headquarters were located in the World Trade Center, and that complex is still owned and being partially redeveloped by the Authority.

The Port Authority is hereby seeking proposals from qualified firms to provide Application Management Services (AMS) for the Authority’s Ground Transportation Information System (“GTIS”), which is a computerized reservation system, and is more fully described herein.

B. Brief Summary of Scope of Work

As described in detail in the Scope of Work (Attachment E), the Contractor shall provide services to ensure a stable, secure, reliable and rapidly recoverable, corporate environment for the Authority’s Ground Transportation Information System (GTIS) to operate at John F. Kennedy International Airport (JFK), LaGuardia Airport (LGA), Newark Liberty International Airport (EWR) and Stewart International Airport (SWF).

The Contractor shall provide personnel to perform, at minimum, the following on-site AMS related services:

- *Operational Support*
- *Application technical maintenance and administration, including production application changes; developing and implementing fixes, enhancements, and releases; security administration; and maintaining adequate access controls and computer operations (data backups, sync processes, batch processing schedules; any adds, moves or changes). Furnish any required hardware that is not provided by Port Authority.*
- *Installation of software, including upgrades.*
- *Relocation, tracking, and servicing of telephone company leased lines*
- *End-user support for testing and implemented fixes, enhancements and releases and for query and report writing;*
- *Troubleshooting and problem resolution;*
- *Up to date documentation of all System components and application system administration and maintenance procedures, and all other things related to support and administration of System.*
- *Disaster recovery coverage;*
- *Database administration(MS SQL, MS Access)*
- *Application test system required*
- *Circuit diagrams, as-built diagrams, user, operational, procedure manuals updated annually*
- *System Administration – Until such time GTIS is migrated to PAWANET*
- *Operating System Maintenance – Until such time GTIS is migrated to PAWANET*

The Contractor will not be responsible for installation, administration and maintenance of the hardware, (excluding hardware that Contractor furnishes), operating system, network LAN System comprising GTIS after System is migrated to PAWANET.

C. Deadline for Receipt of Proposals

The due date specified on the cover page is the Proposal Due Date. Closing of due date is 2:00 P.M., Eastern Standard Time (EST).

PLEASE READ THE FOLLOWING DELIVERY REQUIREMENTS CAREFULLY. Proposers assume all responsibility for delays or problems in delivery.

Proposal submissions will be received at:

The Port Authority of NY & NJ
Attention: Proposal Custodian
Procurement Department
4 World Trade Center
150 Greenwich Street, 21st Floor
New York, NY 10007

Clearly mark the solicitation number on the outermost package.

At this address, proposals will be accepted via (1) regular mail, (2) express delivery service (e.g. UPS), or (3) hand delivery.

Express carrier deliveries by commercial vehicles may be made via vendors approved by Silverstein Properties, the 4 World Trade Center (4 WTC) Property Manager, through the Vehicle Security Center (VSC). Presently, UPS is the only delivery vendor with approved recurring delivery times.

There is extensive security at the World Trade Center Site. Individuals must present a valid government-issued photo ID to enter 4 WTC. Individuals without valid identification will be turned away and their packages not accepted. Individuals without packages or carrying small packages or boxes that can be conveyed by hand or on a hand truck may enter through the lobby. All envelopes, packages and boxes may be subject to additional security screening.

There is no parking available at 4 WTC/150 Greenwich Street, and parking in the surrounding area is extremely limited.

The Port Authority assumes no responsibility for delays caused by any delivery service.

D. Vendor Profile

To ensure maximum opportunities, it is vitally important that Proposers keep their vendor profiles up to date with an appropriate e-mail address, as this will enable their firm to receive timely notice of advertisements, reminders, solicitations and addenda. Proposers may update their vendor profile or register as a Port Authority Vendor by accessing the online registration system at <https://panynjprocure.com/VenLogon.asp>.

E. Submission of Proposals

One reproducible original (containing original signatures and clearly designated as such) and six (6) double-sided copies of the proposal must be submitted on or before the due date and time in accordance with the information on the cover page of this RFP and sent or delivered to the RFP Custodian at the address specified on the cover page. Each copy of the proposal as well as the parcel(s) used for shipping must be conspicuously marked with the Proposer's name and address as well as the Proposer's Vendor Number, if available. In addition, the outside of the package must clearly state the title of this RFP, the number of this RFP and the Proposal Due Date. Failure to properly label proposal submissions may cause a delay in identification, misdirection or disqualification of proposal submissions.

It is necessary to carry valid photo identification when attempting to gain access into the building to hand deliver proposals.

Consistent with environmentally preferable procurement practices, the Port Authority requests all documents submitted to be in a form that can be easily recycled (i.e., no plastic covers or binding) and to provide only supporting literature which directly relates to the proposal being submitted.

F. Communications Regarding this RFP

All communications concerning this RFP shall be directed to the Contracts Specialist listed on the cover page. All questions regarding this RFP shall be submitted in writing to the Contracts Specialist at the address or facsimile number listed on the cover page no later than 3:00 p.m. (EST) (OR EASTERN DAYLIGHT SAVINGS TIME AS APPLICABLE) on (INSERT DATE).

The Contracts Specialist is authorized only to direct the attention of prospective Proposers to various portions of this RFP so that they may read and interpret such portions themselves.

Neither the Contracts Specialist nor any other employee of the Port Authority is authorized to interpret the provisions of this RFP or give additional information as to its requirements. If interpretation or other information is required, it will be communicated to Proposers by written addenda and such writing shall form a part of this RFP.

G. Proposal Acceptance or Rejection

Acceptance shall be only by mailing to or delivering at the office designated by the Proposer in its proposal a notice in writing signed by an authorized representative on behalf of the Port Authority specifically stating that the proposal is accepted or by execution of an agreement covering the subject matter of this RFP signed by authorized representatives of the Port Authority

and the Proposer. No other act of the Port Authority, its Commissioners, officers, agents, representatives or employees shall constitute acceptance of a proposal. Rejection of a proposal shall be only by either (a) a notice in writing specifically stating that the proposal is not accepted, signed by an authorized representative of the Port Authority and mailed to or delivered to the Proposer at the office designated in the Proposal, or (b) omission of the Port Authority to accept the proposal within 180 days after the Proposal Due Date. No other act of the Port Authority, its Commissioners, officers, agents, representatives or employees shall constitute rejection of a proposal.

H. Union Jurisdiction

Proposers are advised to ascertain whether any union now represented or not represented at the Facility will claim jurisdiction over any aspect of the operations to be performed hereunder and their attention is directed to the Section of this RFP entitled "Harmony" included in the "Standard Contract Terms and Conditions" hereunder.

I. City Payroll Tax

Proposers shall be aware of the payroll tax imposed by the:

- a. City of Newark, New Jersey for services performed in Newark, New Jersey;
- b. City of New York, New York for services performed in New York, New York; and
- c. City of Yonkers, New York for services performed in Yonkers, New York.

These taxes, if applicable, are the sole responsibility of the Contractor. Proposers should consult their tax advisors as to the effect, if any, of these taxes. The Port authority provides this notice for informational purposes only and is not responsible for either the imposition or administration of such taxes. The Port Authority exemption set forth in the Paragraph entitled "Sales or Compensating Use Taxes", in the "Standard Contract Terms and Conditions" included herein, does not apply to these taxes.

J. Pre-Proposal Meeting(s)/Site Inspection(s)

A Site Inspection is scheduled for 11:00AM November 17, 2015 JFK Building 14 2nd Fl. Visit will include a tour of a Terminal Welcome Center.

A site inspection allows Proposers to tour and physically inspect the actual site(s) of work prior to the submission of proposals. No questions will be taken during a site inspection.

Attendance is strongly recommended. Information conveyed may be useful to Proposers in preparing their proposals and Proposers not attending assume all risks which may ensue from non-attendance.

Attendees interested in attending should RSVP to Tom Merli at 212-435-6495 no later than 12 noon of the business day preceding the scheduled date(s) to confirm their attendance and/or receive traveling directions.

2. SCOPE OF WORK

The full Scope of Work is set forth in detail in Attachment E.

3. PROPOSER PREREQUISITES

Only Proposers who can demonstrate that they comply with the following should submit proposals as only proposals from such Proposers will be considered:

A. The Proposer shall have had at least three (3) years of continuous experience immediately prior to the date of the submission of its proposal in the management and operation of a business actually engaged in providing software that must have at least 65,000 lines of code in Visual Basic.Net, 200 lines of MS-SQL store procedure, MS-Access programming, and application management services for a computerized reservation system to commercial and industrial accounts under contract. The Proposer may fulfill this prerequisite if it can demonstrate that the persons or entities owning and controlling the Proposer have had a cumulative total of at least the same number of years and type of direct continuous experience immediately prior to the submission of this proposal as is required of the Proposer, or has owned and controlled other entities which meet the requirement.

B. During the time period stated in (A) above, the Proposer shall demonstrate satisfactory performance of at least one (1) contract for supporting software application for a computerized reservation system.

If the Proposer intends to utilize a subcontractor, the Authority will consider the relevant experience of that subcontractor in determining whether the Proposer has met the prerequisites set forth herein. In the event that a Proposer satisfies the prerequisites in (A) above based on the experience of a subcontractor, the Port Authority will reevaluate if the proposed subcontractor arrangement is withdrawn by the Proposer. If the Proposer is a common law joint venture, the Authority will consider the experience of each of the joint venture partners in determining whether the Proposer has met the prerequisites set forth herein.

All references cited as documentation for Prerequisites A and B above, **must appear with complete information on Attachment H: Proposer Reference Form**. Client references used to satisfy requirements A and B do not need to be mutually exclusive. The Authority reserves the right to contact any or all of these client references.

4. FINANCIAL INFORMATION

The Proposer will be required to demonstrate that it is financially capable of performing the contract resulting from this RFP ("Contract"). The determination of the Proposer's

financial qualifications and ability to perform this Contract will be in the sole discretion of the Port Authority. The Proposer shall submit, with its proposal, the following:

- A.** (1) Certified financial statements, including applicable notes, reflecting the Proposer's assets, liabilities, net worth, revenues, expenses, profit or loss and cash flow for the most recent year or the Proposer's most recent fiscal year.

(2) Where the certified financial statements in (1) above are not available, then financial statements reviewed by an independent accountant setting forth the aforementioned information shall be provided.

Where the statements submitted pursuant to subparagraphs (1) and (2) aforementioned do not cover a period which includes a date not more than forty-five days prior to the Proposal Due Date, then the Proposer shall also submit a statement in writing, signed by an executive officer or his/her designee, that the present financial condition of the Proposer is at least as good as that shown on the statements submitted.

- B.** A statement of work which the Proposer has on hand, including any work on which a bid and/or proposal has been submitted, containing a description of the work, the annual dollar value, the location by City and State, the current percentage of completion, the expected date for completion, and the name of an individual most familiar with the Proposer's work on these jobs.
- C.** The name and address of the Proposer's banking institution, chief banking representative handling the Proposer's account, the Proposer's Federal Employer Identification Number (i.e., the number assigned to firms by the Federal Government for tax purposes), the Proposer's Dun and Bradstreet number, if any, the name of any credit service to which the Proposer furnished information and the number, if any, assigned by such service to the Proposer's account.

5. EVALUATION CRITERIA AND RANKING

All proposals will be reviewed by the Port Authority to determine if they adhere to the format required in this RFP, if they contain all required submissions and if the Proposer meets the prerequisites required for submission of a Proposal. For Proposals meeting such requirements, the following criteria, set forth in order of importance, will be utilized in the evaluation of proposals. Criteria B and C below are evaluated equally.

A. Cost of Proposal

- The Total Estimated Contract Price as submitted on the Cost Proposal Form.

B. Work Approach

- The demonstrated ability to provide the required services described in the Scope of Work (Attachment E), including the completeness of the services proposed; the ability

to exceed the requirements of the Service Levels; the quality of the technical approach to be used to ensure consistently high-quality services

C. Management Approach and Technical Experience:

- The extent to which the Proposer, and the managerial and supervisory personnel proposed to be dedicated to this program, have experience in supporting a application management system (specifically a computerized reservation system) and in providing similar services in a similar environment using a staff comparable in size to that necessary for the services to be provided hereunder.
- Experience of Proposer's senior management team in managing employees and conducting employee management programs, including, but not limited to,
 - Quality assurance and control programs
 - Disciplinary procedures
 - Recruiting procedures and maintenance of a stable workforce
 - Utilization of technological advances in software application to increase application functionality
 - Contract management

D. Background Check Plan

The Proposer must submit a Background Check plan in accordance with this document. The Background Check Plan will be evaluated on a “pass/fail” basis.

6. MBE/WBE SUBCONTRACTING PROVISIONS

The Port Authority has a long-standing practice of making its business opportunities available to Minority Business Enterprises (MBEs) and Woman-owned Businesses (WBEs) and has taken affirmative steps to encourage such firms to seek business opportunities with the Port Authority. The successful Proposer will use good faith efforts to provide for meaningful participation by the Port Authority Port Authority certified MBE/WBEs as defined in this document, in the purchasing and subcontracting opportunities associated with this contract, including purchase of equipment, supplies and labor services.

MBE/WBE Good Faith Participation – The Contractor shall use every good-faith effort to provide for participation by Port Authority certified Minority Business Enterprises (MBEs) and Port Authority certified Woman-owned Business Enterprises (WBEs) in all purchasing and subcontracting opportunities associated with this Contract, including purchase of equipment, supplies and labor services, in accordance with the section of the Standard Terms and Conditions entitled “MBE/WBE Good Faith Participation.”

The Contractor shall use good faith efforts to achieve participation equivalent to twelve percent (12%) of the total Contract price for MBEs and five percent (5%) of the total Contract price for WBEs.

Good faith efforts to include participation by MBE/WBEs shall include, but not be limited to the following:

- a. Dividing the services and materials to be procured into small portions, where feasible.

- b. Giving reasonable advance notice of specific contracting, subcontracting and purchasing opportunities to such MBE/WBEs as may be appropriate.
- c. Soliciting services and materials from a Port Authority Port Authority certified MBE/WBE or seeking MBE/WBEs from other sources. To access the Port Authority's Directory of MBE/WBE Port Authority certified Firms go to www.panynj.gov/supplierdiversty
- d. Ensuring that provision is made to provide progress payments to MBE/WBEs on a timely basis.
- e. Observance of reasonable commercial standards of fair dealing in the respective trade or business.

Proposers are directed to use form PA3749 as the recording mechanism for the MBE/WBE participation plan, annexed hereto as [Insert Attachment Letter or Number] or may be downloaded at <http://www.panynj.gov/business-opportunities/become-vendor.html>.

Proposers shall include their MBE/WBE Participation Plan with their Proposals, to be reviewed and approved by the Authority's Office of Business Diversity and Civil Rights (OBDCR).

The MBE/WBE Plan submitted by the Contractor to the Port Authority shall contain, at a minimum, the following:

- Identification of MBE/WBEs: Provide the names and addresses of all MBE/WBEs included in the Plan. If none are identified, describe the process for selecting participant firms in order to achieve the good faith goals under this Contract.
- Level of Participation: Indicate the percentage of MBE/WBE participation expected to be achieved with the arrangement described in the Plan.
- Scope of Work: Describe the specific scope of work the MBE/WBEs will perform.

All MBE/WBE subcontractors listed on the MBE/WBE Participation Plan must be certified by the Port Authority in order for the Contractor to receive credit toward the MBE/WBE goals set forth in this Contract. Please go to <http://www.panynj.gov/business-opportunities/supplier-diversity.html> to search for MBE/WBEs by a particular commodity or service. The Port Authority makes no representation as to the financial responsibility of these firms or their ability to perform work under this Contract.

Subsequent to Contract award, all changes to the MBE/WBE Participation Plan must be submitted via a modified MBE/WBE Participation Plan to the Manager for review and approval by the Authority's Office of Business Diversity and Civil Rights. For submittal of modifications to the MBE/WBE Plan, Contractors are directed to use form PA3749A, which may be downloaded at <http://www.panynj.gov/business-opportunities/become-vendor.html>. The Contractor shall not make changes to its approved MBE/WBE Participation Plan or substitute MBE/WBE subcontractors or suppliers for those named in their approved plan without the Manager's prior written approval. Unauthorized changes or substitutions, including performing the work designated for a subcontractor with the Contractor's own forces, shall be a violation of this section. Progress toward attainment of MBE/WBE participation goals set forth herein will be monitored throughout the duration of this Contract.

The Contractor shall also submit to the Manager, along with invoices, the Statement of Subcontractor Payments in the form of the MBE/WBE Participation Report, which may be downloaded at <http://www.panynj.gov/business-opportunities/become-vendor.html>. The Statement must include the name and business address of each MBE/WBE subcontractor and supplier actually involved in the Contract, a description of the work performed and/or product or service supplied by each such subcontractor or supplier, the date and amount of each expenditure, and such other information that may assist the Manager in determining the Contractor's compliance with the foregoing provisions.

Prompt Payment/Retainage

The Contractor agrees to pay each subcontractor under this Contract, for satisfactory performance of its subcontract, no later than ten (10) days from the receipt of each payment the Contractor receives from the Authority. The prime contractor agrees further to return retainage payments, if any to each subcontractor within ten (10) days after the subcontractors' work is satisfactorily completed. Any delay or postponement of payment from the above referenced timeframe may occur only for good cause following written approval of the Authority.

MBE/WBE Conditions of Participation

MBE/WBE participation will be counted toward meeting the MBE/WBE contract goal, subject to all of the following conditions:

A. **Commercially Useful Function.** An MBE/WBE is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of work on a contract and carries out its responsibilities by actually performing, managing, and supervising the work involved in accordance with normal industry practice. Regardless of whether an arrangement between the Contractor and the MBE/WBE represent standard industry practice, if the arrangement erodes the ownership, control or independence of the MBE/WBE or in any other way does not meet the commercially useful function requirement, that firm shall not be included in determining whether the MBE/WBE goal is met and shall not be included in MBE/WBE reports. If this occurs with respect to a firm identified as a MBE/WBE, the Contractor shall receive no credit toward the MBE/WBE goal and may be required to backfill the participation. An MBE/WBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction or contract through which funds are passed in order to obtain the appearance of MBE/WBE participation. An MBE/WBE may rebut a determination by the Authority that the MBE/WBE is not performing a commercially useful function to the Authority.

B. **Work Force.** The MBE/WBE must employ a work force (including administrative and clerical staff) separate and apart from that employed by the Contractor, other Subcontractors on the contract, or their Affiliates. This does not preclude the employment by the MBE/WBE of an individual that has been previously employed by another firm involved in the Contract, provided that the individual was independently recruited by the MBE/WBE in accordance with customary industry practice. The routine transfer of work crews from another employer to the MBE/WBE shall not be allowed.

C. **Supervision.** All Work performed by the MBE/WBE must be controlled and supervised by the MBE/WBE without duplication of supervisory personnel from the

Contractor, other Subcontractors on the contract, or their Affiliates. This does not preclude routine communication between the supervisory personnel of the MBE/WBE and other supervisors necessary to coordinate the Work.

Counting MBE/WBE Participation

The value of the Work performed by an MBE/WBE, with its own equipment, with its own forces, and under its own supervision will be counted toward the goal, provided the utilization is a commercially useful function. An MBE/WBE prime contractor shall still provide opportunities for participation by other MBE/WBEs. Work performed by MBE/WBEs will be counted as set forth below. If the Authority determines that some or all of the MBE/WBEs work does not constitute a commercially useful function, only the portion of the work considered to be a commercially useful function will be credited toward the goal.

- A. Subcontractors. One hundred percent (100%) of the value of the Work to be performed by an MBE/WBE subcontractor will be counted toward the MBE/WBE goal. The value of such Work includes the cost of materials and supplies purchased by the MBE/WBE, except the cost of supplies or equipment leased from the Contractor, other Subcontractors or their affiliates will not be counted. When a MBE/WBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward MBE/WBE goals only if the MBE/WBE subcontractor is itself a MBE/WBE. Work that a MBE/WBE subcontracts to a non-MBE/WBE firm does not count toward MBE/WBE goals.
- B. Manufacturers/Fabricators. One hundred percent (100%) of the expenditure to a MBE/WBE manufacturer or fabricator will be counted towards the MBE/WBE goal.
- C. Material Suppliers. Sixty percent (60%) of the expenditure to a MBE/WBE material supplier will be counted toward the MBE/WBE goal. Packagers, brokers, manufacturer's representatives, or other persons who arrange or expedite transactions are not material suppliers within the meaning of this paragraph.
- D. Broker's/Manufacturer's Representatives. One hundred percent (100%) of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees for transportation charges for the delivery of materials or supplies provided by an MBE/WBE broker/manufacturer's representative will be counted toward the MBE/WBE goal, provided they are determined by the Authority to be reasonable and not excessive as compared with fees customarily allowed for similar services. The cost of the materials and supplies themselves will not be counted.
- E. Services. One hundred percent (100%) of fees or commissions charged by an MBE/WBE for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of the Work will be counted toward the MBE/WBE goal, provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.
- F. Trucking Operations. If using an MBE/WBE firm for trucking operations, the MBE/WBE trucking firm of record is the firm that is listed on the MBE/WBE Participation Plan. The MBE/WBE trucking firm shall own and operate at least one registered, insured, and fully operational truck used for the performance of the Work and

shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting the MBE/WBE goal. The MBE/WBE trucking firm of record shall control the day-to-day MBE/WBE trucking operations for performance of the Work, and shall be responsible for (1) negotiating and executing rental/leasing agreements; (2) hiring and terminating the work force; (3) coordinating the daily trucking needs with the Contractor; and (4) scheduling and dispatching trucks.

1. MBE/WBE Owned/Leased Trucks. One hundred percent (100%) of the value of the trucking operations the MBE/WBE provides for the performance of the Work using trucks it owns or leases on a long-term basis that are registered, insured, and operated by the MBE/WBE using drivers it employs, will be counted toward the MBE/WBE goal.

2. MBE/WBE Short-Term Leased Trucks. The MBE/WBE may lease trucks on a short-term basis from another MBE/WBE, including an owner/operator who is Port Authority certified as a MBE/WBE. 100% of the value of the trucking operations that the lessee MBE/WBE provides will be counted toward the MBE/WBE goal.

3. Non-MBE/WBE Trucks. The MBE/WBE may lease trucks on a short-term basis from a non-MBE/WBE, including an owner-operator. One hundred percent (100%) of the fee or commission the MBE/WBE receives as a result of the lease arrangement will be counted toward the MBE/WBE goal. The value of the trucking operations provided by the lessee will not be counted toward the MBE/WBE goal.

G. Joint ventures between MBE/WBEs and non-MBE/WBEs may be counted toward the MBE/WBE goal in proportion to the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the MBE/WBE performs with its own forces. Please contact the Office of Business Diversity and Civil Rights at (201) 395-3958 for more information about requirements for such joint ventures.

7. CERTIFICATION OF RECYCLED MATERIALS PROVISION

Proposers shall submit, with their proposals, Attachment L, the Certified Environmentally Preferable Products / Practices Form attesting that the products or items offered by the Proposer contain the minimum percentage of post-consumer recovered material in accordance with the most recent guidelines issued by the United States Environmental Protection Agency (EPA), or, for commodities not so covered, the minimum percentage of post-consumer recovered materials established by other applicable regulatory agencies.

Recycling Definitions:

For purposes of this solicitation, the following definitions shall apply:

- a. "Recovered Material" shall be defined as any waste material or by-product that has been recovered or diverted from solid waste, excluding those materials and by-products generated from, and commonly reused within, an original manufacturing process.

- b. "Post-consumer Material" shall be defined as any material or finished product that has served its intended use and has been discarded for disposal or recovery having completed its life as a consumer item. "Post-consumer material" is included in the broader category of "Recovered Material".
- c. "Pre-consumer Material" shall be defined as any material or by-product generated after the manufacture of a product but before the product reaches the consumer, such as damaged or obsolete products. Pre-consumer Material does not include mill and manufacturing trim, scrap, or broken material that is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.
- d. "Recycled Product" shall be defined as a product that contains the highest amount of post-consumer material practicable, or, when post-consumer material is impracticable for a specific type of product, contains substantial amounts of Pre-consumer Material.
- e. "Recyclable Product" shall be defined as the ability of a product and its packaging to be reused, reconditioned for use, or recycled through existing recycling collection programs.
- f. "Waste Reducing Product" shall be defined as any product that will result in less waste generated due to its use rather than another product designed to serve the same function with a greater waste generation rate. This shall include, but not be limited to, those products that can be reused, refilled or have a longer life expectancy and contain a lesser amount of toxic constituents.

8. PROPOSAL SUBMISSION REQUIREMENTS

In order to expedite the evaluation of proposals, the Proposer's response to this RFP shall follow the format and order of items, using the same paragraph identifiers, as set forth below.

A. Letter of Transmittal

The Proposer shall submit a letter on its letterhead, signed by an authorized representative, stating its experience and qualifications in meeting the requirements of this RFP. This letter shall include a statement on whether the Proposer is submitting a proposal as a single entity, a joint venture, or is partnering with another firm in a prime/subcontracting relationship. In all cases, information required for a single entity is required for each participant in a joint venture.

The Letter of Transmittal shall contain:

- (1) Name and address of the Proposer and an original signature on the Letter of Transmittal by an authorized representative on behalf of the Proposer;

- (2) Name(s), title(s) and telephone number(s) of the individual(s) who are authorize to negotiate and execute the Contract;
- (3) Name, title and telephone number of a contact person to whom the Port Authority can address questions or issues related to this RFP;
- (4) Name and address of proposed subcontractors, if any;
- (5) If a corporation: (a) a statement of the names and residences of its officers, and (b) a copy of its Certificate of Incorporation, with a written declaration signed by the secretary of the corporation, with the corporate seal affixed thereto, that the copy furnished is a true copy of the Certificate of Incorporation as of the date of the opening of the Proposals;

If a partnership: a statement of the names and residences of its principal officers, indicating which are general and which are special partners;

If an individual: a statement of residence;

If a joint venture: information on each of the parties consistent with the information requested above. If the Contract is awarded to a common law joint venture (a partnership of business entities) each member will be jointly and severally liable under the Contract.

B. Executive Summary

The Proposer shall submit a summary presenting the major features of its proposal and how the proposal satisfies the requirements contained in this RFP, as well as the special competencies and expertise of the Proposer to meet the requirements of this RFP.

C. Agreement on Terms of Discussion

The Proposer shall submit a copy of the "Agreement on Terms of Discussion," signed by an authorized representative of the Proposer. The Agreement format is included as Attachment A and shall be submitted by the Proposer without any alterations or deviations. Any Proposer who fails to sign the Port Authority's "Agreement on Terms of Discussion" will not have its proposal reviewed. If the Proposer is a joint venture, an authorized representative of each party must sign the Agreement.

D. Certifications With Respect to the Contractor's Integrity Provisions

The Proposer, by signing the Letter of Transmittal, makes the certifications in the "Contractor's Integrity Provisions," included as Section 38 of Attachment B, entitled "General Contract Provisions" of this RFP. If the Proposer cannot make

any such certifications, it shall enclose an explanation of that inability. (“Certification Statement”).

E. Documentation of Proposer Prerequisites

The Proposer shall submit documentation to demonstrate that it meets all prerequisites, included herein.

F. Proposal

The Proposer must submit a proposal that details and clearly describes its experience and capability to perform the Application Management System services described in this RFP, its approach to such work and the cost of such work to the Port Authority. At a minimum, the proposal shall address the following:

1. Cost Proposal

- a. The Proposer shall submit a Cost Proposal indicating the compensation that it expects to receive. The Cost Proposal shall be submitted on Attachment J. The Cost Proposal shall be complete and inclusive of all work required in this RFP, including but not limited to material and labor costs, fuel costs, any salaries, health benefits, and other benefits, overheads, profits, etc.

2. Work Approach

- a. The Proposer shall show the number of full time and part time employees (including supervisory staff) to be utilized in providing the services required in this RFP.
- b. The Proposer shall provide a complete description of how it intends to implement and manage the required services hereunder, including any information that it believes would be helpful to the Port Authority in assessing its ability to provide the services described in the Scope of Work (Attachment E).
- c. Provide active disaster recovery procedures, as applicable for the applications, which would adhere to the disaster recovery requirements in Attachment K (Control Requirements Contract Checklist)

In addition, the Proposer shall submit proposed minimum service standards (and the appropriate measurements thereof), concepts or procedures that will further its objective to provide the highest possible level of service at LaGuardia Airport (LGA), John F. Kennedy International Airport (JFK), Newark Liberty International Airport (EWR), and Stewart International Airport (SWF), including how it will determine and maintain performance measurements.

3. Management Approach and Technical Experience

- a. The Proposer shall submit a listing of all Application Management Service Contracts that were performed by or are currently being performed by the Proposer within the last three (3) years. For each Contract listed, include:
 - The name and address of the Contracting party
 - The locations where the work was performed
 - Duration of the Contract
 - The approximate dollar amount of the Contract
 - The annual staff hours of full and part time labor expended in the performance of the Contract
 - A summary of the types of work performed and
 - The names, addresses and telephone numbers of the owners
 - Representatives familiar with the work that the Port Authority may contact.
- b. The Proposer shall provide a complete description of all employee management programs (covering both supervisory and non-supervisory personnel), currently utilized by its firm, including, but not limited to:
 - Application Management System, related training
 - Quality Assurance/Quality Control programs
 - Disciplinary procedures, etc. (include, if available, copies of manuals or other associated documents).
- c. The Proposer shall submit to the Port Authority a detailed itemized description explaining technical expertise and past experience the Proposer has in the following areas:
 - Utilization of technological advances in Application Management Systems and resulting benefits;
 - Management of Application Management System contracts in buildings and facilities of similar size.

4. Staffing Management

- a. Describe the Proposer's plan to ensure that an employee who performed a similar role at the Facility under a previous Port Authority Contract suffers no diminution in wage rate under the new Contract.
- b. The Proposer shall provide a statement indicating the qualifications and experience of managerial and supervisory personnel employed by the firm who are to be exclusively dedicated to performance of the Contract, including:
 - Their length of service with the firm
 - The anticipated function of each person on the Contract
 - A summary of the relevant experience of each person listed

c. Describe the Proposer's employee retention plan for this Contract.

5. Contractor Identity Check/Background Screening Plan

The Proposer shall submit a Contractor Identity Check/Background Screening Plan, which shall demonstrate how the Proposer will ensure that only employees who were successfully prescreened and properly credentialed perform the services herein. This Plan shall be applicable to all years of the Contract and shall include, but not be limited to, the following:

The length of time researched for the identity check/background screening on new hires, which shall be at a minimum of 10 years of employment history or verification of what an employee documented they have done in the last 10 years preceding the date of the investigation, resources utilized to perform this, and the frequency at which it is performed on current employees.

G. Acknowledgment of Addenda

If any Addenda are posted or sent as part of this RFP, the Proposer shall complete, sign and include with its Proposal the addenda form(s). In the event any Proposer fails to conform to these instructions, its proposal will nevertheless be construed as though the Addenda had been acknowledged.

If the Proposer downloaded this RFP document, it is the responsibility of the Proposer to periodically check the Port Authority website at <http://www.panynj.gov/business-opportunities/bid-proposal-advertisements.html> and download any addenda that might have been issued in connection with this solicitation.

H. Acceptance of Standard Contract Terms and Conditions

The Port Authority has attached to this RFP as Attachment B, Standard Contract Terms and Conditions governing the Contract. The Proposer is expected to agree with these Standard Contract Terms and Conditions. However, if the Proposer has any specific exceptions, such exceptions should be set forth in a separate letter included with its response to this RFP. After the proposal due date, the Proposer will be precluded from raising any exceptions unless such exceptions are justified by and directly related to substantive changes in the project's business or technical requirements and are agreed to by the Proposer and the Port Authority.

I. MBE/WBE Plan

The Proposer shall submit an MBE/WBE Plan in accordance with the MBE/WBE Subcontracting Provisions hereunder.

9. CONDITIONS FOR THE SUBMISSION OF A PROPOSAL

In addition to all other requirements of this RFP, the Proposer agrees to the following conditions for the submission of its proposal.

A. Changes to this RFP

At any time, in its sole discretion, the Port Authority may by written addenda, modify, correct, amend, cancel and/or reissue this RFP. If an addendum is issued prior to the date proposals are due, it will be provided to all parties in the medium in which the parties obtained the RFP. If an addendum is issued after proposals have been received, the addendum will be provided only to those whose proposals remain under consideration at such time.

B. Proposal Preparation Costs

The Port Authority shall not be liable for any costs incurred by the Proposer in the preparation, submittal, presentation, or revision of its proposal, or in any other aspect of the Proposer's pre-contract activity. No Proposer is entitled to any compensation except under an agreement for performance of services signed by an authorized representative of the Port Authority and the Proposer.

C. Disclosure of Proposal Contents / Use of Ideas and Materials

Proposal information is not generally considered confidential or proprietary. All information contained in the proposal is subject to the "Agreement on Terms of Discussion" attached hereto as Attachment A.

D. Ownership of Submitted Materials

All materials submitted in response to or in connection with this RFP shall become the property of the Port Authority. Selection or rejection of a Proposal shall not affect this right.

E. Subcontractors

If a Proposer intends to use subcontractor(s) the Proposer must identify in its proposal the names of the subcontractor(s) and the portions of the work the subcontractor(s) will perform.

F. Conflict of Interest

If the Proposer or any employee, agent or subcontractor of the Proposer may have a possible conflict of interest, or may give the appearance of a possible conflict of interest, the Proposer shall include in its proposal a statement indicating the nature of the conflict. The Port Authority reserves the right to disqualify the Proposer if, in

the Authority's sole discretion, any interest disclosed from any source could create a conflict of interest or give the appearance of a conflict of interest. The Port Authority's determination regarding any questions of conflict of interest shall be final.

G. Authorized Signature

Proposals must be signed by an authorized corporate officer (e.g., President or Vice President), General Partner, or such other individual authorized to bind the Proposer to the provisions of its proposal and this RFP.

H. References

The Port Authority may consult any reference familiar with the Proposer regarding its current or prior operations and projects, financial resources, reputation, performance, or other matters. Submission of a proposal shall constitute permission by the Proposer for the Port Authority to make such inquiries and authorization to third parties to respond thereto.

I. Evaluation Procedures and Negotiation

Only Proposers who meet the prerequisites may have their proposals evaluated based on the evaluation criteria set forth in this RFP. The Port Authority may use such procedures that it deems appropriate to evaluate such proposals. The Port Authority may elect to initiate contract negotiations with one or more Proposers, including negotiation of costs/price(s) and any other term or condition, including modifying any requirement of this RFP. The option of whether or not to initiate contract negotiations rests solely with the Port Authority.

J. Most Advantageous Proposal/No Obligation to Award

The Port Authority reserves the right to award the Contract to other than the Proposer proposing the lowest price. The Contract will be awarded to the Proposer whose proposal the Port Authority believes, in its sole discretion, will be the most advantageous to the Port Authority. Neither the release of this RFP nor the acceptance of any response thereto shall compel the Port Authority to accept any proposal. The Port Authority will not be obligated in any manner whatsoever to any Proposer until a proposal is accepted by the Port Authority in the manner provided in the Section of this RFP entitled "Proposal Acceptance or Rejection."

K. Multiple Contract Awards

The Port Authority reserves the right to award multiple Contracts for the products, work and/or services that are the subject matter of this RFP and Proposers are hereby given notice that they may not be the Port Authority's only contractor for such products, work and/or services.

L. Right to Extend Contract

If this is a proposal for a contract for a term of years, including specified options for renewal, the Port Authority reserves the additional right to extend the contract term for an additional *120* days, upon the same terms and conditions of the original Contract negotiated between the Port Authority and the successful Proposer.

M. Rights of the Port Authority

- (1) The Port Authority reserves all its rights at law and equity with respect to this RFP including, but not limited to, the unqualified right, at any time and in its sole discretion, to change or modify this RFP, to reject any and all proposals, to waive defects or irregularities in proposals received, to seek clarification of proposals, to request additional information, to request any or all Proposers to make a presentation, to undertake discussions and modifications with one or more Proposers, or to negotiate an agreement with any Proposer or third person who, at any time, subsequent to the deadline for submissions to this RFP, may express an interest in the subject matter hereof, to terminate further participation in the proposal process by a Proposer or to proceed with any proposal or modified proposal, which, in its judgment, will, under all circumstances, best serve the Port Authority's interest. The Port Authority may, but shall not be obliged to, consider incomplete proposals or to request or accept additional material or information. The holding of any discussions with any Proposer shall not constitute acceptance of a proposal, and a proposal may be accepted with or without discussions.
- (2) No Proposer shall have any rights against the Port Authority arising from the contents of this RFP, the receipt of proposals, or the incorporation in or rejection of information contained in any proposal or in any other document. The Port Authority makes no representation, warranty, or guarantee that the information contained herein, or in any addendum hereto, is accurate, complete, or timely or that such information accurately represents the conditions that would be encountered during the performance of the Contract. The furnishing of such information by the Port Authority shall not create or be deemed to create any obligation or liability upon it for any reason whatsoever and each Proposer, by submitting its proposal, expressly agrees that it has not relied upon the foregoing information, and that it shall not hold the Port Authority liable or responsible therefor in any manner whatsoever. Accordingly, nothing contained herein and no representation, statement or promise, of the Port Authority, its directors, officers, agents, representatives, or employees, oral or in writing, shall impair or limit the effect of the warranties of the Proposer required by this RFP or Contract and the Proposer agrees that it shall not hold the Port Authority liable or responsible therefor in any manner whatsoever.

- (3) At any time and from time to time after the opening of the proposals, the Port Authority may give oral or written notice to one or more Proposers to furnish additional information relating to its proposal and/or qualifications to perform the services contained in this RFP, or to meet with designated representatives of the Port Authority. The giving of such notice shall not be construed as an acceptance of a proposal. Information shall be submitted within three (3) calendar days after the Port Authority's request, unless a shorter or longer time is specified therein.

N. No Personal Liability

Neither the Commissioners of the Port Authority, nor any of them, nor any officer, agent or employee thereof shall be charged personally with any liability by a Proposer or another or held liable to a Proposer or another under any term or provision of this RFP or any statements made herein or because of the submission or attempted submission of a proposal or other response hereto or otherwise.

ATTACHMENT A: AGREEMENT ON TERMS OF DISCUSSION

AGREEMENT ON TERMS OF DISCUSSION

The Port Authority’s receipt or discussion of any information (including information contained in any proposal, vendor qualification(s), ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) shall not impose any obligations whatsoever on the Port Authority or entitle us to any compensation therefor (except to the extent specifically provided in such written agreement, if any, as may be entered into between the Port Authority and us). Any such information given to the Port Authority before, with or after this Agreement on Terms of Discussion (“Agreement”), either orally or in writing, is not given in confidence. Such information may be used, or disclosed to others, for any purpose at any time without obligation or compensation and without liability of any kind whatsoever. Any statement which is inconsistent with this Agreement, whether made as part of or in connection with this Agreement, shall be void and of no effect. This Agreement is not intended, however, to grant to the Port Authority rights to any matter, which is the subject of valid existing or potential letters patent.

Any information (including information contained in any proposal, vendor qualification(s), ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) provided in connection with this procurement is subject to the provisions of the Port Authority Freedom of Information Code and Procedure adopted by the Port Authority’s Board of Commissioners on October 22, 2014, which may be found on the Port Authority website at: <http://www.panynj.gov/corporate-information/pdf/foi-code.pdf>. The foregoing applies to any information, whether or not given at the invitation of the Authority.

_____(Company)

_____(Signature)

_____(Title)

_____(Date)

**ORIGINAL AND PHOTOCOPIES OF THIS PAGE ONLY.
DO NOT RETYPE.**

ATTACHMENT B: GENERAL CONTRACT PROVISIONS

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GENERAL CONTRACT PROVISIONS

1. GENERAL AGREEMENT

The undersigned (hereinafter referred to as the "Contractor" or "you") agrees to provide, and The Port Authority of New York and New Jersey (hereinafter referred to as the "Authority") agrees to accept to provide all the necessary supervision, personnel, equipment, materials and all other things necessary to perform the Services required by this Contract as more fully set forth in the Scope of Work attached hereto and made a part hereof. The Scope of Work requires the doing of all things necessary or proper for or incidental to the requirements as set forth in the Scope of Work. All things not expressly mentioned in the Scope of Work but involved in carrying out their intent are required by the Scope of Work and the Contractor shall perform the same as though they were specifically mentioned, described and delineated.

Subject only to the provisions of the clause herein entitled "Extra Work", the Contractor's sole compensation in full consideration for the performance of all the Contractor's obligations under this Contract is provided in the Cost proposal, as accepted by the Port Authority.

2. DEFINITIONS

To avoid undue repetition, the following terms, as used in this Agreement, shall be construed as follows:

Authority or Port Authority - means the Port Authority of New York and New Jersey.

Contract, Document or Agreement - mean the writings setting forth the scope, terms, conditions and Specifications for the procurement of Goods and/or Services, as defined hereunder and shall include, but not be limited to: Invitation for Bid (IFB), Request for Quotation (RFQ), Request for Proposal (RFP), Purchase Order (PO), Cover Sheet, executed Signature Sheet, AND PRICING SHEETS with Contract prices inserted," "STANDARD CONTRACT TERMS AND CONDITIONS," and, if included, attachments, endorsements, schedules, exhibits, or drawings, the Authority's acceptance and any written addenda issued over the name of the Assistant Director, Commodities and Services Division, Procurement Department.

Days or Calendar Days - mean consecutive calendar days, Saturdays, Sundays, and holidays, included.

Director - means the Director of the Department which operates the facility of the Port Authority at which the services hereunder are to be performed, for the time being, or his/her successor in duties for the purpose of this Contract, or one of his/her authorized representatives for the purpose of this Contract.

Facility- Port Authority Facilities within the Port District, as set forth in Attachment E: "Port Authority Facilities".

Contract Manager (or Manager) - means the individual with day-to-day responsibility for managing the project on behalf of the Port Authority.

No person shall be deemed a representative of the Director or Manager except to the extent specifically authorized in an express written notice to the Contractor signed by the Director or Manager, as the case may be. Further, no person shall be deemed a successor in duties of the Director unless the Contractor is so notified in writing signed by the Assistant Director, Commodities & Services Division, Procurement Department. No person shall be deemed a successor in duties of the Manager unless the Contractor is so notified in a writing signed by the

Director.

Services or Work - mean all services, equipment and materials (including materials and equipment, if any, furnished by the Authority) and other facilities and all other things necessary or proper for, or incidental to the services to be performed or goods to be furnished in connection with the service to be provided hereunder, as set forth in the Scope of Work.

Specifications- mean all requirements of this RFP, technical and otherwise, for the performance of the Scope of Work and services hereunder.

Holidays: The following legal holidays will be observed at Port Authority offices and facilities:

New Year's Day	Columbus Day
Martin Luther King, Jr. Day	Veteran's Day
Presidents Day	Thanksgiving Day
Memorial Day	Day After Thanksgiving
Independence Day	Christmas Day
Labor Day	

Do not perform any Work unless authorized by the Authority on these days.

Minority Business Enterprise (MBE) - means a business entity which is at least fifty-one percent (51%) owned and controlled by one or more members of one or more minority groups, or, in the case of a publicly held corporation, at least fifty-one percent (51%) of the stock of which is owned by one or more minority groups, and whose management and daily business operations are controlled by one or more such individuals who are citizens or permanent resident aliens.

"Minority Group" means any of the following racial or ethnic groups:

- (a) Black persons having origins in any of the Black African racial groups not of Hispanic origin;
- (b) Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American culture or origin, regardless of race;
- (c) Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, The Indian Subcontinent, or the Pacific Islands;
- (d) Native American or Alaskan native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.
- (e) Month - unless otherwise specified, means a calendar month.

Site of the Work - or words of similar import shall mean the Facility and all buildings and properties associated therewith as described in this Contract.

Small Business Enterprise (SBE) - The criteria for a Small Business Enterprise are:

- o The principal place of business must be located in New York or New Jersey;
- o The firm must have been in business for at least three years with activity;
- o Average gross income limitations by industry as established by the Port Authority.

Subcontractor - mean anyone who performs work (other than or in addition to the furnishing of materials, plant or equipment) in connection with the services to be provided hereunder, directly

or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any person who furnished merely his own personal labor or his own personal services. "Subcontractor", however, shall exclude the Contractor or any subsidiary or parent of the Contractor or any person, firm or corporation which has a substantial interest in the Contractor or in which the Contractor or the parent or the subsidiary of the Contractor, or an officer or principal of the Contractor or of the parent of the subsidiary of the Contractor has a substantial interest, provided, however, that for the purpose of the clause hereof entitled "Assignments and Subcontracts" the exclusion in this paragraph shall not apply to anyone but the Contractor itself.

Week - unless otherwise specified, means seven (7) consecutive calendar days, Saturdays, Sundays, and holidays.

Woman-owned Business Enterprise (WBE) - shall mean a business enterprise which is at least fifty-one percent (51%) owned by one or more women, or, in the case of a publicly held corporation, at least fifty-one percent (51%) of the stock of which is owned by one or more women and whose management and daily business operations are controlled by one or more women who are citizens or permanent or resident aliens.

WorkDay- unless otherwise specified, means a day between Monday and Friday with Monday and Friday included.

3. GENERAL PROVISIONS

- A. Under no circumstances shall you or your subcontractors communicate in any way with any department, board, agency, commission, or other organization or any person whether governmental or private in connection with the services to be performed hereunder except upon prior written approval and instructions of the Director, provided, however, that data from manufacturers and suppliers of materials, devices and equipment shall be obtained by you when you find such data necessary unless otherwise instructed by the Authority.
- B. Any services performed for the benefit of the Authority at any time by you or on your behalf, even if expressly and duly authorized by the Authority, shall be deemed to be rendered under and subject to this Agreement (unless referable to another expressly written, duly executed agreement by the same parties), whether such additional services are performed prior to, during or subsequent to the services described herein, and no rights or obligations shall arise out of such additional services except as provided under this Agreement.
- C. The Contractor shall observe and obey (and compel its officers, employees, guests, invitees, and those doing business with it, to observe and obey) the rules and regulations of the Port Authority now in effect, and such further rules and regulations which may from time to time during the effective period of this Contract, be promulgated by the Port Authority for reasons of safety, health, preservation of property, or maintenance of a good and orderly appearance of the Facilities, or for the safe and efficient operation of the Facilities. The Port Authority agrees that, except in cases of emergency, it shall give notice to the Contractor of every rule and regulation hereafter adopted by it.
- D. This Contract does not constitute the Contractor as an agent or representative of the Port Authority for any purpose whatsoever. The Contractor shall perform all services hereunder as an independent Contractor and the Contractor, its officers, and employees shall not be deemed to be agents, servants, or employees of the Port Authority.

4. INTELLECTUAL PROPERTY

- A. Except as provided below: as between the Port Authority and the Contractor all process flows, codes including, but not limited to scripts, programs, routines, processes, procedures, documentation, estimates, reports, records, data, charts, documents, models, designs, renderings, drawings, specifications, photographs, computations, computer tapes or discs, and other documentation of any type whatsoever, whether electronic or in the form of writing, figures or delineations, which are prepared or compiled in connection with this Agreement, shall become the exclusive property of the Authority, and the Authority shall have the exclusive right to use or permit the use of them and any ideas or methods represented by them for any purpose and at any time without other compensation than that specifically provided for herein. With regard to training manuals or any other knowledge transfer documentation, communication or presentation prepared under this Agreement the Authority shall expressly have the right to use, alter and reproduce including electronically, said manuals for its internal business purposes. The Contractor hereby warrants and represents that the Authority will have at all times the ownership and rights provided for in the immediately preceding sentence free and clear of all claims of third persons whether presently existing or arising in the future and whether presently known to either of the parties to this Agreement or not. Any information given to the Port Authority before, with or after submission of the Agreement on Terms of Discussion, either orally or in writing, is not given in confidence and may be used, or disclosed to others, for any purpose at any time without obligation or compensation and without liability of any kind whatsoever except as otherwise set forth in the Agreement On Terms Of Discussion.

The right to use all patented materials, appliances, processes of manufacture or types of construction, trade and service marks, copyrights and trade secrets, collectively hereinafter referred to as "Intellectual Property Rights", in the performance of the work, shall be obtained by the Contractor without separate or additional compensation. Where the services under this Agreement require the Contractor to provide materials, equipment or software for the use of the Port Authority or its employees or agents, the Port Authority shall be provided with the Intellectual Property Rights required for such use without further compensation than is provided for under this Agreement.

- B. All preexisting information or documentation including computer programs or code including source code, of the Contractor, utilized by the Contractor hereunder in the performance of his services hereunder shall be deemed licensed to the Authority for the duration and purposes of this agreement, but shall remain the property of the Contractor.
- C. When in the performance of the contract services the Contractor utilizes passwords or codes for any purpose, at any time during or after the performance of such services, upon written request by the Authority, the Contractor shall make available to the designated Authority representative all such passwords and codes.
- D. Third party software not specially prepared for the purpose of this agreement but utilized by the Contractor hereunder in the performance of his services hereunder shall be licensed to the Contractor and the Authority for the duration and purposes of this agreement but shall remain the property of said third party.
- E. The above-described software shall be furnished by the Contractor without additional compensation.

5. PROPRIETARY RIGHTS IN SUBJECT MATTER NOT WITHIN THE INTELLECTUAL PROPERTY CLAUSE

If in accordance with this Contract the Contractor furnishes research, development or consultative services in connection with the performance of the Work and if in the course of such research, development, or consultation patentable or copyrightable subject matter or trade secrets or other proprietary matter is produced by the Contractor, its officers, agents, employees, subcontractors, or suppliers, not custom software, and not covered under clause 6 entitled Intellectual Property, the Authority shall have, without cost or expense to it, an irrevocable, non-exclusive, royalty-free license to make, have made, and use, either itself or by anyone on its behalf, such subject matter in connection with any activity now or hereafter engaged in or permitted by the Authority. Promptly upon request by the Authority, the Contractor shall furnish or obtain from the appropriate person a form of license satisfactory to the Authority, but it is expressly understood and agreed that as between the Contractor and the Authority the license herein provided for shall nevertheless arise for the benefit of the Authority immediately upon the production of said subject matter and shall not await formal exemplification in a written license agreement as provided for above. Such license may be transferred by the Authority to its successors, immediate or otherwise, in the operations of or ownership of any facility now or hereafter operated by the Authority or the Authority but such license shall not be otherwise transferable.

The right of the Authority as well as the Contractor to use all patented material, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction as well as any copyrightable matter, trade secrets or other proprietary matters, shall be obtained by the Contractor without separate or additional compensation whether the same is patented or copyrighted before, during or after the performance of the Work.

6. INDEMNITY IN REGARD TO INFRINGEMENT MATTER

The Contractor shall indemnify the Authority against and save it harmless from all loss and expense incurred in the defense, settlement or satisfaction of any claims in the nature of patent, copyright, or other proprietary rights infringement arising out of or in connection with the Authority's use, in accordance with the preceding clause of such patentable subject matter or patented material, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction, or copyrighted matter or other matter protected as intellectual property. If requested by the Authority and if notified promptly in writing of any such claims, the Contractor shall conduct all negotiations with respect to and defend such claim without expense to the Authority. If the Authority be enjoined from using any of the facilities which form the subject matter of this Contract, and as to which the Contractor is to indemnify the Authority against proprietary rights claims, the Authority may, at its option and without thereby limiting any other right it may have hereunder or at law or in equity, require the Contractor to supply, temporarily or permanently, facilities not subject to such injunction and not infringing any proprietary rights and if the Contractor shall fail to do so, the Contractor shall, at its expense, remove all such facilities and refund the cost thereof to the Authority and otherwise equitably adjust compensation and take such steps as may be necessary to ensure compliance by the Authority with such injunction, to the satisfaction of the Authority.

The Contractor shall promptly and fully inform the Director of any claims or disputes for infringement or otherwise, whether existing or potential, of which it has knowledge relating to any Intellectual Property used, developed or licensed in connection with the performance of the Work or otherwise in connection with this Contract.

7. CONTRACT RECORDS AND DOCUMENTS – PASSWORDS AND CODES

When the performance of the contract services requires the Contractor to produce, compile or maintain records, data, drawings, or documents of any kind, regardless of the media utilized, then all such records, drawings, data and documents which are produced, prepared or compiled in connection with this contract, shall become the property of the Port Authority, and the Port Authority shall have the right to use or permit the use of them and any ideas or methods represented by them for any purpose and at any time without other compensation than that specifically provided herein.

When in the performance of the contract services the Contractor utilizes passwords or codes for any purpose, at any time during or after the performance of such services, upon written request by the Authority, the Contractor shall make available to the designated Authority representative all such passwords and codes.

8. COMPLIANCE WITH WEB SITE TERMS OF USE AND PRIVACY POLICIES

Subject to all of the provisions of this Contract including, without limitation, the obligations of the Contractor under the section hereof entitled “Indemnification,” the Contractor shall, and shall compel its employees, agents and subcontractors, to strictly abide by and comply with the policies established by the Authority governing the use of the Authority’s web sites as set forth in the Authority web sites Terms of Use and Privacy Statement as the same may be supplemented or amended. The Contractor shall immediately implement all procedures in connection with such policies and in furtherance thereof as directed by the Authority.

9. TIME IS OF THE ESSENCE

The Contractor's obligations for the performance and completion of all work within the time or times provided for in this Contract are of the essence of this Contract.

10. FINAL PAYMENT

After satisfactory completion of all services required hereunder, and upon receipt from the Contractor of such information as may be required, the Director shall certify in writing to the Contractor the total compensation earned by the Contractor.

If so required, the Contractor shall thereupon furnish to the Authority a detailed sworn statement of all claims, just and unjust, of subcontractors, materialmen and other third persons then outstanding which he has reason to believe may thereafter be made on account of the services provided under this Agreement.

Within thirty days after issuance of such certificate of total compensation earned (or within thirty days after receipt of the documents provided for in the immediately preceding paragraph, if required and if such date is later), the Port Authority shall pay to the Contractor by check the amount stated in said certificate, less all other payments and advances whatsoever to or for the account of the Contractor. All prior estimates and payments shall be subject to correction in this payment, which is throughout this Agreement called the Final Payment.

The acceptance by the Contractor, or by anyone claiming by or through him, of the Final Payment shall be and shall operate as a release to the Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with this contract and for every act

and neglect of the Authority and others relating to or arising out of the this contract, including claims arising out of breach of the contract and claims based on claims of third persons.

The Contractor's agreement as provided in the immediately preceding paragraph shall be deemed to be based upon the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediately preceding paragraph shall nevertheless be effective. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority. Such release shall be effective notwithstanding any purported reservation of right by the Contractor to preserve such claim. The acceptance of any check designated as "Final Payment" or bearing any similar designation shall be conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause, notwithstanding any purported reservation of rights.

The Contractor agrees that he shall not be entitled to, and hereby waives any right he might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for any such Final Payment or for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such Final Payment or an amount equivalent thereto or based thereon or any part thereof other than in the same fashion as a voluntary acceptance of a Final Payment subject to all the terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of contract) for an amount not included in said Final Payment.

11. DEFAULT, REVOCATION OR SUSPENSION OF CONTRACT

A. If one or more of the following events shall occur:

1. If fire or other event shall destroy all or a substantial part of the Facility, asset or infrastructure necessary to perform the Scope of Work.

If any governmental agency shall condemn or take a temporary or permanent interest in all or a substantial part of the Facility, or all of a part of the Port Authority's interest herein;

then upon the occurrence of such event or at any time thereafter during the continuance thereof, the Port Authority shall have the right on twenty-four (24) hours written notice to the Contractor to revoke this Contract, such revocation to be effective upon the date and time specified in such notice.

In such event this Contract shall cease and expire on the effective date of revocation as if said date were the date of the expiration of this Contract. Such revocation shall not, however, relieve the Contractor of any liabilities or obligations hereunder which shall have accrued on or prior to the effective date of revocation.

B. If one or more of the following events shall occur:

1. The Contractor shall become insolvent, or shall take the benefit of any present or future insolvency statute, or shall make a general assignment for the benefit of creditors, or file a voluntary petition in bankruptcy or a petition or answer seeking an arrangement or its reorganization or the readjustment of its indebtedness under the federal bankruptcy laws or under any other law or statute of the United States or of any State thereof, or consent to the appointment of a receiver, trustee, or liquidator of all or substantially all its property; or
2. By order or decree of a court the Contractor shall be adjudged bankrupt or an

order shall be made approving a petition filed by any of the creditors, or, if the Contractor is a corporation, by any of the stockholders of the Contractor, seeking its reorganization or the readjustment of its indebtedness under the federal bankruptcy laws or under any law or statute of the United States or of any State thereof; or

3. A petition under any part of the federal bankruptcy laws or an action under any present or future insolvency law or statute shall be filed against the Contractor and shall not be dismissed within thirty (30) days after the filing thereof; or
4. The interest of the Contractor under this Contract shall be transferred to, passed to or devolve upon, by operation of law or otherwise, any other person, firm or corporation, or
5. The Contractor, if a corporation, shall, without the prior written approval of the Port Authority, become a surviving or merged corporation in a merger, a constituent corporation in a consolidation, or a corporation in dissolution; or
6. If the Contractor is a partnership, and the said partnership shall be dissolved as the result of any act or omission of its copartners or any of them, or by operation of law or the order or decree of any court having jurisdiction, or for any other reason whatsoever; or
7. By or pursuant to, or under authority of any legislative act, resolution or rule, or any order or decree of any court or governmental board, agency or officer having jurisdiction, a receiver, trustee, or liquidator shall take possession or control of all or substantially all of the property of the Contractor and such possession or control of all or substantially all of the property of the Contractor and shall continue in effect for a period of fifteen (15) days;

then upon the occurrence of any such event or at any time thereafter during the continuance thereof, the Port Authority shall have the right upon five (5) days notice to the Contractor to terminate this Contract and the rights of the Contractor hereunder; termination to be effective upon the date and time specified in such notice as if said date were the date of the expiration of this Contract. Termination shall not relieve the Contractor of any liabilities or obligations hereunder which have accrued on or prior to the effective date of termination.

C. If any of the following shall occur:

1. The Contractor shall cease, abandon any part of the service, desert, stop or discontinue its services in the premises for any reason whatsoever and regardless of the fault of the Contractor; or
2. The Contractor shall fail to keep, perform and observe each and every other promise, covenant and agreement set forth in this Contract on its part to be kept, performed or observed, within five (5) days after receipt of notice of default thereunder from the Port Authority (except where fulfillment of its obligations requires activity over a greater period of time, and the Contractor shall have commenced to perform whatever may be required for fulfillment within five (5) days after receipt of notice and continues such performance without interruption except for causes beyond its control);

then upon the occurrence of any such event or during the continuance thereof, the Port Authority shall have the right on twenty four (24) hours notice to the Contractor to terminate this Contract and the rights of the Contractor hereunder, termination to be effective upon the

date and time specified in such notice. Termination shall not relieve the Contractor of any liabilities, which shall have accrued on or prior to the effective date of termination.

- D. If any of the events enumerated in this Section shall occur prior to commencement date of this Contract the Port Authority upon the occurrence of any such event or any time thereafter during the continuance thereof by twenty-four (24) hours notice may terminate or suspend this Contract and the rights of the Contractor hereunder, such termination or suspension to be effective upon the date specified in such notice.
- E. No payment by the Port Authority of any monies to the Contractor for any period or periods after default of any of the terms, covenants or conditions hereof to be performed, kept and observed by the Contractor and no act or thing done or omitted to be done by the Port Authority shall be deemed to be a waiver of the right of the Port Authority to terminate this Contract or of any other right or remedies to which the Port Authority may be entitled because of any breach thereof. No waiver by the Port Authority of any default on the part of the Contractor in the performance of any of the terms, covenants and conditions hereof to be performed, kept or observed by the Contractor shall be or be construed to be a waiver by the Port Authority of any other subsequent default in the performance of any of the said terms, covenants and conditions.
- F. In addition to all other rights of revocation or termination hereunder and notwithstanding any other provision of this Contract the Port Authority may terminate this Contract and the rights of the Contractor hereunder without cause at any time upon five (5) days written notice to the Contractor and in such event this Contract shall cease and expire on the date set forth in the notice of termination as fully and completely as though such dates were the original expiration date hereof and if such effective date of termination is other than the last day of the month, the amount of the compensation due to the Contractor from the Port Authority shall be prorated when applicable on a daily basis. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already performed but no allowance shall be made for anticipated profits.
- G. Any right of termination contained in this paragraph, shall be in addition to and not in lieu of any and all rights and remedies that the Port Authority shall have at law or in equity consequent upon the Contractor's breach of this Contract and shall be without prejudice to any and all such other rights and remedies. It is hereby specifically agreed and understood that the exercise by the Port Authority of any right of termination set forth in this paragraph shall not be or be deemed to be an exercise by the Port Authority of an election of remedies so as to preclude the Port Authority from any right to money damages it may have for the period prior to the effective date of termination to the original expiration date of the Contract, and this provision shall be deemed to survive the termination of this Contract as aforesaid.
- H. If (1) the Contractor fails to perform any of its obligations under this Contract or any other agreement between the Port Authority and the Contractor (including its obligation to the Port Authority to pay any claim lawfully made against it by any supplier, subcontractor or worker or other person which arises out of or in connection with the performance of this Contract or any other agreement with the Port Authority) or (2) any claim (just or unjust) which arises out of or in connection with this Contract or any other agreement between the Port Authority and the Contractor is made against the Port Authority or (3) any subcontractor under this Contract or any other agreement between the Port Authority and the Contractor fails to pay any claims lawfully made against it by any supplier, subcontractor, worker or other third person which arises out of or in

connection with this Contract or any other agreement between the Port Authority and the Contractor or if in the opinion of the Port Authority any of the aforesaid contingencies is likely to arise, then the Port Authority shall have the right, in its discretion, to withhold out of any payment (final or otherwise) such sums as the Port Authority may deem ample to protect it against delay or loss or to assure the payment of just claims of third persons, and to apply such sums in such manner as the Port Authority may deem proper to secure such protection or satisfy such claims. All sums so applied shall be deducted from the Contractor's compensation. Omission by the Port Authority to withhold out of any payment, final or otherwise, a sum for any of the above contingencies, even though such contingency has occurred at the time of such payment, shall not be deemed to indicate that the Port Authority does not intend to exercise its right with respect to such contingency. Neither the above provisions for rights of the Port Authority to withhold and apply monies nor any exercise or attempted exercise of, or omission to exercise, such rights by the Port Authority shall create any obligation of any kind to such supplier, subcontractors, worker or other third persons. If, however, the payment of any amount due the Contractor shall be improperly delayed, the Port Authority shall pay the Contractor interest thereon at the rate of 6% per annum for the period of the delay, it being agreed that such interest shall be in lieu of and in liquidation of any damages to the Contractor because of such delay.

- I. If the Port Authority has paid any sum or has incurred any obligation or expense which the Contractor has agreed to pay or reimburse the Port Authority, or if the Port Authority is required or elects to pay any sum or sums or incurs any obligations or expense by reason of the failure, neglect or refusal of the Contractor to perform or fulfill any one or more of the conditions, covenants, or agreements contained in this Contract, or as a result of an act of omission of the Contractor contrary to the said conditions, covenants and agreements, the Contractor shall pay to the Port Authority the sum or sums so paid or expense so incurred, including all interests, costs and damages, promptly upon the receipt of the Port Authority's statement therefore. The Port Authority may, however, in its discretion, elect to deduct said sum or sums from any payment payable by it to the Contractor.
- J. If the Port Authority pays any installment to the Contractor without reducing said installment as provided in this Contract, it may reduce any succeeding installment by the proper amount, or it may bill the Contractor for the amount by which the installment paid should have been reduced and the Contractor shall pay to the Port Authority any such amount promptly upon receipt of the Port Authority's statement therefore.
- K. The Port Authority shall also have the rights set forth above in the event the Contractor shall become insolvent or bankrupt or if his affairs are placed in the hands of a receiver, trustee or assignee for the benefit of creditors.

12. WITHHOLDING OF PAYMENT

If (1) the Contractor fails to perform any of its obligations under this Contract or any other agreement between the Authority and the Contractor (including his obligation to the Authority to pay any claim lawfully made against him by any materialman, subcontractor or workman or other person which arises out of or in connection with the performance of this Contract or any other agreement with the Authority) or (2) any claim (just or unjust) which arises out of or in connection with this Contract or any other agreement between the Authority and the Contractor is made against the Authority or (3) any subcontractor under this Contract or any other agreement between the Authority and the Contractor fails to pay any claims lawfully made

against him by any materialman, subcontractor, workman or other third person which arises out of or on in connection with this Contract or any other agreement between the Authority and the Contractor or if in the opinion of the Authority any of the aforesaid contingencies is likely to arise, then the Authority shall have the right, in its discretion, to withhold out of any payment (final or otherwise and even though such payment has already been certified as due) such sums as the Authority may deem ample to protect it against delay or loss or to assure the payment of just claims of third persons, and to apply such sums in such manner as the Port Authority may deem proper to protect it against delay or loss or to satisfy such claims. All sums so applied shall be deducted from the Contractor's compensation. Omission by the Authority to withhold out of any payment, final or otherwise, a sum for any of the above contingencies, even though such contingency has occurred at the time of such payment, shall not be deemed to indicate that the Authority does not intend to exercise its right with respect to such contingency. Neither the above provisions for rights of the Authority to withhold and apply monies nor any exercise or attempted exercise of, or omission to exercise, such rights by the Authority shall create any obligation of any kind to such materialman, subcontractors, workman or other third persons.

Until actual payment to the Contractor, its right to any amount to be paid under this Contract (even though such amount has already been certified as due) shall be subordinate to the rights of the Authority under this clause.

13. CONTRACTOR PERSONNEL STANDARDS OF PERFORMANCE

The Contractor shall furnish sufficiently trained management, supervisory, technical and operating personnel to perform the services required of the Contractor under this Contract. If, in the opinion of the Director, any of the Contractor's personnel are not satisfactory in the performance of services to be furnished hereunder, the Contractor shall remove such personnel and replace them with personnel satisfactory to the Director.

At the time the Contractor is carrying out its operations there may be other persons working physically in the vicinity or in the same logical or technical infrastructure. . The Contractor shall so conduct its operations as to work in harmony and not endanger, interfere with or delay the operations of others, all to the best interests of The Authority and others and as may be directed by the Director.

14. DESIGNATED SECURE AREAS

Services under the Contract may be required in designated secure areas, as the same may be designated by the Manager from time to time ("Secure Areas"). The Port Authority shall require the observance of certain security procedures with respect to Secure Areas, which may include the escort to, at, and/or from said high security areas by security personnel designated by the Contractor or any subcontractor's personnel required to work therein. All personnel that require access to designated secure areas who are not under positive escort by an authorized individual will be required to undergo background screening and personal identity verification.

Forty-eight (48) hours prior to the proposed performance of any work in a Secure Area, the Contractor shall notify the Manager. The Contractor shall conform to the procedures as may be established by the Manager from time to time and at any time for access to Secure Areas and the escorting of personnel hereunder. Prior to the start of work, the Contractor shall request a description from the Manager of the Secure Areas which will be in effect on the commencement date. The description of Secure Areas may be changed from time to time and at any time by the Manager during the term of the Contract.

15. NOTIFICATION OF SECURITY REQUIREMENTS

The Authority has the responsibility of ensuring safe, reliable and secure transportation facilities, systems, and projects to maintain the well-being and economic competitiveness of the region. Therefore, the Authority reserves the right to deny access to certain documents, sensitive security construction sites and facilities (including rental spaces) to any person that declines to abide by Port Authority security procedures and protocols, any person with a criminal record with respect to certain crimes or who may otherwise poses a threat to the construction site or facility security. The Authority reserves the right to impose multiple layers of security requirements on the Contractor, its staff and subcontractors and their staffs depending upon the level of security required, or may make any amendments with respect to such requirements as determined by the Authority.

These security requirements may include but are not limited to the following:

- Contractor/Subcontractor identity checks and background screening

The Port Authority's designated background screening provider may require inspection of not less than two forms of valid/current government issued identification (at least one having an official photograph) to verify staff's name and residence; screening federal, state, and/or local criminal justice agency information databases and files; screening of any terrorist identification files; access identification to include some form of biometric security methodology such as fingerprint, facial or iris scanning, or the like.

The Contractor may be required to have its staff, and any subcontractor's staff, material-men, visitors or others over whom the Contractor/subcontractor has control, authorize the Authority or its designee to perform background checks, and a personal identity verification check. Such authorization shall be in a form acceptable to the Authority. The Contractor and subcontractors may also be required to use an organization designated by the Authority to perform the background checks.

As of January 29, 2007, the Secure Worker Access Consortium (S.W.A.C.) is the only Port Authority approved provider to be used to conduct background screening and personal identity verification, except as otherwise required by federal law and/or regulation (such as the Transportation Worker Identification Credential for personnel performing in secure areas at Maritime facilities). Information about S.W.A.C., instructions, corporate enrollment, online applications, and location of processing centers can be found at <http://www.secureworker.com>, or S.W.A.C. may be contacted directly at (877) 522-7922 for more information and the latest pricing. The cost for said background checks for staff that pass and are granted a credential shall be reimbursable to the Contractor (and its subcontractors) as an out-of-pocket expense as provided herein. Staff that are rejected for a credential for any reason are not reimbursable.

- Issuance of Photo Identification Credential

No person will be permitted on or about the Authority construction site or facility (including rental spaces) without a facility-specific photo identification credential approved by the Authority. If the authority requires facility-specific identification credential for the Contractor's and the subcontractor's staff, the Authority will supply such identification at no cost to the Contractor or its subcontractors. Such facility-specific identification credential shall remain the property of the Authority and shall be returned to the Authority at the completion or upon request prior to completion of the individual's assignment at the specific facility. It is the responsibility of the appropriate Contractor or subcontractor to immediately report to the Authority the loss of any staff member's individual facility-specific identification credential. The Contractor or subcontractor shall be billed for the

cost of the replacement identification credential. Contractor's and subcontractor's staff shall display Identification badges in a conspicuous and clearly visible manner, when entering, working or leaving an Authority construction site or facility.

Employees may be required to produce not less than two forms of valid/current government issued identification having an official photograph and an original, unlaminated social security card for identify and SSN verification. Where applicable, for sensitive security construction sites or facilities, successful completion of the application, screening and identify verification for all employees of the Contractor and subcontractors shall be completed prior to being provided a S.W.A.C. ID Photo Identification credential.

- Access control, inspection, and monitoring by security guards

The Authority may provide for Authority construction site or facility (including rental spaces) access control, inspection and monitoring by Port Authority Police or Authority retained contractor security guards. However, this provision shall not relieve the Contractor of its responsibility to secure its equipment and work and that of its subconsultant/subcontractor's and service suppliers at the Authority construction site or facility (including rental spaces). In addition, the Contractor, subcontractor or service provider is not permitted to take photographs, digital images, electronic copying and/or electronic transmission or video recordings or make sketches on any other medium at the Authority construction sites or facilities (including rental spaces), except when necessary to perform the Work under this Contract, without prior written permission from the Authority. Upon request, any photograph, digital images, video recording or sketches made of the Authority construction site or facility shall be submitted to the Authority to determine compliance with this paragraph, which submission shall be conclusive and binding on the submitting entity.

- Compliance with the Port Authority Information Security Handbook

The Contract may require access to Port Authority information considered Protected Information ("PI") as defined in the Port Authority Information Security Handbook ("Handbook"), dated October, 2008, corrected as of November 14, 2013, and as may be further amended. The Handbook and its requirements are hereby incorporated into this agreement and will govern the possession, distribution and use of PI if at any point during the lifecycle of the project or solicitation it becomes necessary for the Contractor to have access to PI. Protecting sensitive information requires the application of uniform safeguarding measures to prevent unauthorized disclosure and to control any authorized disclosure of this information within the Port Authority or when released by the Port Authority to outside entities. The following is an outline of some of the procedures, obligations and directives contained in the Handbook:

- (1) require that the Contractor and subcontractors, when appropriate, sign Non-Disclosure Agreements (NDAs), or an Acknowledgment of an existing NDA, provided by the Authority as a condition of being granted access to Confidential Information categorized and protected as per the Handbook;
- (2) require that individuals needing access to PI be required to undergo a background check, pursuant to the process and requirements noted in § 3.2 of the Information Security Handbook.
- (3) require Contractors and commercial enterprises to attend training to ensure security awareness regarding Port Authority information;
- (4) specific guidelines and requirements for the handling of PI to ensure that the storage and protection of PI;
- (5) restrictions on the transfer, shipping, and mailing of PI;

- (6) prohibitions on the publication, posting, modifying, copying, reproducing, republishing, uploading, transmitting, or distributing PI on websites or web pages. This may also include restricting persons, who either have not passed a pre-screening background check, or who have not been granted access to PI, from viewing such information;
- (7) require that PI be destroyed using certain methods, measures or technology pursuant to the requirements set forth in the Handbook;
- (8) require the Contractor to mandate that each of its subcontractors maintain the same levels of security required of the Contractor under any Port Authority awarded contract.
- (9) prohibit the publication, exchange or dissemination of PI developed from the project or contained in reports, except between Contractors and subcontractors, without prior approval of the Port Authority;
- (10) require that PI only be reproduced or copied pursuant to the requirements set forth in the Handbook.

- Audits for Compliance with Security Requirements

The Port Authority may conduct random or scheduled examinations of business practices under this section entitled “NOTIFICATION OF SECURITY REQUIREMENTS” and the Handbook in order to assess the extent of compliance with security requirements, Confidential Information procedures, protocols and practices, which may include, but not be limited to, verification of background check status, confirmation of completion of specified training, and/or a site visit to view material storage locations and protocols.

The Authority may impose, increase, and/or upgrade security requirements for the Contractor, subcontractors and their staffs during the term of this Contract to address changing security conditions and/or new governmental regulations.

16. INSURANCE PROCURED BY THE CONTRACTOR

The Contractor shall take out, maintain, and pay the premiums on Commercial General Liability Insurance, including but not limited to premises-operations, products-completed operations, and independent contractors coverage, with contractual liability language covering the obligations assumed by the Contractor under this Contract and, if vehicles are to be used to carry out the performance of this Contract, then the Contractor shall also take out, maintain, and pay the premiums on Automobile Liability Insurance covering owned, non-owned, and hired autos in the following minimum limits:

Commercial General Liability Insurance - \$ 2 million combined single limit per occurrence for bodily injury and property damage liability.

Automobile Liability Insurance - \$ 2 million combined single limit per accident for bodily injury and property damage liability.

In addition, the liability policy (ies) shall name **The Port Authority of NY and NJ, its related entities, their commissioners, directors, officers, partners, employees and agents / The City of New York** as additional insured, including but not limited to premise-operations, products-completed operations on the Commercial General Liability Policy. Moreover, the Commercial General Liability Policy shall not contain any provisions for exclusions from liability other than provisions for exclusion from liability forming part of the most up to date ISO form or its

equivalent unendorsed Commercial General Liability Policy. The liability policy (ies) and certificate of insurance shall contain cross-liability language providing severability of interests so that coverage will respond as if separate policies were in force for each insured. These insurance requirements shall be in effect for the duration of the contract to include any warrantee/guarantee period.

The certificate of insurance and liability policy (ies) must contain the following endorsement for the above liability coverages:

“The insurer(s) shall not, without obtaining the express advance written permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the Tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority, or the provisions of any statutes respecting suits against the Port Authority.”

The Contractor shall also take out, maintain, and pay premiums on Workers’ Compensation Insurance in accordance with the requirements of law in the state(s) where work will take place, and Employer’s Liability Insurance with limits of not less than \$1 million each accident.

Each policy above shall contain a provision that the policy may not be canceled, terminated, or modified without thirty (30) days’ prior written notice to the Port Authority of NY and NJ, Att: Facility Contract Administrator, at the location where the work will take place and to the General Manager, Risk Financing.

The Port Authority may at any time during the term of this agreement change or modify the limits and coverages of insurance. Should the modification or change results in an additional premium, The General Manager, Risk Financing for the Port Authority may consider such cost as an out-of-pocket expense.

Within five (5) days after the award of this agreement or contract and prior to the start of work, the Contractor must submit an original certificate of insurance, to the Port Authority of NY and NJ, Facility Contract Administrator, at the location where the work will take place. This certificate of insurance MUST show evidence of the above insurance policy (ies), stating the agreement/contract number prior to the start of work. The General Manager, Risk Financing must approve the certificate(s) of insurance before any work can begin. Upon request by the Port Authority, the Contractor shall furnish to the General Manager, Risk Financing, a certified copy of each policy, including the premiums.

If at any time the above liability insurance should be canceled, terminated, or modified so that the insurance is not in effect as above required, then, if the Manager shall so direct, the Contractor shall suspend performance of the contract at the premises. If the contract is so suspended, no extension of time shall be due on account thereof. If the contract is not suspended (whether or not because of omission of the Manager to order suspension), then the Authority may, at its option, obtain insurance affording coverage equal to the above required, the cost of such insurance to be payable by the Contractor to the Port Authority.

Renewal certificates of insurance or policies shall be delivered to the Facility Contractor Administrator, Port Authority at least fifteen (15) days prior to the expiration date of each expiring policy. The General Manager, Risk Financing must approve the renewal certificate(s) of insurance before work can resume on the facility. If at any time any of the certificates or policies shall become unsatisfactory to the Port Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy.

The requirements for insurance procured by the Contractor shall not in any way be construed as a limitation on the nature or extent of the contractual obligations assumed by the Contractor under this contract. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on them by law or by this or any other Contract. CITS# 4821N

17. ASSIGNMENTS AND SUBCONTRACTS

Any assignment or other transfer by the Contractor of this Contract or any part hereof or of any of his rights hereunder or of any monies due or to become due hereunder and any delegation of any of his duties hereunder without the express written consent of the Director shall be void and of no effect as to the Authority, provided, however, that the Contractor may subcontract portions of the Work to such persons as the Director, may, from time to time, expressly approve in writing. For each individual, partnership or corporation proposed by the Contractor as a subcontractor, the Contractor shall submit to the Authority a certification or, if a certification cannot be made, a statement by such person, partnership or corporation to the same effect as the certification or statement required from the Contractor pursuant to the clauses of the "Integrity" Section entitled "Certification of No Investigation Indictment, Conviction, Debarment Suspension, Disqualification and Disclosure of Other Information and "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage Contingent or Other Fee". All further subcontracting by any subcontractor shall also be subject to such approval of the Director

No consent to any assignment or other transfer, and no approval of any subcontractor, shall under any circumstances operate to relieve the Contractor of any of his obligations; no subcontract, no approval of any subcontractor and no act or omission of the Authority or the Director shall create any rights in favor of such subcontractor and against the Authority; and as between the Authority and the Contractor, all assignees, subcontractors, and other transferees shall for all purposes be deemed to be agents of the Contractor. Moreover, all subcontractors and all approvals of subcontractors, regardless of their form, shall be deemed to be conditioned upon performance by the subcontractor in accordance with this Contract; and if any subcontractor shall fail to perform the Contract to the satisfaction of the Director, the Director shall have the absolute right to rescind his approval forthwith and to require the performance of the Contract by the Contractor personally or through other approved subcontractors.

18. CERTAIN CONTRACTOR'S WARRANTIES

The Contractor represents and warrants:

- A. That it is financially responsible and experienced in, and competent to perform this Contract; that no representation, promise or statement, oral or in writing, has induced it to submit its Proposal, saving only those contained in the papers expressly made part of this Contract; that the facts stated or shown in any papers submitted or referred to in connection with his Proposal are true; and, if the Contractor be a corporation, that it is authorized to perform this Contract;

- B. That it has carefully examined and analyzed the provisions and requirements of this Contract, that from its own investigations it has satisfied itself as to the nature of all things needed for the performance of this Contract, the general and local conditions and all other matters which in any way affect this Contract or its performance, and that the time available to it for such examination, analysis, inspection and investigations was adequate;
- A. That the Contract is feasible of performance in accordance with all its provisions and requirements and that it can and will perform it in strict accordance with such provisions and requirements;
- B. That no Commissioner, officer, agent or employee of the Authority is personally interested directly or indirectly in this Contract or the compensation to be paid hereunder;
- E. That, except only for those representations, statements or promises expressly contained in this Contract, no representation, statement or promise, oral or in writing, of any kind whatsoever by the Authority, its Commissioners, officers, agents, employees or consultants has induced the Contractor to enter into this Contract or has been relied upon by the Contractor, including any with reference to:
 - (1) the meaning, correctness, suitability or completeness of any provisions or requirements of this Contract; (2) the nature, existence or location of materials, structures, obstructions, utilities or conditions, which may be encountered at the installation sites; (3) the nature, quantity, quality or size of the materials, equipment, labor and other facilities needed for the performance of this Contract; (4) the general or local conditions which may in any way affect this Contract or its performance; (5) the price of the Contract; or (6) any other matters, whether similar to or different from those referred to in (1) through (5) immediately above, affecting or having any connection with this Contract, the bidding thereon, any discussions thereof, the performance thereof or those employed therein or connected or concerned therewith.
- F. That, notwithstanding any requirements of this Contract, any inspection or approval of the Contractor's services by the Authority, or the existence of any patent or trade name, the Contractor nevertheless warrants and represents that the services and any intellectual property supplied to the Authority hereunder shall be of the best quality and shall be fully fit for the purpose for which they are to be used. The Contractor unconditionally guarantees against defects or failures of any kind, including defects or failures in design, workmanship and materials, excepting solely defects or failures which the Contractor demonstrates to the satisfaction of the Authority have arisen solely from accident, abuse or fault of the Authority occurring after issuance of Final Payment hereunder and not due to fault on the Contractor's part. In the event of defects or failures in said services, or any part thereof, then upon receipt of notice thereof from the Authority, the Contractor shall correct such defects or failures as may be necessary or desirable, in the sole opinion of the Authority, to comply with the above guaranty.

Moreover, the Contractor accepts the conditions at the sites of work as they may eventually be found to exist and warrants and represents that it can and will perform the Contract under such conditions and that all materials, equipment, labor and other facilities required because of any unforeseen conditions (physical or otherwise) shall be wholly at its own cost and expense, anything in this Contract to the contrary notwithstanding.

Nothing in the Scope of Work or any other part of the Contract is intended as or shall constitute a representation by the Authority as to the feasibility of performance of this Contract or any part thereof. Moreover, the Authority does not warrant or represent either by issuance of the Scope of Work or by any provision of this Contract as to time for performance or completion or otherwise that the Contract may be performed or completed by the times required herein or by any other times.

The Contractor further represents and warrants that it was given ample opportunity and time and by means of this paragraph was requested by the Authority to review thoroughly all documents forming this Contract prior to execution of this Contract in order that it might request inclusion in this Contract of any statement, representation, promise or provision which it desired or on which it wished to place reliance; that it did so review said documents; that either every such statement, representation, promise or provision has been included in this Contract or else, if omitted, that it expressly relinquishes the benefit of any such omitted statement, representation, promise or provision

and is willing to perform this Contract without claiming reliance thereon or making any other claim on account of such omission.

The Contractor further recognizes that the provisions of this clause (though not only such provisions) are essential to the Authority's consent to enter into this Contract and that without such provisions; the Authority would not have entered into this Contract.

19. RIGHTS AND REMEDIES OF THE AUTHORITY

The Authority shall have the following rights in the event the Director shall deem the Contractor guilty of a breach of any term whatsoever of this contract:

- a) The right to take over and complete the Work or any part thereof as agent for and at the expense of the Contractor, either directly or through other Contractors;
- b) The right to cancel this Contract as to any or all of the Work yet to be performed;
- c) The right to specific performance, an injunction or any other appropriate equitable remedy;
- d) The right to money damages.

For the purpose of this Contract, breach shall include but not be limited to the following, whether or not the time has yet arrived for performance of an obligation under this Contract: a statement by the Contractor to any representative of The Authority indicating that he cannot or will not perform any one or more of his obligations under this Contract; any act or omission of the Contractor or any other occurrence which makes it improbable at the time that he will be able to perform any one or more of his obligations under this Contract; any suspension of or failure to proceed with any part of the Work by the Contractor which makes it improbable at the time that he will be able to perform any one or more of his obligations under this Contract; any false certification at any time by the Contractor as to any material item certified pursuant to the clauses hereof entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Debarment, Suspension, Disqualification and Disclosure of Other Required Information" and "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent or Other Fee", or the willful or fraudulent submission of any signed statement pursuant to such clauses which is false in any material respect; or the Contractor's incomplete or inaccurate representation of its status with respect to the circumstances provided for in such clauses.

The enumeration in this numbered clause or elsewhere in this Contract of specific rights and remedies of The Authority shall not be deemed to limit any other rights or remedies which The Authority would have in the absence of such enumeration; and no exercise by The Authority of any right or remedy shall operate as a waiver of any other of its rights or remedies not inconsistent therewith or to stop it from exercising such other rights or remedies.

Neither the acceptance of the work or any part thereof, nor any payment therefor, nor any order or certificate issued under this Agreement or otherwise issued by the Authority, or any officer, agent or employee of the Authority, nor any permission or direction to continue with the performance or work, nor any performance by the authority of any of the Contractor's duties or obligations, nor any aid provided to the Contractor by the Authority in his performance of such duties or obligations, nor any other thing done or omitted to be done by the Authority, its Commissioners, officers, agents or employees shall be deemed to be a waiver of any provision of this agreement or of any rights or remedies to which the Authority may be entitled because of any breach hereof, excepting only a resolution of its Commissioners, providing expressly for such waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the work, because of any breach hereof, shall be deemed a waiver of any money damages to which the

Authority may be entitled because of such breach. Moreover, no waiver by the Authority of any breach of this Agreement shall be deemed to be a waiver of any other or any subsequent breach.

20. RIGHTS AND REMEDIES OF THE CONTRACTOR

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract which may be committed by the Authority, the Contractor expressly agrees that no default, act or omission of the Authority shall constitute a material breach of this Contract, entitling him to cancel or rescind it or (unless the Director shall so direct) to suspend or abandon performance.

21. TAX EXEMPTIONS

Purchases of services and tangible personal property by the Port Authority are exempt from New York and New Jersey state and local sales and compensating use taxes. (Sales Taxes). Therefore, the Port Authority's purchase of the Contractor's services under this Contract is exempt from Sales Taxes. Accordingly, the Contractor must not include Sales Taxes in the price charged to the Port Authority for the contractor's services under this Contract.

22. TITLE TO EQUIPMENT

Title to all equipment to be furnished hereunder by the Contractor shall be transferred to the Authority upon its delivery to the installation site.

The Contractor shall furnish such bills of sale and affidavits of title as the Authority shall reasonably request.

23. NOTICE REQUIREMENTS

No claim against the Authority shall be made or asserted in any action or proceeding at law or in equity, and the Contractor shall not be entitled to allowance of such claim, unless the Contractor shall have complied with all requirements relating to the giving of written notice and of information with respect to such claim as provided in this clause. The failure of the Contractor to give such written notice and information as to any claim shall be conclusively deemed to be a waiver by the Contractor of such claim, such written notice and information being conditions precedent to such claim. As used herein "claim" shall include any claim arising out of this agreement (including claims in the nature of breach of contract or fraud or misrepresentation before or subsequent to execution of this Agreement and claims of a type which are barred by the provisions of this agreement) for damages, payment or compensation of any nature or for performance of any part of this Agreement.

The requirements as to the giving of written notice and information with respect to claims shall be as follows:

- A. In the case of any claims for which requirements are set forth elsewhere in this Agreement as to notice and information, such requirements shall apply.
- B. In the case of all other types of claims, notice shall have been given to the Director, as soon as practicable, and in any case within forty eight (48) hours after occurrence of the act, omission, or other circumstances upon which the claim is or will be based, stating as fully as practicable at the time all information relating thereto. Such information shall be supplemented with any further information as soon as practicable after it becomes or should become known to the Contractor, including daily records showing all costs which the Contractor may be incurring or all other circumstances which will affect any claim to be made which records shall be submitted to the Authority.

The above requirements for notices and information are for the purpose of enabling the Authority to avoid waste of public funds by affording it promptly the opportunity to cancel or revise any order, change its plans, mitigate or remedy the effects of circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expense or circumstance as they occur and the requirements herein for such notice and information are essential to this Agreement and are in addition to any notice required by statute with respect to suits against the Authority.

The above referred to notices and information are required whether or not the Authority is aware of the existence of any circumstances which might constitute a basis for a claim and whether or not the Authority has indicated it will consider a claim.

No, act, omission or statement of any kind shall be regarded as a waiver of any of the provisions of this clause or may be relied upon as such waiver except only either a written statement signed by the Executive Director of the Authority or a resolution of the Commissioners of the Authority expressly stating that a waiver is intended as to any particular provision of this clause, and more particularly, no discussion, negotiation, consideration, correspondence or requests for information with respect to a claim by any Commissioner, officer, employees or agent of the Authority shall be construed as a waiver of any provision of this clause or as authority or apparent authority to effect such a waiver.

Since merely oral notice or information may cause disputes as to the existence or substance thereof, and since notice, even if written, to other than the Authority representative above designated to receive it may not be sufficient to come to the attention of the representative of the Authority with the knowledge and responsibility of dealing with the situation, only notice and information complying with the express provisions of this clause shall be deemed to fulfill the Contractor's obligation under this Agreement.

24. SERVICE OF NOTICES ON THE CONTRACTOR

Whenever provision is made in this Contract for the giving of any notice to the Contractor, its deposit in any post office box, enclosed in a postpaid wrapper addressed to the Contractor at his/her office, or its delivery to his/her office, shall be sufficient service thereof as of the date of such deposit or delivery, except to the extent, if any, otherwise provided in the clause entitled "Submission to Jurisdiction". Until further notice to the Authority the Contractor's office will be that stated in his/her Proposal. Notices may also be served personally upon the Contractor; or if a corporation, upon any officer, director or managing or general agent; or if a partnership upon any partner.

25. NO THIRD PARTY RIGHTS

Nothing contained in this Agreement is intended for the benefit of third persons, except to the extent that the Agreement specifically provides otherwise by use of the words "benefit" or "direct right of action".

26. INDEMNIFICATION AND RISKS ASSUMED BY THE CONTRACTOR

To the extent permitted by law, the Contractor shall indemnify and hold harmless the Port Authority, its Commissioners, officers, representatives and employees from and against all claims and demands, just or unjust, of third persons (including Contractor's employees, employees, officers, and agents of the Port Authority) arising out of or in any way connected or alleged to arise out of or alleged to be in any way connected with the Contract and all other services and activities of the Contractor under this Contract and for all expenses incurred by it and by them in the defense, settlement or satisfaction thereof, including without limitation thereto, claims and demands for death, for personal injury or for property damage, direct or consequential, whether they arise from the acts or omissions of the Contractor, the Port Authority, third persons (including Contractor's employees, employees, officers, and agents of the Port Authority), or from the acts of God or the public enemy, or otherwise, including claims and demands of any local jurisdiction against the Port Authority in connection with this Contract.

The Contractor assumes the following risks, whether such risks arise from acts or omissions (negligent or not) of the Contractor, the Port Authority or third persons (including Contractor's employees, employees, officers, and agents of the Port Authority) or from any other cause, excepting only risks occasioned solely by affirmative willful acts of the Port Authority done subsequent to the opening of proposals on this Contract, and shall to the extent permitted by law indemnify the Port Authority for all loss or damage incurred in connection with such risks:

- a. The risk of any and all loss or damage to Port Authority property, equipment (including but not limited to automotive and/or mobile equipment), materials and possessions, on or off the premises, the loss or damage of which shall arise out of the Contractor's operations hereunder. The Contractor shall if so directed by the Port Authority, repair, replace or rebuild to the satisfaction of the Port Authority, any and all parts of the premises or the Facility which may be damaged or destroyed by the acts or omissions of the Contractor, its officers, agents, or employees and if the Contractor shall fail so to repair, replace, or rebuild with due diligence the Port Authority may, at its option, perform any of the foregoing work and the Contractor shall pay to the Port Authority the cost thereof.
- b. The risk of any and all loss or damage of the Contractor's property, equipment (including but not limited to automotive and/or mobile equipment) materials and possessions on the Facility.
- c. The risk of claim, whether made against the Contractor or the Port Authority, for any and all loss or damages occurring to any property, equipment (including but not limited to automotive and/or mobile equipment), materials and possessions of the Contractor's agents, employees, materialmen and others performing work hereunder.
- d. The risk of claims for injuries, damage or loss of any kind just or unjust of third persons arising or alleged to arise out of the performance of work hereunder, whether such claims are made against the Contractor or the Port Authority.

If so directed, the Contractor shall at its own expense defend any suit based upon any such claim or demand, even if such suit, claim or demand is groundless, false or fraudulent, and in handling such shall not, without obtaining express advance permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority or the provision of any statutes respecting suits against the Port Authority.

Neither the requirements of the Port Authority under this Contract, nor of the Port Authority of the methods of performance hereunder nor the failure of the Port Authority to call attention to improper or inadequate methods or to require a change in the method of performance hereunder nor the failure of the Port Authority to direct the Contractor to take any particular precaution or other action or to refrain from doing any particular thing shall relieve the Contractor of its liability for injuries to persons or damage to property or environmental impairment arising out of its operations.

27. APPROVAL OF METHODS

Neither the approval of the Port Authority of the methods of furnishing services hereunder nor the failure of the Port Authority to call attention to improper or inadequate methods or to require a change in the method of furnishing services hereunder, nor the failure of the Port Authority to direct the Contractor to take any particular precautions or to refrain from doing any particular thing shall relieve the Contractor of

its liability for injuries to persons or damage to property or environmental impairment arising out of its operations.

28. PORT AUTHORITY TECHNOLOGY STANDARDS AND GUIDELINES AND SUPPLEMENTAL GUIDELINES FOR THE PORT AUTHORITY TECHNOLOGY SERVICES DEPARTMENT

The Contractor and any subcontractors shall follow the Port Authority Technology Standard and Guidelines and the Supplemental Guidelines for the Port Authority Technology Services Department attached hereto and made a part hereof, and shall comply with any updates to or changes in best practices related to such Standards and Guidelines.

29. SUBMISSION TO JURISDICTION

The Contractor hereby irrevocably submits itself to the jurisdiction of the Courts of the State of New York and New Jersey, in regard to any controversy arising out of, connected with, or in any way concerning this Contract.

The Contractor agrees that the service of process on the Contractor in relation to such jurisdiction may be made, at the option of the Port Authority, either by registered or certified mail addressed to it at the address of the Contractor indicated on the signature sheet, or by actual personal delivery to the Contractor, if the Contractor is an individual, to any partner if the Contractor be a partnership or to any officer, director or managing or general agent if the Contractor be a corporation.

Such service shall be deemed to be sufficient when jurisdiction would not lie because of the lack of basis to serve process in the manner otherwise provided by law. In any case, however, process may be served as stated above whether or not it might otherwise have been served in a different manner.

30. APPLICABLE LAW

This Contract shall be construed in accordance with the laws of the State of New York. The Contractor hereby consents to the exercise by the courts of the States of New York and New Jersey of jurisdiction in personam over it with respect to any matter arising out of or in connection with this Contract and waives any objection to such jurisdiction which it might otherwise have; and the Contractor agrees that mailing of process by registered mail addressed to it at the address of the Contractor set forth in the Proposal, shall have the same effect as personal service within the States of New York or New Jersey upon a domestic corporation of said State.

31. AUTHORITY OF THE DIRECTOR

Inasmuch as the public interest requires that the Project to which this Contract relates shall be performed in the manner which the Authority, acting through the Director deems best, the Director shall have absolute authority to determine what is or is not necessary or proper for or incidental thereto and the Specifications shall be deemed merely the Director's present determination on this point. In the exercise of this authority, the Director shall have power to alter the Specifications, to require the performance of Work not required by them in their present form, even though of a totally different character from that not required, and to vary, increase and diminish the character, quantity and quality of, or to countermand any Work now or hereafter required. If at any time it shall be, from the viewpoint of the Authority, impracticable or undesirable in the judgment of the Director to proceed with or continue the performance of the Contract or any part thereof, whether or not for reasons beyond the control of the Authority, the Director shall have authority to suspend performance of any part or all of the Contract until such time as

the Director may deem it practicable or desirable to proceed. Moreover, if at any time it shall be, from the viewpoint of the Authority impracticable or undesirable in the judgment of the Director to proceed with or continue the performance of the Contract or any part thereof for reasons within or beyond the control of the Authority, the Director shall have authority to cancel this Contract as to any or all portions not yet performed and as to any materials not yet installed even though delivered. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already satisfactorily performed, but no allowance shall be made for anticipated profits. To resolve all disputes and to prevent litigation, the parties to this Contract authorize the Director to decide all questions of any nature whatsoever arising out of, under, or in connection with, or in any way related to or on account of, this Contract (including claims in the nature of breach of contract or fraud or misrepresentation before or subsequent to acceptance of the Contractor's Proposal and claims of a type which are barred by the provisions of this Contract) and such decision shall be conclusive, final and binding on the parties. The Director's decision may be based on such assistance as she may find desirable. The effect of the decision shall not be impaired or waived by any negotiation or settlement offers in connection with the question decided, whether or not she participated therein, or by any prior decision of her or others, which prior decisions shall be deemed subject to review, or by any termination or cancellation of this Contract.

All such questions shall be submitted in writing by the Contractor to the Director for a decision together with all evidence and other pertinent information in regard to such questions, in order that a fair and impartial decision may be made. In any action against the Authority relating to any such question the Contractor must allege in the complaint and prove such submission, which shall be a condition precedent to any such action. No evidence or information shall be introduced or relied upon in such an action that has not been so presented to the Director.

In the performance of the Contract, the Contractor shall conform to all orders, directions and requirements of the Director and shall perform the Contract to her satisfaction at such times and places, by such methods and such manner and sequence as she may require, and the Contract shall at all stages be subject to her inspection. The Contractor shall employ no equipment, materials, methods or men to which she objects, and shall remove no materials, equipment or other facilities from the Authority site without permission. Upon request, she shall confirm in writing any oral order, direction, requirements or determination.

The enumeration herein or elsewhere of particular instances in which the opinion, judgment, discretion or determination of the Director shall control or in which the Contract shall be performed to her satisfaction or subject to her inspection, shall not imply that only the matters of a nature similar to those enumerated shall be so governed and performed, but without exception the entire Contract shall be so governed and performed.

This provision shall be construed in accordance with the laws of the State of New York excluding its conflict of law provisions.

32. APPROVALS BY THE DIRECTOR

The approval by the Director of any service required hereunder, shall be construed merely to mean that at that time the Director knows of no good reason for objecting thereto and no such approval shall release the Contractor from its full responsibility for the satisfactory performance of the services to be supplied. "Approved equal" shall mean approved by the Director.

33. CONTRACT REVIEW AND COMPLIANCE AUDITS

The Contractor, and any subcontractors, shall provide system access and reasonable assistance to the Authority's External and Internal Audit staff or its consultants in their performance of work under the contract, including producing specific requested information, extraction of data and reports. The

Contractor, and any subcontractors, shall support requests related to audits of the agreement and administration tasks and functions covered by this Contract.

The Authority reserves the right to use and load security and system software to evaluate the level of security and vulnerabilities in all systems which control, collect, dispense, contain, manage, administer, or monitor revenue “owned” by the Port Authority.

The Authority reserves the right to use as required and load security and system software to evaluate the level of security and vulnerabilities in any applicable environment-covered under this Contract. If such right is exercised, then both parties shall work in good faith to ensure there is no access or potential access to third party proprietary data within the applicable environment or access to other systems not covered under this Contract.

34. AUTHORITY ACCESS TO RECORDS

The Authority shall have access during normal business hours to all records and documents of the Contractor relating to any service provided under this Agreement, amounts for which it has been compensated, or claims he should be compensated, by The Authority above those included in the lump sum compensation set forth elsewhere herein. All Contractor records shall be kept in the Port District. The Contractor shall obtain for The Authority similar access to similar records and documents of subcontractors. Such access shall be given or obtained both before and within a period of three (3) years after Final Payment to the Contractor, provided, however, that if within the aforesaid one year period The Authority has notified the Contractor in writing of a pending claim by The Authority under or in connection with this Contract to which any of the aforesaid records and documents of the Contractor or of his subcontractors relate either directly or indirectly, then the period of such right of access shall be extended to the expiration of six (6) years from the date of Final Payment with respect to the records and documents involved.

Upon request of the Port Authority, the Contractor shall furnish or provide access to the federal Form I-9 (Employment Eligibility Verification) for each individual performing work under this Contract. This includes citizens and noncitizens.

The Contractor shall provide, at no cost to the Authority, access for and reasonable assistance to such auditors from the Authority or the Authority’s external auditors that may, from time to time, be designated to audit detail records which support Contractor charges to the Authority. The Authority shall have access to the detail records that support Contractor charges to the Authority for up to three (3) years following the termination of the Contract.

No provision in this Contract giving The Authority a right of access to records and documents is intended to impair or affect any right of access to records and documents that The Authority would have in the absence of such provision.

35. HARMONY

- a. The Contractor shall not employ any persons or use any labor, or use or have any equipment, or permit any condition to exist which shall or may cause or be conducive to any labor complaints, troubles, disputes or controversies at the Facility which interfere or are likely to interfere with the operation of the Port Authority or with the operations of lessees, licensees or other users of the Facility or with the operations of the Contractor under this Contract.

The Contractor shall immediately give notice to the Port Authority (to be followed by written notices and reports) of any and all impending or existing labor complaints, troubles, disputes or controversies and the progress thereof. The Contractor shall use its

best efforts to resolve any such complaint, trouble, dispute or controversy. If any type of strike, boycott, picketing, work stoppage, slowdown or other labor activity is directed against the Contractor at the Facility or against any operations of the Contractor under this Contract, whether or not caused by the employees of the Contractor, and if any of the foregoing, in the opinion of the Port Authority, results or is likely to result in any curtailment or diminution of the services to be performed hereunder or to interfere with or affect the operations of the Port Authority, or to interfere with or affect the operations of lessees, licensees, or other users of the Facility or in the event of any other cessation or stoppage of operations by the Contractor hereunder for any reason whatsoever, the Port Authority shall have the right at any time during the continuance thereof to suspend the operations of the Contractor under this Contract, and during the period of the suspension the Contractor shall not perform its services hereunder and the Port Authority shall have the right during said period to itself or by any third person or persons selected by it to perform said services of the Contractor using the equipment which is used by the Contractor in its operations hereunder as the Port Authority deems necessary and without cost to the Port Authority. During such time of suspension, the Contractor shall not be entitled to any compensation. Any flat fees, including management fees, shall be prorated. Prior to the exercise of such right by the Port Authority, it shall give the Contractor notice thereof, which notice may be oral. No exercise by the Port Authority of the rights granted to it in the above subparagraph shall be or be deemed to be a waiver of any rights of termination or revocation contained in this Contract or a waiver of any rights or remedies which may be available to the Port Authority under this Contract or otherwise.

- b. During the time that the Contractor is performing the Contract, other persons may be engaged in other operations on or about the worksite including Facility operations, pedestrian, bus and vehicular traffic and other Contractors performing at the worksite, all of which shall remain uninterrupted.

The Contractor shall so plan and conduct its operations as to work in harmony with others engaged at the site and not to delay, endanger or interfere with the operation of others (whether or not specifically mentioned above), all to the best interests of the Port Authority and the public as may be directed by the Port Authority.

36. CLAIMS OF THIRD PERSONS

The Contractor undertakes to pay all claims lawfully made against him by subcontractors, materialmen and workmen, and all claims lawfully made against him by other third persons arising out of or in connection with or because of the performance of this Contract and to cause all subcontractors to pay all such claims lawfully made against them.

37. NON-DISCRIMINATION REQUIREMENTS

The Contractor shall take all necessary and reasonable steps to ensure non-discrimination in the performance and administration of all aspects of this Contract.

- A. Contractor hereby agrees that no person on the ground of race, color, national origin, creed/religion, sex, age or handicap/disability shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the furnishing of goods or services or in the selection and retention of subcontractors and/or vendors under this Contract. Contractor shall also ascertain and comply with all applicable federal, state and local laws, ordinances, rules, regulations, and orders that pertain to

equal employment opportunity, affirmative action, and non-discrimination in employment.

- B. Contractor agrees that these “Non-Discrimination Requirements” are a binding part of this Contract. Without limiting the generality of any other term or provision of this Contract, in the event the Authority, or a state or federal agency finds that the Contractor or any of its subcontractors or vendors has not complied with these “Non-Discrimination Requirements”, the Authority may cancel, terminate or suspend this Contract in accordance with Section 11 of these Terms and Conditions entitled “Default, Revocation, or Suspension of Contract.”
- C. Contractor agrees to cooperate fully with the Authority’s investigation of allegations of discrimination. Cooperation includes, but is not limited to, allowing the Authority to question employees during the investigation of allegations of discrimination, and complying with directives that the Authority or the State or Federal government deem essential to ensure compliance with these “Non-Discrimination Requirements.”

38. CONTRACTOR’S INTEGRITY PROVISIONS

1.Certification of No Investigation (criminal or civil anti-trust), Indictment, Conviction, Debarment, Suspension, Disqualification and Disclosure of Other Information

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the Bidder and each parent and/or affiliate of the Bidder has not

- a. been indicted or convicted in any jurisdiction;
- b. been suspended, debarred, found not responsible or otherwise disqualified from entering into any contract with any governmental agency or been denied a government contract for failure to meet standards related to the integrity of the Bidder;
- c. had a contract terminated by any governmental agency for breach of contract or for any cause based in whole or in part on an indictment or conviction;
- d. ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Bid;
- e. had any business or professional license suspended or revoked or, within the five years prior to bid opening, had any sanction imposed in excess of fifty thousand dollars (\$50,000) as a result of any judicial or administrative proceeding with respect to any license held or with respect to any violation of a federal, state or local environmental law, rule or regulation;
- f. had any sanction imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, bid rigging, embezzlement, misrepresentation or anti-trust regardless of the dollar amount of the sanctions or the date of their imposition; and
- g. been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency, including an inspector general of a governmental agency or public authority.

2. Non-Collusive Bidding, and Code of Ethics Certification, Certification of No Solicitation Based On Commission, Percentage, Brokerage, Contingent or Other Fees

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that

- a. the prices in its bid have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- b. the prices quoted in its bid have not been and will not be knowingly disclosed directly or indirectly by the Bidder prior to the official opening of such bid to any other bidder or to any competitor;
- c. no attempt has been made and none will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition;
- d. this organization has not made any offers or agreements or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics dated March 11, 2014, or as may be revised, (a copy of which is available upon request) nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code;
- e. no person or selling agency other than a bona fide employee or bona fide established commercial or selling agency maintained by the Bidder for the purpose of securing business, has been employed or retained by the Bidder to solicit or secure this Contract on the understanding that a commission, percentage, brokerage, contingent, or other fee would be paid to such person or selling agency; and
- f. the Bidder has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Contract.
- g. no person or organization has been retained, employed or designated on behalf of the Bidder to impact any Port Authority determination with respect to (i) the solicitation, evaluation or award of this Contract, or (ii) the preparation of specifications or request for submissions in connection with this Contract.

The foregoing certifications in 38 (1) and 38 (2) above, shall be deemed to have been made by the Bidder as follows:

- * if the Bidder is a corporation, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each

parent, affiliate, director, and officer of the Bidder, as well as, to the best of the certifier's knowledge and belief, each stockholder of the Bidder with an ownership interest in excess of 10%;

- * if the Bidder is a partnership, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each partner.

Moreover, the foregoing certifications, if made by a corporate Bidder, shall be deemed to have been authorized by the Board of Directors of the Bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the Bidder cannot make the foregoing certifications, the Bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the Bidder is uncertain as to whether it can make the foregoing certifications, it shall so indicate in a signed statement furnished with its bid, setting forth in such statement the reasons for its uncertainty. With respect to the foregoing certification in paragraph "2g", if the Bidder cannot make the certification, it shall provide, in writing, with the signed bid: (i) a list of the name(s), address(es), telephone number(s), and place(s) of principal employment of each such individual or organization; and (ii) a statement as to whether such individual or organization has a "financial interest" in this Contract, as described in the Procurement Disclosure Policy of the Authority (a copy of which is available upon request to the Chief Procurement Officer of the Procurement Department of the Authority). Such disclosure is to be updated, as necessary, up to the time of award of this Contract. As a result of such disclosure, the Port Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsiveness or non-responsibility.

Notwithstanding that the Bidder may be able to make the foregoing certifications at the time the bid is submitted, the Bidder shall immediately notify the Authority in writing during the period of irrevocability of bids and the term of the Contract, if Bidder is awarded the Contract, of any change of circumstances which might under this clause make it unable to make the foregoing certifications, might render any portion of the certifications previously made invalid, or require disclosure. The foregoing certifications or signed statement shall be deemed to have been made by the Bidder with full knowledge that they would become a part of the records of the Authority and that the Authority will rely on their truth and accuracy in awarding and continuing this Contract. In the event that the Authority should determine at any time prior or subsequent to the award of this Contract that the Bidder has falsely certified as to any material item in the foregoing certifications, has failed to immediately notify the Port Authority of any change in circumstances which might make it unable to make the foregoing certifications, might render any portion of the certifications previously made invalid, or require disclosure, or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately represented any circumstance with respect to any item in the foregoing certifications required to be disclosed, the Authority may determine that the Bidder is not a responsible Bidder with respect to its bid on the Contract or with respect to future bids on Authority contracts and may exercise such other remedies as are provided to it by the Contract with respect to these matters. In addition, Bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g. New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself

disqualify a Bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the Bidder. Under certain circumstances the Bidder may be required as a condition of Contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority, said Monitor to be charged with, among other things, auditing the actions of the Bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

3. Bidder Eligibility for Award of Contracts - Determination by an Agency of the State of New York or New Jersey Concerning Eligibility to Receive Public Contracts

Bidders are advised that the Authority has adopted a policy to the effect that in awarding its contracts it will honor any determination by an agency of the State of New York or New Jersey that a Bidder is not eligible to bid on or be awarded public contracts because the Bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a Bidder whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a bid on a Port Authority contract and then to establish that it is eligible to be awarded a contract on which it has bid because (i) the state agency determination relied upon does not apply to the Bidder, or (ii) the state agency determination relied upon was made without affording the Bidder the notice and hearing to which the Bidder was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

4. Contractor Responsibility, Suspension of Work and Termination

During the term of this Contract, the Contractor shall at all times during the Contract term remain responsible. The Contractor agrees, if requested by the Port Authority to present evidence of its continuing legal authority to do business in the States of New Jersey or New York, integrity, experience, ability, prior performance, and organizational and financial capacity.

The Port Authority, in its sole discretion, reserves the right to suspend any or all activities under this Contract, at any time, when it discovers information that calls into question the responsibility of the Contractor. In the event of such suspension, the Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor must comply with the terms of the suspension order. Contract activity may resume at such time as the Port Authority issues a written notice authorizing a resumption of performance under the Contract.

Upon written notice to the Contractor, and an opportunity to be heard with appropriate Port Authority officials or staff, the Contract may be terminated by Port Authority at the Contractor's expense where the Contractor is determined by the Port Authority to be non-responsible. In such event, the Port Authority or its designee may complete the contractual requirements in any manner he or she may deem advisable and pursue available legal or equitable remedies for breach, including recovery of costs from Contractor associated with such termination.

5. No Gifts, Gratuities, Offers of Employment, Etc.

At all times, the Contractor shall not offer, give or agree to give anything of value either to a Port Authority employee, agent, job shopper, consultant, construction manager or other person or firm

representing the Port Authority, or to a member of the immediate family (i.e., a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority of duties involving transactions with the Contractor on behalf of the Port Authority, whether or not such duties are related to this Contract or any other Port Authority contract or matter. Any such conduct shall be deemed a material breach of this Contract.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Contract or any other Port Authority contract), etc. which might tend to obligate the Port Authority employee to the Contractor, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Contract or any other Port Authority contract. Where used herein, the term "Port Authority" shall be deemed to include all subsidiaries of the Port Authority.

The Contractor shall insure that no gratuities of any kind or nature whatsoever shall be solicited or accepted by it and by its personnel for any reason whatsoever from the passengers, tenants, customers or other persons using the Facility and shall so instruct its personnel.

In the event that the Contractor becomes aware of the occurrence of any conduct that is prohibited by this section entitled "No Gifts, Gratuities, Offers of Employment, Etc.", it shall report such occurrence to the Port Authority's Office of Inspector General within three (3) business days of obtaining such knowledge. (See "<http://www.panynj.gov/inspector-general>" for information about to report information to the Office of Inspector General). Failing to report such conduct shall be grounds for a finding of non-responsibility.

In addition, during the term of this Contract, the Contractor shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated March 11, 2014, or as may be revised (a copy of which is available upon request to the Office of the Secretary of the Port Authority).

The Contractor shall include the provisions of this clause in each subcontract entered into under this Contract.

6. Conflict of Interest

During the term of this Contract, the Contractor shall not participate in any way in the preparation, negotiation or award of any contract (other than a contract for its own services to the Authority) to which it is contemplated the Port Authority may become a party, or participate in any way in the review or resolution of a claim in connection with such a contract if the Contractor has a substantial financial interest in the contractor or potential contractor of the Port Authority or if the Contractor has an arrangement for future employment or for any other business relationship with said contractor or potential contractor, nor shall the Contractor at any time take any other action which might be viewed as or give the appearance of conflict of interest on its part. If the possibility of such an arrangement for future employment or for another business arrangement has been or is the subject of a previous or current discussion, or if the Contractor has reason to believe such an arrangement may be the subject of future discussion, or if the Contractor has any financial interest, substantial or not, in a contractor or potential contractor of the Authority, and the Contractor's participation in the preparation, negotiation or award of any contract with such a contractor or the review or resolution of a claim in connection with such a contract is contemplated or if the Contractor has reason to believe that any other

situation exists which might be viewed as or give the appearance of a conflict of interest, the Contractor shall immediately inform the Chief Procurement Officer in writing of such situation giving the full details thereof. Unless the Contractor receives the specific written approval of the Chief Procurement Officer, the Contractor shall not take the contemplated action which might be viewed as or give the appearance of a conflict of interest. The Chief Procurement Officer may require the Contractor to submit a mitigation plan addressing and mitigating any disclosed or undisclosed conflict, which is subject to the approval of the Chief Procurement Officer and shall become a requirement, as though fully set forth in this Contract. In the event the Chief Procurement Officer shall determine that the performance by the Contractor of a portion of its Services under this Agreement is precluded by the provisions of this numbered paragraph, or a portion of the Contractor's said Services is determined by the Chief Procurement Officer to be no longer appropriate because of such preclusion, then the Chief Procurement Officer shall have full authority on behalf of both parties to order that such portion of the Contractor's Services not be performed by the Contractor, reserving the right, however, to have the Services performed by others and any lump sum compensation payable hereunder which is applicable to the deleted work shall be equitably adjusted by the parties. The Contractor's execution of this document shall constitute a representation by the Contractor that at the time of such execution the Contractor knows of no circumstances, present or anticipated, which come within the provisions of this paragraph or which might otherwise be viewed as or give the appearance of a conflict of interest on the Contractor's part. The Contractor acknowledges that the Authority may preclude it from involvement in certain disposition/privatization initiatives or transactions that result from the findings of its evaluations hereunder or from participation in any contract, which results, directly or indirectly, from the Services provided by the Contractor hereunder. The Port Authority's determination regarding any questions of conflict of interest shall be final.

7. Definitions

As used in this Section 38, the following terms shall mean:

Affiliate - Two or more firms are affiliates if a parent owns more than fifty percent of the voting stock of each of the firms, or a common shareholder or group of shareholders owns more than fifty percent of the voting stock of each of the firms, or if the firms have a common proprietor or general partner.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting and/or law enforcement agency and any inquiries concerning civil anti-trust investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for employment, or Federal, State, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the Bidder by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than 50% of the voting stock of the Bidder.

If the solicitation is a Request for Proposal:

Bid - shall mean Proposal;
Bidder - shall mean Proposer;
Bidding - shall mean submitting a Proposal.

In a Contract resulting from the taking of bids:

Bid - shall mean bid;
Bidder - shall mean Bidder; except and until the Contract has been awarded, then it shall mean Contractor
Bidding - shall mean executing this Contract.

In a Contract resulting from the taking of Proposals:

Bid - shall mean Proposal;
Bidder - shall mean Proposer;
Bidding - shall mean executing this Contract.

39. CONFIDENTIAL INFORMATION/NON-PUBLICATION

A. As used herein, confidential information shall mean all information disclosed to the Contractor or the personnel provided by the Contractor hereunder which relates to the Authority's and/or PATH's past, present, and future research, development and business activities including, but not limited to, software and documentation licensed to the Authority or proprietary to the Authority and/or PATH and all associated software, source code procedures and documentation. Confidential information shall also mean any other tangible or intangible information or materials including but not limited to computer identification numbers, access codes, passwords, and reports obtained and/or used during the performance of the Contractor's Services under this Contract.

B. Confidential information shall also mean and include collectively, as per *The Port Authority of New York & New Jersey Information Security Handbook (October 15, 2008, corrected as of November 14, 2013)*, Protected Information, Confidential Proprietary Information, Confidential Privileged Information and information that is labeled, marked or otherwise identified by or on behalf of the Authority so as to reasonably connote that such information is confidential, privileged, sensitive or proprietary in nature. Confidential Information shall also include all work product that contains or is derived from any of the foregoing, whether in whole or in part, regardless of whether prepared by the Authority or a third-party or when the Authority receives such information from others and agrees to treat such information as Confidential.

C. The Contractor shall hold all such confidential information in trust and confidence for the Authority, and agrees that the Contractor and the personnel provided by the Contractor hereunder shall not, during or after the termination or expiration of this Contract, disclose to any person, firm or corporation, nor use for its own business or benefit, any information obtained by it under or in connection with the supplying of services contemplated by this Contract. The Contractor and the personnel provided by the Contractor hereunder shall not violate in any manner any patent, copyright, trade secret or other proprietary right of the Authority or third persons in connection with their services hereunder, either before or after termination or expiration of this Contract. The Contractor and the personnel provided by the Contractor hereunder shall not willfully or otherwise perform any dishonest or fraudulent acts, breach any security procedures, or damage or destroy any hardware, software or documentation, proprietary or otherwise, in connection with their services hereunder. The Contractor shall promptly and fully inform the Director/General Manager in writing of any patent, copyright, trade secret or other intellectual property rights or disputes, whether existing or potential, of which the Contractor has knowledge, relating to any idea, design, method, material, equipment or other matter related to this Contract or coming to the Contractor's attention in connection with this Contract."

D. The Contractor shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Port Authority or to the fact that goods have been, are

being or will be provided to it and/or that services have been, are being or will be performed for it in connection with this Agreement, unless the vendor first obtains the written approval of the Port Authority. Such approval may be withheld if for any reason the Port Authority believes that the publication of such information would be harmful to the public interest or is in any way undesirable.

40. PROVISIONS OF LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

41. INVALID CLAUSES

If any provision of this Contract shall be such as to destroy its mutuality or to render it invalid or illegal, then if it shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

42. NO ESTOPPEL OR WAIVER

The Authority shall not be precluded or estopped by any acceptance, certificate or payment, final or otherwise, issued or made under this Contract or otherwise issued or made by it, the Director or any officer, agent or employee of The Authority, from showing at any time the true amount and character of Work performed, or from showing that any such acceptance, certificate or payment is incorrect or was improperly issued or made; and The Authority shall not be precluded or estopped, notwithstanding any such acceptance, certificate or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on his part to comply strictly with this Contract, and any monies which may be paid to him or for his account in excess of those to which he is lawfully entitled.

43. NON-LIABILITY OF THE AUTHORITY REPRESENTATIVES

Neither the Commissioners of the Authority, nor any officer, agent, or employee thereof shall be charged personally by the Contractor with any liability or held liable under any term or provision of this Contract, or because of its execution or attempted execution, or because of any breach hereof.

44. MODIFICATION OF CONTRACT

No change in or modification, termination or discharge of this Contract, in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or his duly authorized representative, provided, however, that any change in or modification, termination or discharge of this Contract expressly provided for in this Contract shall be effective as so provided.

45. MBE/WBE GOOD FAITH PARTICIPATION

The Contractor shall use every good-faith effort to provide for participation by Port Authority certified Minority Business Enterprises (MBEs) and Port Authority certified Woman-owned Business Enterprises (WBEs) in all purchasing and subcontracting opportunities associated with this Contract, including purchase of equipment, supplies and labor services. If this Contract contains participation goals, the Contractor shall use good faith efforts to achieve the goals.

Good faith efforts to include participation by Port Authority certified MBE/WBEs shall include, but not be limited to the following:

- A. Dividing the services and materials to be procured into small portions, where feasible.
- B. Giving reasonable advance notice of specific contracting, subcontracting and purchasing opportunities to such MBE/WBEs as may be appropriate.
- C. Soliciting services and materials from a Port Authority certified MBE/WBE or seeking MBE/WBEs from other sources. To access the Port Authority's Directory of MBE/WBE Certified Firms go to www.panynj.gov/supplierdiversty
- D. Ensuring that provision is made to provide progress payments to MBE/WBEs on a timely basis.
- E. Observance of reasonable commercial standards of fair dealing in the respective trade or business.

46. TRASH REMOVAL

The Contractor shall remove daily from the Facility by means provided by the Contractor all garbage, debris and other waste material (solid or liquid) arising out of or in connection with its operations hereunder, and any such garbage, debris and other waste material not immediately removed shall be temporarily stored in a clear and sanitary condition, approved by the Manager of the Facility, and shall be kept covered except when filling or emptying them. The Contractor shall exercise care in removing such garbage, debris and other waste materials from the Facility. The manner of such storage and removal shall always be subject in all respects to the continual approval of the Port Authority. No equipment or facilities of the Port Authority shall be used in such removal unless with its prior consent in writing. No such garbage, debris or other waste materials shall be or be permitted to be thrown, discharged or disposed into or upon the waters at or bounding the Facility.

47. ENTIRE AGREEMENT

This Contract including the Request for Proposals for # **44310** (including its Scope of Works and other attachments, endorsements and exhibits, if any,) as well as the Proposal submitted by the Contractor contains the entire agreement between the parties. In the event of any inconsistency between this Contract and other attachments, endorsements and exhibits, if any, including the Proposal submitted by the Contractor, this Contract shall be controlling.

ATTACHMENT C: CONTRACT SPECIFIC TERMS & CONDITIONS

1. DURATION

This Contract shall commence on or about August 17, 2016, and shall remain in effect for a period of three (3) years ("Base Term"), unless otherwise terminated in accordance with the provisions hereof. The Authority shall have the right to extend this Contract for up to two (2) additional two-year periods by written notice to the Contractor at least thirty (30) days prior to the expiration of the Base Term.

The Authority shall also have the right to extend this Contract for an additional 120-day period, from the date originally fixed for expiration of the Base Term or any option period then in effect upon the same terms and conditions, except as set forth elsewhere in this Contract, to be effected by written notice to the Contractor received no later than thirty (30) days prior to the expiration date of the Base Term or the expiration date of the option period, if applicable.

2. PRICE ADJUSTMENT

All Contract prices for services and for extra work labor shall be applicable through the end of the Base Term. The Contractor's compensation for the Option Period shall be adjusted as stated below, but shall not exceed three (3%) percent per year of the Option Periods:

- a. For the first year of the first two-year Option Period of the Contract, the quarterly United States Bureau of Labor Statistics Employment Cost Index for Wages and Salaries for Private Industry Workers Professional, Specialty and Technical (non seasonally adjusted data June 1989 = 100) (hereinafter the "Index") for the second Quarter of 2019 and second Quarter of 2020 shall be obtained. The compensation for services and Extra Work labor payable in the third year of the Base Term of the Contract shall be multiplied by a fraction, the numerator of which shall be said Index for the second Quarter of 2020 and the denominator of which shall be said Index for the second Quarter of 2019. The resulting product shall be the compensation payable for services and Extra Work labor in the first year of the first Option Period.
- b. For the second year of the first Option Period, the Index for the second Quarter of 2021 shall be obtained. The compensation for services and for Extra Work labor payable in the second year of the option period shall be the Prices payable in the first year of the option period multiplied by a fraction, the numerator of which shall be said Index for the second Quarter of 2021 and the denominator of which shall be the number of said Index for the second quarter of 2020. The resulting product shall be the compensation payable for services and Extra Work labor in the second year of the first Option Period.
- c. For the first year of the second Option Period, the Index for the second Quarter of 2022 shall be obtained. The compensation for services and for Extra Work labor payable in the first year of the second option period shall be the Prices payable in the second year of the first option period multiplied by a fraction, the numerator of which shall be said

Index for the second Quarter of 2022 and denominator of which shall be the number of said Index for the second Quarter 2021. The resulting product shall be the compensation payable for services and Extra Work labor in the first year of the second Option Period.

- d. For the second year of the second Option Period, the Index for the second Quarter of 2023 shall be obtained. The compensation for the services and for Extra Work labor payable in the second year of the second option period shall be the Prices payable in the first year of the second option period multiplied by a fraction, the numerator of which shall be said Index for the second Quarter 2023 and the denominator of which shall be the number of said Index for the second Quarter of 2022. The resulting product shall be the compensation payable for services and Extra Work labor in the second year of the second Option Period.
- e. In the event of a change of the basis for the computation of the said Index or the discontinuance of its publication, such other appropriate index shall be substituted as may be agreed upon by the Authority and the Contractor as properly reflecting changes in the value of the of the services and Extra Work labor similar to that established in the said Index. If the parties cannot agree, the Authority will select the substitute Index.
- f. The Contractor's compensation for Services and Extra Work labor for the 120-day extension option shall not be subject to adjustment. Labor and service costs for the 120-day extension period shall be the same as in effect during the year prior to the start of the 120-day option.

3. EXTRA WORK

Except as specifically hereinafter provided in this numbered clause, the Contractor shall immediately supply such modified or additional products and services as the Authority may direct ("Extra Work"). If such changes or additions are without fault on its part, or on the part of others performing on behalf of the Contractor, whether or not in privity of contract with the Contractor, and if, solely as a result thereof, the Contractor incurs additional costs in the performance of its obligations hereunder, the Contractor may request compensation for such changes or additions in addition to the compensation provided for elsewhere herein. Agreement by the Authority, if such is forthcoming, shall be in writing. The execution of the aforementioned written agreement shall be a condition precedent to payment of any additional compensation for changes or additions. Accordingly, if the Authority directs the Contractor to make any change in or addition to products or services which entitle the Contractor to compensation in addition to that provided for elsewhere herein, the Contractor shall not proceed with such changes or additions prior to execution of the aforementioned written agreement except as set forth in the clause hereof entitled "Compensation for Extra Work".

If, as a result of any changes in or additions to the products or services the Authority directs the Contractor to make, the costs of performance of its obligations hereunder are decreased, the parties agree to make such adjustments by way of reduction in the compensation provided for elsewhere herein as they may deem equitable and reasonable and, in making such adjustments, no allowance shall be made for anticipated profits.

The Director shall have the authority to order Extra Work up to an amount equal to six percent (6%) of the Total Estimated price for the base term plus 6% for any option years that have been exercised unless the Contractor is advised of a greater authorization in a letter signed by the Authority's Director of Procurement. Nothing herein shall be construed as a presentation that any changes or additions will be ordered.

4. COMPENSATION FOR EXTRA WORK

The Director and the Contractor may agree, in writing, on lump sum or other compensation for Extra Work. In the event that no such agreement is reached, compensation shall be increased by the sum of the following amounts and such amounts only:

- A. for labor, compensation equal to the applicable hourly rates set forth in Sections 5 and 6 of the Cost proposal, as accepted by the Authority;
- B. the actual net cost in money of the materials required for the work; and
- C. in addition to the foregoing, if the extra work is performed by a subcontractor, five percent (5%) of the amounts under (A) and (B). No extra work shall be performed by a subcontractor without the prior written approval of the Director.

5. EXTRA WORK PROCEDURES

Whenever any Extra Work is performed by the Contractor on a basis other than on a lump sum basis, the Contractor shall, as a condition precedent to payment for such work, furnish to the Director or to his/her authorized representative at the end of each day daily time slips showing (a) the name and employee number of each person employed thereon, and the number of hours in each day during which they performed Extra Work; (b) a brief description of the nature of the work performed and a list of material and equipment used and the Port Authority authorized representative who approved the Extra Work. Item (b) shall be supplemented by the Contractor at a later date with a statement indicating from whom materials were purchased and the amount paid therefor. Such daily time slips are for the purpose of enabling the Director or his authorized representatives to determine the accuracy of the amounts claimed by the Contractor.

6. PERFORMANCE OF EXTRA WORK

The provisions of this Contract relating generally to the Work shall apply without exception to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

7. COMPENSATION FOR NET COST WORK

"Net Cost" shall be computed in the same manner as is compensation for Extra Work, including any percentage addition to cost, as set forth in the clause of the Contract entitled, "Compensation for Extra Work." Performance of such Net Cost Work shall be as directed by the Manager and shall be subject to all provisions of the Contract relating to performance of Extra Work. Compensation for said Net Cost Work shall not be charged against the total amount of compensation authorized for Extra Work.

“Net Cost” shall be the Contractor’s actual cost after deducting all permitted cash and trade discounts, rebates, allowances, credits, sales taxes, commissions, and refunds (whether or not any or all of the same shall have been taken by the Contractor) of all parts and materials purchased by the Contractor solely for the use in performing its obligation hereunder provided, where such purchase has received the prior written approval of the Manager as required herein. The Contractor shall promptly furnish to the Manager such bills of sale and other instruments as the Manager may require, executed, acknowledged and delivered, assuring to the Manager title to such materials, supplies, equipment, parts and tools free of encumbrances.

8. TIME

The Contractor shall not commence the performance of any work on Port Authority premises until the Contractor has received notice from the Port Authority that the insurance provided by the firm in accordance with Attachment B, Section 16 hereof (Insurance to be Procured by the Contractor) is satisfactory, as evidenced by the certificate to be furnished under said clause. The Agreement term shall not be extended on account of the time required to furnish the documents referred to above, but the Port Authority will give notice to the Contractor within five (5) days after receipt of the Certificate of Insurance as to whether or not such insurance is satisfactory.

The Contractor’s obligations for the performance and completion of all work within the time or times provided for the Agreement is of the essence of this Contract. The Contractor guarantees that it can and will complete performance under this Contract within the times herein stipulated.

9. REQUIRED SERVICE LEVELS AND LIQUIDATED DAMAGES FOR NON-PERFORMANCE

The services required hereunder shall be performed in accordance with the service level agreements stated below. The Contractor shall provide monthly reports demonstrating its performance against all the required service levels, including:

A. Server and Application Availability: Upon the Authority’s written notification that the equipment comprising the System has been upgraded, the following service level shall apply for the remainder of the Contract: all servers and associated storage and applications shall be on-line and available for general use 97% of the time per server as measured on a monthly basis.

B. System Response Times: This service level pertains to the time that the System takes to complete a user request and return a response, measured from end-to-end (i.e. when a command or transaction request is entered to the time that the resulting actions are completed and displayed on the monitor).

Upon the Authority’s written notification that the equipment comprising the System has been upgraded, the following service level shall apply for the remainder of the Contract: The end-to-end time shall not exceed 5 seconds for, at minimum, 90% of all transactions.

- C. System Accuracy: Accuracy is defined as follows:
- Data integrity: The accuracy and consistency of the data and database structures. Measured monthly, 100% of all data stored on the System shall be accurate and consistent. For the purposes of this Contract, “consistency” shall mean that Contractor shall use the same terms and definitions for all data entered in the System’s database.
 - Data currency: How current (up-to-date) and timely the data is. All data must be 100% current.
- D. Contractor Response Times: The Contractor shall acknowledge (by email) all Authority-generated requests regarding issues affecting the operation and use of the Systems, within one hour of notification by the Authority to the Contractor. In its acknowledgment, the Contractor shall indicate a time of arrival of its personnel onsite (at the origin of the issue) to address such issues. (Requests from the Authority for services outside regular business hours must be approved in writing by the Authority’s Contract Manager or his/her designee.)
- E. Application Patch and Version Maintenance: Upon the Authority’s written notification that the equipment comprising the System has been upgraded, the following service level shall apply for the remainder of the Contract: the Contractor shall apply all critical application patches within 24 hours of their approval by the Authority. Contractor shall deploy software version upgrades within 12 months of general release by the application vendor.
- F. Operational Requests: The Contractor shall be responsible for:
- Resetting an application user password within 2 hours.
 - Routine operational requests within 2 working days (e.g. adding a new application user, granting a user access to an existing application).
 - Preparing simple ad hoc query reports within 1 working day. For reports requiring more than one day of development, the Contractor shall provide the Authority with an estimate of the duration for developing such report. The Contractor’s duration estimate shall be provided to the Authority within 1 day of the Authority’s written request for such report.
- G. Backups and Archiving: At the end of each day, the Contractor shall ensure that all GTIS data from the airports will be automatically copied to the central server using customized software scripts written by the Contractor. This data shall then be manually copied onto CDs at regular intervals.

Archiving is required to improve disk performance and to maintain a historical record and audit trail of all transactions. All such records must be maintained for at least two years.

H. Hours of Service: For purposes of staffing and service level agreements, the Contractor's hours of service, provided on-site at the referenced airports, shall be from 7:00 AM to 6:00 P.M, Monday through Friday, excluding Port Authority-defined holidays. In some instances, specific and ongoing schedule requirements may necessitate the temporary assignment of support staff outside these standard times, e.g., 6:01 PM. to 6:59AM. Many Port Authority offices are operated 24 hours a day, 7 days a week ("24 x 7"). The Contractor shall respond to system monitoring alerts 24 x 7 as required to meet the Authority's operational needs. Such assignments shall not entail overtime charges where the standard workday duration is not exceeded.

The Contractor's proposed minimum number of qualified staff (including subcontractor staff), as provided in its Staffing Plan accepted by the Authority, shall be maintained throughout the duration of the services described hereunder. Any changes to the accepted Staffing Plan shall be made only with the prior written approval of the Authority's Contract Manager. Furthermore, the reductions in the Contractor's staff will be subject to the Contract Manager's prior approval.

I. Compliance with Control Requirements and Standards and Guidelines for Port Authority Technology: Contractor must satisfy 100% of requirements stated in Attachment K (Control Requirements Contract Checklist) and the Standards and Guidelines for Port Authority Technology (Attachment I) of the Contract.

11.1 Liquidated Damages for Non-Performance

The Contractor's obligations for the performance of all work at the service levels specified hereunder are of the essence of this Contract. The Contractor guarantees that it can and will complete performance of the services stipulated in Section 12, above. The Authority may consider continued failure to meet performance at the levels stipulated as a material breach of this Contract. Service level monitoring will begin immediately upon the Authority's request for services stated herein.

Inasmuch as the damage and loss to the Authority which will result from the Contractor's failure to perform at the stipulated service levels will include items of loss whose amount will be incapable or very difficult to accurately estimate, damages to the Authority for non-performance will be liquidated as follows:

Service	Liquidated Damages
Section 12.A: Server and Application Availability	\$1,000 reduction of the total monthly payment for the affected server, if not available 97% of the time.
Section 12.B: System Response Times	2% reduction of the monthly amount due (for the relevant airport) for support for every 1% below the 90 percent referenced in Section 12.B.
Section 12.C: System Accuracy	Data Integrity: 2% reduction of the total monthly amount (for the relevant airport) for support for every 1% below the 100%

	referenced in Section 12.C. Data Currency: 2% reduction of the total monthly amount (for the relevant airport) for support for every 1% below the 100% referenced in Section 12.C.
Section 12.D: Contractor Response Time	\$500 per instance of non-compliance
Section 12.E: Application Patch and Version Maintenance	\$250 per instance of non-compliance
Section 12.F: Operational Requests	\$200 per day if the reference service levels are not satisfied within the stated times
Section 12.G: Backups and Archiving	\$1,000 per instance of non-compliance
Section 12.H: Hours of Service	\$500 per instance of non-compliance
Section 12.I: Compliance with Control Requirements and Standards and Guidelines- for Port Authority Technology	\$500 per each instance of non-compliance

The above services refer specifically to the work described hereunder, which is the Contractor's responsibility. The Authority will actively monitor the Contractor's performance and will assess Liquidated Damages. However, the Authority will not assess liquidated damages if non-compliance results from events or activities for which the Contractor is not responsible.

The Contractor shall track, calculate, monitor and report on performance against the Service Levels above and shall adjust invoices accordingly.

Repeated failure to meet the above Service Level Standards on the part of the Contractor shall constitute a material breach of the Contract and will be cause for the Contractor to be declared in breach of Contract, regardless of the existence of Liquidated Damages provisions. In the event the Contractor is declared in breach of Contract, in addition to all other rights and remedies available under this Contract, law and equity, the Port Authority shall be entitled to collect Liquidated Damages up to the time of the breach.

10. PAYMENTS

Subject to the provisions of this Contract, the Port Authority agrees to pay to the Contractor and the Contractor agrees to accept from the Port Authority as full and complete consideration for the performance of all its obligations under this Contract and as sole compensation for the Services performed by the Contractor hereunder, a compensation calculated from the services performed and the respective unit prices inserted by the Contractor in the Cost Proposal Form in Attachment J (as accepted by the Authority), forming a part of this Contract.

The manner of submission of all bills for payment to the Contractor by the Authority for Services rendered under this Contract shall be subject to the approval of the Contract Manager in all respects, including, but not limited to, format, breakdown of items presented

and verifying records. All computations made by the Contractor and all billing and billing procedures shall be done in conformance with the following procedures:

- A. Payment shall be made in accordance with the prices for the applicable service as they appear on Attachment J entitled "Cost Proposal," as accepted by the Authority, as same may have been adjusted hereunder, minus any deductions for services not performed and/or any applicable liquidated damages. All Services must be completed within the time frames specified or as designated by the Contract Manager. Contractor shall submit to the Contract Manager by the fifth day of each month following the month of commencement of this Contract and on or by the fifth day of each month thereafter (including the month following the termination, revocation or expiration of this Contract) a complete and correct invoice for the Services performed during the preceding month accompanied by such information as may be required by the Contract Manager for verification. The invoice must show the Contractor's Federal Tax Identification Number. Payment will be made within thirty (30) days of Authority verification of the invoice. No certificate, payment, acceptance of any Services or any other act or omission of any representative of the Authority shall operate to (1) release the Contractor from any obligation under or upon this Contract, or to (2) stop the Authority from showing at any time that such certificate, payment, acceptance, act or omission was incorrect or to (3) preclude the Authority from recovering any monies (a) paid in excess of those lawfully due or (b) attributable to any damage sustained by the Authority.

- B. In the event an audit of received invoices should indicate that the correct sum due the Contractor for the relevant billing period is less than the amount actually paid by the Authority, the Contractor shall pay to the Authority the difference promptly upon receipt of the Authority's statement thereof. The Authority may, however, in its discretion elect to deduct said sum or sums from any subsequent payments payable to the Contractor hereunder.

"Final Payment", as the term is used throughout this Contract, shall mean the final payment made for services rendered in the last month of the Contract Term. However should this Contract be terminated for any reason prior to the last month of the Contract Term, then Final Payment shall be the payment made for services rendered in the month during which such termination becomes effective. The Contractor's acceptance of any payment, including Final Payment, shall act as a full and complete release to the Authority of all claims of and of all liability to the Contractor for all things done or furnished in connection with this Contract and for every act and neglect of the Authority and others relating to or arising out of this Contract, including claims arising out of breach of contract and claims based on claims of third persons. No payment, however, final or otherwise, shall operate to release the Contractor from any obligations in connection with this Contract.

11. STATEMENT ON STANDARDS FOR ATTESTATION ENGAGEMENTS (SSAE) NO. 16 AUDIT

The Contractor shall conduct SSAE 16 or its successor on an annual basis and shall submit such report to the Authority. The Authority reserves the right to conduct or have agents conduct any additional audits they deem necessary.

12. INCREASE AND DECREASE IN SERVICES, AREAS OR FREQUENCIES

The Director shall have the right, at any time and from time to time in his sole discretion, to increase and/or decrease the services required hereunder, frequencies of all or any part of the services required hereunder or to add areas not described herein in the Specifications or remove areas or parts of areas which are hereunder so described. In the event the Superintendent/Manager decides to change any frequencies or areas such change shall be by written notice not less than 24 hours in advance, said changes to be effective upon the date specified in said notice.

In the event of an increase or decrease in services, areas or frequencies, the Contractor's compensation will be adjusted to reflect such change in areas or frequencies utilizing the applicable hourly rates for such services (for the applicable Contract year) as set forth on the Authority-accepted Pricing Sheet(s).

Where no specific Unit Price has been quoted for the type of services to be increased or decreased, the Manager shall have the right to negotiate the compensation to reflect such change, whether an increase or decrease in areas or frequencies, which, in the opinion of the Manager, is necessary to complete the work, by multiplying the increased or decreased amount by the negotiated rate.

In the event of a decrease in services, the Contractor shall not be entitled to compensation for Work not performed.

No such changes in areas or frequencies will be implemented which results in a total increase or decrease in compensation that is greater than 50% of the Total Estimated Contract Price for the Base Term or, if changes are to be implemented during an Option Period, 50% for that Option Period.

Any increases in frequencies or areas shall not constitute Extra Work and, as such, shall not be limited by the Extra Work provisions of this Contract.

ATTACHMENT D: DESCRIPTION OF GTIS AND THE AUTHORITY'S TECHNICAL INFRASTRUCTURE

1. GTIS System – General Overview

The GTIS System ("System," "Ground Transportation Information System" or "GTIS") is a computerized reservation system that provides information to Customer Care Representatives (CCR's) who in turn assist passengers traveling to their final destinations. The System provides detailed information about ground transportation options, including carriers, destinations, schedules and fares. CCR's are able to inquire about available service to any destination or stop within a destination. Passengers provide specific information to the CCR, such as destination, number of adults and children traveling, number of bags, etc., and the System calculates the fare. The customer chooses which service he/she would like to use and the CCR completes the reservation, prints a confirmation receipt/ticket, and captures data on the System. The actual reservation with the selected carrier is made by the CCR via telephone. When the driver arrives at the counter, he/she signs a copy of the reservation ticket, departs with the customer and the reservation is closed out by the CCR through keyboard commands or by using a barcode scanner. No money transactions are conducted at the counters. Customers pay the drivers directly for the transportation.

Technical Architecture

GTIS has a three-tier architecture. The first tier is the central server. The second tier is comprised of individual servers located at each of the airports while the third tier is comprised of workstations located at the ground transportation counters and at the airport administrative offices. The central server communicates with each of the airport servers via leased lines, as do the local airport servers with each of the workstations. Individual workstations within a given counter communicate through a local area network.

The central server contains the 'master copy' of all reference data (carrier, destination, and fare data). Changes to reference data are downloaded to the airport servers on a nightly basis and then distributed to the counter workstation databases. The central server database is the primary repository for reservation data from all four airports [*JFK, LGA, EWR, SWF*]. In addition to the central server, each airport server stores all reservation data for the particular airport as well as copies of all reference data.

Each workstation, whether at the Central Office Location (COL), airport administrative offices or ground transportation counters, uses an interface customized for its respective function. These workstations are equipped with local databases that contain all reference data necessary to operate in "standalone mode". All user input, whether at the COL, the administrative office, or a ground transportation counter, is performed through the GTIS application running on the workstations.

As passenger reservations are created and updated, the airport server databases are updated in real time with the reservation data, giving every workstation in the airport immediate access to that data. The primary benefit of this approach is that all workstations at a given counter have access to the same reservation information. CCR's have the ability to recall reservation

information from any workstation at the counter when passengers approach with questions or inquiries. In addition, airport administrative personnel have the ability to run ad hoc reports against the current day's reservation data and get accurate up-to-the-minute information. The reports are produced on laser jet printers located at the COL and airport administrative offices.

1.1 System Based Software Products/Tools

GTIS uses commercial software as well as a custom application which provides the System's functionality. Commercial software products used by GTIS are listed in Attachment F, which is attached hereto and made a part hereof.

The GTIS application software is described, in very general terms, as follows:

- 1) Custom database replication (MS SQL Server 2008 R2 to Microsoft Access)
- 2) Visual Basic Code has heavy reliance on 3rd party controls from Sheridan (Combo Boxes, Grid, Toolbar). Visual Basic Code and Component Count is listed in Table 1.E.2- Visual Basic Code in 1.5 GTIS Technical Environment - B: Current Software.

The GTIS application software is the property of the Port Authority. The GTIS application code will be made available to the selected proposer, who will be responsible for its maintenance and support, including making any revisions or modifications necessary to ensure GTIS continues to function satisfactorily. Any revisions or modifications made to the GTIS application code by the Contractor shall be fully documented and shall become the sole property of the Port Authority.

All third party commercial software shall be procured by the Contractor in the name of the Port Authority, who shall be the licensee thereof. The Contractor shall also be responsible for ensuring such licenses are current and shall pay any licensing fees on behalf of the Port Authority. The cost of such licenses shall be included in the pricing for support as submitted on the Contractor's Cost Proposal Form.

1.2 GTIS – Users

GTIS supports approximately 60 concurrent users during the heaviest periods. GTIS users are located throughout Port Authority airport facilities and they gain access to the System through the Authority's wide area network PAWANET and dedicated lines. The primary users of the System are Customer Care Representative ("CCR") contract staff, and staff from the Authority's Management.

1.3 GTIS System – Current Support Team

The current support team consists of CMC, an external service provider responsible for providing technical support for GTIS.

1.4 Main Functional Components

The Ground Transportation Information System is comprised of several major functions. GTIS includes the following functional components:

Process Destination: The Process Destination function administers all destinations serviced by ground transportation carriers. This function allows authorized users to add, delete, update and inquire about destinations captured in the System.

Process Carrier: The Process Carrier function administers all carriers that provide transportation services to arriving passengers. This function is used to add, update or delete carrier information. Carrier fare information for a specific destination is also maintained using the Process Carrier function. Additionally, Process Carrier allows users to maintain carrier contact information.

Process Reservation: The Process Reservation function allows counter agents to perform all reservation functions at the Ground Transportation Counters. Reservations are created, updated, tracked, cancelled and completed through this function.

Process Administration: The Process Administration function allows authorized users to update the necessary administrative data. Agent and counter information is added, updated, and deleted using Process Administration. Additionally, Process Administration is utilized to update passwords and airport information.

Management Reporting: The Management Reporting function produces various standard reports on reservation statistics, agent audit and revenue. In addition to predefined reports, administrative users have access to an ad hoc reporting facility to develop "non-standard" and infrequent reports.

GTIS User Manual for reference is hereto as Attachment F.

1.5 GTIS Technical Environment

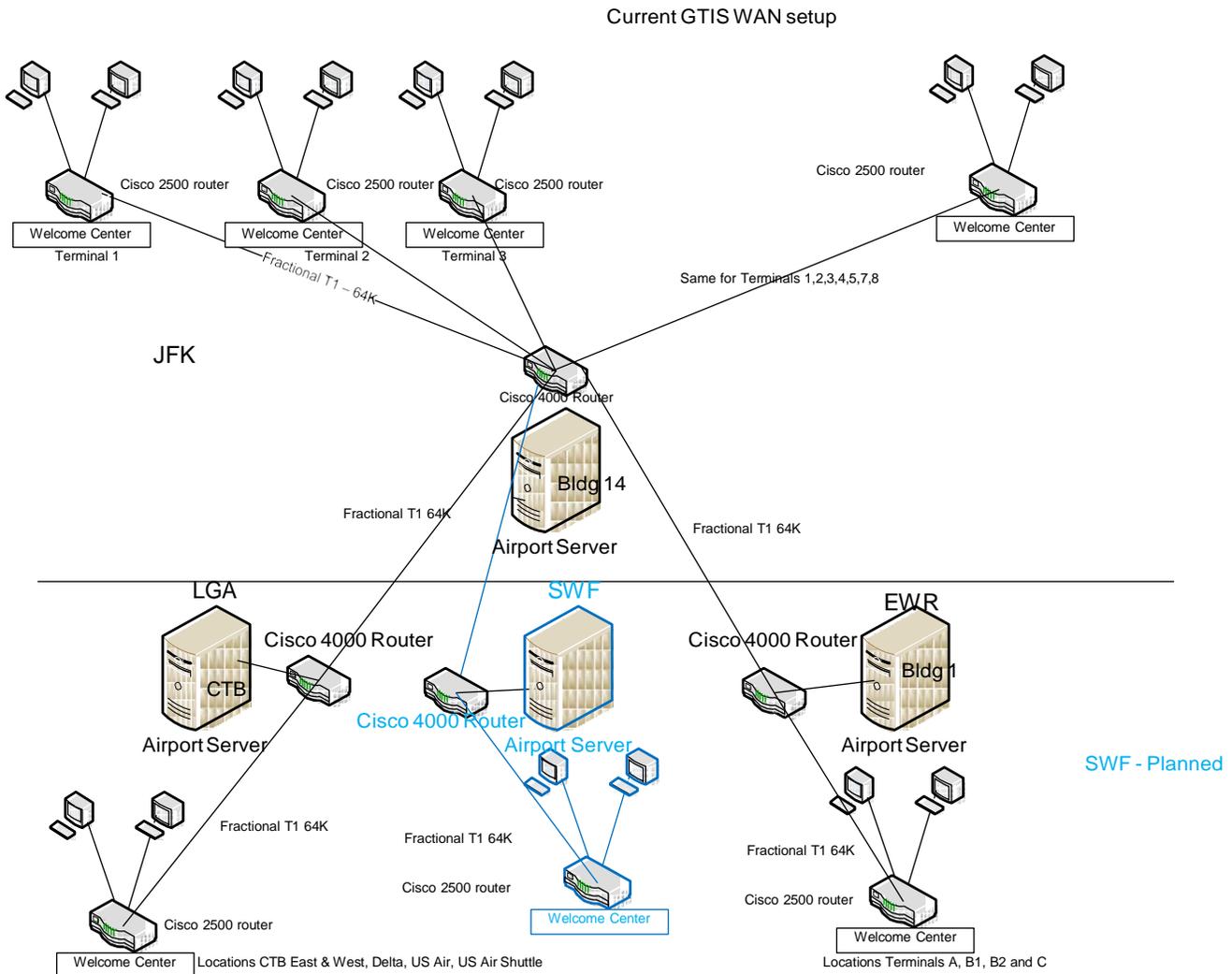
A - Hardware: Network Hardware

The GTIS network topology has a “hub and spoke” design. The first level consists of the central server site, which is the point of convergence for the four airports. The second level consists of the individual airport administrative offices and servers acting as the convergence point for various counter workstations located in the terminal Welcome Centers. An overview diagram of the network is below in Diagram 1.C.1 – System Overview.

Each workstation includes the necessary hardware and software to operate GTIS in stand-alone mode if necessary. Located at each counter station is a personal computer (PC), keyboard (and mouse), monitor and ticket printer. A hub, router, and the Channel Service Unit (CSU) are also located at each counter. Most CSUs are the property of Verizon or AT&T; all other hardware is owned by the Port Authority. The COL and at each airport has a server, administrative workstations that include a PC, monitor, keyboard, mouse and laser printer. A laser printer is used to print administrative reports. CCR staff at the Welcome Center counters at each airport have an office with a workstation and several additional PCs for training. Training workstations are used to simulate an actual GTIS workstation.

A list of GTIS hardware components is compiled in Table 1.C.1 – GTIS Hardware Inventory – Configuration Details; Table 1.C.2 – GTIS Hardware Inventory Details; and Table 1.C.3 - Current Server and Desktop Hardware Specifications.

Diagram 1.C.1 – System Overview



Each airport administrative office and related workstations constitute a LAN, or local area network, as does each counter and its attendant workstations. These LANs are connected to the rest of the GTIS network through either routers, switches or leased lines which are also connected to the hubs. The routers function as gateways for the LANs directing network traffic to the appropriate destinations. Leased lines carry network traffic between the central server, the airport servers, most administrative offices, and the Welcome Centers.

All airport communication with the central server is routed through the airport servers, which can then be accessed by the workstations.

Table 1.C.1 – GTIS Hardware Inventory – Configuration Details

1	IBM Server	IBM X3620/Xeon5620/250GB HDD *4/8GB RAM
2	Dell Desktops	Optiplex 780/E7500/17” monitor/250 GB HDD/DVD ROM
3	Switch	SF 300 -08 -100/1000 (Port Switch)/Hp Procurve 10-base-T Hub/Cisco-wsC2960-8TC-L VO1/D-Link (DES-1105)
4	Airport – Cisco Router	Cisco 4000 series– 8 serial ports/2 Ethernet ports
5	Terminal – Cisco Router	Cisco 2500 series – 2 serial ports / 1 Ethernet / 1 AUI ports
6	CSU/DSU	Export productivity series 300, Motorola USD DDS/MR, Export productivity series 400
7	Ticket Printer	Datamax DMX – ST/SV- 3210
8	Laser Printer	HP Laser Jet 5200

Table 1.C.2 – GTIS Hardware Inventory Details

Airport	Location	Server	PC	Monitor	Printer	Laser Printer	Switch	Router	Modem	Laptops
JFK	Data Center	2		3			1	2	8	
	Counter Contractor		1	1						
	PA Admin -WTC		2	2		1	2	1	1	
	Terminal 1		2	2	2		1	1	1	
	Terminal 2		1	1	1		1	1	1	
	Terminal 4 I		3	3	3		1	1	1	
	Terminal 4 D		2	2	2		1	1	1	
	Terminal 5 D		2	2	2		1	1	1	
	Terminal 5 I		2	2	2		1	1	1	
	Terminal 7		2	2	2		1	1	1	
	Terminal 8 D		2	2	2		1	1	1	
	Terminal 8 I		2	2	2		1			
	System Admin		2	2			1			2
	Spare Parts		2	3	4		1	4	4	
	Subtotal	2	25	29	22	1	14	15	21	2
LGA	Data Center	1		1			1	1	8	
	Counter Contractor		1	1		1	1	1	1	
	CTB West		3	3	3		1	1	1	
	CTB East		3	3	3		1	1	1	
	US Air		3	3	3		1	1	1	
	US Air Shuttle		2	2	2		1	1	1	
	Delta		3	3	3		1	1	1	
	Delta Shuttle		1	1	1		1	1	1	
	Subtotal	1	16	17	15	1	8	8	15	0
EWR	Data Center	1		1			1	1	8	
	Counter Contractor		1	1			1	1	1	
	Terminal A		2	2	2		1	1	1	
	Terminal B2		2	2	2		1	1	1	
	Terminal B3 (Int'l)		2	2	2		1	1	1	
	Terminal C		2	2	2		1	1	1	
	Subtotal	1	9	10	8		6	6	13	0
SWF	Terminal		2	2	3		1	1	1	
	Subtotal	0	2	2	3		1	1	1	0
	Total	4	52	58	48	2	29	30	50	2
		Qty	Descr		Remarks					
	JFK Training	11	Optiplex GX 510		Old desktops					

Table 1.C.3 – Current Server and Desktop Hardware Specifications

Server Hardware, Software and Support		
Description	Serial Number	Qty
IBM System x3620 M3 7376 – Xeon X5650 2.66 GHz	737662U	4
Intel Xeon X5650 / 2.66 GHz processor	69Y1229	4
IBM hard drive – 250 GB – SATA – 300	39M4526	20
Microsoft Windows Server Standard Edition License & Software Assurance	P73-00352	4
Microsoft Business License MS SQL – license & software assurance	359-01005	60
Miscrosoft SQL Server Standard Edition – license & software assurance	228-04628	1

Workstations Specifications		
Base Unit:	OptiPlex 780 Minitower Base Standard PSU (224-6918)	Item No.
Processor:	OptiPlex 780, Core 2 Duo E7500 with VT/2.93GHz, 3M, 1066FSB	317-2456
Memory:	2GB, Non-ECC, 1333MHz DDR3, 1x2GB, Dell OptiPlex 980	317-7665
Keyboard:	Dell USB Entry Keyboard, No Hot Keys, No Palmrest, English, OptiPlex	330-1987
Monitor:	No Monitor Selected, OptiPlex	320-3704
Video Card:	Integrated Video, GMA 4500, Dell OptiPlex 760, 960 and 980	320-3407
Hard Drive:	250GB SATA 3.0Gb/s and 8MB Data Burst Cache, Dell OptiPlex 780/580	341-9793
Operating System:	Windows 7 Home Premium, No Media, 32-bit, OptiPlex, English	468-6982
Operating System:	Windows 7 Label, OptiPlex, Fixed Precision, Vostro Desktop	330-6228
Operating System:	Dell Back-up and Recovery Manager for Win7, MUI, Latitude, Precision, OptiPlex, Vostro	330-6043
Mouse:	Dell MS111 USB Optical Mouse, OptiPlex and Fixed Precision	330-9458
NIC:	No Systems Management MEBX Firmware Removed, Dell OptiPlex 780	330-5810
TBU:	No RAID, Dell OptiPlex	341-8036
CD-ROM or DVD-ROM Drive:	16X DVD-ROM SATA, Data Only, Dell OptiPlex Desktop and Minitower	313-8646
CD-ROM or DVD-ROM Drive:	Cyberlink Power DVD 9.5, No Media, Dell OptiPlex, Latitude and Precision Workstation	421-4370
Sound Card:	Heat Sink, Mainstream, Dell OptiPlex 780 and 380 Mini Tower	330-8926
Speakers:	Internal Chassis Speaker Option, Dell OptiPlex Minitower	313-3350
Cable:	OptiPlex 780 Minitower Standard Power Supply	330-5860
Cable:	Enable Low Power Mode for EUP Compliance, Dell OptiPlex	330-7422
Documentation Diskette:	Documentation, English, Dell OptiPlex	330-1710
Documentation Diskette:	Power Cord, 125V, 2M, C13, Dell OptiPlex	330-1711
Bundled Software:	Adobe Acrobat X, includes Serial Key Card, FI, ENG/FRN	410-0560
Bundled Software:	Microsoft Office Starter 2010, OptiPlex, Precision and Latitude	421-3950
Bundled Software:	Microsoft Office Home and Business 2010, English, OptiPlex, Precision and Latitude	421-3954
Factory Installed Software:	Dell Energy Smart Power Management Settings Enabled OptiPlex	330-4817
Feature:	No Resource DVD for Dell OptiPlex, Latitude, Precision	313-3673
Misc:	Tech Sheet, Eng, Dell OptiPlex 780, Factory Install	330-5897
Misc:	Shipping Material for System, Minitower, Dell OptiPlex 780/580 Minitower	330-6473

B: Current Software

GTIS uses commercial off the shelf software, as well as a custom application that provides the System’s functionality. Commercial software products used by GTIS for the Workstations and Servers are listed in Table 1.E.1 – GTIS Software.

Table 1.E.1 – Current GTIS Software

Vendor	Software Component	Current Version	Web Link
Apex	TrueGrid Pro	6	www.componentone.com
Desaware	Spyworks	1.0 (copy write 2003)	datadirect-technologies.com
			https://www.progress.com/products/datadirect
Microfocus/Intersolv	Data direct Q=E ODBC Drivers	4.0 (ODBC-Win Sybase ASE Adaptive server 11.5,12.0,12.	https://www.microfocus.com/
Microsoft	Access	2003	www.microsoft.com
Microsoft		6 No Change	www.microsoft.com
Microsoft	Visual Basic.net	1.1	www.microsoft.com
Microsoft	Windows OS	Windows 7	www.microsoft.com
SAP	Crystal reports	9	www.crystalreports.com/
Infragistics	Data Widgets	3.1	www.infragistics.com
Infragistics	Designer Widgets	2	www.infragistics.com
TAL	Software wedge	1.2	www.taltech.com/

Server Components

Vendor	Software Component	Current Version	Web Link
Hewlett-Packard	HP-UX	10.2	www.hp.com
Microsoft	Windows Server	2008	www.microsoft.com
Microsoft	SQL Server	2008 R2	www.microsoft.com
MKS	MKS Toolkit	N/A	www.mkssoftware.com/
Hyperion	Oracle	N/A	www.oracle.com/us/corporate/acquisitions/hyperion/index.html
SAP	Crystal Reports	NA	www.crystalreports.com/

Visual Basic Code and Component Count – Table 1.E.2

Vb.net code		
Desktop		
StartDev		
	Vb.net forms	2
	Bas files	9
	Lines of code	3500
GtisDev		
	Vb.net Forms	24
	Bas files	13
	Lines of code	62000
dbtool		
	Lines of code	1500
Reservation upload Utility		
	Vb.net Forms	3
	Bas files	9
	Lines of code	700
MS Access		
GTISRES	Tables	3
	Queries	32
GTISREF	Tables	17
	Queries	91
WTC SERVER		
	Tables	43
	Views	7
	Stored Procedures	140
JFK SERVER , LGA SERVER, EWR SERVER		
	Tables	40
	Views	2
	Stored Procedures	118

Overall Port Authority Technical Infrastructure

2.1 Network

The GTIS network topology requires that communication must exist over a large area to many locations. The counter agents connect to the airport server, and each airport server connects to the central server. This is accomplished with a Wide Area Network (“WAN”), or PAWANET. WANs are connected together through digital leased lines. They operate in a range of speeds

between 56 Kb and 1.54 Mb. The 1.54Mb lines referred to as T1- grade lines. The monthly cost for leased lines will be the responsibility of the Port Authority. The Port Authority, at its expense, may replace some or all leased lines with fiber optic cable, and may also replace any hardware necessary to link GTIS with the fiber. In such event, the Contractor shall provide whatever information or assistance is required to ensure GTIS will continue to function in accordance with this Contract. Upon completion of the fiber installation, the Contractor shall assume responsibility for maintaining any links between the counters and the Port Authority's fiber infrastructure.

AT&T and Verizon provide the leased lines as well as the telecommunications hardware (CSU/DSUs) necessary to make the lines accessible. Each V.35 serial interface to the routers requires a CSU/DSU to connect to a leased line. T1- grade lines are used between the central server and the airport servers. As required by GTIS, the leased lines are used daily to pass data from the counters to the airport servers, and from the airport servers to the central server. These transmissions support both updated reservation information and software, as well as synchronization of the databases.

2.2 Remote Access System

Currently, there is no Remote Access System. Once GTIS is connected to PAWANET the approved mechanism for remote access to Port Authority network will be through the Remote Access System (RAS). The Remote Access System will utilize an Internet-based Virtual Private Network (Blue Ridge VPN) linking remote users to the Port Authority WAN (client-to-site). Access to applications and resources will be obtained through the use of a farm of Citrix Servers capable of supporting up to 200 simultaneous users each. The Port Authority also supports site-to-site VPN connections and utilizes Cisco equipment for these connections.

The Port Authority is currently utilizing SSL acceleration appliances, within the firewall DMZ, to provide identity-based Web security services that control access to application and network resources across technical and organizational boundaries by providing secure authentication and access to portals, Web-based content and Web applications within the Port Authority network.

2.3 Desktop Environment

The desktop environment consists of approximately 60 devices running Windows7, and the Microsoft Office suite. The Windows7 desktop application features Microsoft Office 2007.

2.4 E-mail Environment

In the future, once connected to PAWANET, GTIS will have the capability to email customers. The Port Authority currently uses MS Office 365 as its E-mail environment.

2.5 Application Environment

The Authority's portfolio is a mix of in-house developed and vendor secured applications. Microsoft SQL is the standard database at the Port Authority and support is provided through either outsourced vendor and/or Authority staff.

2.6 Platforms

Currently, the Windows SQL 2008 Server is in process of migrating to Windows 2012.

2.7 Databases

All applications must be based on MS SQL Server and MS Access.

2.8 Guidelines for Providing Application Administration

All services shall be performed in accordance with the Port Authority's Technology Services Standards and Guidelines, attached hereto as Attachment I. Documentation specific to GTIS, with respect to support services, including application administration, software, including application code, hardware maintenance and user instructional material will be available to the selected Contractor, along with Port Authority Technology Department's System Administration Manual. The Contractor shall be responsible for ensuring all documentation is current and accurate.

ATTACHMENT E: SCOPE OF WORK

1. ROLES AND RESPONSIBILITIES

The approach that the Authority is pursuing for the ongoing Application Management Services for the Ground Transportation Information System (GTIS) consists of a Port Authority role and a Contractor role, as outlined below:

1.1 The Port Authority Responsibilities

The Authority shall be responsible for:

- 1) Interaction among business units;
- 2) Strategic direction setting;
- 3) Hardware procurement, and break\fix maintenance, (servers, workstations), excluding receipt ticket printers and other peripherals

Contractor shall provide;

- 4) Operating System maintenance, security, updates, operations, etc. (Until System is connected to PAWANET);
- 5) Network and OS System security (Until System is connected to PAWANET).

Furthermore, the Authority will establish an on-going process to coordinate the management and operation of GTIS. The Contractor will be encouraged to suggest improvements to existing processes on an on-going basis.

1.2 Contractor Responsibilities

The Contractor shall be responsible for providing Application Management Services (“AMS”) for GTIS in the following areas:

- 1) Operational Support;
- 2) Application Technical Maintenance and Support; and Rewrite Application
- 3) Database Administration
- 4) Application Administration
- 5) Application Enhancements/Upgrades
- 6) Software Maintenance
- 7) System Administration
- 8) Network and OS System security (See Item 1.1 5 above)
- 9) Operating System functions including maintenance, security, updates

Note: The Contractor’s responsibility to provide System Administration, Network and OS System security, Operating System maintenance, security, operations, and updates will cease once Ground Transportation Information System is migrated onto PAWANET.

1.3 Contractor Support

The Contractor shall be responsible for:

- The immediate triage of end user calls, questions and problems. Basic 'how-to' problems. Application password resets, initial recreation and troubleshooting of problems and process instruction.
- The Contractor is responsible for providing all technical support for problems involving, at a minimum, GTIS applications software, third-party applications, databases (MS SQL, MS ACCESS), and requiring assistance and follow-up for operating system issues. Requests should be addressed through a standard problem tracking system used to identify, classify and manage, and track each question, problem or request received and time resolved.

The Contractor shall provide a tracking system to monitor activities related to reported problems, issues, service requests and their resolution.

2. CONTRACTOR RESPONSIBILITIES - SERVICE REQUIREMENTS

Working under the general direction of Authority's Contract Manager, the Contractor shall perform all work set forth herein. The Contractor shall also manage the work in accordance with the provisions defined in the *Management of the Work* section below. The Contractor shall ensure that GTIS operates as was intended and is maintained in accordance with a structured maintenance management methodology acceptable to the Authority. The following sections detail the work to be performed by the Contractor and the manner in which it is to be managed. Contractor must follow an approved System Develop Life Cycle (SDLC) process (please see Attachment M, Application and SDLC Controls Checklist).

2.1 Contractor Services

The Contractor shall provide AMS for GTIS in the areas of:

- a. Operational Support;
- b. Application Technical Maintenance and Support; and
- c. Database Administration.
- d. System Administration
- e. Application Administration
- f. Application Enhancements/Upgrades
- g. Software Maintenance

2.2 Operational Support

The Contractor shall:

- maintain the availability and operability of all components of GTIS, which includes interacting with third party vendors in the areas of support of third party software products and services,
- ensure needed functionality and configuration of individual components is properly maintained, and
- always ensure the integrity of the System.

The day-to-day operation support shall include but not be limited to the following:

Production Support

- Performing adjustments to hierarchical structures and reports due to reorganizations;
- Performing modifications and updates to dimensions and outlines (addition of new accounts, removal of inactive accounts, changes to members, attributes, structures, etc.);
- Performing data loads from external sources and/or internal data transfers;
- Preparing outbound data transfers to external systems;
- Performing synchronization and refresh of databases;
- Report generation
- Report maintenance & creation – based on changes in reporting needs;
- Responsible for tracking and tagging, monitoring leased communication lines.
- Monitoring online and batch processes;
- Monitoring System performance;

Security

- Administering and managing Users and Groups maintaining authentication method for Planning, Reports,
- Granting and/or revoking end-user access to applications, views and reports;
- Setting global read-only/write privileges to user and/or groups based on application, reports, hierarchical structures, dimensions, scenarios and versions;
- Performing all tasks necessary for the System to comply with the requirements conveyed in the Authority's Controls Requirement Contract Checklist (Attachment K hereof) and satisfy the checklists therein.

Computer Operations (until the System is connected to PAWANET)

- Monitoring authentication, security (Active Directory);
- Monitoring the Windows operating system;
- Monitoring behavior and performance of Hardware;
- Monitoring Backup processing.

End User Support

- Testing of implemented fixes, enhancements and releases, ad-hoc reports and report writing. All ad-hoc reports must be implemented into the application unless otherwise directed by the Contract Manager.

2.3 Application Technical Maintenance and Support

The Contractor shall maintain and support all environments (primary, secondary and development) of GTIS, and all application modules, related components, application fixes, system application upgrades, enhancements, including maintenance, upgrades and fixes of customized modules.

AMS covers all application processing (i.e., such services as GTIS application and vendor provided software) and include but are not limited to:

- Production - Correction and changes to GTIS applications derived from all functional and technical production problems affecting the normal operation of the System. Production problems could originate from applications, modules, databases, underlying software, third party software, operating system, hardware crashes and failures, etc.;
- Identification, evaluation and resolution of the operational problem;
- Enhancement, upgrade and application changes to improve the application based on the Port Authority's needs and uses. All changes must be approved by Contract Manager.
- Fixes to application code and/or operational modifications to the application;
- Fixes or modifications to applications and associated components, such as structures, hierarchies, dimensions, outlines, calculation scripts, report definitions, report scripts, business rules, load rules, etc.;
- Fixes or modifications to the application processes, queries, procedures, reports, views; and
- Evaluation and application of a program fix or patch, supplied by the vendor of the underlying or third party software, to resolve a production problem.
- The Contractor will have the discretion to rewrite the application, if deemed necessary, with written approval from the Contract Manager and must follow SDLC (see Attachment M, Application and SDLC Controls Checklist) and meet at a minimum the current functionality of present application.
- Monitor communication and reporting outages
- Work with leased communication line providers to restore communications should there be an outage
- Maintain password controls in accordance with Authority's Controls Requirement Contract Checklist (Attachment G hereof)
- Review all application logons/passwords on systems and review access permissions

The Contractor shall ensure System integrity, which necessarily includes maintaining and synchronizing production, secondary and development environments for all applications and components of the System. Services will include but not be limited to:

- Exercising preventive operational modifications on processes or procedures to improve performance of the System;
- Providing necessary services to proceed with enhancements for expanding System functionality, including upgrades due to new releases;
- Provide necessary services to participate in Disaster Recovery Support, and create a Disaster Recovery Plan (DRP) and DRP test, in accordance with the Disaster Recovery Plan requirements conveyed in the Authority's Controls Requirement Contract Checklist (Attachment G hereof);
- Provide recommendation for System/application/security improvements and best practices, etc. Must meet NIST Standard for security and Standards and Guidelines for Port Authority Technology (Attachment I)
- Provide assistance to third party service provider staff for problem resolution;
- Provide services to assist in evaluating external environmental changes (i.e., MS office changes);
- Provide a twenty-four (24) hour on-call availability for resolution of operational problems as may be required at certain times, in accordance with the Contract's service levels stipulated in Section 10 of Attachment C (Contract Specific Terms & Conditions) hereof;

2.4 Database Administration

The Contractor shall be responsible for the general maintenance and administration of all instances of application databases (MS SQL, MS ACCESS database). Responsibilities include but are not limited to:

- Correcting all production problems related to the System's MS SQL, MS ACCESS databases. The Contractor shall investigate and diagnose System problems resulting in unsatisfactory application System performance and take steps to remedy the problem.
- Performing all functions related to the monitoring and tuning of the MS SQL, MS ACCESS databases, standard queries, etc., to ensure an efficient, effective and optimal System performance.
- Evaluating, installing, configuring and implementing new releases of MS SQL or MS ACCESS software.
- Monitoring, evaluating and applying all security or other related patches in a manner consistent with the service levels conveyed in Section 9 (Required Service Levels and Damages for Non-Performance) of the Contract Specific Terms & Conditions (Attachment C); the Control Requirements Contract Checklist (Attachment K), and the *Standards and Guidelines for Port Authority Technology* (Attachment I),

2.5 System Administration

The Contractor shall be responsible for maintenance and overall administration of the System in accordance with the Port Authority Guidelines for System Administration, including:

- Check physical hardware daily, notify the Port Authority of any problems, and escalate through Authority Management through resolution;
- Administering the System in accordance with the Authority's Guidelines for System Administration, which will be provided to the Contractor after commence date, or can be made available for viewing if prospective bidder signs non-disclosure agreement. In addition, please refer to Standards and Guidelines for Port Authority Technology in Attachment I.
- Monitor the operating system (if furnished by the Contractor), check run-time system utilization parameters (e.g., disk usage, file size and allocations, processor loading, page faults, response times, etc.).
- Monitor disk usage to verify adequate empty disk space available for program usage (i.e., temporary files, logs, etc.).
- Monitor logs to verify system log files are saved to removable media and log files are purged on a regular basis and purge log files that exceed the data retention period.
- Check the hardware and software components of the equipment to ensure that all components are present and operating within specified parameters.

Based on these reviews, the Contractor shall perform needed System activities and shall take corrective actions (e.g. de-fragmenting disk files, purging obsolete files from directories, perform database maintenance, etc.) to ensure its performance is within acceptable tolerances and meets the operational availability requirements.

The Contractor shall employ a proactive process to ensure that all operating system software utilized by the System is maintained at fully supported versions from their original manufacturers for the duration of the Contract. This process shall include application of all patches and software updates as necessary to maintain the required levels of security and functionality and immediate notification of the Authority whenever an update or patch is released by the manufacturer. This process shall also include all System application software testing and updates to ensure continued operations with the latest patches and releases of operating system.

The Contractor shall document its patch management procedures, including testing, acceptance, and distribution. The documentation shall also include emergency procedures.

Updates and patches shall be scheduled and performed on a monthly basis. A specific timetable/schedule of updates and patches for the month shall be documented and provided to the Authority. Updates and patches shall first be installed and tested on the Development Environment. Installation shall be performed on the production System only after the Contractor confirms that installed updates and patches have had no adverse effect on the Development Environment, and only with the acceptance of the Authority. For each patch or update to be installed, the Contractor shall document and

provide to the Authority the test procedures that were used on the Development Environment, associated test results, production System deployment procedures, and a back-out plan applicable to both the Development Environment and the production System.

When directed by the Authority, the Contractor shall maintain the Systems and Equipment in such a manner that the systems will comply with the Standards and Guidelines for Port Authority Technology, and shall identify and report to the Manager those aspects where the Systems and Equipment do not comply with the standards. In those cases where the Systems and Equipment do not comply, the Authority will decide whether the Contractor shall modify the Systems to comply or allow the Systems and Equipment to deviate from those standards.

When directed by the Authority, the Contractor shall provide a proactive review of all events, incidents, alerts, and other anomalies to assess whether trends and/or other indications requiring investigation are occurring in the Systems and Equipment.

When directed by the Authority, the Contractor shall respond to requests which may include, but not be limited to, restoration of data, extraction of data and logs, maintenance of configuration tables or files, and participation in Authority meetings, etc. as related to the System.

The Contractor shall conduct regular audits, vulnerability testing, and security scans.

Note: The Contractor's responsibility to provide System Administration will cease once System is migrated onto PAWANET; however, application and database administration will remain the Contractor's responsibility.

2.5.1 Guidelines for Providing Application Administration

The Contractor shall provide its services in accordance with the Standards and Guidelines for Port Authority Technology attached hereto as Attachment I and approved SDLC in (Attachment M, Application and SDLC Controls Checklist), and the Port Authority Guidelines for System Administration, which will be provided after contract award, or can be made available for viewing if prospective bidder signs non-disclosure agreement. Documentation specific to GTIS with respect to support services, including application administration, software, including application code, hardware maintenance and user instructional material will be made available to the selected Contractor. The Contractor shall be responsible for ensuring documentation is current and accurate.

The Contractor shall perform, at a minimum, the application administration services listed below in addition to those listed in section 3 below:

- Application system monitoring and support, database monitoring and support, systems administration, and user applications support.

- Monitor the database to verify proper database operation and ensure its performance is within acceptable tolerances and implement corrections to maintain acceptable performance,

The Contractor shall employ a proactive process to ensure that all third-party software utilized by the System is maintained at fully supported versions from their original manufacturers for the duration of the Contract. This process shall include application of all patches and software updates as necessary to maintain the required levels of security and functionality and immediate notification of the Authority whenever an update or patch is released by the manufacturer. This process shall also include all System application software testing and updates to ensure continued operations with the latest patches and releases third-party applications.

The Contractor shall document its patch management procedures, including testing, acceptance, and distribution. The documentation shall also include emergency procedures.

Updates and patches shall be scheduled and performed on a monthly basis. A specific timetable/schedule of updates and patches for the month shall be documented and provided to the Authority. Updates and patches shall first be installed and tested on the Development Environment. Installation shall be performed on the production System only after the Contractor confirms that installed updates and patches have had no adverse effect on the Development Environment, and only with the acceptance of the Authority. For each patch or update to be installed, the Contractor shall document and provide to the Authority the test procedures that were used on the Development Environment, associated test results, production System deployment procedures, and a back-out plan applicable to both the Development Environment and the production System.

The Contractor shall provide troubleshooting and correction of software related issues either reported by the Authority, the System, or found by the Contractor. System administration and on-call Work (provided through the toll-free number) shall be provided 24 hours per day, 7 days per week as needed to ensure the System performs to the requirements of this Contract.

The Contractor shall provide the Authority with an annual inventory of all hardware, System software, COTS software, and a monthly inventory of all patches or other changes applied to COTS software. In the event that any operating system, network, database, middleware, or other COTS software is no longer supported by its manufacturer, the Contractor shall be responsible for replacement and associated testing (to the Authority's satisfaction) of said software, at no cost to the Authority, for the duration of this Contract.

The Contractor's maintenance staff shall be capable of performing corrective action, maintenance, and enhancements to the System software. The Contractor shall provide continuous monitoring of all the System's logs, metrics, and diagnostics and appropriate follow up activities performed on a regular basis.

The Contractor shall respond to requests that may include, but not be limited to, restoration of data, extraction of data and logs, maintenance of configuration tables or files, and participation in Authority meetings.

The Contractor shall manage and provide computer account maintenance (e.g., add and modify records, and manage Authority user account forms).

The Contractor shall provide desk side support of software applications to the end users as related to the Systems and Equipment (e.g., information downloads, understanding and using software features).

The Contractor shall manage and review technical advisory notices (e.g., Authority, cyber and vendor application advisory alerts) to determine if action (e.g., updates, patches) is required for the Systems. If action is required, coordinate with Authority departments in order to complete the work.

The Contractor shall develop and perform health check procedures to the Systems and Equipment to ensure operational availability and performance.

The Contractor shall develop and perform necessary computer data integrity check procedures to ensure data quality and avoid data inconsistency, incompleteness, inaccuracy, duplicates, missing or unknown data records.

The Contractor shall comply with approved Authority Information Technology software (e.g., third party software) and hardware (e.g., operating systems, computer server hardware) standards unless waived by the Authority.

The Contractor shall maintain and repair all System software in accordance with the requirements of this Contract in order to meet the operation availability.

In the event of any inconsistency between the express provisions of this Contract and the Technology Services Standards and Guidelines, the provisions of this Contract shall prevail.

3. CONTRACTOR RESPONSIBILITIES – ENUMERATED RESPONSIBILITIES

3.1 Troubleshooting and Problem Resolution

The Contractor shall correct all production problems affecting the normal operation of GTIS. This could require application code and/or operational modifications, fixes to outlines, dimensions, calculation scripts, business rules, load rules, etc. It could also require providing assistance to Authority staff for problem resolution, or application of a program fix supplied by the vendor of the underlying software to resolve a production problem. Production problems are considered of high priority. Upon request, provide twenty-four (24) hour on call availability for resolution of operational problems. See Section 9 of Attachment C (Contract Specific Terms & Conditions) hereof for the specific service levels.

3.2 Application Management Methodology

The Contractor shall put an application management methodology in place, subject to the review and approval of the Authority. This shall include a methodology for recording changes made, new programs, documenting fixes and updates made to the application or underlying software, managing the development, testing and production environments, putting new applications or new software into production and keeping users informed.

Reporting is a key component of the application management methodology. The Authority will identify a set of performance, utilization and status reports the Contractor shall be required to provide on a periodic basis. The Contractor shall deliver suggested formats to the Authority, within the first ninety (90)-days of the Contract, for Authority approval. The Authority will determine the frequency of reporting, typically weekly, and the Contractor shall provide reports accordingly.

3.3 Application Enhancements/Upgrades

Application enhancements are defined as any change or modification in System and/or application functionality, implying significant effort, and requiring detail analysis, evaluation, planning, scheduling and prioritization for its execution. All operational support items stated under Section 2.2, above, may require a modification. Accordingly, they are not considered application enhancements, as these efforts are considered production problems of critical nature requiring immediate attention.

The Contractor shall be responsible for all enhancements to GTIS. Enhancements/Upgrades may derive from changes in requirements of the System and incorporation of new features functionality. Enhancements include modifications needed on any component of the System to maintain compliance with Port Authority policy; and/or modifications to applications and components directly or indirectly associated with GTIS which would affect its operability or functionality or processing due to environmental changes.

Contractor requests for enhancements and changes to the System and its applications, databases and components shall occur in a controlled manner. All requests for enhancing or changing the System shall occur only after authorization by the Authority, and after they have been evaluated, developed, tested and documented prior to implementation in the production environment. All work related to enhancements and changes shall occur according to a structured change management and maintenance methodology acceptable to the Authority. Must follow approved SDLC process in (Attachment M, Application and SDLC Controls Checklist).

For all application enhancements, the Contractor must provide estimates and project plan/schedules and must obtain Authority approval prior to initiating.

Note: Requirements and scope generation for and estimate preparation activities for contemplated application enhancements are considered part of scope of services set forth herein.

Upgrades and Fixes –The Contractor shall be responsible for the regular application of underlying software fixes and updates supplied by **MS SQL and third-party software** which are necessary to maintain the application at its current performance level. Such services include full impact analysis of applying the fix to GTIS, the application and testing of the fixes, and submission for migration to production. In addition, the Contractor shall upgrade the underlying software to the next release of the software issued by the software vendor to retain product currency. If this upgrade is a major release, the Contractor shall treat it as a full upgrade project and shall provide the services described in Section 3.4, below. All upgrades to database or database versions and third-party software shall be included in cost of Contract.

3.4 Software Maintenance

For all Systems (including their component equipment) covered under this Contract, the Contractor shall provide software maintenance for the operating system (if furnished by the Contractor), applications software, third party software and third party tools, and database that was furnished and installed by the Contractor. Software maintenance shall include but not be limited to the following:

3.4.1 Error Correction

In the event that the System does not meet the operational availability or function in accordance with the manufacturer's stated functionality and performance due to errors in software or any modifications thereto, the Contractor shall correct any such error in the System as identified by the Authority. Errors shall include, but not be limited to, flaws in operations and errors due to flaws in the design and coding of the System.

Upon notification of the error by the Authority or discovery of the error by the Contractor, the Contractor shall dispatch Trained Personnel to repair, replace and correct all malfunctions as required for the System to perform in accordance with the manufacturer's stated functionality and meet the operational availability. Contractor must respond within one hour of notification. The Contractor shall provide documentation relating to the error correction, if any, in machine-readable format. The corrected software shall be tested by the Contractor in an off-line test environment. The Contractor shall then prepare a test and demonstrate to the Authority's satisfaction that the error has been corrected and submit it to the Authority for review and approval before the corrected software is installed into the production System. Such corrections to the software shall be provided at no additional cost to the Authority. The Contractor's obligations for the performance and completion of such error correction in order to ensure that the equipment meets the operational availability and functions in accordance with the manufacturer's stated functionality and performance within the time provided for in the above are of the essence of this Contract.

3.4.2 Software Updates

The Contractor shall notify the Authority whenever upgrades and/or enhancements to operating system, the application software, third party software or third party software tools

used by the System become available. The Contractor shall also provide the Authority with an analysis of the potential effects of such upgrades/enhancements on the System. This analysis shall include, at a minimum, the following:

- Compatibility of the application software with the new operating system or third-party software;
- Compatibility of the upgrade with the system architecture, server and communications infrastructure ;
- Infrastructure improvements required to support the upgrade;
- Potential increases or decreases in equipment performance;
- The availability of product support for the current (older) version of the operating system or third party software; the cost of the software upgrade, including testing and any other tasks which may be associated with the upgrade.

The Authority will then determine whether or not to order the upgrade. If the Authority selects the upgrade, the Contractor shall perform the upgrade on the System, test the system, and update the documentation, all in accordance with the sections on testing and documentation. The Contractor will be compensated for this Work under the net cost provisions of the Contract (Section 7 – Compensation for Net Cost Work – Attachment C). Sample Work Order for Software Updates and Price Sheet are in Attachment G Work Orders.

3.5 Specific Work Order Modifications

Based on changes in business requirements and reporting needs, additional changes and database modifications may be required. Specific Work Order modifications may require additional resources beyond the base contract requirements, payable according to the rates provided in the Attachment G, Work Orders, and approved by Contractor. Assume that one task order modification will be requested on an annual basis.

An example of a specific work order modification would be: Rebuilding the existing application to work with an App on mobile devices to create a ground transportation reservation or receive notification of a reservation.

Another example of a Specific Work Order would be:

The Port Authority of New York and New Jersey desires to add and install new reservation ticket printers in several Welcome Centers. The Specific Work Order would include purchase, installation, termination, testing and documentation of the printers and printer cables.

Sample of Work Order and Work Order Pricing Sheet are in Attachment G.

All requests made by the Port Authority for Work Order Modification quotes must be furnished to Port Authority within five (5) business days.

3.6 Release Control

The Contractor shall perform all functions required to maintain the current System environments. Unless otherwise directed by the Authority, the Contractor shall maintain the underlying software (Microsoft based software products) supporting GTIS within one generation of application currency, such that it is fully supported by Microsoft without any fee other than that required for standard software maintenance paid by the Authority directly to

Microsoft. Note that new version of the underlying software supporting “GTIS environment” shall include and be integrated (as appropriate) with all products listed in the description of GTIS based software Products and Tools in Attachment D, above (which shall include custom components).

The Contractor shall perform upgrades or apply releases of underlying software into test and quality assurance areas and shall perform application acceptance testing prior to implementation into production.

3.7 Expanded Functionality

The Contractor shall be responsible for services associated with maintaining functionality of GTIS, as deployed by the Authority. However, the Contractor shall make recommendations on optimizing GTIS, enhancing or extending the functionality of any of its applications, components and processes. This may include but not be limited to incorporation and integration of additional modules, decommissioning existing modules, third party products complementary to the GTIS software, as well as adding functionality on reports, calculations, workflow and web-enabled transaction processing, mobile applications.

3.8 Best Practices

The Contractor provide System monitoring, security and reporting in accordance with industry best practices of application software interfaces.

GTIS security Administration: The Contractor shall establish and maintain security profiles, controlling access to GTIS servers, databases, applications and reports and shall develop and maintain administration policies and procedures.

Access Authorization and Administration: The Contractor shall create, control and maintain user accounts as well as the periodic reporting of user account statistics.

3.9 Tuning

The Contractor shall perform all functions related to the tuning of the MS SQL and MS ACCESS Databases, standard queries and the applications of GTIS to ensure an efficient and effective System.

3.10 Disaster Recovery Support

The Contractor shall create for the Authority a Disaster Recovery Plan, test the disaster recovery plan on an annual basis, or, in the enactment of a real disaster, participate in the DR recovery operation including fail over / switch over to the secondary server in the event of a primary production server failure, which could include establishing the System and related software components on the Authority-selected alternate Disaster recovery site. The Contractor shall work with the Authority’s Contract Manager to define the scope of annual disaster recovery tests, coordinate with other Authority staff and third parties to ensure all required tasks are covered and to conduct and evaluate the components of these Disaster

Recovery tests. The Contractor shall maintain up-to-date Disaster Recovery plans, including projected and actual (based on Disaster Recovery tests) timelines for the various recovery steps. The Contractor shall do basic validation and ongoing tuning to ensure the resulting processes are always kept up-to-date and well documented. Contractor must do a DRP test at least once a year and must provide all documentation and all software, including third-party software, to reconstitute the System.

3.11 Business Resumption Planning

The Contractor shall work with the Authority's Contract Manager and the user departments to participate in activities associated with the Authority's Business Resumption Plan. The Contractor shall be responsible for the portion of the plan concerned with providing continuing application management services for GTIS. The Contractor shall participate in any test of the Business Resumption Plan scheduled by the Authority, typically quarterly.

3.12 System Availability and Operating Environment

The Contractor shall perform all services to ensure that GTIS is fully operational 24 hours per day and 7 days per week. The System must also be available for data entry for functions including report production, database inquiries and backups, interfaces with other jobs, and system maintenance.

3.13 Interaction with third-party service providers

The Contractor shall work in coordination with Authority's Contract Manager and in harmony with the Authority's third party Contractors and service providers. These services include but are not limited to:

- Working with Authority staff in contacting third-party contractors and service providers (e.g. software vendors for application support, telephone company for broken communications lines).
- Working with Authority staff in contracting with third-party Contractors and service providers to coordinate activities related to infrastructure (hardware/OS software) upgrades/changes, system integration, implementation of new infrastructure software releases (i.e. HIDS), assisting in validation activities to ensure compatibility of the System for upgrades of the desktop computing platform, and/or other associated maintenance fixes, or releases.

4. CONTRACTOR RESPONSIBILITIES - CAPACITY MANAGEMENT AND PERFORMANCE MONITORING

The Contractor shall monitor GTIS performance to ensure that performance meets the operational needs of the users. The Contractor shall take measures to ensure the continued effective operation of the application systems comprising GTIS, through accepted industry capacity management and performance monitoring procedures, including recommending corrective actions to correct capacity and performance inadequacies.

4.1 Capacity Management

4.1.1 Maintaining records

The Contractor shall maintain records on application performance and resource usage, user response time, etc., adequate to predict needed upgrades to hardware and software based on current performance and expected growth.

4.1.2 Forecasting upgrade needs

The Contractor shall maintain communication with the Authority's Contract Manager regarding plans for System enhancement, upgrades, patches, expansion or modification which would affect System capacity or performance.

4.1.3 Tracking resource usage

The Contractor shall track such items as database and file sizes, and concurrent licensed users, to ensure that adequate resources shall be available for the near future and to take preventative action to minimize application failure due to insufficient resource levels.

4.2 Performance Monitoring

4.2.1 Maintaining proper allocation of resources

The Contractor shall monitor CPU, memory, application and database servers, file distribution on direct access storage devices and, as warranted, make recommendations and, after securing the Authority's concurrence, implement these recommendations to maintain adequate application System performance.

4.2.2 Troubleshooting

The Contractor shall investigate and diagnose System problems that result in unsatisfactory application System performance and shall take steps to remedy the problems.

4.2.3 Maintaining data structures

The Contractor shall de-fragment files, purge and/or reorganize databases on a scheduled and as needed basis.

5. CONTRACTOR RESPONSIBILITIES - CHANGE MANAGEMENT ADMINISTRATION

The Contractor shall ensure that all changes to GTIS occur in a controlled manner using a SDLC process in (Attachment M, Application and SDLC Controls Checklist). The Contractor shall determine that all application system changes are properly authorized, tested and documented prior to implementation in the production environment, in accordance with a structured change management and maintenance methodology acceptable to the Authority, and shall be aware of changes to the Authority's information infrastructure, with appropriate back-out and/or reversal procedures.

The scope of the change management portion of the services furnished shall include but not be limited to the activities identified below. The Authority's automated tools for change control shall be used, as dictated by the *Standards and Guidelines for Port Authority Technology*.

5.1 Verification and Control of Software

The Contractor shall verify that no unauthorized software has been introduced to the System. Upon verification of the introduction of unauthorized software into the System, the Contractor shall comply with the Authority's procedures, as specified herein. The versions of authorized software shall be checked to verify that no unauthorized changes have been made, and authorized changes shall be stored the version control for Client/Server, PC, etc. Software and applications is stored at the airport, Port Authority vault at the Central Office and on PA Aviation Shared-drive. All stored information must be encrypted and the encryption key must be left with the Aviation Department.

5.2 Informing Management of New Software

The Contractor shall notify the Authority whenever upgrades and/or enhancements to the operating system, the application software, third party software or third party software tools used by the System become available. The Contractor shall also provide the Authority with an analysis of the potential effects of such upgrades/enhancements on the System. This analysis shall include, at a minimum, the following:

- Compatibility of the application software with the new operating system or third-party software;
- Compatibility of the upgrade with the system architecture, server and communications infrastructure ;
- Infrastructure improvements required to support the upgrade;
- Potential increases or decreases in equipment performance;
- The availability of product support for the current (older) version of the operating system or third party software;
- The cost of the software upgrade, including testing and any other tasks which may be associated with the upgrade.

5.3 Establishing Segregated Test And Quality Assurance Environment

The Contractor shall maintain a segregated test and quality assurance environment insulated from the production environment for testing of all changes to software or custom applications prior to introduction to the production environment to ensure changes are compatible with the application and other installed components.

The Contractor shall ensure that all updates to the production environment are simultaneously reflected in this environment.

Once the System is migrated onto PAWANET, the Port Authority will maintain the test environment.

5.4 Controlling Software Migrations

The Contractor shall establish procedures to ensure that only approved changes are implemented. The Contractor shall ensure that:

- Properly authorized modification request forms have been received for all changes to be made to software or applications ;
- Access controls have been established to prevent more than one retrieval of a module for modification;
- Multiple changes to the same module are coordinated;
- There is synchronization of changes so that all modules affected by a modification to a data element or other factor are changed simultaneously;
- Migration of modules is controlled through the test and implementation cycle;
- New application versions are thoroughly tested prior to use on the production system;
- SDLC Process (see Attachment M, Application and SDLC Controls Checklist)
- New application versions are thoroughly documented, in accordance with, at a minimum, Authority standards; and

The Contractor's implementation of application changes, enhancements, and software release upgrades must be scheduled to minimize downtime and avoid the Monday to Friday time period, utilizing scheduled weekend maintenance windows. See the Standards and Guidelines for Port Authority Technology (Attachment I) for further information.

5.5 Maintaining Prior Versions of Software

The Contractor shall exercise control over application and software versions, ensuring the proper version of application and software is migrated and that any prior versions are available for roll back in the event of an emergency.

5.6 Testing New Software

The Contractor shall maintain a test bed of transactions and known results to verify the integrity of fixes, changes, enhancements, and new software releases. The test bed shall be updated to include test data for all new conditions arising out of maintenance or enhancement of the System.

6. CONTRACTOR RESPONSIBILITIES - APPLICATION SYSTEM DOCUMENTATION

The Contractor shall establish and maintain a documentation library containing all hardcopy and computer readable documentation for software developed during ongoing maintenance. The Contractor shall be responsible for ensuring that all documentation needed for the continued operation and management of the System is accurate, current and available and is in compliance with, at a minimum, a structured maintenance methodology acceptable to the Authority. All application software, documentation, and instruction for reconstitution remains the property of the Authority, and all physical documentation must be maintained on site at the Authority, and not removed from its premises. Two copies of application source, object, tools to rebuild the System, and third-party system, documentation and method to reconstitute the System must be provided to the Contract Manager and Business Application Manager.

The scope of the System documentation portion of the application support services furnished shall include but not be limited to the activities identified below in this section:

6.1 *Establishing a Documentation Library*

The Contractor shall maintain a documentation library containing all documentation material for software, standards manuals and procedure manuals, and shall act as the Authority's agent in obtaining or producing any needed documentation not in the Authority's possession. All material in or obtained for the documentation library shall be the property of the Authority. Where documentation does exist, the Contractor shall ensure that, at a minimum, it meets documentation standards as set in the Contractor's structured maintenance methodology, as accepted by the Authority. The Contractor shall work with the Authority to ensure that controlled access to documentation materials is maintained, signing out manuals to authorized individuals when appropriate and tracking the location of signed out materials. In a similar manner, access to electronic versions of documentation shall also be controlled at the user ID level. In addition, the Contractor will provide an annual review/assessment of the document library.

6.1.1 *Archiving Data*

The Contractor shall follow System archiving procedures to capture data to be archived to permanent storage media as required to maintain proper System functioning or as scheduled in the System operating procedures (whichever occurs first), for the systems that are not administered by the Authority's system administrator. The Contractor shall ensure that archived media is properly stored, logged and maintained and that archived data is viable and accessible throughout the required archive retention period for the data and shall test that the media is viable and contains the archived data on a quarterly basis.

The Contractor shall also be responsible for ensuring that an adequate inventory of media for primary and backup purposes is available and for providing additional media when needed in a timely manner. The Contractor shall be responsible for loading archived historic data onto the System as needed to generate reports; and for doing required searches and clearing loaded historic data when it is no longer needed for immediate, on-line access.

6.2 *Maintaining Application System Documentation*

The Contractor shall maintain a run book for Computer Operations as well as a functional specifications document describing the business purpose of the System and a high-level description of the processes and reports; a design specifications document detailing the technical solution to the business function described in the functional design document described above; and shall maintain program documentation, including narrative descriptions, specifications, configuration, code listings, data layouts, IPO (Input, Processing, Output) charts, flow charts.

6.3 *Maintaining Test Plans*

The Contractor shall document and maintain records of test plans and procedures, acceptable to the Authority, for retesting the System after modifications to base software, applications, and/or databases. The Contractor shall also maintain a file of all test results in accordance with the documentation standards referenced herein and evaluations of results along with any recommendations resulting from testing. All test plans and related files and data shall be the property of the Authority. Test plan documentation shall include but not be limited to:

- Unit Testing - Create and maintain unit test plans to verify the functioning of the new and/or modified System component, and that it satisfies the business user's requirements.
- System and Integration Testing - Create and maintain test plans to test the entire System with the new and/or modified component installed to verify the integrity of the System as a whole and to determine that the intended purpose of the new and/or modified component is achieved.
- Acceptance and User Testing - Create and maintain test plans to verify the functionality of the new and/or modified component in the production environment for a specified period, prior to final acceptance.

7. CONTRACTOR RESPONSIBILITIES - TRAINING AND USER ASSISTANCE

The Contractor shall provide technical support to the System users, act as the focal point for troubleshooting maintenance problems, provide technical support to user department staff at internal and/or external meetings and provide training to up to 12 selected Authority staff. Such Authority staff will train other staff employed by the Port Authority.

The scope of the training portion of the application support services furnished shall include but not be limited to the activities below in this section:

7.1 Conducting Enhancement Training

The Contractor shall provide training to the Authority's training staff when application System enhancements warrant such training to ensure that they are trained in the proper procedures associated with the System and can function effectively after training. Assume such on-site training will have to be provided annually to approximately ten people, highlighting system changes and functionality. All training shall be provided at the Authority's premises. All training materials shall be provided by the Contractor and shall be transferred to and owned by the Authority.

7.2 Providing User Assistance

The Contractor shall serve as a resource for Authority staff as related to application System functionality. This includes but is not limited to:

- Provide technical support to Authority staff and/or Authority Contractors relative to the applications functionality and business support;
- Research and take corrective action on reported software malfunctions;

- Participate internal and external audits as directed by the Authority's Contract Manager; and,
- Perform other support activities as may be assigned by the Authority's Contract Manager (e.g., visit/review similar systems, interview potential service providers, etc.).

8. CONTRACTOR RESPONSIBILITIES - MANAGEMENT OF THE WORK

The Contractor shall be responsible for the effective management of the work described herein and of the staff assigned to the work. The Contractor shall implement sufficient management controls and utilize management tools necessary to ensure that the work is accomplished in an effective, efficient manner.

8.1 Organization

The Contractor shall be responsible for establishing and maintaining an organizational and operational structure appropriate to the work to be performed under this Contract. This shall include but not be limited to:

- Assigning an appropriate number of staff with requisite skills, acceptable to the Authority, for the tasks to be performed.
- Supplying direct supervision of the staff assigned to carry out the work as defined herein.
- Providing qualified persons, acceptable to the Authority, for relief of the assigned staff in the event of vacation, illness, personal business or any other absence of the assigned staff.
- Providing the staff assigned with procedures for escalating issues that cannot be solved on-site and providing for the support of these individuals where such support is required to ensure prompt resolution.

8.2 Labor Force

The Contractor shall furnish sufficiently trained management, supervisory, and technical personnel to perform the services required under this Contract, with all such personnel subject to review and approval by the Authority. Specifically, the Contractor's staff assigned to the Authority under the Contract shall have achieved the following certifications by the commencement of the Contract:

- MSCE License;
- MCSD;
- MSCA SQL and Server;

Furthermore, such assigned staff shall maintain their certifications throughout the duration of the Contract in the application versions utilized by the Authority. To the extent that the Port Authority discovers that assigned staff lack any of the required certifications detailed herein during any period of performance under this Contract, the Port Authority shall be entitled to a reasonable adjustment in the cost of the services so performed If payment has already been

made to the Contractor for the relevant period, the Port Authority shall be entitled, at its sole discretion, to either (i) a refund from the Contractor; or (ii) a credit against future charges.

If any such personnel is deemed unsatisfactory or does not perform the services to be furnished hereunder in a proper manner and satisfactory to the Authority, or in the determination of the Director may have taken any action which constitutes a conflict of interest or which is inconsistent with the highest level of honesty, ethical conduct or public trust or which the Director determines is adverse to the public interest or to the best interest of the Authority, the Contractor shall remove any such personnel immediately, and replace them by personnel satisfactory to the Authority within two weeks, upon notice from the Authority.

8.3 Program Management - Appointment of Staff

The Contractor shall appoint member(s) of its organization to oversee the management of the Contract. Assigning and reassigning staff shall be subject to pre-approval by the Authority's Contract Manager.

The Contractor shall assign a full-time, technically proficient, English-speaking, experienced and fully qualified account manager ("Account Manager"). The Account Manager shall be that person proposed, in that capacity, in the Contractor's proposal.

The Contractor shall consult with the Authority on any changes to assigned personnel during the duration of the Contract, before such changes are made.

Furthermore, removal or reassignment of the Account Manager shall be subject to the Authority's preapproval.

8.4 Status Meetings and Reporting

8.4.1 Status Meetings

The Contractor shall schedule and conduct regular status meetings with the Authority, at an Authority selected site, no less once per month. At the sole discretion of the Authority, the frequency of meetings may be adjusted. The purpose of these meetings shall include but not be limited to:

- Reporting on the operational status of GTIS;
- Tracking the progress of application management activities;
- Reviewing the Contractor's performance to the contracted service level metrics;
- Reviewing Contractor's invoices for services provided; and
- Tracking the progress of projects.

The Contractor shall produce and deliver to the Authority, at least 24 hours prior to each status meeting, a project status report. At minimum, the report shall:

- provide a complete statement of the System's status;

- include performance measure reporting;
- indicate progress made during the reporting period;
- indicate progress made on work to correct deficiencies, activities to be undertaken in the next reporting period, activities and/or tasks behind schedule;
- identify problems and concerns related to GTIS;
- provide statistics on problems encountered and resolved in the reporting period and year-to-date.
- Provide Invoice tracking and expenditures

8.4.2 Management Reports

GTIS provides standard reports, some of which are listed below, the Contractor must be able to generate ad-hoc reports from GTIS as well.

- **Destination, Stop and Fare Report**

This report lists every possible destination and stop, and all transportation options to such destinations, and all associated fares. The data is filtered by airport, and then sorted by state, then destination, and stop. The printed report serves as a guidebook for counter agents to use in the event that GTIS is unavailable (such as in the event of a power failure).

- **Ground Transportation by Carrier Report**

This report provides a hard-copy which is distributed to permittees to confirm that their rate and service information is current and correct.

- **Combined Summary of Statistics Report**

This report is utilized by airport management staff and summarizes all transactions made at ground transportation counters at a given airport. It provides a quick view of all transactions conducted within a time period at all counters in a given airport.

- **Agent/Counter Audit Report**

This report is used by Airport Management to track reservation count and preference statistics for each agent at each of the airport counters. It provides hourly statistics for the activities of each counter and counter agent.

- **Tour Report**

This report provides the details of each reservation made at each counter for a particular airport. It is used by Airport Management to provide detailed information about every reservation made on a particular date.

- **Cancellation Report**

This report provides the volume, frequency, and reasons for cancelled reservations. The cancelled reservations are listed by date, with all reservations for the given date grouped together.

- **Late Pick-Up Report**

This report summarizes the late arrivals of carriers for pick-ups over a specified period of time. It categorizes how many minutes late the carrier was and provides the percentage of pick-ups that were late.

- **Reservations by Service and Preference Report**

This report provides statistics for the type of service (Scheduled, Shared and Private) requested by passengers (over a period of time). It also indicates the percentage of total reservations, as well as the percentage by service type.

8.5 Security

8.5.1 Physical Access

Maintaining lists of authorized personnel: The Contractor shall maintain a list of its employees authorized to enter secured areas. The Contractor shall update the Authority's Contract Manager in writing to notify of changes in its employees' employment status, which may require updating said list. The Contractor shall ensure that the System files of any automated entry system in operation are reconciled to the authorized list on a scheduled basis.

8.5.2 System Access

Maintaining lists of authorized users: The Contractor shall maintain a list of Contractor employees authorized by the Authority's Contract Manager to access to GTIS and any ancillary software supporting GTIS, where access shall be only to the minimum extent necessary to perform the job function. The Contractor shall also provide a means for immediate communication with the Authority's Contract Manager when changes in employment status or assignments occur, which may require updating the list.

Limiting access to the system: The Authority will issue logon IDs for only those persons authorized by the Authority's Contract Manager to have access to the System and will periodically reconcile the list of logon IDs to the authorized list. The Contractor shall institute controls over super passwords, other special passwords, and/or highly privileged access so that their use is documented and approved in advance by the Authority's Contract Manager. Any request by the Contractor to increase access authority must be documented in writing, with full backup information to document the need for the increased access; the request must be approved by the Authority. Access to the production environment by Contractor's staff is subject to the written advance approval of the Authority's Contract Manager.

8.5.3 Data Security

Safeguarding Data: All information concerning the business of the Authority which becomes accessible, or known, to the Contractor, including his employees and subcontractors, and including, but not limited to, financial information, customers, customer lists, business plans, operational plans, data and computer programs, documentation, engineering/technical data, design process, pricing, research and development, strategic plans, and operating data resident on magnetic media, or other media processed, stored, archived or maintained, shall be protected from loss, erroneous alteration, and shall be held in strict confidence and protected

from unauthorized access. Data security shall be provided in accordance with the provisions of the Port Authority of New York and New Jersey's Information Security Handbook, October 15, 2008, Corrected as of February 9, 2009 (<http://www.panynj.gov/business-opportunities/pdf/Corporate-Information-Security-Handbook.pdf>), as the same may be modified or supplemented from time to time without the approval of the Contractor. In the event of any non-authorized access, modification, disclosure, loss or inability to account for any Authority data, the Contractor shall provide immediate notification to the Authority's Contract Manager.

8.5.4 Cyber Security Administration

The Contractor shall ensure that intrusion detection software is installed, maintained at current release levels, and up to date with required patches and security profiles, in accordance with the Standards and Guidelines for Port Authority Technology. The Contractor shall document and implement intrusion detection incident response procedures. Mitigation of security alerts/breaches shall be performed in accordance with the Port Authority Guidelines for System Administration provided to the Contractor after Contract is awarded.

8.5.5 Manage Cyber Vulnerabilities

The Contractor shall monitor, evaluate, track, log, and immediately report on all cyber-security vulnerabilities and/or other vulnerabilities related to the software used in the equipment. The Contractor shall work with the Authority to address any identified vulnerabilities and mitigate all security/malware/virus alerts in accordance with the procedures identified in Port Authority Guidelines for System Administration provided to the Contractor after Contract is awarded.

8.6 Quality Assurance

The Contractor shall establish and maintain a quality assurance program to ensure that all work is performed in accordance with the terms of this Contract. The Contractor shall employ procedures to ensure the timely and effective execution of all tasks required to be performed by this Contractor. The quality assurance program shall include a measurement plan that tracks the quality and productivity of services provided by the Contractor. The Contractor shall issue reports regarding this Quality Assurance activity each quarter.

8.7 Training

The Contractor shall be responsible for maintaining the appropriate knowledge, skills and abilities of its staff assigned to support the Authority by providing a regular ongoing training program appropriate to the needs of the staff assigned.

8.8 Right of First Refusal

The Authority has the right to approve or disapprove, at the Authority's sole discretion, with or without cause, any potential Contractor Employee who would directly service the Authority account.

8.9 Right of Replacement

The Authority has the right to require the Contractor to replace any Contractor Employee, assigned to the Authority Account.

8.10 Technologies Supported

The Contractor shall support all of the technologies currently employed by the Authority while identifying opportunities to implement new technologies that will improve service and support at a reduced cost.

8.11 Incentives to Reduce Costs

The Authority is continually seeking ways to reduce and minimize its expenses. Accordingly, the Authority encourages the Contractor to explore and identify opportunities to improve the services and reduce the cost of services being provided under this agreement.

The Contractor shall advise the Authority's Contract Manager of each opportunity that is identified and to estimate potential savings.

8.12 Location From Where Services Will Be Provided

The Authority requires that team members, including the Account Manager, shall perform all their work on Authority premises [Monday through Friday, 8:00AM to 5:00PM], at the location designated by the Authority except where specifically noted herein or in the Contractor's proposal, as accepted by the Authority. These key team members are full time staff requiring direct interaction with Authority personnel to perform their duties. This location for onsite services is anticipated to be at John F. Kennedy International Airport, Building 14, but it may be changed at the Authority's sole discretion.

The Contractor shall propose which services can be provided off site to reduce cost or gain some other potential advantage. The Authority does not, however, anticipate moving any people, hardware, application or network components off-site. The Contractor may propose various alternatives with associated costs for consideration.

The Authority shall not charge the Contractor for the Authority-provided workspace for application management services personnel, which includes space, utilities, current workstation equipment, telephone access and reasonable usage and site services. If the Contractor requires additional site resources and/or relocation to an alternate site, and/or workstation equipment upgrades, the Authority will not assume any costs for space, workstation equipment or related networking and telecommunications equipment, software and/or expense. All expenses for off-site services must have been specified in the Contractor's proposal, as accepted by the Authority

The final determination of which services are to be provided off-site will be made by the Authority.

8.13 Transition Planning from Current Contractors

The Contractor shall support an orderly transition from the existing vendor providing the services to the proposed Contract. The maximum transition period shall be 60 days, or less as determined feasible by the Authority. The selected Contractor shall actively participate in discussions and shall agree to written plans that clearly specify the transition period and responsibilities.

8.14 Transition Planning to Future Contractors

The Contractor shall support an orderly transition to future vendors who will provide the services described herein. The maximum transition period shall be 60 days, or less as determined feasible by the Authority. The Contractor shall actively participate in discussions and shall agree to written plans that clearly specify the transition period and responsibilities.

8.15 Return of Data

Upon the termination or expiration of the Contract, all Authority data stored on electronic media or otherwise, must be returned to the Authority without cost. Any copies held by the Contractor must be purged from their files.

8.16 Right to Use Contractor Tools

Upon termination of the Contract, the Contractor may have implemented specific Contractor owned or proprietary tools for the management, operation or reporting on the application maintenance environment within the Authority. To avoid disruption of operations, the Contractor shall at no additional cost accommodate the Authority (or its designee) in the use of, or access to, any and all Contractor specific tools or services until such time as they can be replaced. Additionally, Contractor shall at no additional cost provide maintenance, training, support and documentation as may be required.

8.17 Right to Acquire Contractor Tools

Upon expiration or termination of the Contract, the Contractor shall provide the Authority or its designee with full rights to licenses. All licenses must be in name of the Port Authority.

It should be noted that if Contractor-owned or proprietary tools are necessary for the continued operation and maintenance of the applications, the Contractor is required to use tools which can be transferred to the Authority such that the ongoing support of the application is not in jeopardy at the termination of the Contract.



THE PORT AUTHORITY OF NY & NJ

**GROUND TRANSPORTATION
INFORMATION SYSTEM (GTIS)**

USER'S MANUAL

March 2004



RESERVATION ADMINISTRATION MODULE



RESERVATION ADMINISTRATION MODULE

Module time is 1 hour.



Prerequisites

Before you can begin this module you must be at an airport and logged onto the system with a user ID that has a security class above Counter Agent.



Module Contents

Topic A: Add Reservation
Topic B: Update Reservation



Module Overview

The Reservation Administration window has two main functions. The first is to add reservations to the system which were made manually but not with the GTIS. Its second function enables old reservations (reservations which were closed or canceled more than fifteen minutes ago) to be updated. This window is not accessible from the World Trade Center and may only add and update reservations for the airport at which the workstation is located. It may be opened by choosing the Admin button from the bottom of the Reservation Inquiry window. The Admin button will only appear in the Reservation Inquiry window when the user currently logged on has a security class above Counter Agent.

NOTE: The Reservation Administration window is not available in stand-alone mode.



Reservation Administration Window

Reservation Inquiry Window

Admin button

Reservation Administration Window

To access the Reservation Administration window, follow the steps below:



STEP:

1. Make sure the user currently logged on has a security class above Counter Agent.
2. Open the Reservation Inquiry window by pointing and clicking on the **1:** icon or pressing the F6 key.
3. Choose the Admin button from the bottom of this window. This will bring you to the Reservation Administration window.



Topic A: Add Reservation

Topic time is .5 hours.

Topic Contents

Topic A: Add Reservation



Topic Overview

One of the two main functions of the Reservation Administration window is to add closed or canceled reservations to the system. Thus, if the system were ever unavailable for a period of time, reservations may be made manually and entered at a later date. These reservations must have a close or cancel date more than fifteen minutes in the past and an operational date no more than two years ago. The close/cancel date must be more than fifteen minutes in the past so that such reservations may not be updated and thus reopened. Any updates to reservations made with this window may be performed using the update function provided by this window and described later in Topic B.

Topic Objective

After completion of the topic lecture, participants will be able to:

1. Add appropriate closed or canceled reservations to the system.



Reservation Administration Window - Add Mode

Reservation Administration Window in Add Mode

To add a reservation using the Reservation Administration window, choose the Add option button in the upper left corner of the screen. This puts the window in Add mode and insures that the appropriate fields for adding reservations are displayed and reset to their default values. Then, follow the steps below:

1. Enter the operational date of the reservation. The operational date may not be more than two years in the past, but may be the current date if the close/cancel time of the reservation is more than 15 minutes in the past.
2. From the Counter combo box, choose the counter at which the reservation was made.
3. Select the appropriate gender option button (Mr. or Ms.).
4. Enter the passenger's name in the text box next to the gender option buttons.
5. Enter the number of adults, children and infants in the corresponding text boxes. The total number of passengers must be at least 1.
6. Enter the estimated pick-up time in the Estimated Pick-Up Time text boxes. The hours and minutes may be entered directly by typing in each box, or may be incremented or decremented by clicking on the up or down arrow buttons next to each text box. All times should be entered in 24-hour format.
7. Enter the fare in the Fare text box.
8. Select the appropriate payment type option button.
9. Enter the number of bags in the Bags text box.
10. If appropriate, check the Pets check box.
11. If a preferred reservation, check the Preferred check box.
12. Select the option button corresponding to the reservation's status: Closed or Canceled.



13. If Closed is selected, enter the close time in the Close Time text boxes in the same manner as the estimated pick-up time.
14. If Canceled is selected, a text box for the Cancel Agent will appear, as well as a combo box for the Cancel Reason. Enter the cancel time in the Cancel Time text boxes (in the same manner as the estimated pick-up time), the cancel agent in the Cancel Agent text box, and choose the cancellation reason from the list in the Cancel Reason combo box.
15. Enter the destination into the Destination combo box in the same manner as in the Destination Inquiry and Make Reservation window.
16. If the reservation requires, choose a stop from the Stop combo box.
17. If the destination and/or stop cannot be found in either combo box, the destination and/or stop may be entered by choosing the Special check box and then typing the desired destination/stop name in the text portion of the appropriate combo box.
18. Enter an address in the Address text box if appropriate.
19. Choose the carrier from the Carrier combo box.
20. Choose the service type from the Service Type combo box.
21. If the reservation is already known to be special, check the Special check box.
22. Enter the add agent's ID in the Add Agent text box.
23. Enter the dispatcher's name in the Dispatcher text box.
24. Enter the add time of the reservation in the Add Time text boxes in the same manner as the other time fields.
25. Enter any comments in the Comments text box.

Remember, all times are entered in 24-hour format and the beginning and end of each operational date is 4:00AM. This means that, for a given operational date, 4:23PM is entered as 16:23, 2:30 is 21 hours *after* 5:30, and 12:15 is 1 hour *before* 1:15. In addition, the add time must be **1** minute before either the estimated pick-up time or the close/cancel time.

When all of the appropriate reservation information has been entered, select the Add button to add the reservation to the data base. This information is then checked to make sure that all data entered make sense (there is at least one passenger, etc.). In addition, if the reservation has been entered as non-special, it is verified to make sure a fare exists for the given destination/stop, carrier and service type. If no fare exists for this information, the user is prompted to either change the reservation information or to keep the current information and create it as a special reservation. If a fare does exist, but the fare entered is different from the fare which would normally be calculated by the GTIS, the user is prompted to either change the fare or to create the reservation as special. Checking the Special check box before attempting to add the reservation overrides this fare verification and automatically creates a special reservation.

When the reservation is added, it is assigned a reservation number which will be displayed in a message box confirming that the reservation has been added. All reservations made with this window will be assigned a workstation ID of O which, when combined with the airport number, operational date, the chosen counter's ID, and a dynamically allocated sequence number, will comprise this reservation's unique reservation ID.

The reservation information may be cleared at any time during the add process with the Clear button. The Cancel button will close the window.



Topic B: Update Reservation

Topic time is .5 hours.

Topic Contents

Topic B: Update Reservation



Topic Overview

The second of the two main functions of the Reservation Administration window is to update reservations completed (closed or canceled) in the past. These reservations must have a close or cancel date more than fifteen minutes in the past and an operational date no more than two years ago. The close/cancel date must be more than fifteen minutes in the past so that such reservations may not be updated and thus reopened. The operational date, add time, destination/stop, carrier and/or service type of a reservation *may not* be updated. However, any other field of a reservation may be updated, including status (i.e., canceled to closed, closed to canceled).

Topic Objective

After completion of the topic lecture, participants will be able to:

1. Update appropriate closed or canceled reservations.



Reservation Administration Window - Update Mode

Reservation Administration Window
in Update Mode

To update a reservation using the Reservation Administration window, choose the Update option button in the upper left corner of the screen. This puts the window in Update mode and insures that the appropriate fields for updating reservations are displayed and reset to their default values. Then, follow the steps below:



- STEP: 1. Enter the operational date of the reservation. The operational date may not be more than two years in the past, but may be the current date if the close/cancel time of the reservation is more than 15 minutes in the past.
2. Enter the six-digit reservation number of the reservation to be updated, then choose the Retrieve Info button to populate the window with the reservation information.
 3. Update the gender, name, number of passengers, estimated pick-up time, payment type, bags, pets, preferred status, status, close/cancel time, cancel agent and reason, address, add agent, and/ or dispatcher as required. Updating the number of passengers for a non-special reservation will adjust the fare accordingly. Updating the number of passengers for a special reservation requires the user to input the new fare, as the fare for a special reservation is not automatically calculated.
 4. If it is a special reservation, the fare may be updated. If the reservation is not special, but the fare must be updated, the Special check box must be checked because the reservation would have to be updated to special when the fare is changed. In this case, checking the Special check box will allow the Fare text box to be updated.
 5. To view the old reservation comments, choose the Old option button. This will hide the Comments text box (where new comments are entered) and reveal the label which displays the old comments. Old reservation comments may not be updated. Choosing New will show the Comments text box again.



6. To update a reservation, at least one new character *must* be added to the Comments text box to explain why the update is being made. The only instance in which new comments would not be required is when the old comments are of the maximum allowable length (255 characters). In this case, the Comments text box will be disabled and the reservation may be updated without adding any new comments.

Again, all times are entered in 24-hour format and the beginning and end of each operational date is 4:00 AM. This means that, for a given operational date, 4:23PM is entered as 16:23, 2:30 is 21 hours *after* 5:30, and 12:15 is 1 hour *before* 1:15. In addition, the add time must be 1 minute before either the estimated pick-up time or the close/cancel time.

When all updates have been made and new comments have been added, select the Update button to update the reservation on the data base. The update time for the reservation is set to the current time, the update ID to the ID of the user currently logged on, and the update reason is set to Administrative Update.

During the update process (i.e., after the Retrieve Info button is chosen), the operational date and reservation number text boxes are disabled. If they were able to be changed, then the information in the window would not correspond to the values in these text boxes. To enable them again and clear the information in the window, choose the Clear button. The Cancel button will close the window.



**AIRPORT
ADMINISTRATIVE
UPDATE
MODULE**



MODULE V: AIRPORT ADMINISTRATIVE UPDATE

Module time is one and a half hours.



Prerequisites

Before you can begin this module you must be logged onto the system.



Module Contents

- Topic A: User Update
- Topic B: Counter Update
- Topic C: Airport Update
- Topic D: Codes Table Update
- Topic E: Airline Update

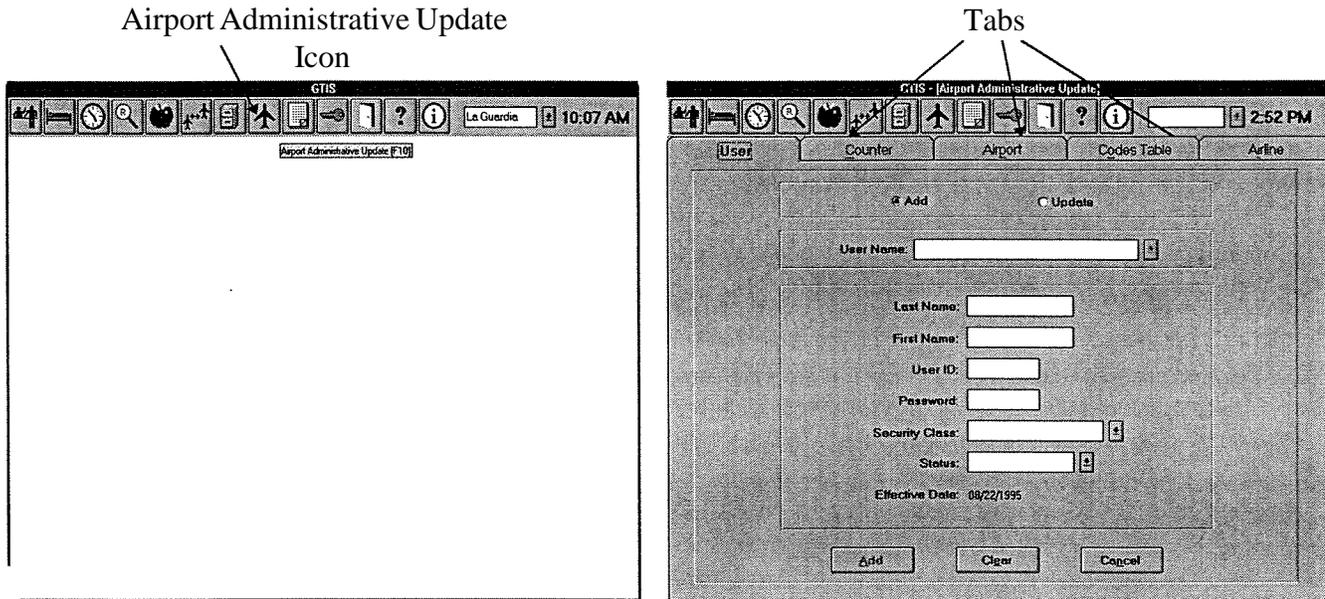


Module Overview

This module describes the GTIS functions needed by airport management to maintain the data on the system. The five topics in the module correspond to the five tabs in the Airport Administrative Update window, each of which performs a specific GTIS function. The User Update window provides the ability to add and update user information. The Counter Update window updates counter information for any of the counters at a given airport. The Airport Update window allows users to update airport information for any of the airports. The Codes Table Update window gives airport management the ability to add or update codes information such as cancellation reasons, terminals, etc. The Airline Update window allows users to add, update, or delete information on airline locations at the airports.



Airport Administrative Update Introduction



The five windows in the Airport Administrative Update module may be accessed by selecting the Airport Administrative Update icon from the toolbar or hitting the F10 key. The user must select the type of update they wish to make. Each type of update has a corresponding "tab" that brings up a specific update window. To access the Airport Administrative Update window, follow the steps below:



STEP:

1. Press F10 or point and click on the Aircraft Icon.
2. When the Administrative Update window is displayed, it automatically highlights the User tab as the default.



Topic A: User Update

Topic time is .25 hours.

Topic Contents

Topic A: User Update

Exercise 1: Walkthrough and exercise that gives participants the opportunity to practice the User Update process.



Topic Overview

One of the GTIS administration tasks is adding or updating user information. Users may not be deleted, but their Status may be changed to show they are "Inactive" or "Terminated."

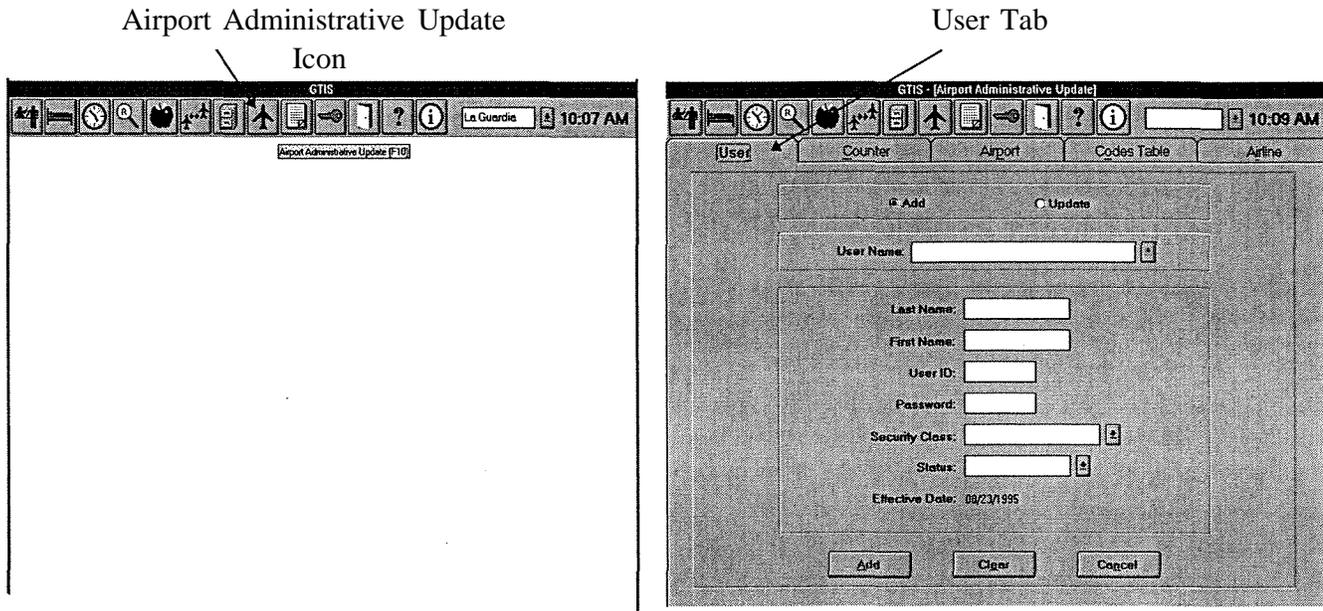
Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Add new user to the data base.
2. Make changes to existing user information in the data base.



User Update Introduction

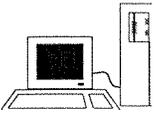


User information may be added and updated using the User Update window. This window may be invoked by selecting the Airport Administrative Update icon from the toolbar and selecting the User tab.

The User Update window contains Add and Update radio buttons which are used to select the desired function. To add a new user to the system, the Last Name, First Name, User ID, Password, Security Class, and Status for the new user must all be entered. The Effective Date is defaulted to the current date.

To update a user's information, the window provides the User Name box for the selection of the user's name. When a user is selected, all the user's information will appear in the text boxes. Users may be "deleted" by updating their status. (The User ID and Effective Date may not be changed.) After changes are made, the Update button is used to save the information.

The Clear button will allow the user to clear all entries in the window fields before the Add or Update push button has been chosen. The Cancel push button will close the window without saving any additions or changes.



Airport Administrative Update Procedures

User Update - Add

User Update Window

User Tab

GTIS - [Airport Administrative Update]

User Counter Airport Codes Table Airline

Add Update

User Name: []

Last Name: []

First Name: []

User ID: []

Password: []

Security Class: []

Status: []

Effective Date: 08/23/1995

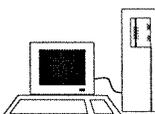
Add Clear Cancel

To add or update user data, follow the steps below and on the next page:



STEP: Add User:

1. Select the User tab if not already highlighted.
2. Choose the Add radio button.
3. Enter last name of new user on the Last Name box.
4. Type in first name of new user on the First Name box..
5. Type in the User ID in the User ID box.
6. Type in the user password in the Password box.
7. Select the appropriate row from the Security Class combo box.
8. Select the appropriate row from the Status combo box.
9. Select the Add button to save new information.



Airport Administrative Update Procedures

User Update - Update

User Tab

The screenshot shows the 'GTIS - [Airport Administrative Update]' window. The 'User' tab is active, and the 'Update' radio button is selected. The form contains the following fields and controls:

- User Name:** A text box with a dropdown arrow on the right.
- Last Name:** A text box.
- First Name:** A text box.
- User ID:** A text box.
- Password:** A text box.
- Security Class:** A dropdown menu.
- Status:** A dropdown menu.
- Effective Date:** 08/23/1995
- Buttons:** Add, Clear, and Cancel.

1. Select User tab.
2. Choose the Update radio button.
3. Tab to the User Name combo box, and begin typing the last name of the user to be updated.
4. Select the correct user name from the drop down list.
5. Make the appropriate changes to the user information displayed in the text boxes.
6. Select the appropriate row from the Security Class combo box if it is necessary to change to a different class.
7. Select the appropriate row from the Status combo box if it is necessary to change to a different status.
8. Select the Update push button to save changes.

Note: Users are "deleted" by changing Status to "Inactive" or "Terminated."



Topic B: Counter Update

Topic time is .25 hours.

Topic Contents

Topic B: Counter Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to practice the Counter Update process.



Topic Overview

The Counter Update window is used to add and update counter information.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

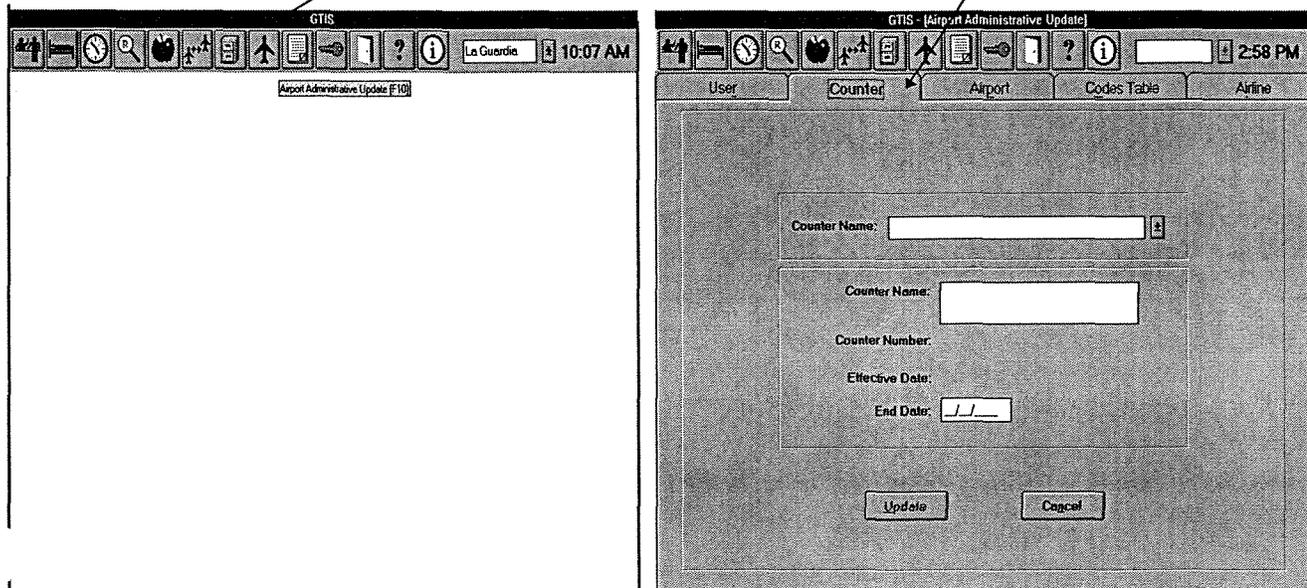
1. Make changes to existing counter information in the data base.



Counter Update Introduction

Airport Administrative Update icon

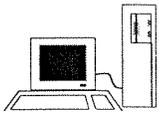
Counter Tab



Counter information may be changed using the Counter Update window. This window may be invoked by selecting the Airport Administrative Update icon from the toolbar and selecting the Counter tab.

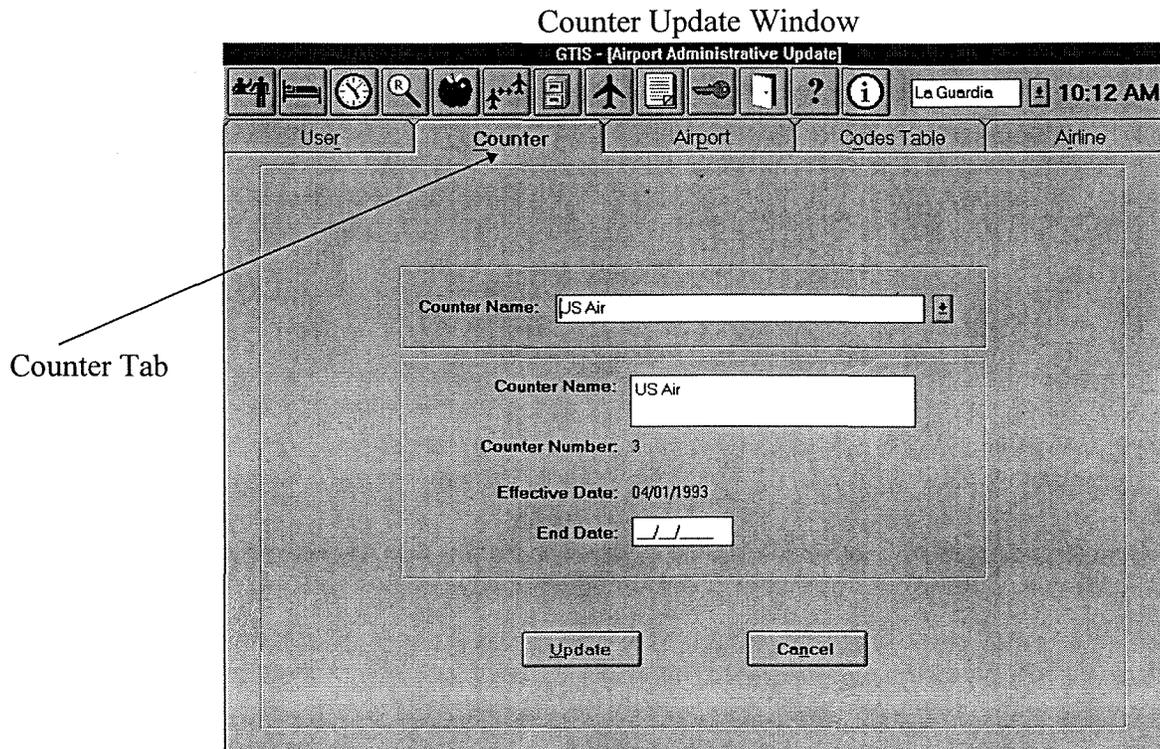
To update a counter, select the counter name for a particular airport and make changes to the information that is displayed in the window. After changes are made, the Update push button is used to save the information. To make a counter inactive, an End Date must be entered.

The Cancel push button will close the window without saving any additions or changes.



Airport Administrative Update Procedures

Counter Update



To update counter data, follow the steps below:



- STEP:**
1. Select the Counter tab.
 2. Tab to the Counter Name combo box and begin typing the name of the counter to be updated.
 3. Select the correct counter name from the drop down list.
 4. Update the Counter Name or End Date as necessary.
 5. Select the Update button to save changed information.

- Notes:
- a) When typing in dates, be sure to include the entire year, for example, 01/01/1998.
 - b) A counter is made "inactive" by updating the End Date.



Topic C: Airport Update

Topic time is .25 hours.

Topic Contents

Topic C: Airport Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to practice the Airport Update process.



Topic Overview

The Airport Update window is used to update and add specific airport contact information.

Topic Objective

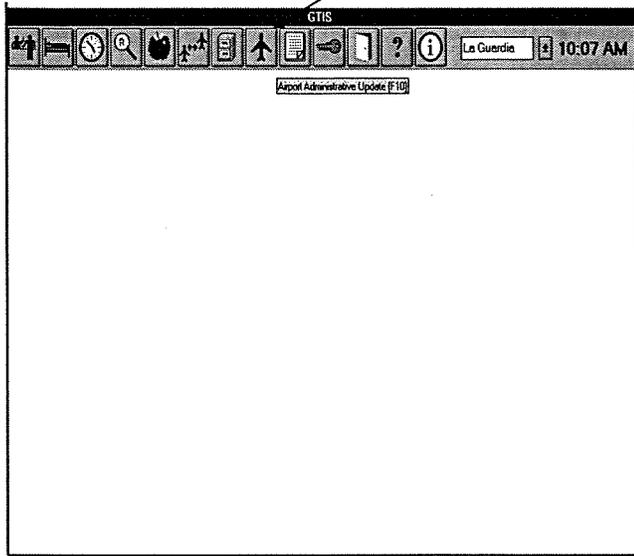
After completion of the topic lecture and exercise, participants will be able to:

1. Make changes to existing airport information in the data base.

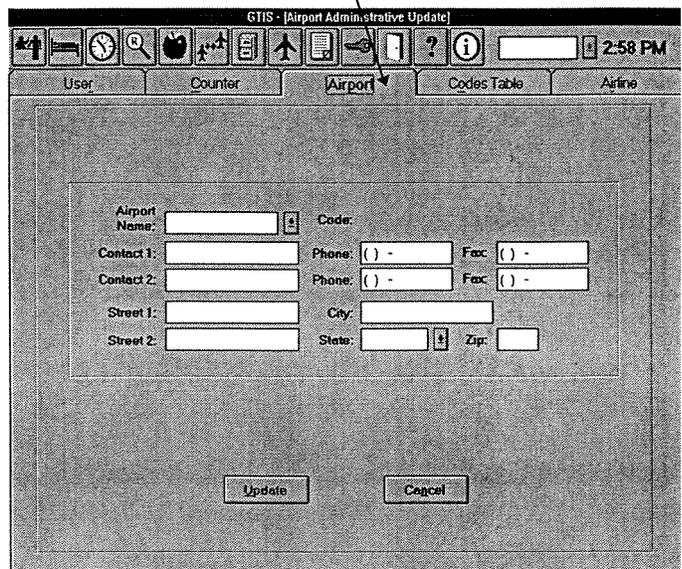


Airport Update Introduction

Airport Administrative Update icon



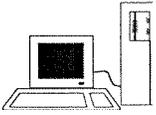
Airport Tab



Airport information may be changed using the Airport Update window. This window may be invoked by selecting the Airport Administrative Update icon from the toolbar. Then select the Airport tab.

Users can view and update airport information for any airport. Users may update the following information: the airport name, contact persons 1 and 2 (Operations Managers), respective addresses, phones, fax numbers, city, state, and zip.

The Cancel push button will close the window without saving any additions or changes.



Airport Administrative Update Procedures

Airport Update

Airport Update Window

Airport Tab

GTIS - [Airport Administrative Update]

User Counter **Airport** Codes Table Airline

Airport Name: Code:

Contact 1: Phone: () - Fax: () -

Contact 2: Phone: () - Fax: () -

Street 1: City:

Street 2: State: Zip:

Update Cancel

To update airport data, follow the steps below:



- STEP:
1. Select the Airport tab.
 2. Tab to the Airport Name combo box and select the airport to be updated.
 3. Update the appropriate information as necessary.
 4. Select the Update button to save changed information.



Topic D: Codes Table Update

Topic time is .25 hours.

Topic Contents

Topic D: Codes Table Update

Exercise 1: Walkthrough and exercise that gives participants the opportunity to practice the Codes Table Update process.



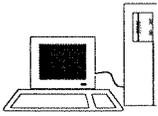
Topic Overview

One of the GTIS administration tasks is adding or updating codes used in the system, such as the reasons used in canceling reservations or updating reservations. Codes may not be deleted, but their display status check box may be changed so they are not displayed when GTIS is in use.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

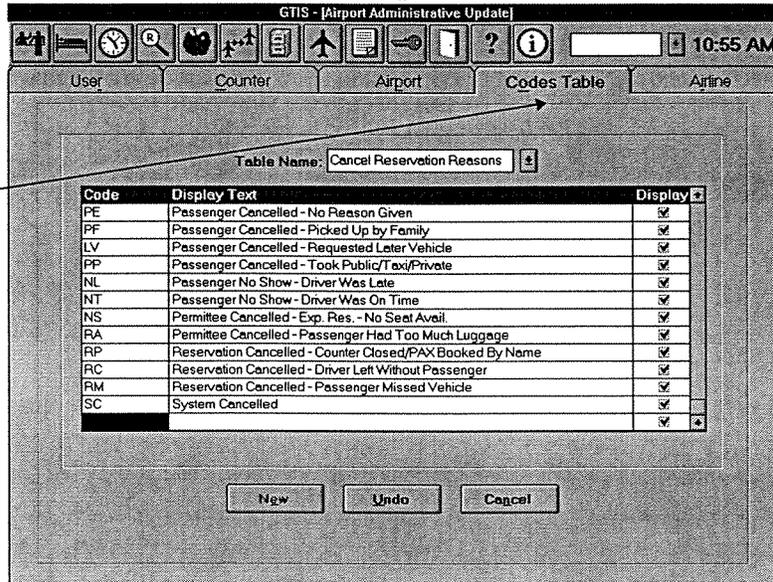
1. Add new codes to the data base.
2. Make changes to existing codes information in the data base.



Airport Administrative Update Procedures
Codes Table Update - Add

Codes Table Update Window

Codes Table
Tab

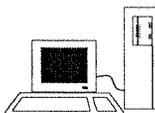


To add or update codes data, follow the steps below and on the next page:



STEP: Add Code:

1. Select the Codes Table tab.
2. Tab to the Table Name combo box and select the desired table.
3. Choose the "New" button.
4. Enter the new (unique) code on the highlighted blank cell of the first column.
5. Move to the next cell of the new row. Type in the display text.
6. Note that the display indicator is automatically checked. Click on the check box if you do not want the new row displayed in GTIS.
7. Click on or arrow up to another row to save the new code information.



Airport Administrative Update Procedures
Codes Table Update- Update

Codes Table Update Window

Codes Table
 Tab

Code	Display Text	Display
CE	Carrier Arrived Early - No Passenger at Counter	<input checked="" type="checkbox"/>
XO	Other	<input checked="" type="checkbox"/>
PC	Passenger Cancelled - Changed Carriers	<input checked="" type="checkbox"/>
AT	Passenger Cancelled - Changed Dest./Alternate Trans.	<input checked="" type="checkbox"/>
SP	Passenger Cancelled - Changed Dest./Same Permittee	<input type="checkbox"/>
CS	Passenger Cancelled - Changed Stop	<input checked="" type="checkbox"/>
PO	Passenger Cancelled - Dispatcher Overbooked Vehicle	<input checked="" type="checkbox"/>
PD	Passenger Cancelled - Driver Was Late	<input checked="" type="checkbox"/>
PV	Passenger Cancelled - No Drivers/Vehicles Available	<input checked="" type="checkbox"/>
PE	Passenger Cancelled - No Reason Given	<input checked="" type="checkbox"/>
PF	Passenger Cancelled - Picked Up by Family	<input checked="" type="checkbox"/>
LV	Passenger Cancelled - Requested Later Vehicle	<input checked="" type="checkbox"/>
PP	Passenger Cancelled - Took Public/Taxi/Private	<input checked="" type="checkbox"/>



STEP: Update Code:

1. Select Codes Table tab.
2. Tab to the Table Name combo box and select the desired table.
3. The codes, display text, and display indicators of the chosen table will be displayed in the grid.
4. Type in changes to the display text or click on the display indicator of the desired row.
5. Click on or arrow up or down to another row to save the updated code information.



Topic E: Airline Update

Topic time is .25 hours.

Topic Contents

Topic E: Airline Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to practice the Airline Update process.



Topic Overview

The Airline Update window is used to add and update airline location information.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

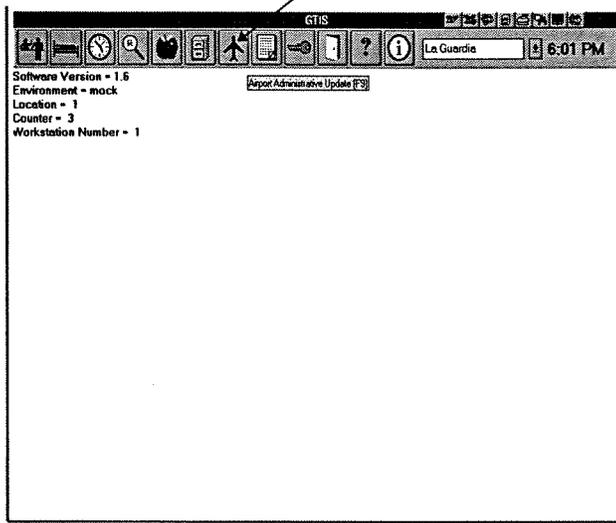
1. Make changes to existing airline location information in the data base.



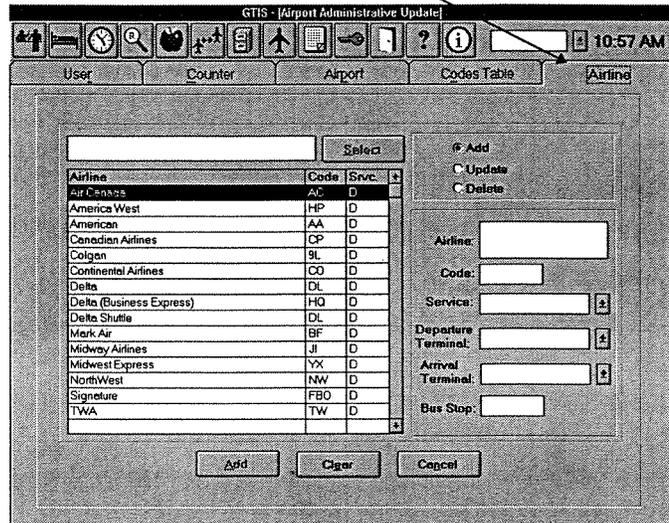
Airline Update

Introduction

Airport Administrative Update icon



Airline Tab



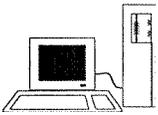
Airline location information may be changed using the Airline Update window. This window may be invoked by selecting the Airport Administrative Update icon from the toolbar and selecting the Airline tab. The grid on the left side of the window will display the information for all current airlines at the airport selected in the airport combo box, including their names, codes and service types ("D" is for domestic and "I" is for international.) Note that changing the airport in the airport combo box at the backdrop will change the grid and terminal information.

To add a new airline, select the Add radio button. Type in the new airline name on the Airline text box on the right side of the window. Enter the airline code in the Code text box. From the Service combo box, select the appropriate service type (domestic, international, or both). Select the Departure Terminal and Arrival Terminal locations for the new airline from the corresponding combo boxes. The bus stop information is optional. However, if needed, type in the stop in the Bus Stop text box. The Add push button located at the bottom of the window is used to save the new airline information.

To update an airline, select the Update radio button. Users may find the airline to be updated using several methods: type the airline name in the text box on the left of the Select push button, use the up and down arrow keys to search the grid for the airline, or use the mouse and the scroll arrows. Once found, the airline that is highlighted on the grid will be selected when the user hits the Enter key or when Select is pressed or when the highlighted row is clicked twice. All the current information about the airline will be displayed on the window for the particular airport that is selected on the backdrop. Users may now update any of the information showing on the window. The Update push button is used to save the new airline information.

fo delete an airline, select the Delete radio button. Select the airline the same way as when updating airline information. In the delete mode, the system will not allow users to update any of the airline data shown on the window. Select the Delete push button to delete the airline. A message will appear confirming the action that the user wants to take. Responding "Yes" to the message will delete the airline. Responding "No" will return to the window without deleting the selected airline.

The Clear push button will clear all entries in the window. The Cancel push button will close the window without saving any additions or changes.



Airport Administrative Update Procedures
Airline Update- Add Airline

Airline Update Window

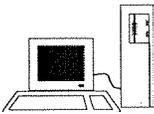
Airline Tab

Airline	Code	Svc.
Air Canada	AC	D
America West	HP	D
American	AA	D
Canadian Airlines	CP	D
Colgan	9L	D
Continental Airlines	CO	D
Delta	DL	D
Delta (Business Express)	HQ	D
Delta Shuttle	DL	D
Mark Air	BF	D
Midway Airlines	JJ	D
Midwest Express	YX	D
NorthWest	NW	D
Signature	FBO	D
TWA	TW	D

To add airline data, follow the steps below:

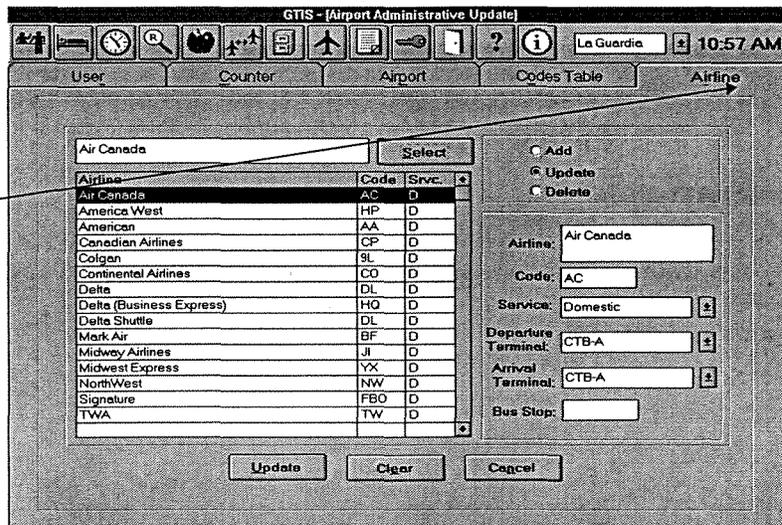


- STEP:
1. Select the Airline tab.
 2. Select the Add radio button if not already highlighted.
 3. Type in the new airline name in the Airline text box.
 4. Type in the new airline code in the Code text box.
 5. Select the service type for the new airline from the Service combo box.
 6. Select the departure terminal name for the new airline from the Departure Terminal combo box.
 7. Select the arrival terminal name for the new airline from the Arrival Terminal combo box.
 8. Type in the bus stop or stops (if different for arrival and departure terminals) in the Bus Stop text box. This is optional.
 9. Select the Add push button to save the new airline information.



Airport Administrative Update Procedures
 Airline Update- Update Airline

Airline Update Window

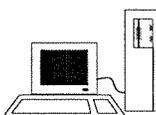


Airline Tab

To update airline data, follow the steps below:

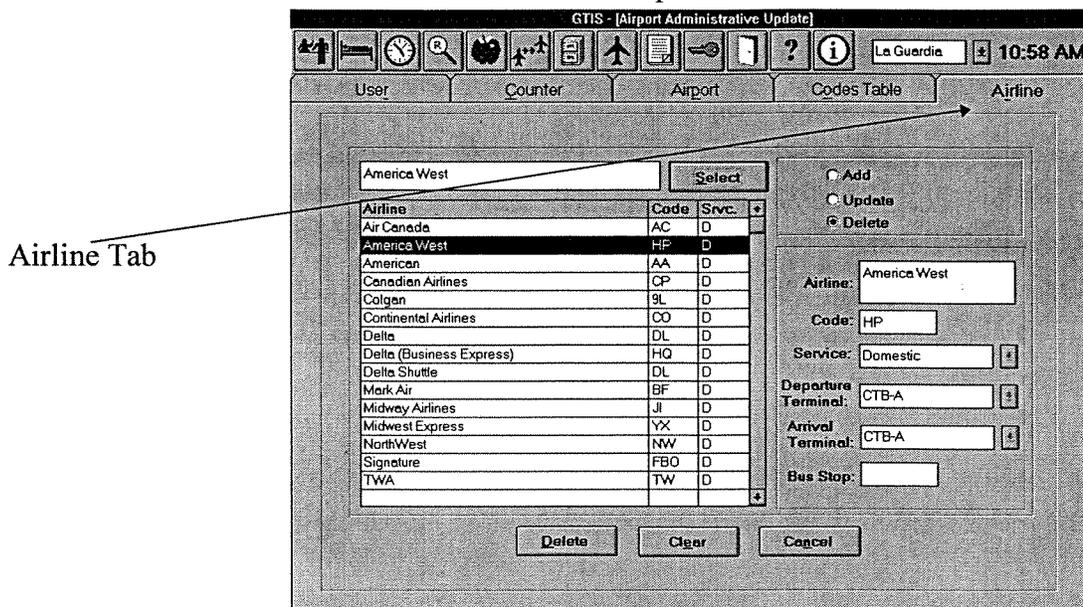


- STEP:
1. Select the Airline tab.
 2. Select the Update radio button.
 3. Find the Airline to be updated by any of the following methods: select the Airline text box and type in the airline name; use the up and down arrow key to find the airline on the grid; use the mouse and the scroll arrows to find the row and click on the airline row once found.
 4. Choose the Select push button. The window will display all information about the airline selected.
 5. Update the airline name, code, service, terminals or bus stop as necessary.
 6. Select the Update push button to save the new airline information.



Airport Administrative Update Procedures
Airline Update- Delete Airline

Airline Update Window



To delete airline data, follow the steps below:



- STEP:
1. Select the Airline tab.
 2. Select the Delete radio button.
 3. Find the Airline to be deleted by any of the following: select the Airline text box and type in the airline name; use the up and down arrow key to find the airline on the grid; use the mouse to scroll through the scroll arrow or scroll bar on the grid and clicking on the airline row once found.
 4. Select the Select push button. The window will display all information about the airline selected. You may not update any of the data when the system is in the delete mode.
 5. Select the Delete push button to delete the airline.
 6. The window will display a message asking you to confirm the deletion by selecting either "Yes" or "No." Select the appropriate choice.
 7. If "Yes" is selected, the system will delete the airline.
 8. If "No" is selected, the system returns to the window without changing anything.



**DESTINATION/STOP,
CARRIER, FARE &
PUBLIC/TAXI UPDATE
MODULE**

**MODULE IV: DESTINATION/STOP, CARRIER, FARE, & PUBLIC/TAXI UPDATE**

Module time is 2 hours.



Prerequisites

Before you can begin this module you must be logged onto the system.



Module Contents

- Topic A: Destination/Stop Update
- Topic B: Carrier Update
- Topic C: Fare Update
- Topic D: Public/Taxi Update



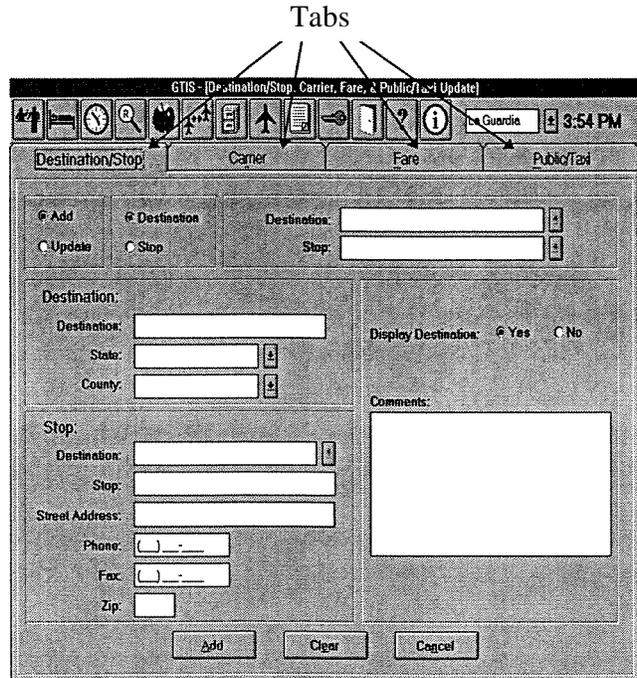
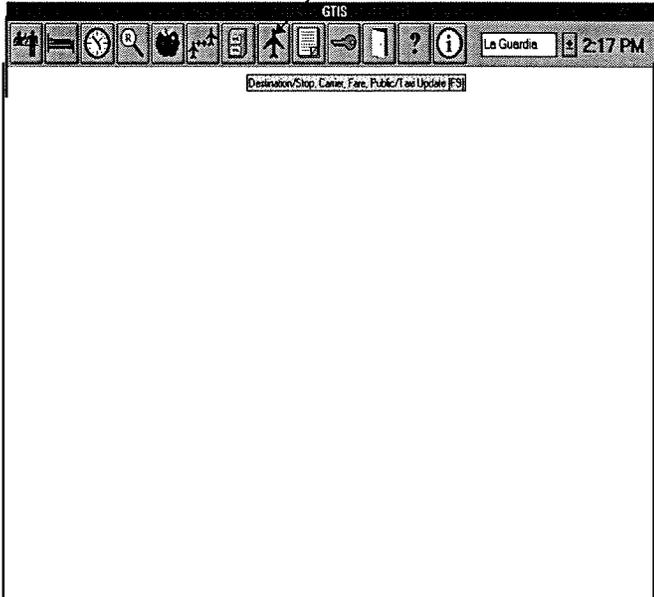
Module Overview

This module contains four topics concerned with updating the GTIS data base with new information. Each topic corresponds to an update window. The Destination/Stop Update window allows users to add and update destination and stop information. The stops include hotel/site address information as well. Users may add and update carrier contact information and comments using the Carrier Update window. Fares and fare comments may be updated using the Fare Update window. The Public/Taxi Update window allows users to add and update information for public transportation and taxi service for a given destination.



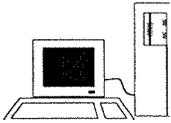
Destination/Stop, Carrier, Fare & Public/Taxi Update Information Introduction

Destination/Stop, Carrier, Fare & Public/Taxi Update icon



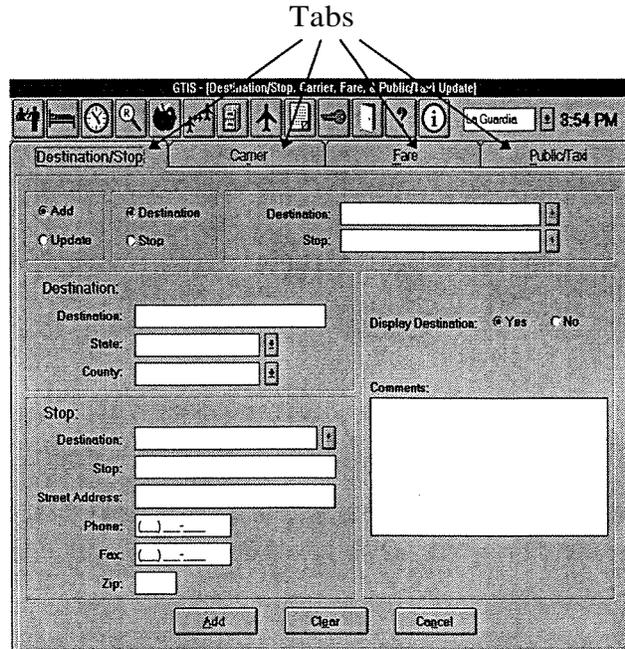
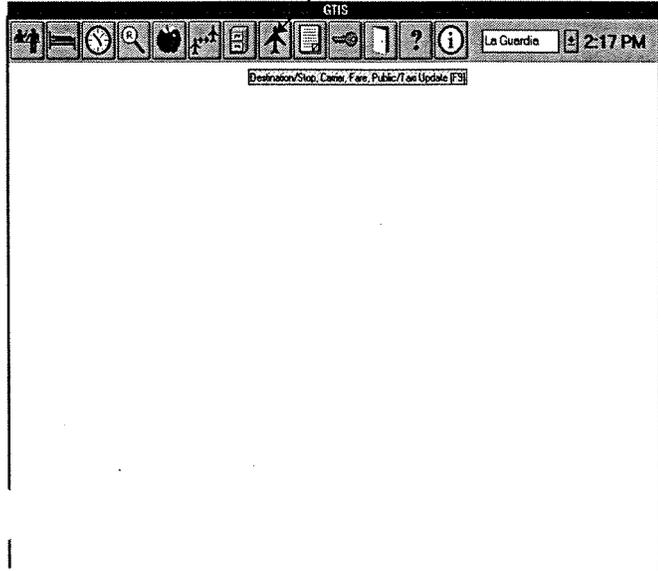
The four windows in the Destination/Stop, Carrier, Fare & Public/Taxi module may be accessed by selecting the corresponding icon from the toolbar or hitting the F9 function key. The user must select the type of update they wish to make. Each type of update has a corresponding "tab." To bring up a specific update window, the user need only click on the desired tab.

The user has a choice of which airport database may be updated. Each Update window has different layouts for providing the data fields corresponding to the type of update being done.



Destination/Stop, Carrier, Fare & Public/Taxi Update Procedures
Destination/Stop, Carrier, Fare & Public/Taxi Update Window

Destination/Stop, Carrier, Fare & Public/Taxi Update icon



To access the Destination/Stop, Carrier, Fare & Public/Taxi Update window, follow the steps below:



STEP:

1. Point and click on the File Cabinet icon. This will bring you to the Destination/Stop, Carrier, Fare & Public/Taxi Update window.
2. When the Destination/Stop, Carrier, Fare & Public/Taxi Update window is displayed, it automatically highlights the Destination/Stop tab as the default.



Topic A: Destination/Stop Update

Topic time is .25 hours.

Topic Contents

Topic A: Destination/Stop Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to use the Destination/Stop Update window.



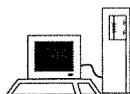
Topic Overview

Users will add a destination/stop or update an existing destination or stop on the data base. This topic will bring the users through the steps in making changes to the data related to the destinations or stops. Stops include popular sites and hotels in New York and other destinations.

Topic Objective

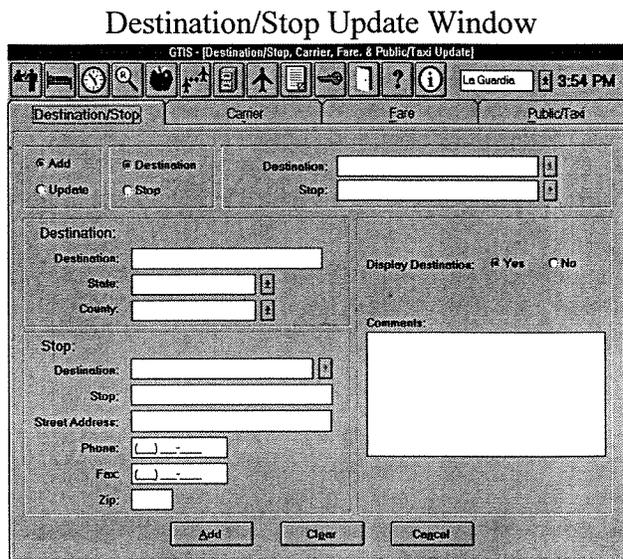
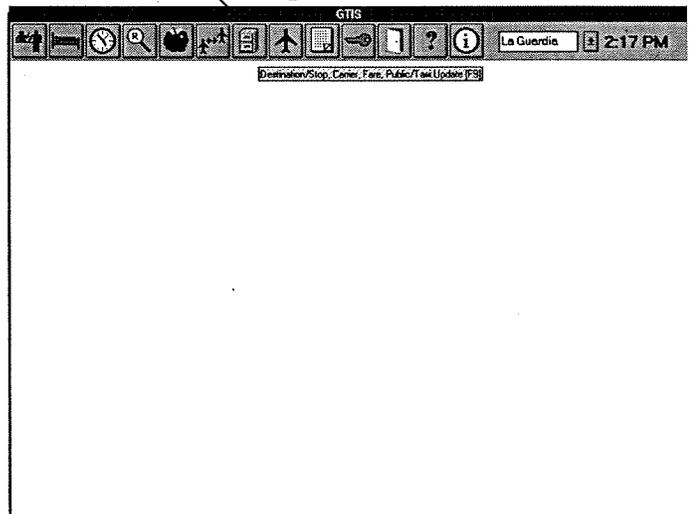
After completion of the topic lecture and exercise, participants will be able to:

1. Add a new destination or stop to the data base.
2. Make changes to existing destination or stop in the data base.



Destination/Stop Update Introduction

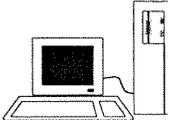
Destination/Stop, Carrier, Fare & Public/Taxi
Update icon



The Destination/Stop window is invoked by selecting the Destination/Stop, Carrier, Fare & Public/Taxi Update icon from the toolbar and selecting the Destination/Stop tab. The window has Add and Update radio buttons for choosing the desired function, and Destination and Stop radio buttons for selecting whether destinations or stops will be added or updated.

There is no delete function in this window. The "Yes" or "No" radio buttons on the right side of the window (next to the label that says "Display Destination" or "Display Stop", depending on which radio button is currently selected) are used to indicate if a destination or stop will be shown during the destination/stop inquiry process. The reason for not displaying a certain destination or stop might be that management has decided it is not being serviced for the time being from this particular airport. That destination or stop can be displayed again by going to Update and clicking on the "Yes" button.

The Comments box is used to add or update comments specific to a destination or stop, although destinations and stops may be added without comments. To enter comments to a destination that already exists, the destination must be updated. The Clear button will allow the user to clear all entries in the window before the Add or Update button has been chosen. The Cancel push button will close the update window without saving changes.



Destination/Stop, Carrier, Fare & Public/Taxi Update Procedures

Destination/Stop Update- Add Destination

Destination/Stop Update Window

GTIS - [Destination/Stop, Carrier, Fare, & Public/Taxi Update]

La Guardia 3:54 PM

Destination/Stop	Carrier	Fare	Public/Taxi
<input checked="" type="radio"/> Add <input type="radio"/> Update	<input checked="" type="radio"/> Destination <input type="radio"/> Stop	Destination: <input type="text"/> Stop: <input type="text"/>	Display Destination: <input checked="" type="radio"/> Yes <input type="radio"/> No
Destination: State: <input type="text"/> County: <input type="text"/>	Comments: <div style="border: 1px solid black; height: 50px;"></div>		
Stop: Destination: <input type="text"/> Stop: <input type="text"/> Street Address: <input type="text"/> Phone: <input type="text"/> Fax: <input type="text"/> Zip: <input type="text"/>			
<input type="button" value="Add"/> <input type="button" value="Clear"/> <input type="button" value="Cancel"/>			

Display radio buttons

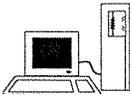
When adding a destination, all the new destination information must be entered into the "Destination" area of the window. To add a destination, follow the steps below:



STEP: Add Destination:

1. Choose the Destination/Stop tab if it is not already chosen.
2. Select the Add radio button.
3. Select the Destination radio button.
4. In the Destination text box of the "Destination" area of the window, type in the new destination name.
5. Select the appropriate state from the State combo box.
6. Select the appropriate county from the County combo box.
7. Enter any comments for the destination in the Comments text box.
8. Choose the Add button on the bottom of the window to add the destination.

Note: If the new destination is not to be displayed during the Destination Inquiry process, select the "No" radio button next to the "Display Destination" label.



Destination/Stop, Carrier, Fare & Public/Taxi Information Procedures
 Destination/Stop Update- Add Stop

Destination/Stop Update Window

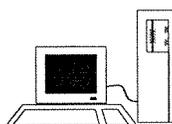
When adding a stop, all the new stop information must be entered into the "Stop" area of the window. To add a stop, follow the steps below:



STEP: Add Stop:

1. Choose the Destination/Stop tab if it is not already chosen.
2. Select the Add radio button.
3. Select the Stop radio button.
4. Select the destination corresponding to the stop to be added from the Destination combo box in the "Stop" section of the window.
5. Type in the name of the new stop in the Stop text box.
6. Type in the address of the stop in the Street Address text box. Do the same for the Phone, Fax, and Zip text boxes.
7. Enter any comments for the stop in the Comments text box.
8. Choose the Add button on the bottom of the window to add the stop.

Note: If the new stop is not to be displayed during the Destination Inquiry process, select the "No" radio button next to the "Display Stop" label.



Destination/Stop, Carrier, Fare & Public/Taxi Information Procedures

Destination/Stop Update- Update Destination

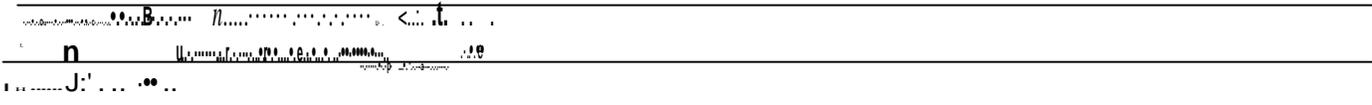
Destination/Stop Update Window

When updating a destination, all the new destination information must be entered into the "Destination" section of the window. To update destination data, follow the steps below:



STEP: Update Destination:

1. Select Destination/Stop tab if it is not already chosen.
2. Select the Update radio button.
3. Select the Destination radio button.
4. Select the destination to be updated from the Destination combo box at the top of the window. The data for this destination will then be displayed in the "Destination" section of the window.
5. Change the destination name, state, county, or comments as needed in their respective text boxes.
6. If the display status of the destination has changed, choose the appropriate radio button next to the "Display Destination" label.
7. Select the Update button at the bottom of the window to update the destination.



Topic time is .25 hours.

Topic Contents

Topic B: Carrier Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to practice the Carrier Update process.



Topic Overview

Users will need to add carrier information or update existing carrier information on the data base. This topic will bring the users through the steps for making changes to the data related to carriers.



Topic Objective

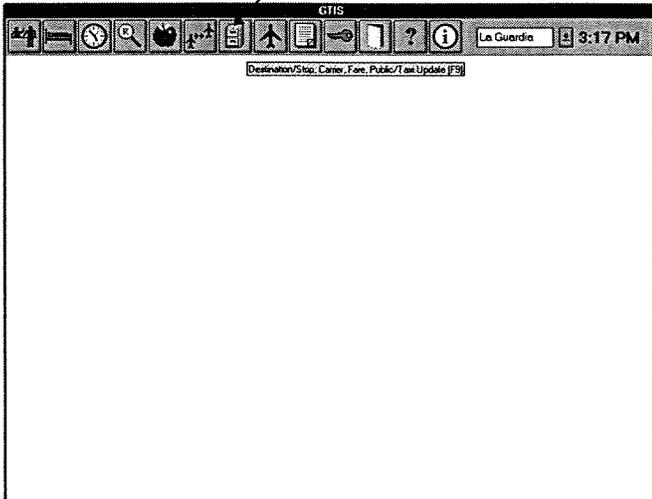
After completion of the topic lecture and exercise, participants will be able to:

1. Add new carrier to the data base.
2. Make changes to existing carrier information in the data base.

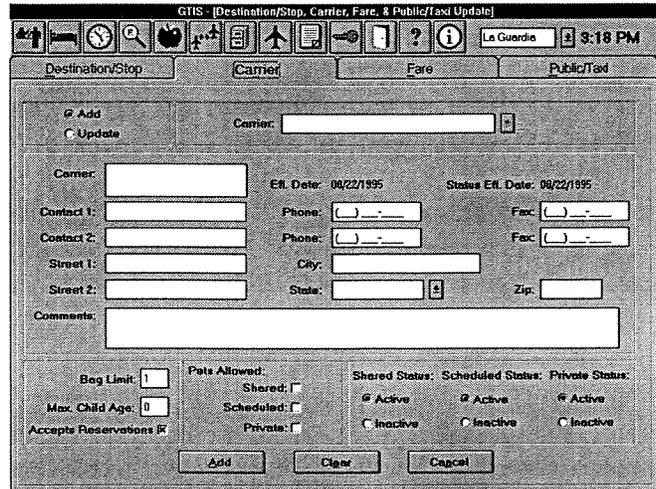


Carrier Update Introduction

Destination/Stop, Carrier, Fare & Public/Taxi Update icon



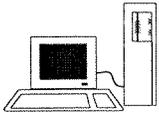
Carrier Update Window



The Carrier Update window is invoked by selecting the Destination/Stop, Carrier, Fare & Public/Taxi Update icon from the toolbar and then selecting the Carrier tab. The window contains Add and Update radio buttons to select which function to perform. To add a carrier, the user selects the Add radio button, enters the carrier information and chooses the Add push button.

Carrier data may also be updated. When the Update radio button is selected, the window activates the Carrier combo box so that a user can choose the carrier to be updated. The window then displays the current data for the carrier in the fields below. The user may then update the carrier information and choose the Update push button at the bottom to save these changes. The effective date for the carrier remains the same as it was, but the status effective date changes to the current date if a status has changed. A carrier may be "deleted" by assigning "Inactive" to all its services through the update window.

The Clear button will allow the user to clear all entries in the window fields before the Add or Update push button has been clicked. The Cancel push button will take the user out of the window.



Destination/Stop, Carrier, Fare & Public/Taxi Update Procedures
Carrier Update -Add

Carrier Tab

Carrier Update Window

GTIS - [Destination/Stop, Carrier, Fare, & Public/Taxi Update]

La Guardia 3:18 PM

Destination/Stop **Carrier** Fare Public/Taxi

Add
 Update

Carrier:

Carrier: Eff. Date: 08/22/1995 Status Eff. Date: 08/22/1995

Contact 1: Phone: Fax:

Contact 2: Phone: Fax:

Street 1: City:

Street 2: State: Zip:

Comments:

Bag Limit: Pets Allowed: Shared Status: Scheduled Status: Private Status:

Max. Child Age: Shared: Active Active Active

Accepts Reservations Scheduled: Inactive Inactive Inactive

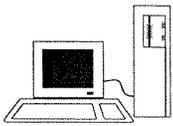
Private:

To add carrier data, follow the steps below:



STEP:

1. Select the Carrier tab.
2. Select the Add radio button. Notice that the Effective Date and Status Effective Date default to today's date.
3. Enter the carrier information (name, contacts, phone and fax numbers, street address, city, state, and zip) into the appropriate fields. The Name, Contact 1, Contact 1 Phone, Street 1, City and State fields are required and must be filled in for the carrier to be added.
4. Type any comments into the Comments text box.
5. Enter the number of bags allowed by the carrier into the Bag Limit text box.
6. Enter the age limit for which the carrier offers a child fare into the Max. Child Age text box.
7. If the carrier accepts reservations, make sure the Accepts Reservations check box is checked. If not, make sure it is unchecked.
7. Check the boxes for each service type for which pets are allowed, if any.
8. Select the appropriate status for each service type ("Active" or "Inactive").
9. Choose the Add push button to save the information.



Destination/Stop, Carrier, Fare & Public/Taxi Update Procedures
Carrier Update- Update

Carrier Update Window

Carrier Tab

To update carrier data, follow the steps below:



- STEP:
1. Select the Carrier tab.
 2. Select the Update radio button.
 3. In the Carrier combo box, select the carrier to be updated.
 4. The existing information for the carrier will be displayed on the fields below. Update any or all of the fields as necessary.
 5. Make sure the bag limit, maximum child age, accepts reservations status, pets check boxes, and status for each service type are set correctly.
 6. Once satisfied with the changes made, select the Update push button at the bottom of the window to save these changes.



Topic C: Fare Update

Topic time is .25 hours.

Topic Contents

Topic C: Fare Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to practice the Fare Update process.



Topic Overview

Users will need to add fare information or update existing fare information for a carrier or carriers on the data base. This topic will bring the users through the steps for making changes to the fare data.

Topic Objective

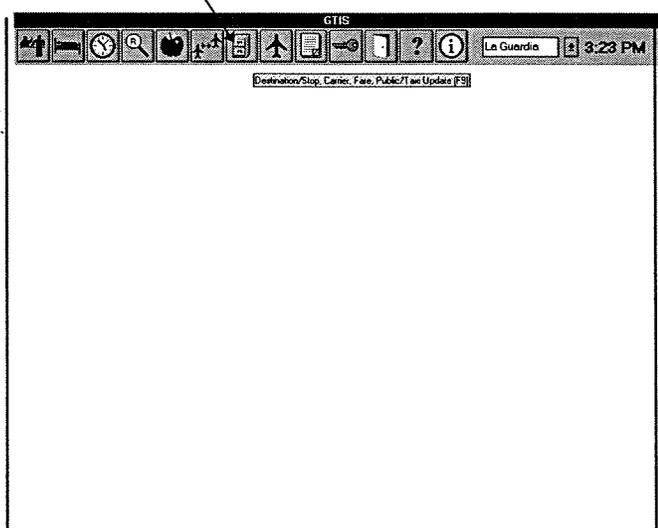
After completion of the topic lecture and exercise, participants will be able to:

1. Add new carrier fare to the data base.
2. Make changes to existing carrier fare information in the data base.

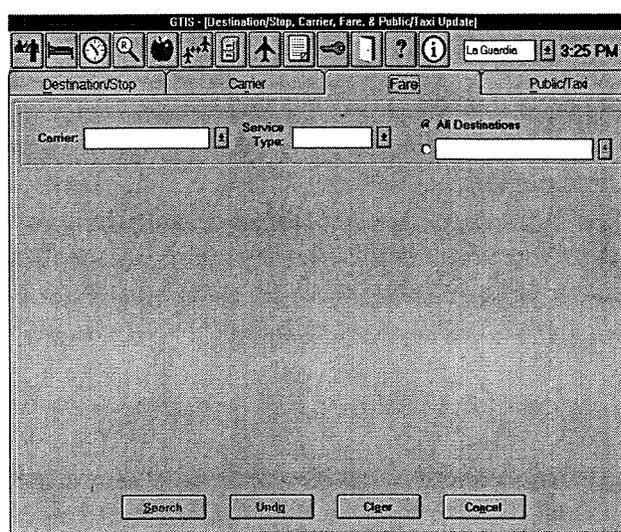


Fare Update Introduction

Destination/Stop, Carrier, Fare & Public/Taxi icon



Fare Update Window



The Fare Update window is invoked by selecting the Destination/Stop, Carrier, Fare & Public/Taxi Update icon from the toolbar and selecting the Fare tab. The Fare Update window will allow fare information for the Scheduled, Shared Door-to-Door, and Private service types to be added and updated.

To update fares, a specific carrier and service type must be selected. The window will display a grid that shows all current destination/stops for the carrier/service type specified. Each row contains the carrier's destination, stop, state, county, fare columns, effective date, end date, transfer indicator, end service indicator, and comments. Updating is done one row at a time.

To add a fare, a user must simply enter the appropriate information into the correct row. The first fare column and an effective date always has to be entered, and the effective date must be in the future. All other fields are optional within a row. Information is saved by clicking on another row or hitting the down or up arrow key on the keyboard to move to another row.

To change existing fares, the user selects a row and makes updates to the desired fare values. The user also keys in the effective date for the new fare(s), in effect overwriting the current effective date. When the user moves to another row indicating that the update task is completed for the current row, the grid displays a duplicate of the destination/stop row just updated with the "old" fare data reflecting the effective date of old fare(s) and having an end date of one day prior to the effective date of the new fare(s). This allows the user to review exactly what was updated as well as to indicate that there is a continuity in the historical records of the fare rates for this particular destination/stop of a given carrier.

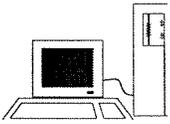


Fare Update Introduction- continued

To delete a fare from the data base, the user clicks on the end service indicator so it displays a check mark. The system displays the current date in the end date field indicating that effective immediately, the fare is being made "inactive".

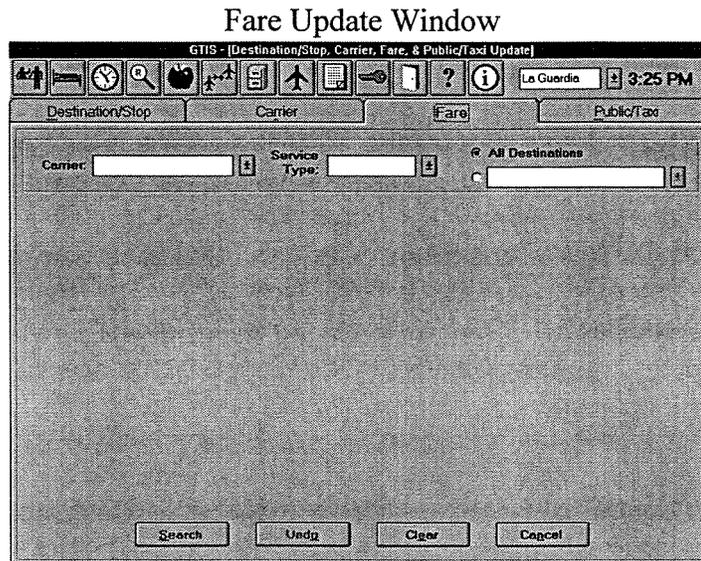
The system will save the deletion when the user moves on to another row. It is rare that an independent deletion such as this is performed because this will mean that the carrier will not be serving this destination/stop anymore. What usually happens is that a fare is "deleted" when a new fare replaces it as when fare is updated as described above.

The Clear push button will clear the grid out of the window leaving just the Carrier, Service Type and Destination combo boxes. The Cancel push button will close the Fare Update window.



Update Information Procedures

Fare Add



To add fare data, follow the steps below:



STEP: Add fare:

1. Select the Fare tab.
2. Select the carrier from the Carrier combo box.
3. Select the service type from the Service Type combo box.
4. If adding fares to only one destination, choose the radio button next to the combo box on the right side of the window, and select the desired destination from within this combo box (this is optional).
5. Select the Search button. The window displays a grid for the all destinations and stops for the selected carrier (if no destination was specified) with all current fare information.
7. Find the destination and stop for which fare(s) are going to be added. Add new fares in the appropriate column(s). On the same row, enter the effective date. Add comments for this fare if necessary.
8. Click on the transfer indicator if a transfer is required at this stop.
9. Select another row of the grid to save the changes to this fare row.



Topic D: Public/Taxi Update

Topic time is .25 hours.

Topic Contents

Topic D: Public/Taxi Update

Exercise 1: Walkthrough and exercise that give participants the opportunity to practice the Public/Taxi Update process.



Topic Overview

Users will need to add public/taxi information or update existing public/taxi information on the data base. This topic will bring the users through the steps for making changes to the data for public/taxi information.

Topic Objective

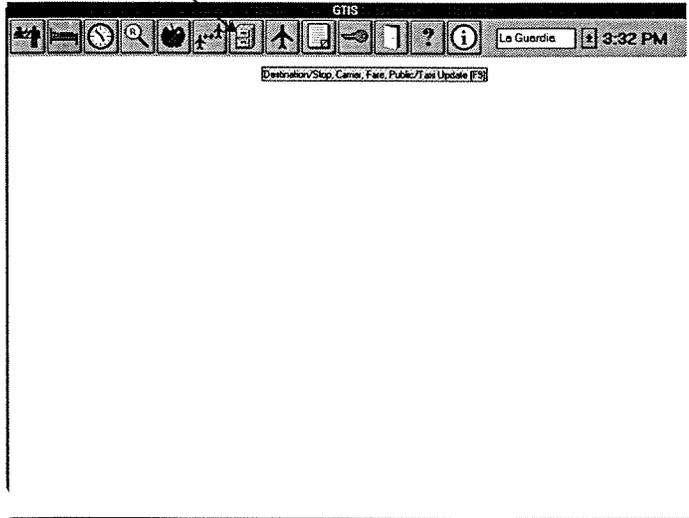
After completion of the topic lecture and exercise, participants will be able to:

1. Add new public/taxi information to the data base.
2. Make changes to existing public/taxi information in the data base.

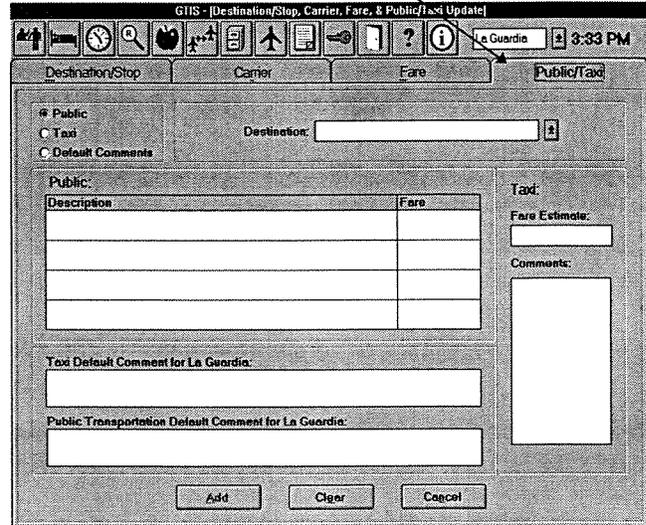


Public/Taxi Update Introduction

Destination/Stop, Carrier, Fare & Public/Taxi Update icon

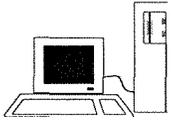


Public/Taxi Tab



The Public/Taxi Update window allows users to add and update options and fares for public transportation fares and options as well as fare estimates and comments for taxi service for the given destination. Users may also update the default comments for each airport in this window. The window is invoked by selecting the Destination/Stop, Carrier, Fare & Public/Taxi Update icon from the toolbar or pressing F9 and selecting the Public/Taxi tab. There are three radio buttons on the upper left portion of the window: Public, Taxi and Default Comments. Choosing one of these radio buttons determines the function to be performed.

The Clear push button will allow the user to clear all entries in the window fields before the "Update" button has been clicked. The Cancel push button will close the Public/Taxi Update window.



Destination/Stop, Carrier, Fare & Public/Taxi Update Procedures
Public/Taxi Update- Adding Public Transportation Information

Public/Taxi Update Window

GTIS - [Destination/Stop, Carrier, Fare, & Public/Taxi Update]

La Guardia 3:33 PM

Destination/Stop Carrier Fare **Public/Taxi**

Public
 Taxi
 Default Comments

Destination:

Public:		Taxi:
Description	Fare	Fare Estimate:
		<input type="text"/>
		Comments: <input style="width: 100%; height: 100%;" type="text"/>

Taxi Default Comment for La Guardia:

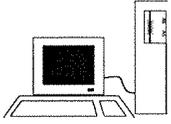
Public Transportation Default Comment for La Guardia:

To add public transportation information, follow the steps below:



STEP: Adding Public Transportation Options:

1. Select the Public/Taxi tab.
2. Select the Public radio button.
3. In the Destination combo box, select the destination for which the option is being added.
4. If there are no other options for this destination, enter the option description and the fare for this option in the first blank row of the grid. Then press the down arrow to save these changes.
5. If there are other options, arrow down to the last option, hit the down arrow twice, and a new row will be added at the bottom of the grid for the new option. Enter the option description and fare for this option and the arrow up or click on another existing row to save these changes.



Destination/Stop, Carrier, Fare & Public/Taxi Update Procedures

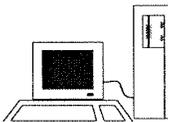
Public/Taxi Update- Update Public

To add public transportation information, follow the steps below:



STEP: Adding Public Transportation Options:

1. Select the Public/Taxi tab.
2. Select the Public radio button.
3. In the Destination combo box, select the destination for which the option is being added.
4. If there are no other options for this destination, enter the option description and the fare for this option in the first blank row of the grid. Then press the down arrow to save these changes.
5. If there are other options, arrow down to the last option, hit the down arrow twice, and a new row will be added at the bottom of the grid for the new option. Enter the option description and fare for this option and the arrow up to save these changes.



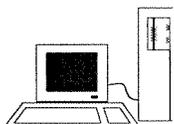
Destination/Stop, Carrier, Fare & Publicffaxi Update Procedures Publicffaxi Update- Update Taxi

To update Taxi data, follow the steps below:



STEP: Update Taxi:

1. Select the Public/Taxi tab.
2. Select the Taxi radio button.
3. In the Destination combo box, select the destination for which the taxi information is being updated.
4. Update the fare estimate (which can be a single number or two numbers separated by a dash("-")) and the comments for this destination in the corresponding text boxes.
5. Choose the Update push button to save this information.



Destination/Stop, Carrier, Fare & Publicffaxi Update Procedures

Publicffaxi Update- Update Default Comments

To update default comments, follow the steps below:



STEP: Update Default Comments:

1. Select the Public/Taxi tab.
2. Select the Default Comments radio button.
3. Select the appropriate airport for which the default comments are being updated.
4. Update the default comments and the taxi default comments for this airport in the corresponding text boxes.
5. Choose the Update push button to save this information.



REPORTS

MODULE



Module time is 3 hours.



Prerequisites

Before you can begin this module you must be logged onto the system.

Module Contents

- Topic A: Ground Transportation by Airport Report
- Topic B: Ground Transportation by Carrier Report
- Topic C: Combined Summary of Statistics Report
- Topic D: Agent/Counter Audit Report
- Topic E: Tour Report
- Topic F: Revenue Report
- Topic G: Cancellation Report
- Topic H: Late Pick-Up Report
- Topic I: Reservations by Service and Preference Report
- Topic J: Inquiry and Reservation Totals Report



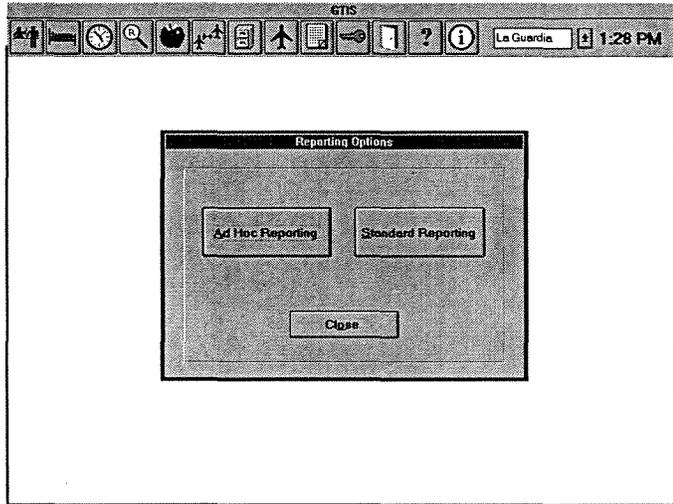
Module Overview

This module explains how to produce various management reports of reservation statistics, agent audit, and revenue. Information from all airports, or any specific airport is available to management reporting users. There are ten standard reports that users will be working with. Producing these reports requires users to work within two windows: the Reporting Options window and the Standard Reporting window.

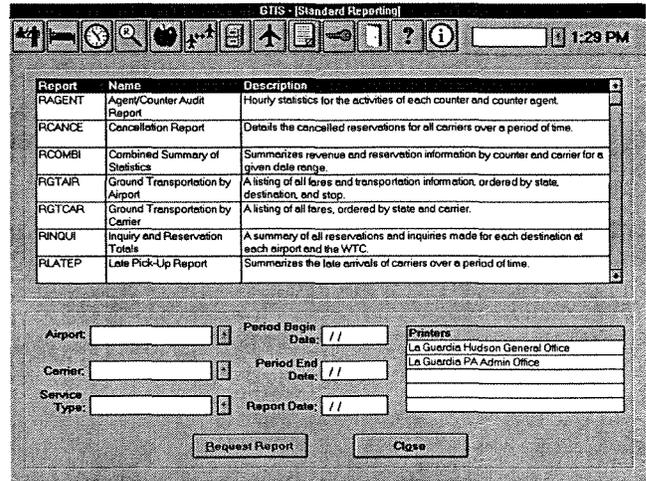


Reports Introduction

Reporting Options Window



Standard Reporting Window



There are two windows used in the Reports module. The first window, Reporting Options, gives three choices - Ad Hoc Reporting, Standard Reporting, or Close. Ad Hoc Reporting opens a separate application called Crystal Reports, which allows the user to create custom reports and access GTIS data on-line. (Ad Hoc Reporting is not discussed here). Standard Reporting opens another window which contains a list of standard, pre-formatted reports. Close will get the user out of the Management Reporting window. The second window, Standard Reporting, gives the list of ten standard reports that are available from the Reporting Options window. Below the list, there are various reporting options available for each report.



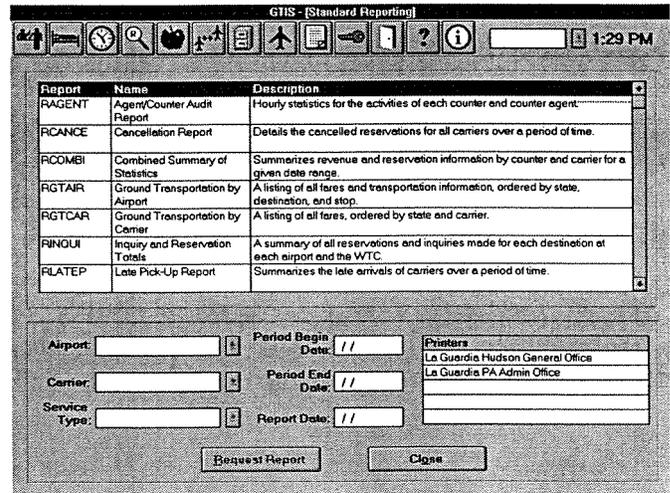
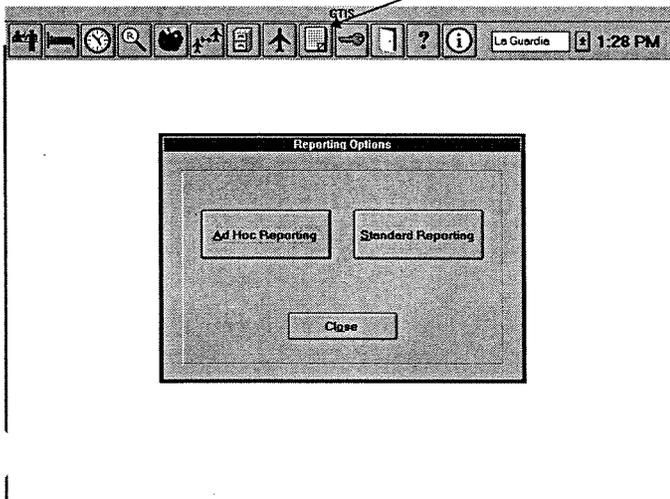
Reports Procedures
Reporting Options Window

mill

Reporting Options Window

Standard Reporting Window

Reporting Options icon



To access the Standard Reporting window, follow the steps below:



STEP:

1. Choose the Reporting Options **(00)** icon. This will bring you to the Reporting Options window.
2. Choose the Standard Reporting button. This will bring you to the Standard Reporting window. All standard reports are requested from this window.

The first report that we will request is the Ground Transportation by Airport report (RGTAIR).



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Topic time is .25 hours.

Topic Contents

Topic A: Ground Transportation by Airport Report

Exercise 1: Walkthrough and exercise based on the Ground Transportation by Airport Report.



Topic Overview

This report provides a detailed representation of all fare, public transportation and taxi data available for all destinations and stops and reference information for all carriers on the system. All data provided on-line through the Destination Inquiry function is displayed in this report. This topic will take you through the selection and printing process.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Ground Transportation by Airport report from GTIS for a specific airport.
2. Understand and analyze the information contained in this report.

Description of the Ground Transportation by Airport Report

The Ground Transportation by Airport Report provides a "hard copy" of the information available for the Destination Inquiry function of GTIS.

For each airport, the report shows every destination (ordered by state) and all transportation options to that destination. For each destination, the report shows first the public transportation options and taxi information for the destination (if they exist), followed by the Scheduled, Shared, and Private information for the destination and each stop within the destination. The Scheduled and Shared fares are broken down per person for adults and children. The Private fares are given for all seven Private types: Van 1, Van 2, Van 3, Sedan, Wagon, Limo, and Stretch. Comments are also displayed along with their associated fares.

The WTC management staff is responsible for running the Ground Transportation by Airport Report on a bi-weekly or on an as needed basis. Since it is a "hard copy" of GTIS, it is important that a current copy of the report is always available at every counter in each of the airports, as well as at the WTC office. In the event of a system failure, this "hard copy" will be the source of information for the counter staff and WTC staff when responding to passenger inquiries on ground transportation.



Reports Procedures
Standard Reporting Window - Ground Transportation by Airport Report

Standard Reporting Window

RGTAIR row

Report	Name	Description
RAGENT	Agent/Counter Audit Report	Hourly statistics for the activities of each counter and counter agent.
RCANCE	Cancellation Report	Details the cancelled reservations for all carriers over a period of time.
RCOMBI	Combined Summary of Statistics	Summarizes revenue and reservation information by counter and carrier for a given date range.
RGTAIR	Ground Transportation by Airport	A listing of all fares and transportation information, ordered by state, destination, and stop.
RGTCAR	Ground Transportation by Carrier	A listing of all fares, ordered by state and carrier.
RINQUI	Inquiry and Reservation Totals	A summary of all reservations and inquiries made for each destination at each airport and the WTC.
RLATEP	Late Pick-Up Report	Summarizes the late arrivals of carriers over a period of time.

to request the Ground Transportation by Airport Report (RGTAIR) follow the steps below:



- STEP:
1. Select the row beginning with RGTAIR in the main grid of the Standard Reporting window.
 2. From the Airport combo box on the lower portion of the window, choose the airport for which the report is to be run.
 3. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 4. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 5. Choose the Close Button to exit out of the Standard Reporting window.

- Notes:
- a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
 - b) The date on the actual report defaults to today's date.
 - c) This report is run for the current date, so no date field needs to be entered for this window.



Topic B: Ground Transportation by Carrier Report

Topic time is .25 hours.

Topic Contents

Topic B: Ground Transportation by Carrier Report

Exercise 1: Walkthrough and exercise based on the Ground Transportation by Carrier Report.



Topic Overview

This report lists all the destinations, stops, and services provided by a given carrier from a given airport, ordered by state. This report is given to carriers to confirm that rate and service information is correct and current.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Ground Transportation by Carrier report from GTIS for a specific airport.
2. Understand and analyze the information contained in this report.



Description of the Ground Transportation by Carrier Report

The Ground Transportation by Carrier Report is provided to the carriers to confirm that rate and service information is current and correct.

The report lists all destinations and stops serviced by a given carrier from a given airport. The report is sorted first by state. For each state, all destinations and associated stops for each carrier service are printed. If a destination has multiple stops, the destination will only appear once. The information for each of the stops is printed directly underneath its associated destination. For each carrier, prices on Scheduled, Shared, and Private service types are provided.

For each destination or destination/stop combination in the Scheduled and Shared sections, the report provides the fare breakdown for adults and children, as well as comments specific to the destination or destination/stop. The Private section provides fare information for Van 1, Van 2, Van 3, Sedan, Wagon, Limo, and Stretch services, along with any comments specific to the carrier's private services. The report will skip a line after each destination or stop. Additionally, the report will page break for a new carrier.

The WTC management staff is responsible for running the Ground Transportation by Carrier report on an as needed basis. The report is run whenever major changes on carrier rates and destinations are made or as often as WTC management see fit. Carriers are responsible for making sure that their data is correct as reflected on the report.



Reports Procedures
Standard Reporting Window- Ground Transportation by Carrier Report

RGTCARrow

Standard Reporting Window

Report	Name	Description
PAGENT	Agent/Counter Audit Report	Hourly statistics for the activities of each counter and counter agent.
RCANCE	Cancellation Report	Details the cancelled reservations for all carriers over a period of time.
RCOMBI	Combined Summary of Statistics	Summarizes revenue and reservation information by counter and carrier for a given date range.
RGTAIR	Ground Transportation by Airport	A listing of all fares and transportation information, ordered by state, destination, and stop.
RGTCAR	Ground Transportation by Carrier	A listing of all fares, ordered by state and carrier.
RINQUI	Inquiry and Reservation Totals	A summary of all reservations and inquiries made for each destination at each airport and the WTC.
RLATEP	Late Pick-Up Report	Summarizes the late arrivals of carriers over a period of time.

Airport: Period Begin Date:
 Carrier: Period End Date:
 Service Type: Report Date:

Printers:
 La Guardia Hudson General Office
 La Guardia PA Admin Office

To request the Ground Transportation by Airport Report (RGTCAR) follow the steps below:



- STEP:
1. Select the row beginning with RGTCAR in the main grid of the Standard Reporting window.
 2. From the Airport combo box on the lower portion of the window, choose the airport for which the report is to be run.
 3. From the Carrier combo box, choose the carrier for which the report will be run, or "All" to generate the report for all carriers at the airport.
 4. From the Service Type combo box, choose the service type of the fares to be included in the report, or "All" to generate the report for all service types.
 5. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 6. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 7. Choose the Close Button to exit out of the Standard Reporting window.

Notes on the following page...



- Notes:
- a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
 - b) The date on the actual report defaults to today's date.
 - c) This report is run for the current date, so no date field needs to be entered for this window.



Topic C: Combined Summary of Statistics Report

Topic time is .25 hours.

Topic Contents

Topic C: Combined Summary of Statistics Report

Exercise 1: Walkthrough and exercise based on the Combined Summary of Statistics Report.



Topic Overview

This report summarizes all transactions made at all ground transportation counters at a given airport.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Combined Summary of Statistics report from GTIS for a specific airport.
2. Understand and analyze the information contained in this report.



Description of the Combined Summary of Statistics Report

The Combined Summary of Statistics Report provides an "at-a-glance" view of all transactions conducted within a time period at all counters in a given airport.

The report includes revenue, number of reservations, number of passengers, preferred reservations, and canceled reservations for each carrier by counter.

The report is designed with one column for each carrier and five rows for each counter. At the bottom and sides of report, there are totals for each counter, carrier, and the whole airport. The airport management staff is responsible for requesting the Combined Summary of Statistics Report on a monthly or "as needed" basis for a given airport.

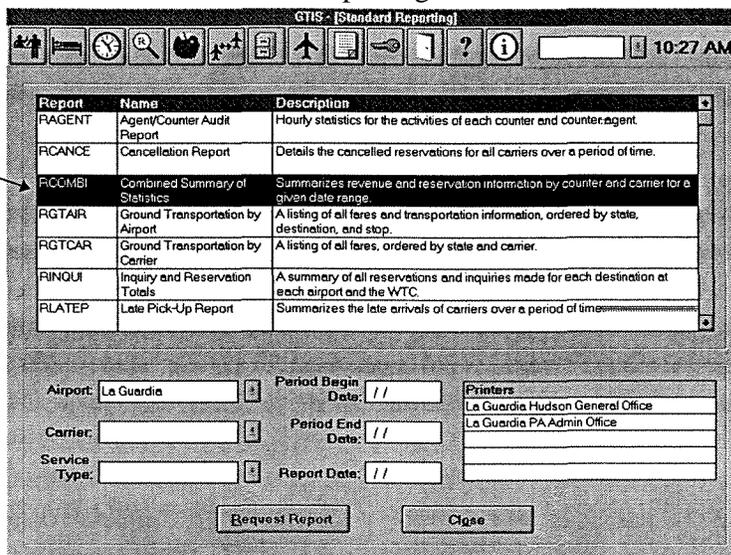


Reports Procedures

Standard Reporting Window - Combined Summary of Statistics Report

Standard Reporting Window

RCOMBI row



To request the Combined Summary of Statistics Report (RCOMBI) follow the steps below:



- STEP:
1. Select the row beginning with RCOMBI in the main grid of the Standard Reporting window.
 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
 3. Tab to the Period Begin Date text box. Enter the start date of the date range for which the report will be run.
 4. Tab to the Period End Date text box. Enter the end date of the date range for which the report will be run.
 5. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 6. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 7. Choose the Close Button to exit out of the Standard Reporting window.

- Notes:
- a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
 - b) When typing in dates, be sure to include the entire year. For example, "09/0111995".



Topic D: Agent/Counter Audit Report

Topic time is .25 hours.

Topic Contents

Topic D: Agent/Counter Audit Report

Exercise 1: Walkthrough and exercise based on the Agent/Counter Audit Report.



Topic Overview

This report provides hourly statistics for the activities of each counter and counter agent. It is used by Airport Management to track reservation count and preference statistics for each agent at all of the airport counters.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Agent/Counter Audit Report from GTIS.
2. Understand and analyze the information contained in this report.

**Report****Description of the Agent/Counter Audit**

The Agent/Counter Audit Report is used by Airport Management to track reservation count and preference statistics for each agent at all of the airport counters for a given date.

The report provides hourly statistics (for the hours between 5:00A.M. and 3:00A.M.) for the activities at each counter and for each counter agent. The reservations made by an agent while at a counter are tallied in this report. The report details the number of reservations made with each carrier, number of reservations made according to the customer's preference, total reservations made, and total cancellations. The "Agent Totals" line provides summary statistics for the reservations made with each carrier by the specific agent. In a separate section, the report also summarizes the total number of bookings per hour for each counter.

Airport management staff are responsible for requesting the Agent/Counter Audit Report on an as needed basis for a given day.

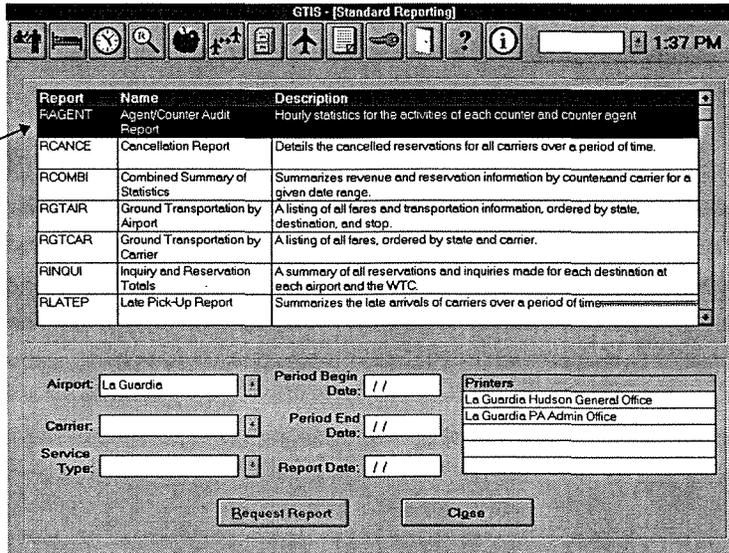


Reports Procedures

Standard Reporting Window - Agent/Counter Audit Report

Standard Reporting Window

RAGENTrow



To request the Agent/Counter Audit Report (RAGENT) follow the steps below:



- STEP:
1. Select the row beginning with RAGENT in the main grid of the Standard Reporting window.
 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
 3. Tab to the Report Date text box. Enter the date for which the report will be run.
 4. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 5. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 6. Choose the Close Button to exit out of the Standard Reporting window.

- Notes:
- a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
 - b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".

Topic E: Tour Report

Topic time is .25 hours.

Topic Contents

Topic E: Tour Report

Exercise 1: Walkthrough and exercise based on the Tour Report.



Topic Overview

This report provides the details of each reservation made at each counter for a particular airport. It is used by Airport Management to provide detailed information about every reservation made on a particular date.



Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Tour Airport report from GTIS.
2. Understand and analyze the information contained in this report.



Description of the Tour Report

The Tour Report provides airport management with detailed information about every reservation made on a particular date.

The Tour Report is divided into sections by counter, each counter begins on a new page. Within each counter section, the reservations are listed sequentially by reservation number. Each row of the report details the reservation number, time booked, destination, stop, carrier, service type, fare, number of passengers, preferred indicator, and the names of the agents who added, updated, and deleted the reservation. The report also captures canceled reservations by marking those reservation numbers with an asterisk.

The airport management staff is responsible for requesting the Tour Report on an as needed basis for a given day.



Reports Procedures

Standard Reporting Window - Tour Report

Standard Reporting Window

RTOURR row

Report	Name	Description
RGTAIR	Ground Transportation by Airport	A listing of all fares and transportation information, ordered by state, destination, and stop.
RGTCAR	Ground Transportation by Carrier	A listing of all fares, ordered by state and carrier.
RINQUI	Inquiry and Reservation Totals	A summary of all reservations and inquiries made for each destination at each airport and the WTC.
RLATEP	Late Pick-Up Report	Summarizes the late arrivals of carriers over a period of time.
RREVEN	Revenue Report	Revenue figures by carrier and day for a given month at an airport.
RSERV	Reservations by Service and Preference	Summary statistics of reservation information concerning service type and passenger preferences.
RTOURR	Tour Report	A listing by counter of all reservations made at an airport for a single day.

Airport: Period Begin Date:
 Carrier: Period End Date:
 Service Type: Report Date:

Printers:
 La Guardia Hudson General Office
 La Guardia PA Admin Office

Request Report Close

To request the Tour Report (RTOURR) follow the steps below:

- STEP: 1. Select the row beginning with RTOURR in the main grid of the Standard Reporting window.
- 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
- 3. Tab to the Report Date text box. Enter the date for which the report will be run.
- 4. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
- 5. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
- 6. Choose the Close Button to exit out of the Standard Reporting window.

Notes: a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.

b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".



Topic F: Revenue Report

Topic time is .25 hours.

Topic Contents

Topic F: Revenue Report

Exercise 1: Walkthrough and exercise based on the Revenue Report.



Topic Overview

This report details the daily revenue for each of the carriers at the specified airport. The purpose of this report is to document the revenues of each carrier for a given month.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Revenue Report from GTIS for a given month.
2. Understand and analyze the information contained in this report.



Description of the Revenue Report

The Revenue Report documents the revenues of each carrier for a given month. It also provides subtotals for each week of the month.

Each page of the Revenue Report represents one month. Each row of the report corresponds to a single day in the month. After every seventh day, a subtotal row is printed that displays weekly results. Every carrier maintains a separate column, with up to 9 carriers fitting on one page. A "Totals" column provides daily revenue statistics for all carriers at the airport. The "Totals" row provides monthly revenue statistics for each carrier.

WTC management staff is responsible for requesting the Revenue Report on a monthly or "as needed" basis for a given airport.



Reports Procedures

Standard Reporting Window - Revenue Report

Standard Reporting Window

RREVEN Row

Report	Name	Description
RGTAIR	Ground Transportation by Airport	A listing of all fares and transportation information, ordered by state, destination, and stop.
RGTCAR	Ground Transportation by Carrier	A listing of all fares, ordered by state and carrier.
RINQUI	Inquiry and Reservation Totals	A summary of all reservations and inquiries made for each destination at each airport and the WTC.
RLATEP	Late Pick-Up Report	Summarizes the late arrivals of carriers over a period of time.
RREVEN	Revenue Report	Revenue figures by carrier and day for a given month at an airport.
RSERVI	Reservations by Service and Preference	Summary statistics of reservation information concerning service type and passenger preferences.
RTOURR	Tour Report	A listing by counter of all reservations made at an airport for a single day.

Airport: Period Begin Date:
 Carrier: Period End Date:
 Service Type: Report Date:
 Printers:
 La Guardia Hudson General Office
 La Guardia PA Admin Office

to request the Revenue Report (RREVEN) follow the steps below:



- STEP:**
1. Select the row beginning with RREVEN in the main grid of the Standard Reporting window.
 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
 3. Tab to the Report Date text box. Enter the date (only month/year for this particular report) for which the report will be run.
 4. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 5. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 6. Choose the Close Button to exit out of the Standard Reporting window.

- Notes:
- a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
 - b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".



Topic G: Cancellation Report

.HI

Topic time is .25 hours.

Topic Contents

Topic G: Cancellation Report

Exercise 1: Walkthrough and exercise based on the Cancellation Report.



Topic Overview

This report provides the volume, frequency, and reasons for canceled reservations.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Cancellation Report from GTIS for a specified period.
2. Understand and analyze the information contained in this report.



Description of the Cancellation Report

The Cancellation Report provides airport managers and WTC staff with the volume, frequency and reasons for canceled reservations.

The report lists the date, reservation number, time booked, booking agent, time canceled, cancel agent, and cancellation reason for all reservations that were canceled for a specified period of time. Each carrier that services the airport begins on a new page. The canceled reservations are listed by date, with all reservations for the given date grouped together.

The airport management staff is responsible for requesting the Cancellation Report on a monthly or "as needed" basis.

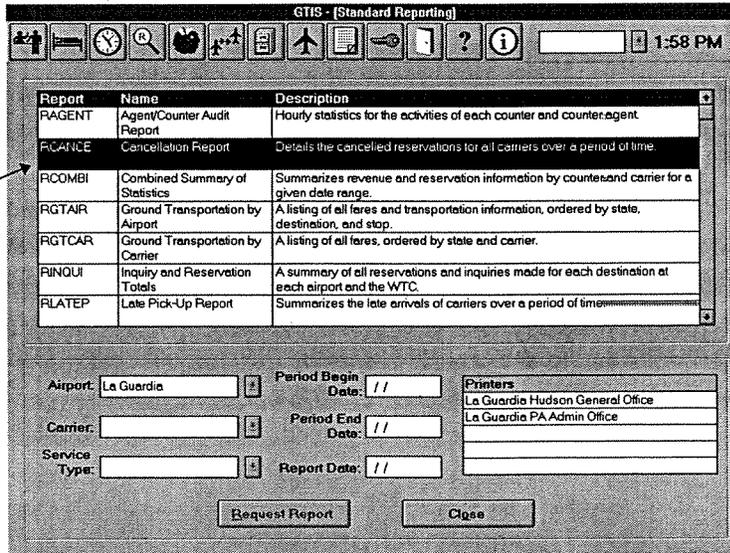


Standard Reporting Window - Cancellation Report

Reports Procedures

Standard Reporting Window

RCANCE Row



To request the Cancellation Report (RCANCE) follow the steps below:



- STEP:
1. Select the row beginning with RCANCE in the main grid of the Standard Reporting window.
 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
 3. Tab to the Period Begin Date text box. Enter the start date of the date range for which the report will be run.
 4. Tab to the Period End Date text box. Enter the end date of the date range for which the report will be run.
 5. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 6. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 7. Choose the Close Button to exit out of the Standard Reporting window.

Notes: a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen,

there is no way that the requested report may be canceled.

- b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".



Topic H: Late Pick-Up Report

Topic time is .25 hours.

Topic Contents

Topic H: Late Pick-Up Report

Exercise 1: Walkthrough and exercise based on the Late Pick-Up Report.



Topic Overview

This report summarizes the late arrivals of carriers for pick-ups over a specified period of time. It categorizes how many minutes late the carrier was and provides the percentage of pick-ups that were late.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Late Pick-Up Report from GTIS for a specific airport.
2. Understand and analyze the information contained in this report.



Description of the Late Pick-Up Report

The Late Pick-Up Report provides management with a summary of the late pick-ups over a specified period of time.

The report categorizes how many minutes late the carrier was and provides the percentage of late pick-ups. The first page of the report lists all carriers and the late pick-up information. A "Totals" line at the bottom of the report will give summary statistics for lateness at the airport. The remainder of the report is designed with each carrier having a separate page that consists of the late information specific to that carrier.

The airport management staff is responsible for requesting the Late Pick-Up Report on a monthly or "as needed" basis.



Reports Procedures
Standard Reporting Window - Late Pick-Up Report

RLATEP Row

Standard Reporting Window

GTIS - [Standard Reporting]

Report	Name	Description
RAGENT	Agent/Counter Audit Report	Hourly statistics for the activities of each counter and counter agent.
RCANCE	Cancellation Report	Details the cancelled reservations for all carriers over a period of time.
RCOMBI	Combined Summary of Statistics	Summarizes revenue and reservation information by counter and carrier for a given date range.
RGTAIR	Ground Transportation by Airport	A listing of all fares and transportation information, ordered by state, destination, and stop.
RGTCAR	Ground Transportation by Carrier	A listing of all fares, ordered by state and carrier.
RINQUI	Inquiry and Reservation Totals	A summary of all reservations and inquiries made for each destination at each airport and the WTC.
RLATEP	Late Pick-Up Report	Summarizes the late arrivals of carriers over a period of time.

Airport: # Period Begin Date:

Carrier: # Period End Date:

Service Type: # Report Date:

Printers:
 La Guardia Hudson General Office
 La Guardia PA Admin Office

Request Report Close

To request the Late Pick-Up Report (RLATEP) follow the steps below:



- STEP:
1. Select the row beginning with RCANCE in the main grid of the Standard Reporting window.
 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
 3. Tab to the Period Begin Date text box. Enter the start date of the date range for which the report will be run.
 4. Tab to the Period End Date text box. Enter the end date of the date range for which the report will be run.
 5. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 6. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 7. Choose the Close Button to exit out of the Standard Reporting window.

- Notes:
- a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
 - b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".



Topic I: Reservations by Service and Preference Report

Topic time is .25 hours.

Topic Contents

Topic 1: Reservations by Service and Preference Report

Exercise 1: Walkthrough and exercise based on the Reservations by Service and Preference Report.



Topic Overview

This report provides statistics for the type of service (Scheduled, Shared and Private) requested by passengers. It also indicates the percentage of total reservations which were preferred, as well as the percentage preferred by service type.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Reservations by Service and Preference Report from GTIS for a specific airport.
2. Understand and analyze the information contained in this report.



Description of the Reservations by Service and Preference Report

The Reservations by Service and Preference Report will provide statistics on the type of service (Scheduled, Shared and Private) and preference requested by passengers over a specified period of time.

The report will have a section for each counter. Within each counter, the service and preference information will be displayed by carrier and for the counter as a whole. The reported information includes the total number of reservations, number of Scheduled, Shared and Private reservations, the percentage of these reservations which were preferred, and the percentage of total reservations which were preferred. At the end of the report, these data are totaled for the whole airport.

The airport management staff is responsible for requesting the Reservations by Service and Preference Report on a monthly or on an "as needed" basis for a given airport.



Reports Procedures
Standard Reporting Window - Reservations by Service and Preference Report

Standard Reporting Window

RSERVI Row

Report	Name	Description
RGTAIR	Ground Transportation by Airport	A listing of all fares and transportation information, ordered by state, destination, and stop.
RGTCAR	Ground Transportation by Carrier	A listing of all fares, ordered by state and carrier.
RINQUI	Inquiry and Reservation Totals	A summary of all reservations and inquiries made for each destination at each airport and the WTC.
RLATEP	Late Pick-Up Report	Summarizes the late arrivals of carriers over a period of time.
RREVEN	Revenue Report	Revenue figures by carrier and day for a given month at an airport.
RSERVI	Reservations by Service and Preference	Summary statistics of reservation information concerning service type and passenger preferences.
RTOURR	Tour Report	A listing by counter of all reservations made at an airport for a single day.

To request the Reservations by Service and Preference Report (RSERVI) follow the steps below:

- STEP: 1. Select the row beginning with RSERVI in the main grid of the Standard Reporting window.
- 2. If at the WTC, choose the desired airport from the Airport combo box on the lower portion of the window. If at an airport, the report may only be requested for that airport.
- 3. Tab to the Period Begin Date text box. Enter the start date of the date range for which the report will be run.
- 4. Tab to the Period End Date text box. Enter the end date of the date range for which the report will be run.
- 5. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
- 6. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
- 7. Choose the Close Button to exit out of the Standard Reporting window.

- Notes: a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.
- b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".



Topic J: Inquiry and Reservation Totals Report

Topic time is .25 hours.

Topic Contents

Topic J: Inquiry and Reservation Totals Report

Exercise 1: Walkthrough and exercise based on the Inquiry and Reservation Totals Report.



Topic Overview

This report details the number of inquiries and reservations made for each destination at each airport over a specified period of time. The number of inquiries at the WTC (AIR RIDE) is also included, as well as totals for all three airports and the WTC.

Topic Objective

After completion of the topic lecture and exercise, participants will be able to:

1. Request the Inquiry and Reservation Totals Report from GTIS for all airports.
2. Understand and analyze the information contained in this report.



Description of the Inquiry and Reservation Totals Report

The Inquiry and Reservation Totals Report will provide the number of inquiries and reservations made for each destination over a specified period of time, for a given airport and for all airports.

The report is sorted by state. It lists each destination in the given state for which there was an inquiry or reservation made during the period specified. If a destination exists on the system, but there were no inquiries on or reservations made for it, it will not appear on this report.

The report displays an Inquiries column and a Reservations column for each of the airports. The WTC has a column for Inquiries as well. The number of inquiries and the number of reservations for each destination are displayed in the total columns. The total number of inquiries and the total number of reservations made per state is displayed at the end of each state section.

The airport and WTC management staff are responsible for requesting the Inquiry and Reservation Totals Report on an as needed basis.



Reports Procedures

Standard Reporting Window

Standard Reporting Window

RINQUI Row

Report Name	Description
RAGENT	Agency/Counter Audit Report
RCANCE	Cancellation Report
RCOMBI	Combined Summary of Statistics
RGTAIR	Ground Transportation by Airport
RGTCAR	Ground Transportation by Carrier
RINQUI	Inquiry and Reservation Totals
RLATEP	Late Pick-Up Report

To request the Inquiry and Reservation Totals Report (RINQUI) follow the steps below:



- STEP:
1. Select the row beginning with RINQUI in the main grid of the Standard Reporting window.
 2. Since this report includes statistics for all three airports and the WTC, there is no need to choose an airport, and this combo box is disabled.
 3. Tab to the Period Begin Date text box. Enter the start date of the date range for which the report will be run.
 4. Tab to the Period End Date text box. Enter the end date of the date range for which the report will be run.
 5. At the bottom right of the window is the Printers list box. Select any or all of the available printers from the list. Airport users will only be able to print to printers at their airport.
 6. Choose the Request Report button. A Message Dialog will appear saying that the report has been submitted for overnight generation. The report will be ready the next morning from the printer(s) that have been selected.
 7. Choose the Close Button to exit out of the Standard Reporting window.

Notes: a) If the wrong report in the grid was selected, choose a different row for another report or click on the Close button. However, once the Request Report button has been chosen, there is no way that the requested report may be canceled.

b) When typing in dates, be sure to include the entire year. For example, "09/01/1995".



AD HOC REPORTING MANUAL

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Section 1 - Getting Started

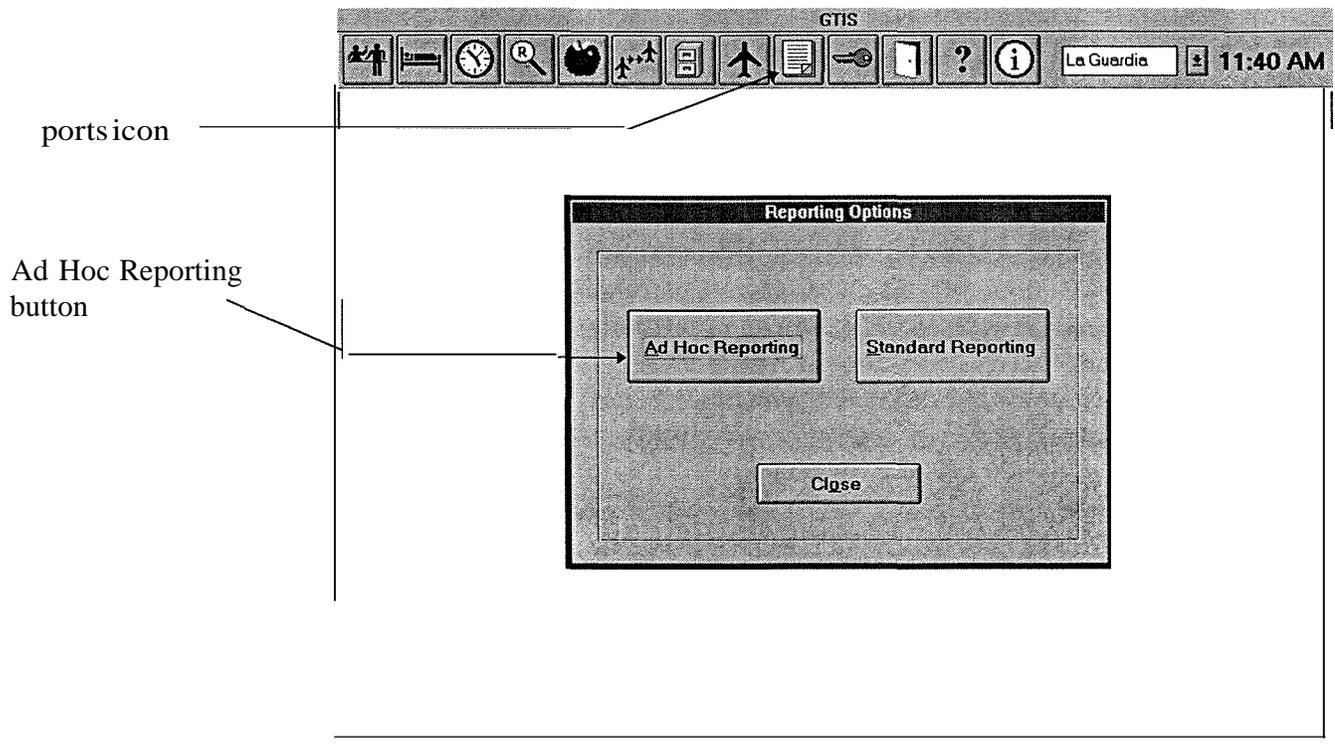
This section explains how to access and begin using Crystal Reports, the ad hoc reporting tool for the GTIS system.

Introduction

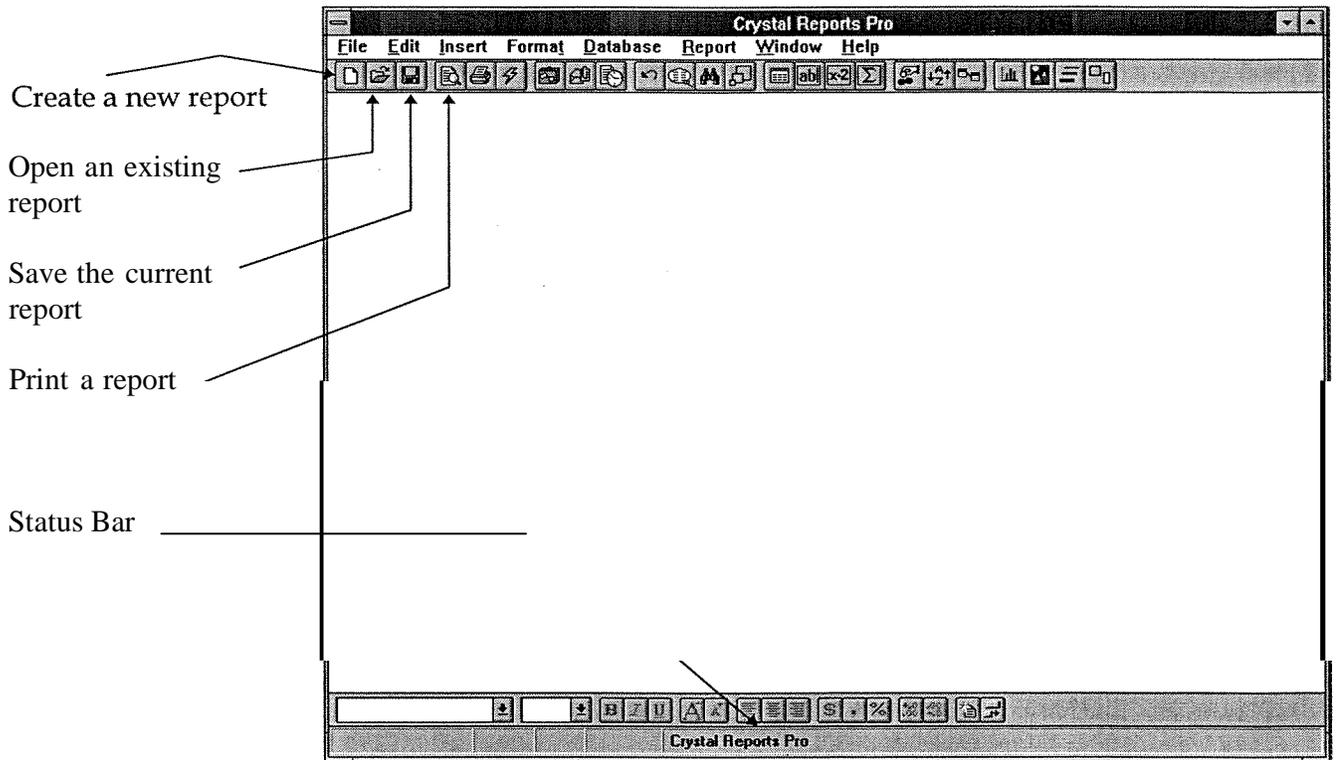
Crystal Reports is a powerful yet easy to use application for creating custom reports from GTIS data. The program works by establishing connections with the GTIS data base. Using these connections as conduits, the desired values are drawn from the data base fields you select and are used in the report, either in their original form or as part of a formula that generates more sophisticated values.

Accessing Crystal Reports from GTIS

To open Crystal Reports from GTIS, click on the Reports icon  or press the F11 key. This action will open the Reporting Options window. Select the Ad Hoc Reporting button from this window to open the Crystal Reports application.



When the Ad Hoc Reporting button is chosen, the following window appears:



In the above diagram of Crystal Reports' main window, the blue bar at the top of the window is called the Title Bar. Below the Title Bar is the Menu Bar (where the pull down menus are listed). Below the Menu Bar appears the Button Bar. Crystal Reports groups several commonly used commands on this Button Bar, each command being represented by a button with a icon connected with that button's function. Button Bar commands are activated by clicking on the desired button with the left mouse button. The functions of some of the important toolbar buttons are outlined in the diagram. Whenever you forget the function of one of these buttons, simply place the mouse over the button and look at the Status Bar - it will display a description of the button's function.

Creating a New Report

To create a new report, follow the instructions below:

- 1) Click on the leftmost button on the Button Bar, as shown in the diagram on the previous page. This will open another window entitled "Create a New Report."
- 2) Click on the "Custom>>>" button on the lower right of this window. This will open an additional section of this window.
- 3) Click on the button with the caption "Dictionary" underneath (in the lower right of the box).

A window will appear listing the names of two views ("WTC" and "Airport"). It is important to understand the concept of views and what they mean before creating a report. As stated in the introduction, Crystal Reports establishes connections with a data base, and then channels the desired data from the data base through these connections to create the report. When a view is selected, it tells Crystal Reports where (i.e. to which data base) to make these connections. Thus, if the WTC view is selected, the data will be retrieved from

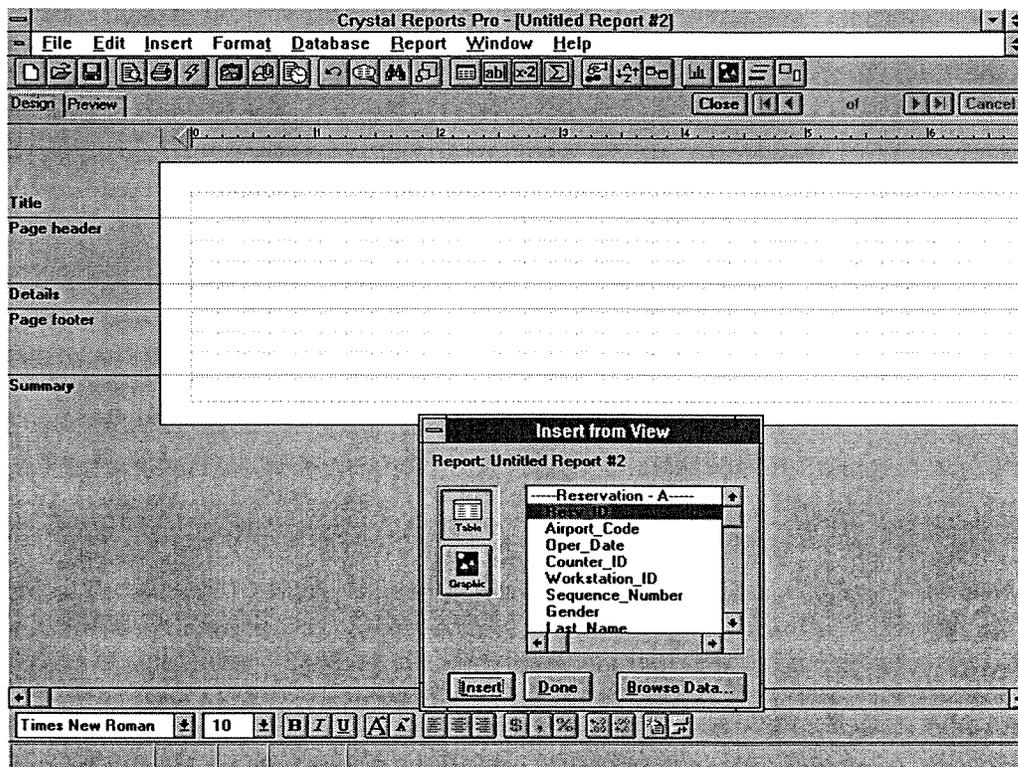


the World Trade Center data base whenever (and more importantly, wherever) the report is run..If the Airport view is selected, the data will be retrieved from the airport data base for that workstation (the Newark server at Newark, the La Guardia server at La Guardia, the JFK server at JFK, and the World Trade Center server at the WTC).

The concept of views is critical to the use of Crystal Reports. Views determine the server from which the report will retrieve data, *independent of the location at which the report was created*. If a report is created at the World Trade Center on the WTC view and is run at La Guardia airport, the data will still be retrieved from the World Trade Center server. If a report is created using the Airport view at JFK and is then run at Newark, the data will be retrieved from the Newark server. If a report is created at the World Trade Center using the Airport view and is run at La Guardia, it will use data from the La Guardia server.

Where a report is run is important because only the airport servers have today's reservation data on them. Any report which needs such data has to be run at that airport using a report created with the Airport view. Also, only the WTC server has all three airports' reservation data, so any report requiring more than one airport's reservation data must be created with the WTC view.

When a view is selected, the Design window of Crystal Reports is opened:



Columns to be included in the report may now be selected from the "Insert from View" window. This window lists each table in the chosen view, and under each table name is a list of the columns found in that table. The table names are all followed by either "- W" or "- A", depending upon which view was selected. All of the table names in the WTC view end with "- W" and all of the table names in the Airport view end with "-A". Each view has the exact same set of tables and columns (with the exception of the Inquiry Summary table, which is found only in the WTC view), and can only be distinguished at this point by the letter following each of the table names.



Report Design vs. Report Output

The window on the previous page is called the Design window because it contains the basic format and components of the report. Included in the report design are the layout of columns from the tables in the chosen view, rules regarding which data are and are not to be included in the report, formatting of the data, headers and footers for the report, etc. It is the "skeleton" of the report, and is independent of the actual data. A "report" file is actually just a template which is laid over a set of data, and may produce a different result each time it is run. A report design which includes reservation information will produce a different report if run against JFK reservation data or Newark reservation data, because these sets of data are different. Therefore, it is important to recognize the distinction between a report's *design* and its *output*. The same design may be used over and over again on different data to produce different results. Designs may be modified slightly each time to include different dates, counters, carriers, etc., and then re-run to produce a whole new set of information. For example, a report design may print out all the canceled reservations on a given day for a given carrier. If this design is saved, it may be opened each time and modified with the desired date and carrier and re-run, saving the trouble of creating a whole new report each time.

Opening a Pre-Existing Report

To open and run a pre-existing report (which may also be referred to as a *template*), follow the instructions below:

- 1) Choose file/Open... from the Menu Bar.
- 2) Select the desired report from the F:\REPORTS directory.
- 3) Choose the Open button to open the report design.

The Design window will open and display the design of the selected report. Remember, to determine which view the design came from, look at the table names in the "Insert from View" window. The letter which follows each table name will either be W for the WTC view or A for the Airport view.

Basic Report Elements

Report designs are composed of four basic elements. These are database fields, text fields, formula fields and special fields.

Database fields are elements which display data taken directly from the data base. These data are organized in tables of columns and rows (for a more detailed discussion of the GTIS relational data base model, see Section 3- The Data Model). Database fields are inserted in a report to display the data within a specific column for whichever rows in the table meet the stated selection criteria. For example, if a report is designed to select all late reservations for a given carrier, one database field which may be included in a report is the number of minutes late for each reservation. For each row included in the report (i.e. each late reservation in the Reservation table with the given carrier ID) this database field will display the number of minutes late, taken from the Min_Late column of the Reservation table. Although there may be a little formatting involved, it is essentially the raw data extracted directly from the data base.

Text fields are placed in a report to print some constant text string in a report. The report title, for example, may be placed in a text string, formatted, and positioned in an appropriate place in the report design.

• Formula fields take data from the data base and manipulate it in some way and displaying the result. This could be the sum of several row values, the difference between values, an average, etc. Any operation a developer needs to perform on data is done through the use of a formula field.



Special fields are all other elements which may be placed in a design. Page numbering, group numbering, the title and/or time are all done through the use of special fields.

These four elements are the building blocks of reports. In combination they can be used to produce effective, well-organized, professional-looking reports.

Previewing a Report

The report design may have been created from scratch, taken from an existing report file, or even taken from an existing report and tailored further. When the design of a report is ready to be run against actual data, the first step is to *preview* the report. The report preview is a first look at the current design applied to the appropriate set of data (which depends upon both the workstation's location and the view selected). To preview the current report design:

- 1) Click on the Preview tab in the Design window or choose file/Print Preview from the Menu Bar.

If the report is very long, it may take awhile for the entire report to be generated. When designing a report, this process may be repeated many times as the design is refined. To preview a limited number of records (and thus reduce dramatically the waiting time for each preview):

- 1) Choose *Eile(Erint/Preview Sample...* from the Menu Bar instead of the above method
- 2) Enter the desired number of records in the text box (or click on the radio button to choose the default number) and choose the OK button.

Printing a Report

To produce a hard copy of a report, a printer and printer setup must be selected. The printer settings are important because they determine the size of the "paper" the design is laid over, the margins on the page, etc. For example:

- 1) Select file/Printer Setgp... from the Menu Bar.
- 2) Choose the Landscape option from the Orientation box, and choose OK.
- 3) Observe the vertical and horizontal dimensions of the white background beneath the design.
- 4) Repeat Step 1 and then choose the Portrait option from the Orientation box. Choose OK.
- 5) Now observe the size of the background.

The point is simply that the printer setup determines many of the design's properties, so be sure the setup is configured properly before printing.

To select a printer, follow Step 1 of the instructions above and choose the appropriate printer option from the printer box.

Once all the printer settings are correct, select *Eile/_Erint/_Erinter ...* from the Menu Bar, set the desired options in the window which appears, and choose OK to send the request to the printer.



Saving a Report

Use the Save command to save the active report design to disk under its current name. All changes you have made while working on the report will be saved, and the previous version of the report will be overwritten.

To save the report:

- 1) Select file/ save from the Menu Bar.

Crystal Reports saves the report under its current name and leaves the active report on the screen. If you are working on a new report that has not yet been assigned a name and saved, the "File Save As..." dialog box appears and a name must be assigned to the report. The file/Save As... command will also bring up the "File Save As..." dialog box, and it will allow the current report to be saved to a new name, so that an old report will not be overwritten.

Reports should always be saved in the directory F:\REPORTS. Remember: Saving the report under the name of an existing report overwrites the contents of the existing report file.



Section 2 - Where to Go for Help

If you are having trouble achieving the results you want, don't panic. There are many forms of help available for Crystal Reports. This section will detail the various levels of support for any problems or difficulties you may encounter.

The Status Bar

The most basic form of help available is the Status Bar (located on the bottom of the window). When appropriate, it will display messages about a button's function or the properties of selected portions of the current design. When you have forgotten a button's function (in the Button Bar), simply place the mouse over the button and a description of its function will be displayed on the Status Bar. Click on any field in the current design, and, depending upon what type of field it is, the Status Bar will show information about it. For example, if it is a database field which displays column information, the name of the column from which the data will be taken will be displayed in the Status Bar.

On-Line Help

To obtain help from Crystal Reports at any time, press the F1 key, or choose one of the options from the Help menu option on the Menu Bar. The F1 key will open the "Crystal Reports Help" window which contains general help topics. From this window you can begin to look for the answer to a specific question, or just J...,rowse to read up on Crystal Reports various functions. This window is also opened by choosing the "elp/Contents option from the Menu Bar.

To search for a specific topic, choose the Search button from this window, or the Help/ earch ... option from the Menu Bar. Either method will open a search window in which you may enter a key word, look for appropriate Help Topics, and open them.

If you are having trouble using help, or want to be more effective in doing so, choose the Help/Using Help topic from the Menu Bar. A window will open with basic instructions on how to navigate through all the Crystal Reports help.

For in-depth training in Crystal Reports functionality and procedures, use the Private Tutor. The Private Tutor may be accessed by choosing the Private Tutor button from the "Crystal Reports Help" window or by choosing the Help;/Erivate Tutor option from the Menu Bar. It provides instructions on Crystal Reports topics and techniques selected by the user. Help on both basic and advanced topics is available.

Other Sources of Help

Two manuals are included with the software, Crystal Reports User's Guide and Crystal Reports Developer's Reference. These manuals have some examples and are useful guides to the basics. They rely heavily on explanations found in the on-line help (the information found in the Help menu option) and are best used in concert with these help screens.



For additional help, there are several types of product support offered by Crystal Reports:

On-line (modem)	(604) 662-8298
Bulletin Board	(604) 681-9516
Fax Support	(604) 681-7163
Phone Support	(604) 669-8379

The support people will want to know the version of Crystal Reports being used, which is 4.0.1.0. All product support information can be found by opening the "About Crystal Reports" window (choose the Help/ About Crystal Reports Pro... option from the Menu Bar).

For mail-in support and other inquiries, the write to:

Crystal
1050 West Pender Street, Suite 2200
Vancouver BC Canada V6E 357



Section 3 - The Data Model

A logical data base design has been developed for use with Crystal Reports. It is very similar to the data base design described in the Detailed System Design of the GTIS, modified slightly for use with this reporting tool. The data base is composed of tables, which consist of columns and rows of data. Each row in a table is a single record. For example, one row of the Reservation table corresponds to a single reservation and contains all of the data for that reservation. Likewise, one row of the Destination table corresponds to a single destination. Each column of a table stores a specific type of data for all records in that table. The "Add_ID" column of the Reservation table stores the User ID of the booking agent for each reservation (row) in the table.

The following pages describe all the tables in the data model, with a description and layout for each. Some tables have the exact same layout, so they are grouped together (e.g., Add Users, Update Users and Cancel Users). The layout of the table lists each data element (column) in the table, the type of the data element, and the length of the data element. The data element(s) in bold italics is the primary key for the table. The primary key for a table is the element or set of elements which is unique for each row. In the Carrier table, the "Carrier_ID" element is the primary key because each row in the table (i.e., each carrier) has its own unique carrier ID number. For the Taxi table, the primary key is "Airport_Code" and "Dest_ID" because there may be more than one taxi fare for a single airport or for a single destination. However, from a given airport to a given destination there will be only one taxi fare, and this combination is therefore the unique primary key.

The tables in the data model are:

- Reservation
- Airport
- Counter
- Carrier
- Destination
- Stop
- Public Trans
- Taxi
- Fare
- Inquiry Summary
- Airline Location
- Add Users, Update Users, and Cancel Users
- Update Codes, Cancel Codes, Service Codes, Payment Codes, Status Codes, and County Codes

The tables grouped together have the same layout, and the differences between them are addressed in the table descriptions.

R.eservation

_ reservation row contains all information relating to a specific passenger reservation. The table is comprised of a unique reservation number, airport code, date, counter, workstation, reservation sequence number, passenger name, passenger gender, destination, stop, carrier, number of adults, number of children, number of infants, estimated pick-up time, service type, preferred indicator, pets allowed indicator, number of bags, special fare indicator, fare, method of payment, booking agent, date/time booked, update agent, date/time updated, update reason, cancel agent, date/time canceled, cancel reason, date/time closed, status, dispatcher, minutes late, address and comments. Each reservation has a destination/ stop/carrier/ service type combination associated with it. The fare is dependent upon the destination, stop, carrier, and service type.

(See next page for layout)



Reservation		
NAME	TYPE	<LENGTH
<i>Resv_ID</i>	<i>Double</i>	8
Airport_Code	char	3
Date	datetime	8
Counter_ID	smallint	2
Workstation_ID	smallint	2
Sequence_Number	smallint	2
Gender	char	1
Last_Name	char	20
Dest_ID	int	4
Stop_ID	int	4
Carrier_ID	smallint	2
Adults	smallint	2
Children	smallint	2
Infants	smallint	2
Est_Pick_Up	chui	5
Service_Type	char	1
Preferred_Ind	char	1
Pets_Ind	char	1
Bags	smallint	2
Special_Fare_Ind	char	1
Fare	real	4
Payment_Type	char	1
Add_ID	char	6
Add_Date	char	8
Add_Time	char	5
Update_ID	char	6
Update_Date	char	8
Update_Time	char	5
Update_Reason	smallint	2
Cancel_ID	char	6
Cancel_Date	char	8
Cancel_Time	char	5
Cancel_Reason	smallint	2
Close_Date	char	8
Close_Time	char	5
Status	char	1
Dispatcher	char	15
Min_Late	smallint	2
Street_Address	char	25
Comments	varchar	255



"irport

All airport is a site where users create reservations at counters. There are three records for this table, one for each airport. The airport table contains information such as airport operations manager names, addresses, telephone and fax numbers, and the airport taxi default comment.

Airport		
NAME	TYPE	LENGTH
<i>Airport_Code</i>	<i>char</i>	3
Name	char	35
Contact1	char	25
Phone1	char	10
Fax1	char	10
Contact2	char	25
Phone2	char	10
Fax2	char	10
Street1	char	25
Street2	char	25
City	char	25
State	char	2
Zip	char	5
Def_Taxi_Comment	varchar	255
Def_Public_Comment	varchar	255



Counter

A counter is the physical site where reservations are made by agents. There are several counters at each airport. The table contains the counter's name and number for reporting purposes.

Counter		
NAME	TYPE	LENGTH
<i>Counter_ID</i>	<i>smallint</i>	2
<i>Airport_Code</i>	<i>char</i>	3
Name	char	12
Eff_Date	datetime	8
End_Date	datetime	8

carrier

A carrier is a company that enters into a contract with the Port Authority to provide ground transportation services for airport passengers. A carrier may offer three services: scheduled line haul, shared door to door, or private limousine service. This table contains the primary attributes of a carrier, including carrier name, address, telephone number, status and code.

Carrier		
NAME	TYPE	LENGTH
<i>Carrier_ID</i>	<i>smallint</i>	2
Name	char	20
Eff_Date	datetime	8
End_Date	datetime	8
Contact1	char	25
Phone1	char	10
Fax1	char	10
Contact2	char	25
Phone2	char	10
Fax2	char	10
Street1	char	25
Street2	char	25
City	char	25
State	char	2
Zip	char	5
Bag_Limit	smallint	2
Pets_Sched_Ind	bit	1
Pets_Shared_Ind	bit	1
Pets_Priv_Ind	bit	1
Makes_Res_Ind	bit	1
Max_Child_Age	smallint	2
Status_Sched	char	1
Status_Shared	char	1
Status_Priv	char	1
Status_Eff_Date	datetime	8
Comments	varchar	255

Destination

A destination is a city, town, or village to which a carrier provides transportation services. Destination records contain destination name, county and state. Additionally, destinations may have many stops associated with them (which are listed in the Stop table).

Destination		
NAME	TYPE	LENGTH
<i>Dest_ID</i>	<i>int</i>	4
State	char	2
County	char	3
Destination	char	30
Display_Ind	bit	1
Comments	varchar	255



A destination may have zero, one or more stops associated with it. A stop is considered to be a major site, such as a hotel, tourist attraction, or railway or bus station.

Stop		
NAME	TYPE	LENGTH
<i>Dest_ID</i>	<i>int</i>	4
<i>Stop_ID</i>	<i>int</i>	4
Stop	char	20
Street	char	25
Zip	char	5
Phone	char	10
Fax	char	10
Display_Ind	bit	1
Comments	varchar	255



....ublic Trans

The Public Trans table contains public transportation service options to destinations maintained by the GTIS. There may be several option from an airport to a particular destination. An option consists of a description and a fare estimate.

Public Trans		
NAME	TYPE	LENGTH
<i>Airport_Code</i>	<i>char</i>	3
<i>Dest_ID</i>	<i>smallint</i>	2
<i>Option_ID</i>	<i>smallint</i>	2
Option_Desc	varchar	255
Fare	real	4



The Taxi table contains taxi information from a given airport to a particular destination. Taxi information is recorded as a combination of the estimated fare and any comments. The comments are not required for the record to be complete.

Taxi		
NAME	TYPE	LENGTH
<i>Airport_Code</i>	<i>char</i>	3
<i>Dest_ID</i>	<i>smallint</i>	2
Taxi_Fare	char	20
Comments	varchar	255



""fare

A fare is the price a passenger pays for the transportation services provided by a carrier. The fare entity consists of detailed fare breakdowns for airport/ carrier/ service type/ destination/ stop combinations. This table maintains information for all carriers and all service types. Fare data is used in computing the total fare a passenger pays to the carrier upon pick-up. Fares information may also include a specific effective and end date. Additionally, each fare may have an associated comment, detailing information specific to the carrier and service type for the destination/ stop.

Fare		
NAME	TYPE	LENGTH
<i>Airport_Code</i>		3
<i>Carrier_ID</i>	<i>smallint</i>	2
<i>Dest_ID</i>	<i>int</i>	4
<i>Stop_ID</i>	<i>int</i>	4
<i>Service_Type</i>	<i>char</i>	1
<i>Eff_Date</i>	<i>datetime</i>	8
End_Date	datetime	8
Adult1	real	4
Adult2	real	4
Adult3	real	4
Addl_Adult	real	4
Child1	real	4
Child2	real	4
Addl_Child	real	4
Van1	real	4
Van2	real	4
Van3	real	4
Sedan	real	4
Wagon	real	4
Limo	real	4
Stretch	real	4
Ind_Transfer	bit	1
Comments	varchar	255



• Inquiry Summary

An inquiry is the process of providing specific fare information for a destination/ stop at a given airport. Agents must perform inquiries prior to making reservations. One destination may have many inquiries but an inquiry has only one destination. The Inquiry Summary table stores the number of inquiries made on each destination at an airport for a given day. If, for a given day and airport, there is no row for a destination, it means there were no inquiries made on that destination from that airport on that day. This table is found only on the WTC server, and therefore only in the WTC view in Crystal Reports.

Inquiry Summary		
NAME	TYPE	LENGTH
<i>Airport_Code</i>	<i>char</i>	3
<i>Date</i>	<i>datetime</i>	8
<i>Dest_ID</i>	<i>smallint</i>	2
<i>Inquiry_Count</i>	<i>smallint</i>	2



''' **irline Location**

This table contains information (departure terminal, arrival terminal, and bus stop) particular airlines at each airport. These data are used to fill the Airline Locator window within the GTIS application. Each row corresponds to an airline at a given airport with a given type of service. The "Type" of an airline location can be either "I" for international service, "D" for domestic service, or "B" for both types of service.

Airline Location		
NAME	TYPE	LENGTH
<i>Airport_Code</i>	<i>char</i>	3
<i>Ailrline</i>	<i>char</i>	30
<i>Airline_Code</i>	<i>char</i>	3
<i>Type</i>	<i>char</i>	1
Dept_Term	char	15
Arr_Term	char	15
Bus_Stop	char	15



· dd Users, Update Users, and Cancel Users

In the Reservation table, three columns store user IDs: "Add_ID," "Update_ID," and "Cancel_ID." Each of these corresponds to the above tables, respectively. When creating a report, if information about a user who has canceled a specific reservation is needed, then the Cancel Users table would be used, because it maps to the "Cancel_ID" column of the Reservation table.

These user tables contain information such as user name, security class, user id, password, password expiration date, and status of each user.

NAME	TYPE	LENGTH
User_ID	char	6
Name_Last	char	20
Name_First	char	15
Eff_Date	datetime	8
Status	char	1
Security_Code	smallint	2
Password	char	6
Password_Exp_Date	datetime	8

Update, Cancel, Service, Payment, Status and County Codes

These code tables store the codes and corresponding decodes or update reasons, cancel reasons, service types, payment types, reservation status and counties. For example, the code for the Scheduled service type is 'H', so in the Service Codes table, that row would have 'H' in the code column, and 'Scheduled' in the decode column.

Codes		
NAME	TYPE	LENGTH
<i>Code</i>	<i>char</i>	8
Decode	char	60



.. ppendix A- Sample Reports

There are three sample reports included in the F:\REPORTS directory. They are practical examples of how to employ Crystal Reports to create useful reports. The first two reports are Crystal Reports versions of standard reports which can be generated using the Standard Reporting window of the GTIS. The third is intended to show some of the more advanced reporting functions.

rdate.rpt

This is a report in the same format as the Detailed Late Pick-Up report (RDLATE). It shows all late reservations by carrier for a given airport over a specified time period. This report was created with the Airport view, meaning that if run at one of the airports, it will include reservations for only that airport (as the page header of this design implies) or if run at the WTC will include reservation for all three airport, unless otherwise modified.

To understand how the report is composed, begin by looking at the page header section in the report design window. There are several "sections" to every report, and user-defined sections can also be added. A title section, for example, should include any elements which should be printed on the first page of a report (i.e., a cover page). The page header section includes elements to be printed at the top of each page. In this case, the page header section contains several text fields with title and column heading information. Sections may be formatted to be hidden or unhidden, to include blank lines or not, to go to a new page before and/or after the section is printed, etc. To format a given section, choose the Format/Section... option from the Menu Bar.

Reports can group data in any user-defined order. When a group is created, a header and a footer for the group are also created and can be formatted the same way as any section. Where the group is created will dictate where the group header and footer are located. In this report, three groups have been created, one inside the other. The headers and footers for these groups have been hidden, but the group definitions can be viewed by choosing the Report/Edit Selection formula/Group... option. Then choose a group from the Field box in the upper left-hand corner to see its definition in the Formula text box. In this report, the outer group orders the data by carrier, the next group orders it by the date added, and the next group orders by the time added. Since the headers and footers for these groups do not need to be seen, they have been formatted as hidden.

The database fields for this report are the reservation operational date, number, time added, estimated pick-up time, time closed, minutes late, destination, service type, and the add agent's user ID. These fields were added to the details section of the report, which is always the "interior" section of any design. Note that some, reservation ID for example, have been formatted.

One major issue with any report design is which records to include (or not include). The rules for record selection for a report can be found by choosing the Report/Edit Selection formula/Record... option. This will open an edit box with the record selection formula in it. This report requires selection of all reservations which were late (where the Min_Late column is greater than or equal to 15) and which have an operational date between September 1, 1995 and September 7, 1995. The formula in this window reflects these criteria. When creating a new report, which rows to include or not include must be strictly defined and expressed as a formula in this manner.



-rcance.rpt

us is a report in the same format as the Cancellation report (RCANCE). It shows all canceled reservations by carrier for a given period of time. It is very similar in format and design to the rdlate.rpt report. This report was also created with the Airport view and implies the same assumptions about data inclusion as the rdlate.rpt report.

Note how easy it is to manipulate one template to get a totally different report, but with a similar format and structure. The groups are essentially the same for this report as for the previous one, as well as the section formatting and many of the database fields in the details section. Their difference lies in the selection formulae. The formula for rdlate.rpt includes all reservation for the date range with a Min_Late value of greater than or equal to 15. For rcance.rpt, the selection formula includes reservation with a Status of 'X' (the code for canceled, which can be looked up in the Cancel Codes table by browsing this table's data. Reservation.Status ='X' could therefore also be expressed as Cancel Codes.decode ='canceled').

xreassum.rpt

This report displays the number of times each cancellation reason is used for all cancellations during a given time period. It requires the use of a formula field which displays the number of rows in a user-defined group. In this case, the rows are grouped by cancellation reason, and the formula field displays the number reservations corresponding to each reason. Notice that, since there are no details needed on a reservation-to-reservation basis, there do not need to be any fields in the details section of the report. This report is for summary statistics only.



L\ppendix B -Codes Tables, Reservation Date and Time Notes

There are several codes tables in the data model. Some of these codes tables, like Updates Codes, Cancel Codes and County Codes, are subject to change over time. Others, however, are fixed. These fixed codes are listed below for reference:

Service Codes

The Service Codes table lists codes and decodes for the three service types in the GTIS system:

Code	Decode
H	Scheduled
p	Private
S	Shared

Each reservation has a service type, as does each fare. Therefore, each reservation row will have one of these codes in the Service_Type column, as will each fare row.

Status Codes

The Status Codes table lists codes and decodes for the three possible states for a reservation:

Code	Decode
A	Active
C	Closed
X	Canceled

Only reservations made during the current day may ever be active. All other reservations are either closed or canceled. The code for a reservation's status is stored in the Status column of its corresponding row.

Payment Codes

The Payment Codes table lists codes and decodes for the four possible payment methods:

Code	<u>Decode</u>
C	Cash
K	Check
R	Charge
V	Voucher

Each reservation has a payment code stored in the Payment_Type column of its corresponding row.



A Note on Reservation Dates and Times

Several tables contain columns which store dates. The Fare table, for example, contains columns for the effective date and the end date of each fare row. The Reservation table, however, has several date columns as well as several columns which store times (e.g., Add_Time). It is important to understand what each signifies so your reports will reflect the proper data.

The Oper_Date column of a reservation stores the operational date for that reservation. The operation date is the same for all reservations made from the time the counter opens to the time the counter closes. Therefore, if a counter opened at 5:30 on September 1, 1995 (all times are in 24-hour format) and closed at 01:00 on September 2, 1995, the Oper_Date value for any reservation made in that time period will be "9/1/1995," even if it was made at 00:30 on September 2, 1995. The Add_Date column stores the day of *the exact moment the reservation is made*. The Add_Date of a reservation made at 14:30 on September 1, 1995 is "9/1/1995," and the Add_Date of a reservation made at 00:45 on September 2, 1995 is "9/2/1995." Thus, it is possible for a reservation to have a different Oper_Date and Add_Date. Similarly, the Update_Date and Cancel_Date columns store the day of the exact moment a reservation is updated or canceled, respectively.

This distinction can become important when ordering and grouping reservations. If reservations for a given operational date are ordered by their Add_Time values, the reservations made after midnight on that operational day will have lower time values than those made at the beginning of the operational day. Take the following reservations, for example:

Reservation	<u>Oper Date</u>	<u>Add Date</u>	<u>Add Time</u>
A	10/10/95	10/10/95	16:42
B	10/10/95	10/11/95	00:27
C	10/10/95	10/10/95	09:54

All three reservations were made during the same operational day. If they are ordered by their Add_Time values only, they would be ordered B, C, A. This is not, in fact, the correct chronological order. If ordered by Add_Date first and then Add_Time, they would then correctly be C, A, B.

ATTACHMENT G: WORK ORDERS

SAMPLE WORK ORDER - I
The Port Authority of New York and New Jersey desires to rebuild the existing (GTIS) application to work with Mobile Apps on all Mobile devices to create a reservation notification process.
Description of Work: Install, modify and test existing application to be compatible with mobile app devices to be able to create ground transportation reservations via mobile device applications. Existing GTIS application will remain online and functioning while the work order is being completed.
EQUIPMENT LIST (if any)
ASSUMPTIONS

STAFFING ALLOCATIONS

Personnel Title	Relative Frequency of Use (Anticipated)	Estimated Hours to be applied to complete Scope of Work	Hourly Rate	Extended Total
Project Manager				
Engineer				
Senior Technician				
Technician				
Programmer				
Web Application Programmer				
System Integration Specialist				
Manufacturer Technician Support				
System Integration Specialist				
System Designer				
Data-Base Administrator				
Administrator				
Extended Labor Total				

SAMPLE WORK ORDER – II

The Port Authority of New York and New Jersey desires to add and install new reservation ticket printers in several Welcome Centers at LaGuardia, Newark and JFK airports.

Description of Work: The purchase, installation, configuration, termination, testing and documentation of the printers and printer cables added to each airport welcome center.

EQUIPMENT LIST (if any)

- (7) Reservation Ticket Printers, Model XXX
- (7) Printer cables

ASSUMPTIONS

110 vac. power is available in all airport welcome centers.

STAFFING ALLOCATIONS					
Personnel Title		Relative Frequency of Use (Anticipated)	Estimated Hours to be applied to complete Scope of Work	Hourly Rate	Extended Total
Project Manager					
Engineer					
Senior Technician					
Technician					
Programmer					
Web Application Programmer					
System Integration Specialist					
Manufacturer Technician Support					
System Integration Specialist					
System Designer					
Data-Base Administrator					
Administrator					
Extended Labor Total					

SAMPLE WORK ORDER – III

Software Updates. It may be necessary at certain times throughout the term if this Contract to update third-party software. The Contractor shall provide the Authority with an analysis of the potential effects of such upgrades/enhancements on the System

Description of Work: The analysis shall include, at a minimum, the following:

- Compatibility of the application software with the new operating system or third-party software;
- Compatibility of the upgrade with the system architecture, server and communications infrastructure ;
- Infrastructure improvements required to support the upgrade;
- Potential increases or decreases in equipment performance;
- The availability of product support for the current (older) version of the operating system or third party software;
- The cost of the software upgrade, including testing and any other tasks which may be associated with the upgrade.
- Contractor shall perform the upgrade on the System, test the System, and update the documentation, all in accordance with the sections testing and documentation.

EQUIPMENT LIST (if any)

ASSUMPTIONS

STAFFING ALLOCATIONS

Personnel Title	Relative Frequency of Use (Anticipated)	Estimated Hours to be applied to complete Scope of Work	Hourly Rate	Extended Total
Project Manager				
Engineer				
Senior Technician				
Technician				
Programmer				
Web Application Programmer				
System Integration Specialist				
Manufacturer Technician Support				
System Integration Specialist				
System Designer				
Data-Base Administrator				
Administrator				
Extended Labor Total				

ATTACHMENT H: PROPOSER REFERENCE FORM

INSTRUCTIONS FOR STATEMENT OF SUBCONTRACTOR PAYMENT

Attached is the Statement of [Subcontractor Payments form](#), which shall be submitted with every invoice to be used in conjunction with the MBE/WBE Participation Plan.

Name of Proposer: _____

Please provide a list of references on the MBE/WBE firm's performance of similar work within the last five years, including all current contracts. Use additional sheets as necessary.

_____ Include the following information for each reference: _____

Customer Name: _____
Address: _____
Contact Name and Title: _____
Phone and Fax Numbers of Contact: _____
Contract date(s): _____
Contract cost: _____
Description of Work: _____

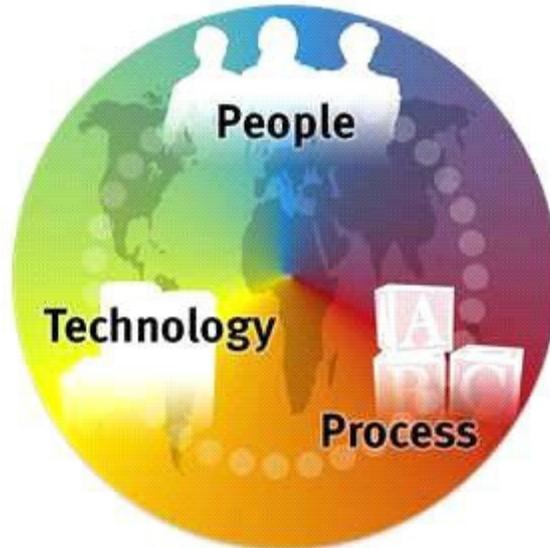
Customer Name: _____
Address: _____
Contact Name and Title: _____
Phone and Fax Numbers of Contact: _____
Contract date (s): _____
Contract cost: _____
Description of work: _____

Customer Name: _____
Address: _____
Contact Name and Title: _____
Phone and Fax Numbers of Contact: _____
Contract date (s): _____
Contract cost: _____
Description of work: _____

**ATTACHMENT I: STANDARD & GUIDELINES FOR PORT AUTHORITY
TECHNOLOGY**

**STANDARDS AND GUIDELINES
FOR
PORT AUTHORITY TECHNOLOGY**

**(Non-Confidential Sections for use in
preparation/distribution with RFP)**



Technology Department

**Version 7.5
5/28/14**

(PREPARED FOR RFP: PLACE TITLE OF RFP HERE)

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Introduction

The purpose of this document is to communicate the standards established by the Technology Department (TD) and provide guidance in proposing Information Technology (IT) solutions for the Port Authority of New York & New Jersey (PANYNJ), the Agency.

To that end, these guidelines intend to help RFP Submitters do the following:

- Implement computing and networking solutions that ensure the utmost reliability, availability and security.
- Procure hardware and software that advances business needs in a manner that is compatible in an ever-changing IT environment that enables departments to work with each other more effectively.
- Easily and efficiently communicate and exchange information throughout the agency.
- Achieve greater systems integration so that the application will be interoperable resulting in cost effectiveness and quality control.
- Adherence to these standards ensures that IT investments achieve Enterprise connectivity, interoperability, consistency, and will enhance performance in a cost-effective way.

1.1 The Port Authority Wide Area Network (PAWANET)

1.2 PAWANET Overview

The Port Authority has a modern distributed computing network, called the Port Authority Wide Area Network (PAWANET), which is managed as an enterprise resource. It connects all the various Port Authority facilities and transportation systems using high-speed voice, data, and video lines or links.

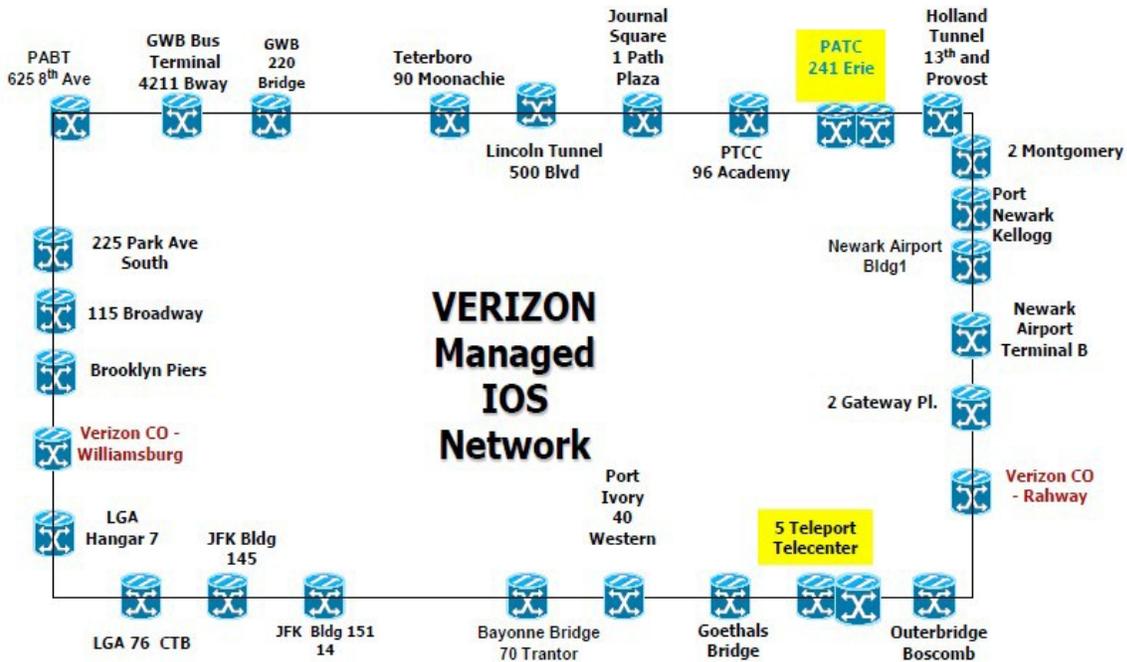
This network is crucial to all Port Authority businesses because it provides the connections for applications such as e-Mail, Internet and Intranet access, SAP, PeopleSoft, Electronic Toll Collection, Computer Aided Design and Drafting (CADD), Lease Image, Closed Circuit Television (CCTV) surveillance systems, and in the future, videoconferencing, and more.

PAWANET consist of a Managed Fiber Optic Dense Wave Division Multiplexed (DWDM) Network, provided by Verizon Select Services, as an Integrated Optical Service (IOS) network. This network consists of eleven separate and distinct (1) Gbps lightwave networks, each interconnecting with the data centers at Telecenter and the Port Authority Technical Center (PATC). Site-to-Site interconnectivity is achieved via the "hub and spoke" topology through the data centers. Additional high-speed Ethernet Private Lines (EPL) have been deployed to support key Port Authority off-ring facilities. Remote locations are linked using redundant high-speed dedicated point-to-point leased communication lines.

Remote locations are linked using redundant high-speed dedicated point-to-point leased communication lines. Wireless connectivity also supported when hardwired connections are not practical.

The network consists of state-of-the-art Cisco Systems equipment and services, such as, high performance Cisco Catalyst switches and routers. The Port Authority uses Bluewater Network Monitoring Services to monitor PAWANET, and Cisco Systems SMARTnet hardware/software maintenance services, and Cisco's Technical Assistance Center (TAC) to support and maintain the network.

1.2 VOIP Circuit Diagram –



1.3 Inter-site Services Providers

The Technology Department (TD) has contracted with a variety of companies to provide inter-site services. Companies providing communications services for the Wide Area Network are listed below.

- AT&T Local Services
- Verizon

1.4 PAWANET Functions

Currently PAW ANET is used to transport the following:

Data	Supports the low and high volume transfer of data used for applications, such as SAP and PeopleSoft, and for network communications, such as e-Mail. Provides a data path for off-site, mainframe data backup of file, print and application servers. Enables the use of Storage Area Network (SAN) for network storage of user files and routing jobs to shared network printers.
Video	The transfer of Closed Circuit TV (CCTV) data is supported across the entire network to provide security for the Port Authority's key facilities. The network provides the hardware capabilities for voice and VoIP transmission.
Voice	The network switches and transmission lines are used for videoconferencing to enable diversely located staff participate in meetings across large geographic area.
Videoconferencing	Voice Over Internet Protocol (VOIP) is in the process of being implemented for the agency to replace the legacy Nortel system , which currently serves the majority of Port Authority users. VOIP will be another data stream utilizing the PAW ANET infrastructure.
VOIP	

1.5 Features of PAW ANET

PAW ANET provides a high performance and reliable fail-safe communications network. These are its key features:

- Alternate paths of communication
- Support of high volume traffic such as CADD, CCTV and others
- Catalyst 3000, 4000 and 6500 switches at all the major sites, and at the Teleport
- Cisco high performance 2000, 3000 and 7200 router family products with redundant power supplies

1.6 Supported Protocols

The network supports the following network protocols, allowing dissimilar platforms to communicate within PAW ANET:

TCP/IP:	TCP/IP is the universal protocol that allows communications between all systems within the Port Authority's network, as well as other networks.
IPX/SPX:	This protocol allows communications between all Novell platforms.
SNA/SDLC:	This protocol allows communications between all IBM systems and other systems that support System Network Architecture (SNA).

1.7 PAWANET Switches and Routers

The current standard switches and routers used on PAW ANET are:

- Tellabs Reconfigurable Optical Add Drop Multiplexers (ROADMS) are the DWDM nodes on the Verizon Managed IOS Network.
- Cisco High performance 3000, 4000, and 6000 series switches
- Cisco High performance 2000, 3000 series routers for intermediate connectivity.
- Cisco 7200 high performance routers
Provide high-speed connectivity and routing capabilities across the network in

support of TCP/IP, IPX/SPX and bridging functions, and provides routing capabilities for Port Authority Internet access.

- A pair of fault tolerant 10 Gbps links on IOS are established on IOS to provide the required band with between the data centers at Telecenter and PATC.

1.8 Approved Servers

Only IBM File & Print and Application servers may be connected to PAW ANET.

This includes turnkey and distributed systems where File & Print or Application servers are used. Any replacement File & Print or Application servers must be IBM servers. Deviation from this policy will not be allowed, without prior approval of the Chief Technology Officer or their designee.

1.9 Enterprise Addressing Scheme (including IP addressing)

The Port Authority's enterprise network is a TCP/IP Class B network allowing for a maximum of 255 subnet assignments. Subnets assigned on a geographical basis according to the number of resources required. Workstations are configured for dynamic assignment of IP addresses via Dynamic Host Configuration Protocol (DHCP).

TD will assign static IP addresses for servers, printers and faxes that are to be connected to PAWANET.

1.10 Enterprise Network Monitoring Software

The Port Authority has selected Bluewater Network Monitoring Services to continually provide real time monitoring of PAW ANET, and its data and voice link availability. To provide for real time network monitoring, the following software utilities are used by Bluewater and the Port Authority, respectively:

- Remedy Network Management software used by Bluewater
- Cisco Works for Switched Internetworks used by Port Authority

2.1 Network Resources

2.2 Network Overview

The Port Authority has a modern distributed computing network, which is managed as an Enterprise resource. The network connects all individual PCs, servers, printers, and other devices in a unified computing infrastructure that makes it possible for the Port Authority to conduct its business.

The Enterprise Network consists of the PAW ANET (see Section 1.1) and connected Local Area Networks (LAN's). The line of demarcation between the cable and wiring is the responsibility of the carrier and the Port Authority's area of responsibility is usually a wiring closet. The Port Authority's Enterprise Network consists of the following components on the Port Authority side of demarcation:

Enterprise Devices

- Cabling
- Routers
- Switches
- Wiring Closets
- Communications Equipment Racks
- Server Racks
- File and Print Servers
- Application Servers
- Storage Area Networks (SAN)
- Network Printers
- Security Devices (Video Encoders, IP Cameras, ACS Panels)

LAN Devices

- Desktop PCs
- Workstations
- Voice Over IP Phones
- Laptops
- Video Conference Units
- Local Printers
- Scanners
- Copiers
- PC Peripherals

2.3 Enterprise Network Architecture

The Port Authority operates an extensive network of Enterprise file, print and application servers. These devices are linked to an Enterprise Wide Area Network. The flexibility provided by the use of multiple servers, server clusters and Storage Area Networks (SAN) offers users improved network response, greater reliability, increased data security and reduced operating cost. Adherence to the standards outlined in this section allows the Port Authority to manage their systems, applications and data in a way that best meets our business needs while maintaining interoperability and safeguarding Port Authority's information assets.

2.2.1 Server Operating System and Software

All Enterprise File & Print services in the Port Authority are currently, based on the Windows Operating System. Microsoft Windows, Linux and Sun Solaris are supported as application servers when required for functionality.

In addition to the base operating system, all servers must include the following components:

- Virus Protection (minimum: McAfee Engine 8.5.0i, with current DAT files)
- Network Security
- Remote Monitoring and Management
- Intrusion Detection
- Mainframe Systems Backup (minimum: Upstream 3.5.0c)
- Uninterrupted Power Supply (If central UPS is not installed at the location)
- Current Service Packs and security patches (minimum: SP1)

Note: All operating system and server software shall be provided and configured by the Technology Department prior to connection to PAW ANET.

2.2.2 Configuration

All network devices--including servers, workstations, network printers, and network faxes--must use IP addresses which conform to the standards outlined in sections, 1.9 Enterprise Addressing Scheme, and 2.3.1, Server Names. System Administrators may refer to the Guide to System Administration for specific instructions on how to install and configure the Windows operating systems.

2.2.2.1 Drive Mapping Conventions and Organization

Mapping of workstation drive pointers to SAN or server disk volumes or folders is accomplished through a Windows Active Directory Login Script or the Microsoft equivalent. The following drive letters are reserved for Windows Active Directory installations:

Pointer	Volume or Folder
M:	Reserved
P:	Public Applications

Q:	Installation and Upgrade Utilities
S:	Departmental shared directories and files
T:	Reserved
U:	Users Private Home Directory

- Public (Shared) application software installed on a file and print server cluster must reside on a separate volume named "APPS".
Example:
P:\APP
S
- Each software application installed on the file and print server, or server cluster, must have its own sub-folder.
Examples: P:\APPS\EXCEL
P:\APPS\W ORD
- Shared Data stored on a file and print server cluster, shall reside in a volume named Data, and shall be mapped to the "S:\" drive pointer.
Example <Cluster_name>\DATA\<Department_NAME>\SHARE on a server cluster
- Each Department's SHARE folder will contain at least three sub-folders titled Org, Everyone and Projects.
- Under the Projects folder will be two additional folders, one called "Active" and one called "Completed". Active projects reside in the "Active" folder.
- When staff identifies a project as being completed, the project folder will be moved to the "Completed" folder and all rights, except for "Browse" will be removed from the folder. This will ensure that the final project documents remain unchanged, while still allowing authorized staff to review the old documents and use them as templates for new documents if desired. The "Completed" folder will be set to archive its data.
- Under the "ORG" folder will be subfolders with names corresponding to the various divisions within the department. By default, only staff within a division will have access to a division's folder. These folders are intended to hold data for a specific division that would not normally be shared departmentally. Staff from other divisions would not have access to these folders unless the division manager of the owning division gives their approval. Having folders setup by divisions will simplify the process of identifying who is responsible for the contents of a folder.
- The "S" and "U" drives should only be used to store business related files.
- The Systems Administrator, at the direction of the Chief Technology Officer, may from time to time remove any data deemed to be non-business related.
- A folder called "Everyone" will be created in the Share folder. All staff in the department will have full access to this folder to store and retrieve files that are not related to a project or a division's day-to-day operations.
- Additional shared folders, with access restricted to only specific users, if required, will be created in the Share folder. Access will be restricted through the use of Inherited Rights Filters and access will be granted through the use of groups. These groups will be named using the same name as the folder name.
- In general, rights to any folder will be granted through the use of a group having the same name as the folder. The group would have trustee rights to the folder, and users would be added to or removed from the group as needed. All rights would be granted or revoked through the use of form PA-3624A. Designated staffs in each department are required to approve these requests.

- A user “U” drive will be assigned to each standard Windows Active Directory account for use by each individual user to store business related data on the network. Access to the “U” drive is restricted to the account owner only. Users receive all rights to this folder. Users cannot share data on their “U” drive. Files should be shared only by using the Share, (“S”) drive.
- Access to a user’s home directory, by anyone other than the owning user is prohibited and will be removed after notifying the end-user.
- Installation files used in the installation of desktop software must reside in a sub-folder under the “APPS” volume

Example P:\APPS\Pst

2.2.2.2 Connecting LAN Devices to the Enterprise Network

The Technology Department (TD) is responsible for connecting all LAN devices to the Enterprise Network (PAW ANET) provided they meet the Port Authority’s standards. The following system components must meet the standards in order to connect department devices:

Type of Device or Software

- Primary Network Operating System (NOS)
- Application Server Operating System
- Network Interface Card (NIC)

2.2.3 Server Network Resources Security

2.2.3.1 Server Physical Security

All servers and communication equipment must be located in locked rooms or secured with a cable and lock with the keyboard secured to prevent tampering and unauthorized usage.

2.2.3.2 Server Logical Security

To safeguard the Port Authority’s Information Technology (IT) systems and data, TD has implemented a number of processes and procedures, including the requirement that all users accessing the Port Authority’s networks authenticate to the Microsoft (MS) Windows Active Directory (Active Directory). The Active Directory Service is a database containing descriptions of all network devices including servers, workstations and user accounts.

In plain English, this means that by executing a login when you first power on your PC you are telling the network who you are. This is accomplished by providing your Windows Username and password. Just as you are issued an ID card for access to certain facilities, buildings or rooms you need to visit to perform your job, your Windows authentication grants you access to network resources, such as shared data volumes, software applications and network printers you use in performing your assigned tasks.

TD, or its contracted vendor, is responsible for providing all enterprise servers with the following protection of their logical resources:

- Guard against unauthorized access.
- Perform daily incremental backups of servers and authorized workstations and full backups weekly.
- Store all monthly backups off site at a secure location and secure daily and weekly backups on-site in a locked area.
- Test recovery procedures annually.
- Use system and application passwords that conform to the Technology Services Department standards.
- Configurations must conform to security parameters identified by NetVision and Quest

Intrust Suite software.

- Control all remote access using the Port Authority's Remote Access System.
- Maintain current patch levels and critical security updates.

2.2.4 Network Access and User Account Security

2.2.4.1 Account Creation

User accounts are created and managed in MS Windows Active Directory Services for the Windows network resources. Documentation for the creation of user accounts and authority for access is maintained by the Customer Service Desk Manager.

2.2.4.2 Time Restrictions

Due to the fact that The Port Authority serves its clients 24 hours a day, we do not have Login Time Restrictions on our File & Print servers. All staff may access their account 24 X 7.

2.2.4.3 Concurrent Logins

Login sessions will be limited to one connection per user. User accounts should not have the ability to login to multiple workstations after establishing one active connection to the network.

2.2.4.4 Intruder Detection

These system-monitoring features must be active:

- Restrict the count of incorrect login attempts to three before the account is locked out.
- The time for which unsuccessful login attempts are retained to determine a possible intruder attack should be a minimum of 30 minutes before the counter is reset to zero.
- The time for which a user account remains disabled before the account can be used again should be a minimum of 30 minutes.

2.2.4.5 Passwords

All user accounts must have passwords conforming to the following standards:

- Minimum length is six (6) characters.
- The password should not be easily guessed. It should not be related to one's job and should not be a word in the dictionary or a proper name.
- Should be set to expire at least every 90 days and 30 days for accounts with system or application administrator access
- Grace Logins should be activated and limited to three
- Users should be notified several days in advance of password expiration.
- Users should be forced to change their password on initial login and once it expires.
- Unique passwords should be required when changed. Users should be prevented from reusing a previous password for a minimum of one-year.
- Users should not be permitted to change their passwords more than once a day.
- Passwords should be encrypted in storage.
- Passwords must be entered in a non-display field with a re-enter verify function for new passwords.
- Passwords must not be available on hard copy.
- Passwords used in system startup files and login scripts must be encrypted.
- If an application uses a default password, change it on installation.
- Do not use cyclical passwords, such as the word, February, during the month of February.
- Do not reveal your password to anyone except authorized persons.
- Use both upper and lower case characters and special characters where possible.
- Change password if it has been disclosed or compromised.
- Protect by using a screen saver password with a recommended 15-minute time-out

- period.
- Passwords should not be the same as the user ID

Passwords are considered confidential data. They protect the Port Authority's network resources and grant system privileges and access. Disclosure may result in unauthorized access to data, system files and transactions. Passwords are also your signature and identify you as the individual who is responsible for the system activity.

2.2.4.6 Modems and Switches

Staff is prohibited from connecting dial-up modems and switches including wireless switches (e.g. Linksys wireless switches) to workstations that are simultaneously connected to PAW ANET or another internal communication network unless approved by the Technology Department(TD).

Where modems have been approved, users must not leave modems and/or switches connected to personal computers in auto answer mode, such that they are able to receive in-coming dial-up calls.

2.2.5 Remote Access System

The use of local modems to establish direct dial connections to devices on the Port Authority's network is prohibited. Exceptions to this policy require the approval of the Technology Department's Chief Technology Officer.

The approved mechanism for remote access to the Port Authority network is through the Remote Access System (RAS). The Remote Access System utilizes an Internet-based Virtual Private Network (VPN) tunnel established over the Internet linking remote users to the Port Authority Wide Area Network (PAW ANET) (remote client to PA site). It is designed to provide authorized Port Authority users with secure access to corporate applications and to files available on their departmental file servers. This access to applications and resources is delivered through a thin-client environment consisting of a farm of Citrix MetaFrame/Microsoft Terminal Services servers capable of supporting 200 or more simultaneous users each. There is no provided access to the user's office PC desktop. Port Authority offices without direct connection to the Port Authority Wide Area Network (PAW ANET) can use this system to establish remote access to corporate applications located on PAW ANET.

RAS provides multiple security mechanisms to ensure that only authorized users gain access to the Port Authority's computing resources and systems. Through multiple security steps, the user must respond to security challenges. After successful authentication verification, authorized users are provided with access to corporate applications and their departmental network resources through the thin-client environment.

The Port Authority also supports corporate site-to-site VPN connections and utilizes Cisco equipment for these connections.

Remote access is authorized on a case-by-case basis by the Chief Technology Officer.

2.2.6 Hardware Standards

The TD Enterprise Architecture team is responsible for setting the agency hardware standards. As of October 2012, the hardware standards are as follows:

- | | |
|------------------------------------|-----------------|
| • Desktop, Laptop, CAD* | Lenovo |
| • High End Multimedia Workstation* | Apple |
| • Mobile Devices | BlackBerry |
| • Printers* | Hewlett Packard |
| • Routers and Switches | Cisco |

- Servers* IBM and NEC
- Smart Devices iPhone/iPad
- Storage Area Network (SAN) IBM (Entry Level and Mid-Range)

* Note: To maintain optimal operating efficiency of the computing environment a standard “refresh” age has been adopted. The agency standard refresh age is greater than 5 years. TD is responsible for the automatic replacement/upgrade of hardware that has exceeded the agency standard age limit.

2.2.6.1 Standard Servers

A representative sample of standard servers is as follows:

Server Description	IBM Model
WEB Server, Small applications server	xSeries 3550M4
Medium applications server	xSeries 3650M4
Database Server, Multiple and Large application server	xSeries 3850M4
Virtual Clusters	NEC Express 5800 series or IBM as stated above

Each server shall have at least three (3) network interface ports to support a production, management and backup network, and redundant power supplies.

The Port Authority manages servers models via a lifecycle process with a minimum ‘in service’ life of three (3) years.

2.3 Network Naming Conventions

2.3.1 Server Names

The Port Authority employs a naming convention for all servers within PA WANET. That convention will be discussed during a solution implementation phase.

2.4 Directory Services and Structure

The Port Authority uses Windows Active directory to manage network resources and user access. Port Authority departments are designated as organizational units (OU) and servers are network objects contained within the OU.

All network printers should be created using Printer Properties Pro utility.

Applications are distributed using Microsoft System Center Configuration Manager (SCCM).

Applications are distributed based on the type of workstation and user definitions.

Scheduling of distributions is performed in conjunction with client departments.

2.5 System Backup and Recovery

There are two Port Authority approved standard software products, used to perform scheduled server backups:

- **Upstream Reservoir** is a centralized backup tool used to create data backups for all distributed systems.
- **FDR Upstream** is a Mainframe based tool used to backup all Mainframe data.

Backup data is stored on disk storage for prompt backup and restore. Encrypted tape backup is stored remotely at a secure facility, and is required to assure off-site disaster recovery data storage. All backup media and records must be treated with the same level of security and confidentiality as the original data.

The System Administrator is responsible for verifying that system backups, both local and remote backups, can be used to restore the data. Tests of the ability to successfully restore from both backup systems should be performed annually. It is recommended that:

- Tests of the ability to restore system and application files will be performed on a non-production server.
- When incremental or differential backups are routinely used, the test restore procedure should incorporate both.
- Immediately prior to performing the test restore procedure, do a special full backup on the directories being tested.

2.5.1 Backup Logs

The System Administrator will maintain the following logs for a period of two years:

- Back-up activity
- Rotation of back-ups
- Usage/rotation of back-up media
- Off-site data storage

2.5.2 Backup Scheduling

The System Administrator is responsible for performing back-ups of data, application and system files. This must be as follows:

- Weekly full back up of each server. A full back-up is a back up of all files on the server.
- Daily differential, incremental or full back up of each server or server cluster. The type of back-up performed is dependent on time constraints and the amount of data to be backed up. Incremental back ups are back-ups of all files changed since the last back up. Differential back ups are back-ups of all files changed since the last full back-up.
- A Grandfather, Father, Son (GFS) scheme based on a 33 tape rotation should be used to ensure complete back-up and recovery.

2.6 Business Resumption Plan

The vendors, providing IT services to the PA, shall work with the Technology Department (TD) to develop a disaster recovery and contingency plan. The System Administrator will participate in the planning, design, implementation, testing, updating and documentation of the plan. [Appendix 1](#) shows a recommended outline for such a plan. The Business Resumption Plan will be reviewed quarterly and tested at least annually.

2.7 Telecommunications Standards for Enterprise Network Resources

To see the standards and guidelines for the following telecommunications components, please see the Appendix.

[Appendix 2](#) - Communication Rooms/Closets Standards

[Appendix 3](#) - Standard Cabling Schemes

- [Appendix 4](#) - Unified Wiring Specifications
- [Appendix 5](#) - Telephone Closet/ IDF Termination Blocks
- [Appendix 6](#) - Workstation Jacks
- [Appendix 7](#) - Standard Switches
- [Appendix 8](#) - Workstation and Lateral Cable Identification Management
- [Appendix 9](#) - Fiber Optics Specifications for Network Services - PAWANET

2.7.1 [Closet and Telecommunications Room Access](#)

The following standards must be followed regarding access to closets and communication rooms:

- All telecommunications rooms must be physically secured. Remote locations, which are not secured, by a guard or within line of sight of personnel, must be secured by a card access system and/or video cameras.
- The Network Connections (NC) group is responsible for installing routers, switches (along with Cisco Staff when applied) and station drops. They also patch connections and troubleshoot LAN cabling.
- System Administrators requiring routine maintenance of data communications equipment should call the Customer Support Desk when new devices or reconfigurations are required.

2.7.2 [Telecommunications Installation Contractor's Responsibilities](#)

1. Adherence to all of the above specifications
2. Assurance of labor harmony by providing installation technicians whom currently maintains appropriate union membership
3. The contractor must supply all cable, blocks, brackets, connectors, jacks, housings, face plates, special tools, etc., as necessary to perform an installation which is satisfactory to the Port Authority.
4. The contractor must label every workstation (jack faceplate) and the corresponding cross connect point (punch down block or patch panel) in accordance with the cable identification management plan, as previously described.
5. Install all Category 5e cabling in the proper manner, with the appropriate number of twists, to maintain Category 5e integrity and capabilities, as outlined in the TIA/EIA 568-B.2 standard.
6. The contractor must ensure that cable connections are in accordance with

standard telecommunications practices and that all cabling maintains normal connectivity and continuity.

7. All materials must be agreed upon by PA Network Services prior to the start of installation.
8. All computer or network communication rooms and closets are to be isolated, locked, and secured. No other equipment, storage area, or smoking area are to be located in this room. This room must provide appropriate cooling and ventilation. Access to this room will be reserved to TD staff and an agreed upon Facility Manager or designee of the site where the PAW ANET equipment is located. This procedure is to ensure the security and the integrity of the Port Authority's computer network and its users.

2.7.3 Electrical Requirements

The following power and receptacles should be installed to support different equipment requirements such as:

- Standard 110/120 volt power receptacles
- Standard and/or NEMA 5L630P 220/240 volt 30 amp power receptacles
- Dedicated circuit breaker per AC feed, with alternate power source.
- Server rack electrical requirements are specified in the appropriate design document.

Currently, services obtained through the PA's contract are required to have the APC (American Power Conversion) UPS included in the delivered service.

2.7.4 Telephone Company Interface

The following items are needed for the telephone company interface, if needed for a specific vendor solution:

- a) Install a dedicated wallboard for Telco demarcs (if none available for implementation)
- b) Standard Telco demarcs:
 - P66 Block
 - Network Termination Unit (Rj48 interface) Smartjacks
 - Network Termination Unit (DB15-pin female interface)
 - Network Termination Unit (V.35/V.36 female interface)
 - Digital Signal X-connect (DSX)
 - Basic T1 CSU/DSU
 - Basic DS3 handoff coax/HSSI unit
 - High-speed dialup modems for network trouble-shooting when needed

2.8 Documentation

It is the responsibility of the System Administrator to update and maintain a library of all documentation designated as standard by the Port Authority. These include archived system files and system backups. Vendors will be provided our "Guide to Systems Administration" during the implementation phase of a project. The "Guide to Systems Administration" covers the provisioning and setup of computing & networking resources to successfully implement a project within the Port Authority.

3.0 Virus Scanning & Management

3.1 Overview

This section describes the standards and guidelines for the prevention, detection and removal of

computer viruses, (malware). Its purpose is to minimize the risk and negative impact of computer virus infections in the work environment by establishing clearly defined roles, responsibilities and procedures for the effective management of computer viruses.

3.2 Standards

Standard virus protection software must be installed on all network servers and personal computers, and updated on a regular basis. The Port Authority currently uses McAfee ePolicy Orchestrator (ePO) v4.5 to monitor, manage and maintain the virus definition (DAT files) of the Agency desktop computing platform. The McAfee ePO Management Agent (v4.6), and VirusScan / AntiSpyware Enterprise (v4.8), are part of the standard desktop core image.

3.3 Acquisition and Installation

The Technology Department maintains current versions of standard virus protection software and virus detection files, (DATs), including configuration-specific instructions for downloading and installing the software on network servers and desktops

3.4 Virus Detection and Response

The Port Authority's IT support vendor is responsible for responding to all virus outbreaks, as well as eradicating them and, where possible, preventing them.

The speedy reporting of all computer viruses is essential for the protection of the information stored on Port Authority LANs. Much of that information is important to the safety of the public, as well as the day-to-day business of the PA.

If the anti-virus software has detected a virus and cleaned it, no further action is required on the end user's part. If the virus is not cleaned, or the end-user suspects that a virus still exists, the end-user should immediately contact the Customer Support Desk, and they will work to remove the virus.

The Port Authority IT support vendor will respond quickly to all such alerts by doing the following:

Assess the risk

- Confirm the existence of a virus.
- Take appropriate measures to quarantine the virus so that it does not infect other Port Authority devices.

Notify Appropriate Parties

- Contact the originating party who introduced the virus to the Port Authority.
- If it is a new virus, contact our antivirus vendor, McAfee, for further assistance.

Remove the virus

- Work with appropriate parties until the virus is removed.

In addition, the Port Authority's IT support vendor will report on all such outbreaks on a weekly basis. The report must include:

Support Ticket Number

User Name

Virus Name

Information which was lost, (if any)

Time to correct the problem, (lost staff time)

Virus Origin, (if this can be determined; Diskette, CD, Internet)

4.0 Electronic Mail

4.1 E-Mail Overview

The Port Authority's Electronic Mail System (E-Mail) is designed to facilitate business communication among employees, job shoppers, contractors, consultants, and outside business associates. This E-Mail system is comprised of Microsoft Outlook desktop software accessing e-mail stored on Microsoft Exchange servers. This solution also includes group calendaring and workgroup collaboration.

4.2 E-Mail System Architecture

The Port Authority's E-Mail system is hosted by AT&T Corp, who acquired USinternetworking, a managed application service provider; and consists of Microsoft Exchange servers connected to the Port Authority's enterprise network. Authorized Port Authority staff access their corporate e-mail through Microsoft Outlook desktop software on the network. The system has multiple Exchange servers containing mailboxes and Public Folders. Additional servers host Outlook Web Access, BlackBerry services, and perform Internet-based e-mail services including anti-spam and anti-virus e-mail checking.

The hosted Exchange site is on a Windows resource domain with a one-way trust to the Port Authority's corporate user account Windows domain located on the Port Authority network. This Port Authority Windows domain is used for Windows authentication services when the Outlook client is opened. In addition, the Port Authority hosts DNS servers to satisfy requests from the Outlook client as needed.

High-speed, secure, and redundant network connections connect the AT&T's data center and network to the Port Authority network.

4.3 E-Mail Environment: Design Considerations and Infrastructure

The E-mail environment is further described below:

- The E-Mail system is comprised of Microsoft Outlook 2007 desktop software accessing e-mail (via MAPI mail protocol) stored on several Microsoft Exchange 2007 servers
- E-mail is protected by TrendMicro's InterScan Messaging Security Suite and ScanMail for Microsoft Exchange virus protection software products on the Exchange servers.
- Incoming Internet-based e-mail is also scanned for Spam and for viruses through McAfee (MX Logic), a web-based service provider.
- The servers are currently configured for the following messaging protocols:
 - o MAPI (Microsoft's Messaging Mail protocol) and SMTP
- IMAP4 and POP3 mail protocols, NNTP news protocol, and LDAP directory protocol are disabled.
- Front-end Exchange servers running TrendMicro's InterScan Messaging Security System (IMSS) are being used to send and receive Internet SMTP mail. No other mail system connectors (such as Lotus Notes) are in place.
- RIM's BlackBerry Enterprise Server software for Exchange provides wireless e-mail and calendar access to BlackBerry wireless handheld device users.
- There are several forms of SMTP addresses used at the Authority. Exchange Active Sync is used to provide email and calendar access to Apple iPads/iPhones and Windows Mobile devices.
- Exceptions are governed by the Authority's directory services

- structure and user account requirements.
- Each individual e-mail message and its file attachments have a combined limit of 10MB.
- Each regular user mailbox has the following size limits:
- 80 MB - user receives warning notice
- 90 MB - user is prohibited from sending
- 100 MB - user is prohibited from sending or receiving
- Other mailbox sizes exist on an exception basis.
- This E-Mail system also includes group calendaring and workgroup collaboration.
- Public Folders are supported based on departmental and agency-wide requirements and, in general, are used for dynamic items for a form of workgroup collaboration. Static documents like corporate policy statements are placed on the corporate intranet (EmployeeNet) and not on the Public Folders. Documents requiring long-term storage are stored elsewhere such as on Windows file servers.

4.4 Integrating Applications Server with Port Authority Email System

4.4.1 Requesting SMTP Services

The vendor will request SMTP services from and coordinate its work with the Technology Department

Port 25 needs to be available to utilize it for SMTP services.

4.4.2 Email Restrictions

The following restrictions are in place to protect the SMTP system and the “reputation” of Agency mail servers on the Internet:

- Forged email headers are STRONGLY discouraged, but applications for circumvention will be entertained, and valid business justifications must be included. The “From” and “Reply-to” fields should be valid users on the system sending email.
- Settings: The maximum number of recipients per email is currently 90. This includes “To”, “cc”, and “bcc”; maximum size with attachments is 10MB. Emails that do not conform to these restrictions will be rejected by the SMTP servers.
- Mail will be relayed only if your server has an entry in the SMTP access database.

Note: SMTP logs are checked periodically for policy violations. Repeated violations and failure to correct them will result in SMTP services being disabled for the offending system.

5.0 Intranet

5.1 Intranet Overview

The Port Authority EmployeeNet (eNet) is intended to provide timely information and resources to employees via the web browser on their desktops. eNet is a decentralized collection of web pages, data lookup services and applications that are managed as if they were a centralized enterprise resource. It is accessible to all personal computer workstations on the Port Authority Wide-Area Network (PAWANET). eNet is housed on servers at the Teleport.

Examples of business information hosted on eNet include:

- Departmental Websites
- Directories
- Corporate Announcements
- Reference Materials
- Document Collections
- Library Services
- News Displays
- Enterprise and Departmental Applications

5.2 Direction of eNet Development

eNet is intended to provide a convenient, timely and accurate source of information for Port Authority employees as well as providing access to enterprise and departmental applications. The owner of content on eNet is responsible for authorizing its publication, its accuracy and timeliness. Technology Services provides a common infrastructure and technical support for those departments that electronically publish agency information or make available electronic resources. Infrastructure standards and guidelines are recommended to ensure compatibility and facilitate maintenance. Departments requesting specific applications should discuss their requirements with eNet staff to determine a solution that best meets the department's business needs.

5.3 eNet Software Infrastructure Standards & Guidelines

Category	Software Name	Minimum Version
Browser:	Microsoft Internet Explorer	7.0
Browser Plug-in	Windows Media Player	10.0
	Adobe Acrobat Reader	9.0
	Macromedia Shockwave Player	9.0
Web Server Software	Sun One Web Server	6.1
	Microsoft IIS	5.0
Media Server Software	Microsoft Media Server	9.0
Application Server Software	Adobe Cold Fusion 9	7.0
Development and Design Tool	Adobe CS5	11.0
Database	Oracle Database	9i
	MS SQL Server	2008
	MS Access	2007
Programming Language/Scripts	ColdFusion MX	7.0
	Java	6.0
	PERL for Windows	5.0
	JavaScript	1.0
Search Engine Software	UltraSeek	5.7
Web Performance Monitoring	WebTrends Marketing Lab 2	2.0
Content Management	Stellent	7.5
	Open Text Website Management	10.1

5.3.1 Design Guidelines

We have developed the following guidelines to ensure that all web pages on eNet have a consistent look, feel and navigation scheme, while providing creative flexibility.

Departmental Web Site Standards and Guidelines

Prescribed standards are assigned to only the following items:

Resolution: Pages are designed for optimal viewing at the 1024x768 setting.
Page Width: Each page has a fixed page width of 960 pixels.
Page Justification: The entire page is center-justified within the browser window.
Page Layout: Each web page will follow the same, basic layout:
A Global Navigation strip;
A Masthead;
A Local Navigation strip;
A Body area (with a 1-column, 2-column or 3-column layout);
A Footer.

5.3.2 Accessibility Guidelines

TD's eBusiness Unit is committed to making all eNet content accessible to persons with disabilities. In order to ensure that all eNet web content is in compliance with accessibility guidelines and applicable legal requirements, contact the Webmaster via email at webmaster@panynj.gov, or call 212-435-3294.

6.0 Workstation Hardware and Operating System Software

6.1 Overview

The Port Authority makes extensive use of computers (workstations) networked into an Enterprise Wide Area Network to accomplish its business objectives. For the purpose of this section, the term computer and/or workstation will be used to reference desktop, laptop and CAD computing devices. In order to ensure compatibility with the agency's enterprise network and to make optimal use of its resources, this section defines the standards governing workstations and their configuration and use.

6.2 Workstation Operating System Standard

The Port Authority's standard operating system for workstations is Microsoft's Windows XP Professional. The following are operating systems used within the Agency:

- Microsoft Windows XP SP3
- Microsoft Windows 7
- Apple OS X

6.3 Workstation Configuration

6.3.1 Workstation Naming Conventions

All departmental workstations must contain a unique computer name which is the machine's serial number.

Example: Workstation name: 23AAH86

System Administrators are responsible for naming workstations and maintaining an up-to-date inventory of equipment and names used.

6.3.2 Automated Software Distribution for Computers

The Port Authority currently uses Microsoft System Center Configuration Manager (SCCM) 2012 to, at a minimum, do the following:

- Install new, or upgrade existing, software on Agency desktop, laptop, and CAD computers
- Create packages to automate system tasks (e.g. data migrations of desktop computers, eDiscovery requests, etc.).
- Bare Metal Provisioning of Servers.

6.3.3 Remote Workstation Management

The Port Authority also distributes software applications and upgrades via Novell's ZENworks. Each workstation should have Novell's Workstation Management module installed as part of the NetWare workstation client. This will enable remote distribution and updates of software, hardware inventory and workstation troubleshooting.

6.3.4 Drive Mappings

Computer drive mappings are automatically accomplished using a Microsoft login script. The script is executed upon successful login to the Agency's Microsoft domain.

6.3.5 Standard Workstation Hardware Configurations

There are standard configurations established for workstations and laptops. The standards specify the product approved for the following devices: processor, memory, storage, CD/DVD-ROM/multimedia and monitor. The following is current workstation standard:

Lenovo ThinkStation D30 4223-CC9 - Custom PA configuration based on Lenovo Model 4223-69U; (1) Intel Xeon E5-2650 2.0Ghz 8core – (2) x 8GB RAM - (2) 500GB SATA HDD - NVIDIA Quadro 4000 2GB - Windows 7 Professional x64.

Lenovo ThinkPad T430 2347-EZ4 - Custom PA configuration based on Lenovo Model 2347-G6U; i5-3320M, (2) x 4GB RAM, 14.0" High Definition+ Wide Screen Display, 720p Camera, 500GB 7200rpm Hard Drive, Backlit Keyboard-None, Intel 6205 PCIe mini card, PCIe WWAN upg, Finger Print Reader, Blue Tooth, Battery Cells 9, Intel vPro, Windows 7 Professional x64.

Lenovo ThinkCentre M92p 3212-C14 - Tower - Custom PA configuration based on Lenovo Model 3212-C7U; 4x5 i5-3550, (2) x 4GB RAM 1600MHz, 250GB 7200 rpm hard drive, Bay DVD±RW, Media Reader-None, High Definition 2500 Graphics Card, Display Port Dongle-None, Chassis Intrusion Switch-None, Energy Star 5.2, Intel vPro, Global Program-None, Windows 7 Professional x64.

NEC AccuSync AS191WM-BK Flat Panel display- TFT-19" widescreen 1440 x 900 /250 cd/m² 1000:1 5ms 56 - 75 Hz Analog RGB 0.7 Vp-p/75 Ohms DVI-D and VGA 15-pin D-Sub

NEC MultiSync EA243WM-BK - LED monitor - 24" - 1920 x 1200 - TN - 250 cd/m² - 1000:1 - 25000:1 (dynamic) - 5 ms - HDMI, DVI-D, VGA, DisplayPort - speakers - black

6.3.6 Standard Workstation Software

The following software is the standard Port Authority software for departmental workstations. New computer installations should conform to the existing standard.

6.3.6.1 Standard Workstation Software

The following list is a compilation of the core software components found on the computer Arc Build (commonly referred to as an image).

Windows XP, Professional Edition
LumensionPatchlink
System Center Configuration Manager - SCCM
McAfee Antivirus
Internet Explorer
Microsoft Office Professional

Because technology is rapidly changing, TD should be consulted to obtain the most recent versions of standard software.

6.3.7 Enterprise Software

The following is a list of standard enterprise application software used in the Agency. The applications supported by third party service providers are: PeopleSoft, SAP and Livelink Content Management.

6.3.8 Other Business Applications

Other Enterprise applications are deployed on occasion to user workstations. This includes systems like the Business Expenses system, (BEAM) and BudgetPro. System Administrators are responsible for deploying the workstation clients and network server software according to standards and guidelines provided by the Technology Department.

Current list of Enterprise applications, is shown below –

AutoCAD	Oracle
BudgetPRO	PeopleSoft
Cognos Client Software	Primavera
Livelink	SAP
Microsoft Server	Schedulesoft
MS SQL	TRIM

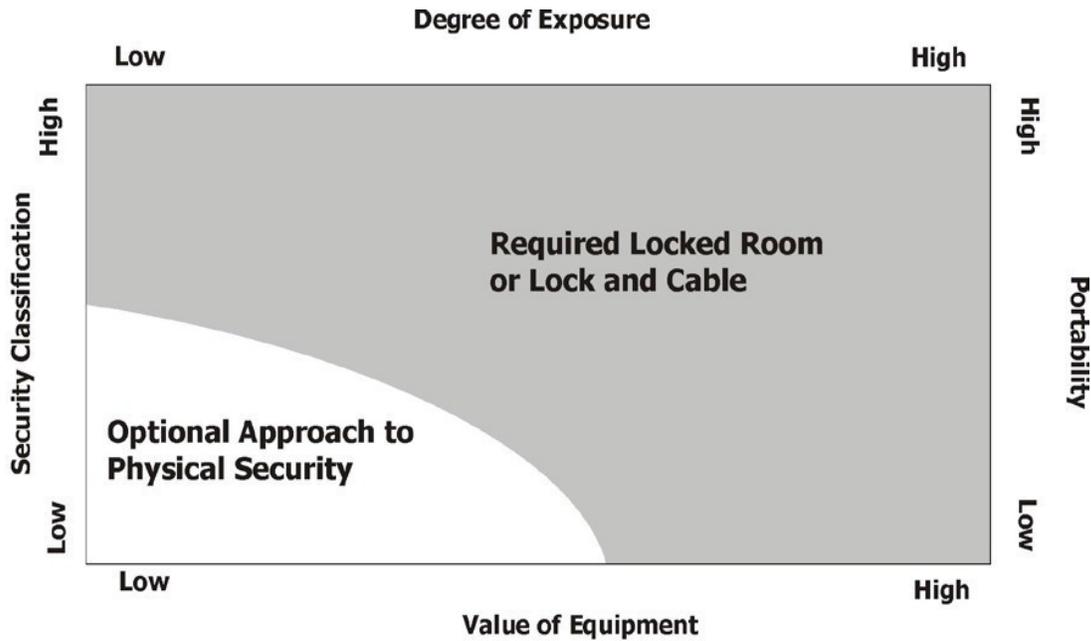
6.4 Workstation Security

Workstation users and their managers are responsible for the security of computer equipment and safeguarding critical corporate data and access to Port Authority network resources. This includes both the physical securing of equipment as well as logical safeguarding equipment and data.

6.4.1 Physical Security

The method of control should be based on the value of the equipment, the sensitivity of the data, its portability and the degree of exposure to theft. The department's Business Manager should make the appropriate determination of physical security required based on their best business judgment.

The graph below provides general guidance to Business Managers in determining the level of physical security required.



In all cases, laptops must be secured with a Lock/Cable product (e.g., Kensington).

6.4.2 Logical Security

The Technology Department (TD) is responsible for providing for the security of computer resources and devices:

- Workstations are protected with Novell and Microsoft directory security mechanisms.
- Screen saver passwords are implemented with a maximum of a fifteen (15) minute time-out.
- All critical data are backed up nightly onto either external media or a network drive.

7.0 Distributed Systems Environment

7.1 Overview

A number of enterprise servers provide critical application and system services. Different operating systems and configurations may be required for specific applications. This section provides information on the standards and guidelines for supported systems within the Port Authority.

7.2 Microsoft Windows Servers

The standard for general-purpose application servers and File and Print Computing is IBM servers. Microsoft Windows 2003 & 2008 Server (Enterprise) are supported Operating Systems for application servers.

7.2.1 Virtual Environment

The standard for Virtualization Computing is both IBM and NEC FT host servers. The Port Authority will provide a VMware ESX-based Guest Virtual Machine (VM) to operate all

Contractor- provided applications software on one of the above host computing platforms depending on the critical nature of the application.

All applications software shall be capable of operating in a virtual environment under VMware ESX server and shall operate in a VMware ESX-based Guest Virtual Machine (VM) on a 'shared' host- computing platform for Contractor application, unless performance or other requirements mandate a dedicated system.

7.2.2 Windows Data Encryption

For those applications that require additional data security measures, TD offers additional tools that provide encryption services to protect the data stored in the application's database, even from authorized individuals that have physical access to the applications and database servers but not the decryption key.

7.3 Unix

Sun/Oracle Solaris is the currently supported UNIX operating system for infrastructure (e.g., SMTP services) and corporate servers. RedHat Enterprise Linux Server is the supported operating system for infrastructure and corporate servers (e.g., SAP, Peoplesoft).

7.3.1 Unix Security

Unix and Linux servers must be physically and logically secured from unauthorized access. Operating system logical security is defined by the Technology Department (TD).

7.3.2 Backup

Critical system backup must be performed regularly (daily and/or weekly) utilizing our centralized backup strategy and associated tools. Extra copy of backup is kept offsite for disaster recovery purposes if required.

7.3.3 Download Scripts in the Unix/Linux Environment

- The script must be written in a generally supported language: Perl, Korn shell and Powershell. Powershell should be consistent with Microsoft standards and best practices.
- The script must be limited in access, as well as the script's owner's user account. The owner of the script should be able to read, edit, and execute the script, but no one else (with the exception of the root or administrator accounts).
- If the content being downloaded is public information or widely available on the Internet, File Transfer Protocol (FTP) may be used.
- For all other content, Secure FTP must be used, and a key exchange made with the entity who is providing the content. A username and password must be used when retrieving the content.
- If the entity cannot accommodate the use of SFTP, ftp may be used as long as the content is encrypted with a secure, widely used utility like PGP.
- Information and guidance on securing passwords should follow Recommendations of the National Institute of Standards and Technology.

7.4 z/OS

z/OS (currently release 1.5) is the IBM-supplied operating system on the IBM 2096-R07. This hardware/software supports multiple users and multiple applications. Provided on this platform for transaction-processing applications are TSO/E, ISPF, and CICS. The database is DB2, although other file structures are also supported.

7.4.1 Databases

Oracle 10.2.0.5 or higher and MS/SQL 2005 Server or higher are the supported database platforms for Port Authority systems. Auditing trail enabled for all database accounts with administrator privileges.

7.4.2 Geospatial Databases

This GIS environment is built on an ESRI platform using ArcSDE for the spatial database. ArcGIS Server 10 and ArcSDE Version 10 are the supported platforms for the current GIS environment.

7.5 Application Security

TD recognizes the critical importance of application security and maintains a Best Practices document containing rules and recommendations for purchased applications, and those developed in-house.

7.6 Server Physical Security

All servers and communication equipment must be located in locked rooms or secured with a cable and lock with the keyboard secured to prevent tampering and unauthorized usage. The Business System Manager is responsible for determining the appropriate access control method (receptionist, metal key lock, magnetic card door locks, etc.) This person must also maintain a list of persons authorized to enter secured areas. Technology Department staff is available to provide technical assistance in making this determination.

7.7 Load Balancing – Failover Architecture

Depending on the requirements of the application, load balancing and failover architectures are supported.

8.0 Vendor Provided Dedicated Systems

8.1 Overview

Vendor Provided Dedicated Systems refers to the application software and possibly the computer hardware that may be furnished and/or installed by an outside contractor. These systems are usually procured through either a Request for Proposal (RFP), or a “Low Bid” contract and are

specifically engineered to support a dedicated application.

These systems generally support Capital Projects, which are usually large scale, multi-year engagements, requiring specialized technical and management staff, as well as, Systems Integration support. These projects normally have significant construction components and require the coordination, design and support from many diverse Engineering and Technology disciplines.

On all technology related projects a representative from the Technology Department (TD) provides a single point of contact for technology oversight, accountability, adhering to standards and systems integration, which is required under the Roles and Responsibilities of the Director and is expected by our client departments.

To ensure a successful project implementation and honoring our responsibility to the Agency and

our customers, one of the steps undertaken by TD is to provide guidance and focus attention on, adherence to and compliance with the Port Authority Technology Standards and Guidelines.

By following the Standards and Guidelines, it enables the Port Authority to

- Leverage large discounts negotiated in the various requirements contracts.
- Ensure that the seamless integration of equipment with other existing systems.
- Ensure that long-term maintenance and systems administration contracts are focused on the same product lines.
- Ensure that the relevant sections of the Standards and Guidelines are included in either, the basic design of a low bid contract or as requirements in an RFP. Responses to RFP's shall be reviewed for their compliance with the Standards and Guidelines.
- Deployment, integration and testing shall be monitored by TD to ensure that equipment or infrastructure is not duplicated, that the integration and migration plan will not adversely affect existing systems, and to integrate new systems under existing maintenance contracts where applicable.

In cases where a specific vendor or system is so specialized that it normally does not adhere to the hardware, software, infrastructure and operations guidelines of the Standards and Guidelines, the vendor shall be directed to work with TD in exploring all options. If an exception is required, the vendor should work with TD to prepare the necessary business case scenarios to receive written concurrence from the Chief Technology Officer for this deviation from the Port Authority Technology Standards and Guidelines.

8.2 Physical Security Technology Standards

8.2.1 Agency Standard for Digital Video Recording, Access Control and Alarm Monitoring

Based upon the Agency's investment and positive experience with Lenel's Systems OnGuard access control and alarm monitoring application offering as well as Verint Nextiva, CCTV and Digital Video recording technologies, these product sets are the Agency's standard. Below is a description of when these standards apply.

The Port Authority has long recognized the need for a corporate architecture for its security systems that would allow us to integrate digital video and access control recording compatible technologies agency-wide. Using these standards will improve the Agency's security posture and will permit us

to leverage additional operations and business benefits while keeping our operations resources, maintenance and support costs at a minimum.

The standard will also improve:

- Access to and the sharing of information from a centralized location
- Centralized monitoring of all facilities from an Emergency Operations Center
- The operational and cost-effectiveness of adding a variety of modular features to the core systems, such as paging, e-mail, fire systems, facility management, etc.
- Alarm notification, response, and acknowledgement
- Operational flexibility for facility and Public Safety staff
- Single learning curve
- Reduce the cost for maintenance and system administration

Guidelines for using the Verint Nextiva standard include:

1. If the CCTV system needs to be recorded
2. When an existing system is in place, at a PA facility or at a tenant facility that is monitored/reviewed by PA personnel, and needs to be upgraded or expanded to accommodate a particular project.
3. When rule based intelligence is to be added like motion detection and other related algorithm processes, all efforts should be made to ensure compatibility, functionality, maintainability (version upgrade resiliency) with the existing Verint

system .

4. If WEB based video needs to be made available
5. When monitoring at remote locations is needed to view on site operations and archived events via the corporate WAN
6. When live video monitoring is required
7. When distributed recording is required i.e. at multiple locations, concurrently
8. When network transport (communication) medium has limited bandwidth and the video needs to be sent to designated workstations on the network. All network transport tasks and bandwidth planning is required to be discussed with Technology Department before proposing any solutions
9. On all new projects where Verint Nextive is the current site base system
10. When the Office of Emergency Management (OEM) department needs override capabilities in the event of an emergency
11. If third party technology (non-Verint supplied) is required to be integrated with the current Verint system at a facility, that technology must be compatible with the existing Verint system at the particular facility. Any third party integrations need to be reviewed and approved by the Technology Department and be approved for use by the manufacturer (Verint) for the software version in production at the facility. When a (Verint) software upgrade is required in order to deploy a third party interface, that upgrade will have to be coordinated through TD, the facility, and the appropriate contractor(s).
12. Any server or workstation supplied in conjunction with a particular system must comply with the hardware and software requirements of both the Port Authority and the manufacturer of the video management software.
For more information regarding CCTV standards, reference the CCTV Standards and Guidelines documentation.

Guidelines for using the Lenel OnGuard standard include:

1. All new or upgrade projects that require electronic card access and / or alarm monitoring
2. All projects that will have security that needs to be monitored by PA personnel or contractors (airports are monitored by contractors)
3. All new projects where Lenel OnGuard is the site base system currently
4. Where access is required to work with ID cards that exist and are compatible with the agency standard
5. When the OEM department needs override capabilities in the event of an emergency
6. If third party technology (non-Lenel supplied) is required to be integrated with the current Verint system at a facility, that technology must be compatible with the existing Verint system. Any third party integrations need to be reviewed and approved by the Technology Department and be approved for use by the manufacturer (Lenel) for the software version in production at the facility. When Lenel software upgrade is required in order to deploy a third party interface, that upgrade shall have to be coordinated through TD, the facility and the appropriate contractor(s).
7. Any expansion of card access systems (added card readers, sensors, etc.) need to be reviewed and approved by the Technology Department to ensure that the new devices meet the agency standards for card access (including but not limited to: card formats, badge layouts, encryption algorithms, etc.)
8. Any server or workstation hardware required in conjunction with a specific system must be provided by the Technology Department.

Currently the Access Control Task Force is working on the Access Control Standards for the Agency. The work is tentatively scheduled to complete by year-end 2013. The Access Control Standards documentation will be available upon completion.

8.2.2 Situational Awareness Platform Software

The Situational Awareness Platform Software (SAPS), is a software application that allows multiple, independently manufactured and installed security, life safety, and building systems to all interoperate under a single, common operating picture, giving a user access to information

spreading across multiple systems as if they were all one single system. This “common view” is made even more valuable by the incorporation of powerful, rules-based tools within the SAPS system, which allows intelligent linking of seemingly unrelated events into “Situations” that represent patterns of activity that pose a threat to security or site-wide operations.

The SAPS objective is to monitor the identity and event data from the various systems, identify incidents and anomalies, and detect trends that could be a threat to our facilities. SAPS turns data into actionable intelligence when an incident is detected. SAPS have the capability to automatically alert the security operations staff and push the information to security control centers and first responders.

- Provide a software platform to enable integrating the various electronic systems across all agency sites
- Provide a single software perform solution for situational awareness.
- Provide a single system database for reports
- The SAPS will provide transparent notification of security related events for all agency security systems.

8.3 Communications Infrastructure Standards

The Port Authority Standard for Communications Infrastructure is Cisco. This applies to all future systems, as well as, upgrades to existing systems. This standard ensures the interoperability of all deployed systems and permits the full integration of systems into PA WANET. In addition, all Cisco equipment either designed in a low bid contract or specified in an RFP must be purchased through the Cisco Requirements contract, which is administered by TD and permits the Agency to purchase equipment, maintenance and support services under the high discounts negotiated in the Requirements Contract.

This standard applies but is not limited to; Layer 2 and 3 Ethernet switches, Routers, Wireless Access Points (WAP), Mobile Access Routers (MAR), GIG E (Gigabit Ethernet) switching and networking and SONET (Synchronous Optical NETWORK) equipment. Deviation from this standard requires the written consent of the Chief Technology Officer.

8.4 Server Infrastructure Standard

The Port Authority’s standard platform for File & Print and Application servers is IBM.

Technology Services has contracted discounted pricing with our service provider for its servers and hardware support. In order for the agency to take full advantage of these savings, any new Application servers or File & Print servers must be built using IBM hardware purchased by TD. This includes turnkey and distributed systems where File & Print or Application servers are specified in the design. Any replacement File & Print or Application servers must be IBM servers. Deviation from this policy will not be allowed without prior approval of the Chief Technology Officer or his designee.

9.0 Wireless Technologies

9.1 Wireless Guidelines

9.1.1 Purpose and Scope

This section references the standard policies and procedures for all wireless devices and technologies including voice and data capabilities that store, process, transmit or access data. This includes but is not limited to commercial and unlicensed wireless networks and laptops, cellular devices, scanning devices, messaging devices (email devices) and PDAs.

9.1.2 General Policy

Employees will only use PA owned wireless devices to store, process, transmit or access PA data.

The following must be considered:

- Wireless Technologies Vulnerabilities Protection
- Minimum Requirements
- Identification and authentication at both the device and network level.
- Confidentiality encryption of data transmitted is required.
- Data end-to-end over an assured channel (a communication link with security protocol such as Secured Sockets Layer).
- At the device level, implement file system encryption where applicable.
- Devices should not be connected to PA systems for data synchronization, data transfer, or any other purpose without virus protection, mobile code restrictions (executable information delivered to information system and directly executed on any architecture that has appropriate host execution environment) and other preventative measures.

9.1.3 Personal Area Networks - PAN

PAN technologies should not be used for transmitting information without encryption.

Bluetooth security alone is unacceptable because it is not encrypted and does not use Federal Information Processing Standardization (FIPS) 140-1/2.

Wireless devices should be procured without Bluetooth embedded transmitters, when not possible transmitter should be disabled.

9.1.4 Wireless Local Area Networks – WLANs

9.1.4.1 Overview

Business requirements have arisen throughout various Port Authority locations for the improved use of Wireless LAN technology to facilitate local user mobility. Research performed on the different technologies support the use of Cisco as opposed to various wireless vendors in an attempt to produce a standard that will provide the agency with a secure, robust and scalable solution as WLAN's continue to grow within the agency.

In summary, the current Port Authority Wireless LAN standards are based upon IEEE 802.11n draft 2.0 technologies. (802.11n is backwards-compatible with existing 802.11a/b/g network adapters.)

The physical infrastructure is now based upon a centralized WLAN architecture that relies upon Cisco wireless bridges, access points, mesh routers and newly implemented controllers. WLAN's should be standardizing on the 4404 and 4402 controllers at this time as described further in this document.

Wireless LAN technology is continually developing with rapidly evolving industry standards, government regulations, and vendor products. As a result, the WLAN Standard presented in this document will likely be superseded in the future as the technology and products change.

9.2 Scope

The scope of this document shall present some standards for the Agency Wireless LAN and the specification of all devices and configurations.

9.3 Principles

At the highest level, the principles for the Wireless Standard are based upon the following attributes:

- Security - use of strong encryption (e.g. WPA-TKIP / WPA2- AES) for use as authentication of all traffic on a port-to-port basis, with the use of credentials stored on a back-end RADIUS server utilizing key distribution.
- Scalability - with LWAPP access points & use of LWAPP tunnels

- Reliability - via authentication of users to the networking enterprise mode.
- Manageability - via secured ports and VPN / FW access.

9.4 Compliance Requirements

All specifications defined in this document may be effective upon approval of and complete concurrence with TD's Chief Technology Officer, to update wireless standards and policies as per IEEE and Wi-Fi Alliance Standards

9.5 Device Specifications

The following sections will provide the various hardware components, and related firmware versions, that are specified for use in the Port Authority's WLAN solution.

9.5.1 Access Point (AP) Standard

Standards Details:

- 3600 AP's are the agency standard for WLAN deployment. These AP's have 802.11n 2.0 radios. Backward compatible to 802.11 a/b/g.
- 1310 AP/ Bridge is certified for use in unique situations where both internal and external antennae are supported. The major distinction is that of a more rugged chassis designed for higher-stress outdoor-type conditions. 3250 mobile routers for mesh deployments.
- AP Deployments will be Lightweight Access Point (LW AP)
- AP Standard Summary:
 - a) Two cables per pull during wiring for wired to wireless.
 - b) AP's & controller placements via RF propagation results.
 - c) PA supported standard AP's need to be verified with TD
 - d) If wireless is primary connection-'load-balance' AP' cabling connection to two different network switches
- WLAN Controller Standard
This standard is in the process of being upgraded to Network Control System (NCS) & Identity Services Engine (ISE) Appliance to accommodate more advanced wireless deployments.

- **Best Practice**

The following information is industry best practices for wireless hardware implementation agency-wide deployments, not for wireless device configuration practices.

WLAN Best Practices Add-ons:

1. Ensure that the PA maintains an up-to-date wireless hardware inventory.
2. Identify rogue wireless devices via wireless intrusion prevention systems (IPS)
3. Enable automatic alerts on the wireless IPS
4. Perform stateful inspection of connections.
5. Augment the firewall with a wireless IPS
6. Mount AP in location that do not permit easy physical access
7. Secure handheld devices with strong passwords
8. Enable WPA and WPA2 under ENTERPRISE mode
9. Synchronize the AP's clocks to match networking equipment.
10. Manage remote physical locations of all access points which support an isolated network that needs access to PA WANET for server farms and internet access.
11. Maintain cryptographic strength range from 128-bits to 256-bits with matching symmetric algorithms AES-128 to AES-256

Wireless Control System (WCS):

1. Single license

2. Secure "WIRELESS LOCATION APPLIANCE" with real-time client tracking & RF fingerprinting
3. Secure Windows-Based deployment as minimum, for example, windows server 2003; intel dual-core; 3.2 GHz; 4-GB RAM; 80-GB hard drive; IPS devices; IOS firewall routing; HTTP port 80; HTTPS port 443.
4. Multi-homed server (i.e., two NIC cards)
5. Secure WCS and IIS (i.e., internet information service), installation sequence
6. Create configuration group (configure multiple controllers)
7. Secure auto provisioning with filtering
8. Secure WCS with RF modeling for heat map planning
9. Secure 15 second alarm summary refresh

9.1.5 Portable Electronic Devices (PEDs) – Cell Phones, PDAs, messaging devices, laptops and tablets

If a device receives information via a wireless technology, and that device allows that information to be placed directly into the corporate network at the workstation level, then all perimeters and host-based security devices have been bypassed. Therefore, the following procedures apply:

- PEDs connected directly to a PA wired network via a hot sync connection to a workstation shall not be permitted to operate wirelessly at the same time. Wireless solutions could create backdoors into corporate networks.
- IR, Bluetooth and 802.11 peer to peer should be set to "off" as the default setting. Mobile code should be downloaded only from trusted sources over assured channels.
- Anti-virus software should be on devices and workstations that are used to synchronize/transmit data, if available. Where not available on a device, you need to disable the synchronization capability or provide server or workstation based handheld anti-virus protection.
- PEDs are easily lost or stolen therefore approved file system/data store encryption software should be installed.
- PEDs need to be capable of being erased or overwritten to protect data. If the device is no longer needed and cannot be erased or overwritten, it must be physically destroyed.

9.1.6 Cellular and Wireless Email

Cellular and wireless email devices are subject to several vulnerabilities (e.g. interception, scanning, remote command to transmit mode, etc). Therefore, the following procedures apply:

- These devices are not to be allowed into an area where classified information is being discussed unless it is rendered completely inoperable.
 - Must have end-to-end encryption.
- PC based redirectors are not allowed as it requires the PC to be active at all times only server based redirectors should be used.
- Electromagnetic sensing shall be periodically performed to detect unauthorized LANs, Bluetooth transmitters etc.

9.1.7 Synchronization

Some synchronization systems will operate even if the workstation is locked and the wireless or handheld device is not registered with the sync application on the workstation. As long as the workstation is on, the user is logged on, the data application client (e.g. MS Outlook) is active, and the "hot sync" cable is attached to the workstation; any person can place a compatible wireless or handheld device in the "hot sync" cradle and download data. Therefore, the following procedures apply:

- "Hot sync" cable or cradle has significant security risks, therefore perform "hot sync", and then remove immediately once "hot sync" operation is complete.
- Secure "hot sync" cables and cradles.
- Use only PA approved third party sync access control software installed on all workstations.
- PA owned devices may only be synchronized with PA owned computer systems

9.1.8 Responsibilities of Technology Department

- Monitor and provide oversight of all PA wireless activities, insure interoperability of wireless capabilities across the agency.
- Develop appropriate technical standards and guidelines for secure wireless and handheld solutions.
- Establish a formal coordination process to ensure protection of PA information with PA information systems employing wireless technologies.
- Review and evaluate wireless technologies, products, solutions that meet PA requirements.
- Identify approved monitoring mechanisms for wireless devices to ensure compliance with policy.
- Periodically review approved wireless technology standards and procedures to ensure products and solutions remain compliant.
- Support risk management activities associated with evaluating wireless services
- Act as central coordination point and final approval authority for any exceptions to this policy.
- Define or approve acceptable wireless devices, products, services and usage.
- Provide immediate consultation to PA units.

9.1.9 Responsibilities of Technology Services Voice Networks Group

- Adhere to wireless procedures and standards, establish procedure for reviewing and approving requests for using wireless devices to store, process, or transmit information.
- Establish procedures for periodically reviewing approved wireless devices and services to ensure that the business requirement for device/service/system is still valid and meet current PA guidance.
- Establish procedures for inventory and control of wireless devices and equipment.
- Establish procedures and implementation plans for auditing wireless connections to the network.
- Provide user training.

9.1.10 Responsibilities of Wireless and Handheld Device Users

- Coordinate all requests through Technology Department...
- Read and follow standards and guidelines.
- Access information systems using only approved wireless hardware, software, solutions and connections.
- Take appropriate measures to protect information, network access, passwords and equipment.
- Use approved password policy and bypass automatic password saving features.
- Use extreme caution when accessing PA information in open areas where non-authorized persons may see PA info (airport lounge, hotel lobby).
- Protect PA equipment and information from loss or theft at all times, especially when traveling.
- Keep current anti-virus software on devices.
- Use appropriate Internet behavior (e.g. approved downloads).
- Exercise good judgments in efficient cooperative uses of these resources and comply with current and future standards of acceptable use and conduct at all times.
- Report any misuse of wireless devices, services or systems to management.

9.2 Paging Device Policy

9.2.1 Policy

The Port Authority obtains its paging services under governmental contracts. All orders for paging

service or equipment must be placed under these contracts. If the contract service provider cannot meet the paging requirements, a memorandum requesting approval to obtain paging service outside of the contract's must be sent to the Chief Technology Officer.

9.3 Cellular Phone & Wireless Modem Policy and Procedures

9.3.1 Policy

The Port Authority obtains cellular service under governmental contracts. All orders for cellular service or equipment must be placed under these contracts. If the contract service provider cannot meet the requirements, a memorandum requesting approval to obtain cellular service outside of the contracts must be sent to the Chief Technology Officer.

9.4 Technology Services Mobile Device (Windows Mobile and Apple) Policy

9.4.1 Introduction

Mobile devices are a class of handheld computers that currently offer limited functionality with compact size and portability. Mobile devices are designed to replace the paper organizer; functionality typically includes maintaining a date book, address list, to-do lists, email, etc. Additional functionality such as Word and Excel are already included in many Mobile devices, with further enhancements predicted.

In order to better serve the PA, and to limit the expense of supporting a wide variety of Mobile device hardware and software, Technology Services will support the use of the Windows and Apple IOS based devices.

With a Mobile device, a user can maintain their calendar, address book, to-do list, and e-mail on a platform that is very portable and easy to use. Integration with Outlook makes it possible for users to keep identical, synchronized copies of data on both the desktop application and the Mobile devices.

9.4.2 Hardware – Hyper Link

Manufacturers using the current Windows Mobile or Apple IOS software are supported.

9.4.3 Software

The current version of Windows Mobile or Apple IOS software are supported. Microsoft ActiveSync is used for connecting to the corporate E-Mail system.

Any software found to interfere with normal operation must be uninstalled in order to receive support from Technology Services.

9.4.4 Support

Support for Mobile devices hardware and software is provided by Technology Services through the Customer Support Desk. TD will support the physical hardware connection (PDA cradle to PC) and software to support this connection. No software can be added to company owned mobile devices without TD's assistance and Chief Technology Officer approval.

9.4.5 Training

Training will be available covering basic mobile devices use and integration with Outlook at the time of installation of the equipment. Training classes for the mobile devices may be provided in the future depending on user demands.

9.4.6 Acquisition

The PA will purchase Mobile devices for employees with a business need for the mobile device. Employees are responsible for obtaining management approval. TD also recommends that a protective case (preferably a zippered case) be purchased to reduce damage to the

units.

Since the PA owns the device, if an employee leaves the PA, the device is returned to the director's office of their department.

9.4.7 Personal Acquisition

Employees, who purchase their own mobile devices, will not be allowed to connect to the PA corporate network or equipment, unless approved by Technology Services.

Customer Support Desk personnel will support all PA owned and authorized mobile devices.

9.4.8 Data Security Considerations

Since in most cases the data residing on a mobile device is not encrypted or password-protected, data can be easily browsed by anyone having possession of the device. Users should carefully consider what type of information they store on their mobile. Extreme caution should be taken when using company confidential data on the mobile units.

All mobile devices accessing corporate resources should be password protected.

At the present time, Technology Services is researching options for encrypting mobile data using a third-party application. Until a solution is found, great care should be taken to ensure that important or confidential information does not end up in the wrong hands.

9.4.9 Data Backup

Though it does not happen often, it is possible to lose, damage or duplicate the data that resides in the mobile devices and PC applications. Technology Services will provide assistance in attempting to recover files or data from data corruption.

9.5 BlackBerry Device Policy & Procedure

The Port Authority provides corporate wireless e-mail services using the BlackBerry device from RIM.

The BlackBerry is a palm-sized device designed to synchronize with Outlook and other e-mail systems. With a BlackBerry device, one can read, compose and respond to e-mail messages and meeting requests, which are transmitted through the Port Authority's E-Mail System. The BlackBerry contains the user's synchronized Outlook "Contacts" address book, Outlook Calendar, memo pad and task list as well as a calculator and an Internet browser.

9.6 BlackBerry Guidelines

9.6.1 Introduction

BlackBerry devices (data only or combined data (e-mail) & voice) are available from most wireless carriers in the Port District. Combined BlackBerry devices are designed to replace stand-alone cellular telephones and stand-alone BlackBerry data devices and they operate on the same wireless network as a stand-alone cellular telephone from the same carrier.

9.6.2 Support

Support for BlackBerry devices is provided by Technology Services through the Customer Support Desk. The Customer Services/PMO Group provides additional support as needed.

9.6.3 Breakage and Loss

Be aware that the screen used on a BlackBerry device is very fragile. Dropping a device from the height of a desktop can result in breakage. It is also sensitive to water damage. Once this happens, the device is likely to be unusable. Broken, lost or stolen devices should be reported to the Customer Support Desk at 212-435-7469, who will notify the appropriate staff for further action. As with all PA equipment, BlackBerry devices should be used for business purposes only.

9.6.4 Data Security Considerations

Data residing on a BlackBerry device can be easily browsed by anyone having possession of the device. Agency policy automatically activates the password security available on the device. Users should not disable this security feature. Users should carefully consider what type of information they store on their devices. Extreme caution should be taken when using company confidential data on the devices.

9.6.5 Data Backup

Though it does not happen often, it is possible to lose, damage or corrupt the data that resides on the BlackBerry device. There are data backup features on the PC utilizing the BlackBerry Desktop Manager software. We recommend setting the advanced automatic backup to 7 days with the backup of all device application data. In the event of a lost or broken device, this backup may be used to recover lost data.

Appendices

Appendix 1 -- Business Resumption Plan Document Format

I. PURPOSE

- Goals and objectives of plan
- Benefits obtained if plan properly implemented

II. SCOPE OF PLAN

- Planning assumptions
- Facilities and resources included in plan

III. NOMENCLATURE

- Recovery terms
- Definitions and acronyms

IV. DISASTER SEVERITY DEFINITION

Define level of potential disaster based on impact to critical functions. Explain what degree of operational disruption would constitute each level of disaster:

- catastrophic
- serious
- major
- limited

V. OPERATIONS RECOVERY PROCEDURES (Procedures for recovering services)

1. Indicate time frames in which essential operational/business functions must be resumed.
2. Specify sequence of operations recovery events and individuals responsible for activity. Note any specific activities required for particular levels of disaster severity. For example:
 - Notifications
 - Preliminary evaluation
 - Activate operations recovery personnel
 - Coordinate with emergency personnel
 - Evaluate recovery options and issue directive which details:
 - Assigned tasks
 - Project schedule/time frame
 - Coordination required
 - Identify relocation activities, if required
 - External/internal status updates
3. Identify items required for backup of critical functions. For example:
 - Alternate work site
 - Hardware/software
 - Personal computers

- Necessary software packages
- Documentation
- Peripherals (printers, modems, etc.)
- Databases
- Emergency equipment
- Communications
- Transportation
- Supplies
- Security
- Operations and procedures manuals

VI. OFFICE/FACILITY BUSINESS SITE RESTORATION PROCEDURES
(Procedures for restoring physical facilities)

- Identify restoration responsibilities
- Assess damage
- Develop restoration plan/time frames

VII. BRP UPDATE PROCEDURES

- Specify responsibility for updating and communicating BRP changes
- Indicate frequency of review/update

Appendix 2 -- Communication Rooms/Closets Standards

SPACE

All data communication rooms must be designed with required and estimated space to meet immediate requirements, as well as, future growth.

ENVIRONMENTAL

The following conditions must be met:

- a) Doorways/Entrances must be designed to support at least the minimum space requirements of 90"Hx72"W x60" D.
- b) The room's cooling capabilities must be sufficient to support the heat dissipation requirements for the equipment. This requirement will be measured in minimum and maximum BTUs powered by AC-powered systems. Equipment specs will be supplied by TD upon request.
- c) Backup UPS systems are necessary to avoid equipment damage in case of site power failure.
- d) Telco demarcs must be located in a central location with sufficient space to house Telco termination equipment.
- e) The room should be designed with the appropriate fire safety regulations such as a sprinklers, pre-action of FM 2000 systems.
- f) Cables trays must also be installed in the communications room ceiling where appropriate, to support the routing of data communications and Telco cables.
- g) Basic 24"W/30"D/84"H cabinets with 19" racks must be installed to house communications equipment such as: routers, switches, hubs, DSUs/CSUs and monitors.
- h) To create more wall space the use of wall mount racks can be installed. Appropriate sized plywood must be installed prior to mounting racks.
- i) Category 5e/6 cable must be terminated in wall/rack mounted patch panel.
- j) Fiber patch panel must be installed in fiber IDF panel with SC female interface.
- k) The fiber must be neatly tie wrapped and enclosed in flexible inner-duct.
- l) Telephone access must be installed in the appropriate location to provide for basic troubleshooting and vendor support.
- m) All communications equipment and cabinets must have ample room for easy access and proper ventilation.

Appendix 3 - Standard Cabling Schemes

- a) Teflon-coated cables will be installed per fire code regulations.
- b) Overhead cable trays and drop post must be installed for cable routing.
- c) Cabling scheme must be used to label and identify all cables. All cables must be neatly tie-wrapped.

Appendix 4 -- Unified Wiring Plan

To satisfy existing and future voice and data communications requirements, while minimizing the need for wiring changes and additions, the Port Authority has adopted the following lateral wiring specifications for all workstations being constructed. This plan is applicable to all PA locations, except when specifically noted.

LATERAL CABLE:

Voice and data telecommunications requirements for each workstation will be provided by a combination of three individual cables, installed between the workstation and the serving telephone closet / intermediate distribution frame (IDF), in a "home run" configuration. All cabling installed will be of plenum type, fire retardant (FEP) rated.

Cable specifications:

(3) Cables capable of supporting Category 5e capabilities as outlined in the TIA/EIA-568-B.2 standard. Specifically:

Gauge: 24 AWG Pair

Size: 4

Insulation: Plenum, fire code rating (FEP)

Cable allocations will be as following:

Cable #1: Voice** Cable

#2: Data

Cable #3: Data

- *100.0MHz is the speed the PA wants to deliver to the desktop.
- **Cable #1 is to be split in the workstation to support 2 telephones.

Technical specs for the Cat 5e cable is as follows

TECHNICAL DATA - ELECTRICAL

FrequencyMHz	Horizontal		Patch	
	Attenuation dB/100 m max.	Next dB min.	Attenuation dB/100 m max.	Next dB min.
1	2	62.3	2.4	62.3
4	4.1	53.2	4.9	53.2
10	6.5	47.3	7.8	47.3
16	8.2	44.2	9.8	44.2
20	9.3	42.7	11.1	42.7
31.25	11.7	39.8	14.1	39.8
62.5	17	34.3	20.4	34.3
100	22	32.3	26.4	32.3

TECHNICAL DATA--PHYSICAL

	CMR	CMP	CM (Patch)*
	0.02	20	24
Conductor diameter-in. (mm)	-0.52	-0.52	-0.61
Cable diameter-in. (mm)	0.195 -5	165 -4.2	215 -5.5
Nominal cable weight-lb./kft. (kg/km)	21 (31)	21 (31)	23 (34.2)
Max. installation tension-lb. (N)	25 -110	25 -110	25 -110
Min. bend radius-in. (mm)	1 -25.4	1 -25.4	1 -25.4

* Patch cables utilize stranded tinned copper conductors

PARAMETRIC MEASUREMENTS

	Horizontal	Patch
Mutual Capacitance	4.6 nF/100 m nom.	5.6 nF/100 m nom.
DC resistance	9.38 Ohms/100 m max.	9.09 Ohms/100 m max.
Skew	45 ns/100 m max.	45 ns/100 m max.
Velocity of Propagation	72% nom. Non Plenum	72% nom.
Input Impedance	100 + 15% 0.7772-100 MHz	100 + 15% 0.772-100MHz
	ISO/IEC 11801	

COLOR CODE			TEMPERATURE RATING	
Pair 1	White/Blue	Blue	Installation	0 degrees C to +50
Pair 2	White/Orange	Orange	Operation	-10 degrees C to +60
Pair 3	White/Green	Green		
Pair 4	White/Brown	Brown		

Appendix 5 -- Telephone Closet / IDF Termination Blocks

Lateral Data cabling serving each workstation will be terminated on a CAT5e/6 patch panel (RJ45 face, 110 punch rear) in the telephone closet. For analog phone service, termination is to be on 110 blocks in telephone closet, allowing access to the telephone riser. For data, a patch cord is installed between patch panel and IT device. The patch panel can be mounted on the wall with a wall mount kit or in a rack if one is needed and should be appropriately numbered with the workstation number. The patch panel must be capable of supporting Category 5e/6 the TIA/EIA-568-B.2 standard. The patch panel shall have a swing away faceplate or rack mountable.

NOTE: The Category 5e/6 patch panel should be equivalent to the AMP SL series 110Connect Category 5e/6 patch panel or approved Category 6 patch panel. The number of ports may vary.

Each workstation shall be assigned a unique station identification number.

Appendix 6 -- Workstation Jacks

Workstations will be equipped with various components of the AMP Communications Outlet system (AMP equivalent can be used with TD approval). Each workstation will be installed with (1) double-gang jack housing box and matching face plate, capable of securely mounting three Category 5e cables or Category 6 and four modular data connectors, maintaining the integrity of category 5e/ Category 6 capabilities as outlined in the TIA/EIA-568-B.2 standard. All workstation jacks will be wired in accordance with the TIA/EIA-568-B.2 standard. All modular jacks are to be labeled in accordance with TD number schema.

Appendix 7 -- Standard Switches Inside the Department

Any switches in the following Cisco series are acceptable (Vendors will consult with the Technology Department (TD) to determine the appropriate switch configuration at the time of proposal submission):

- Cisco 3000 series – low capacity
- Cisco 4000 series – medium capacity
- Cisco 6000 series – high capacity
- Cisco Nexus 7000 series – high capacity

Appendix 8 -- Workstation and Lateral Cable Identification Management

WORKSTATION AND LATERAL CABLE IDENTIFICATION/MANAGEMENT (Facility)

All lateral cabling installed to workstations at the Port Authority Facilities must be designated in accordance with the Port Authority's workstation and lateral cable identification code: This code consists of two elements, as follows:

- 1 - Room number or department name (acronyms are acceptable).
- 2 - Workstations (3 numeric digits)

The cable identification code for Workstation 10 in room 3801 at LGA CTB is 3801-010. The cable identification code for Workstation 15 in PA Automotive shop is Auto-015

Appendix 9 – Fiber Optic Specification for Network Services - PAWANET

General Scope of Work

1. Conduct a walk thru based on the specific Scope of Work for the job in question.
2. Note that all diagrams and or sketches that may be provided are approximates and not to scale.
3. All fiber optic cable is to be installed in rigid conduit or, where applicable, in plenum rated flexible inner duct.
4. Contractor shall furnish and install fiber optic cable as designated in the specific Scope of Work.
5. Fiber optic cable type for interoffice use shall be loose tube, with aramid yarn water block:
 - Singlemode Fiber – 8.3/125/250 micron diameter (core/cladding/coating) manufactured by General Cable or approved equal.
6. Fiber optic cable attenuation from the factory, before installation, shall not exceed:
 - Singlemode – 4db per km @ 1310nm/.3 db per km @ 1550nm
7. All fiber optic cable is to be labeled on each end and at any junction or patch panel with, 28 gauge, 2” wide embossed with ¼” high letters. The labels are to be fastened to the fiber optic cable using sealed wrap around labels or pliable Velcro ties.
8. Fiber optic cable shall be installed in accordance with the manufacturer’s specifications. Any portion of the cable damaged during installation will be repaired or replaced by the contractor without any additional cost to the Port Authority of New York New Jersey.

Fiber Optic Terminations

1. Fiber optic terminations will use **SC** connectors unless otherwise specified in the Scope of Work.
2. Fiber optic terminations shall not yield more than 1db per mated (at the bulkhead) connector.

Fiber Optic Testing

1. Fiber optic testing shall be performed by the contractor and certified fiber optic technicians.

Fiber optic technicians will be prepared to complete test procedures with the following equipment:

- Source and power meter testing to provide optical loss measurements.
 - Reference test cables and mating adapters that match the cables to be tested.
 - Cleaning materials – lint free cleaning wipes and pure alcohol.
 - OTDR test set with the proper launch cables and adapter types.
 - Power loss testing from both ends.
2. Fiber optic technicians will perform OTDR test on all terminated fibers unless otherwise noted in the Scope of Work.
 3. Fiber optic test results shall be recorded, and reports provided to the PA in hardcopy and via a readable txt file (PDF or RTF is acceptable).

Appendix 10 -- Public Telephone Ordering Guidelines

Technology Services (TD) staff is responsible for the management of the permit for public telephone service are available to answer any questions and provide direction for any matter relating to public telephones.

General Guidelines

All public telephone requests – that is both coin and non coin in any Port Authority space or any area of the tenant space – both “public” and “club” locations will be coordinated by the Port Authority to cover both New York and New Jersey.

Process

When the Facility, Property Manager, tenant or their representative (e.g. designer, architect, general contractor) has a public telephone requirement, they will contact the Technology Department (TD) whom will review the request and provide coordination with the appropriate service provider.

ATTACHMENT J: COST PROPOSAL

1. THREE-YEAR BASE PERIOD

1.A Three –year base period; Fixed Price (Lump Sum)

Description	Facility	Year - 1
(1) Operational Support	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(2) Application Technical Maintenance and Support	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(3) Database Administration	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(4) System Administration, Network and OS System Security, Operating Maintenance, Security, Updates (Until Migrated to PAWANET)	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr

Total Cost Year 1 - \$_____

Include Attachment G, Work Order with Attachment J, Cost Proposal.

Description	Facility	Year - 2
(1) Operational Support	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(2) Application Technical Maintenance and Support	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(3) Database Administration	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(4) System Administration, Network and OS System Security, Operating Maintenance, Security, Updates, (Until Migrated to PAWANET)	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr

Total Cost Year- 2 \$_____

Include Attachment G, Work Order with Attachment J, Cost Proposal.

Description	Facility	Year-3
(1) Operational Support	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(2) Application Technical Maintenance and Support	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(3) Database Administration	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr
(4) System Administration, Network and OS System Security, Operating Maintenance, Security, Updates, (Until Migrated to PAWANET)	JFK	\$_____/mo x 12 months =\$_____/yr
	EWR	\$_____/mo x 12 months =\$_____/yr
	LGA	\$_____/mo x 12 months =\$_____/yr
	SWF	\$_____/mo x 12 months =\$_____/yr

Total Cost Year -3 \$_____

Include Attachment G, Work Order with Attachment J, Cost Proposal.

ATTACHMENT K: CONTROLS REQUIREMENT CONTRACT CHECKLIST

Audit Department Controls Requirement Contract Checklist

General

- Documented procedures, flowcharts and process maps for the application.
- Conduct regular audits, vulnerability testing, and security scanners.
- SSAE 16 SOC 2 Type II (previously known as SAS 70 Level 2)
- Federal Risk and Authorization Management Program (FedRAMP) Certification
- ISO27001 Certification
- Criminal Justice Information Services security policies and procedures (CJIS) compliant for law enforcement information and systems.
- Background check shall be performed on all Contractor's personnel.

System/Security Administration

- Administrative personnel shall receive training.
- Administrative staff shall receive general security awareness training before access is provided. All security training must be reinforced at least every three years and must be tracked as per the PA Information Security Handbook.
- System and security administration procedures shall be documented and distributed.
- Administrator(s) roles and responsibilities shall be documented.
- Developers and/or programmers shall not have access to the production server.
- Operating system administrators shall not have access to the production database and application.

Hardening of operating system/database that supports the application:

- Disable and/or remove unnecessary ports/services.
- Remove all manufacturer samples from the production system. Scripts must be removed from production systems, except those required for the operation and maintenance of the system.
- Default, public, and guest accounts should be secured/locked/removed.
- Change all default passwords; delete all default content and login scripts.
- Limit administrative and user account privilege and access.
- Document system accounts such as administrator, root, oracle and sys.
- Document user/group access rights
 - Users/groups shall be set up with least access required to perform job responsibilities.
- Implement access control at the database level (i.e. user roles and permissions, passwords, secure links)
- Use secure encrypted remote access methods.
- If the application is a web application, log (and monitor) web traffic and trend the activity looking for abnormal activity.
- Ensure that appropriate security and vulnerability assessment tools are running.
- At login, last user login shall not display.
- Inventory listing of hardware and software shall be current and maintained.

License Management

- Ensure that application licensing requirements are documented, reviewed and maintained.
- Application licenses shall be current/valid and individuals/groups with application access shall have completed the necessary access request forms and shall adhere to licensing requirements.

Logical Access Controls

- All users are required to read the Agency Policy Computing Resource Administrative Instruction (AI 15-4.03) and must sign an acknowledgement of the Agency IT Acceptable Use Code of Conduct policy prior to account activation.
- Procedures to grant/modify/delete access shall be documented.
 - Access request forms for adding/modifying/deleting users shall be used.
 - Account expiration for contractors and consultants.
 - Accounts adequately identify the user – no generic accounts
- Ensure that security administrator procedures exist to:
 - Create/remove application access in a timely manner
 - Review user roles/permissions
- Validate that all users have accessed the application within the past 90 days.
 - Review dormant accounts
 - Inactive accounts should be removed.
- Each user shall have a unique user ID, as described in the Port Authority Standard and Guidelines.
 - All user accounts profile shall include Employee ID# and full user name.
- Roles shall be set up with least access required to perform job responsibilities.
- Roles shall have a segregation of duties/roles.
- All accounts must have an individual or business group assigned to be responsible for account management.
- Segregation of duties and areas of responsibility must be implemented where appropriate.
- Whenever segregation of duties is not technically feasible, other compensatory controls must be implemented, such as monitoring of activities, audit trails and management supervision. These compensating controls shall be subject to PA's prior approval.
- Review of audit trails and system approvals must be performed independent and retained to document the implementation of these security controls
- Access Control List (ACL) shall include:
 - Current list of ACL
 - Creation and updates to ACL
 - Testing and approvals of ACL
- The application shall have the PA's warning banner on the login screen. The application shall have a warning banner, terms of use, and/or privacy statement that has been approved by the Port Authority on the login screen.
- The system shall have an access role that shall allow real only access to all application, database and operating system screens, functions, logs and reports.
- Remote access shall be approved, secured, and documented in accordance with PA policy. Remote access, at a minimum, must consist of multifactor authentication mechanisms, secured communications (SSL/ VPN encryption methodology), access control mechanisms and logging of user activity.

Password Controls

- Ensure that password controls for the System are consistent with or more stringent than these requirements:

- Passwords must be at least 10 alphanumeric characters long
- Passwords must be changed every 90 days (administrators every 30 days)
- Passwords must not be shared
- Password complexity enable (capital letter, number, special character)
 - contain at least two upper and lowercase alphabetic characters,
 - contain at least one number (0-9)
 - contain at least one special character (e.g.,-+}:>_?&\$%#).
- Accounts shall be locked after a three logon failures
- Passwords shall not be the same account name
- No concurrent login capabilities
- End user accounts shall be disabled (not deleted) after 60 days of non-use.
- Password file shall be securely stored with limited access and encrypted.
- Application forces initial passwords to be changed and the initial passwords shall not be easily guessable.
- Maintain a password dictionary; password history shall be set to 5.
- Set “automatic session timeout” to 15 minutes of inactivity and require user to log back in with valid ID and password.
- Smartphones and smart device, where capable, shall leverage biometric access to provide the most security for the least inconvenience.

Application Controls

O. Data Validation & Input Controls

- The application shall have input controls to verify the validity of the data entered.

P. Data Retention and Management

- All data shall be classified according to its sensitivity (confidential, etc) and protected accordingly.
 - Data archive strategy shall be documented and in place and shall specify how long active data is kept.

Q. Data Integrity and Security

- Sensitive data, such as credit card #s and Social Security #s, shall be encrypted.
- Data shall be restricted and audit trails shall be available to identify all user activity include view access to sensitive data.
- Sensitive data shall be stored in the database encrypted and blocked from user views in the application unless it is authorized.
- Encryptions level shall at a minimum be AES 256bit when encryption is used.

R. Application Interfaces

- Interfaces shall have secured transmission and be archived.
- Reconciliation of data shall be done on a batch record and totals. Detail data reconciliations shall be completed on periodic basis.

S. Processing Controls

- Application databases/interfaces shall have the necessary controls to prevent processing of inaccurate, duplicate, or unauthorized transactions and producing inaccurate outputs.
- Controls to ensure that all data is processed and accounted for shall be in place.
- Rejected items shall be logged, tracked and resolved in a timely manner.

Change Management

- Processes and tools shall be used to report, track, approve, fix, and monitor changes on the application.
- The application and all changes to the application shall be tested before being put into production.
 - Documentation of approval for change and evidence of testing shall be in place.
 - Specific timetable/schedule shall be documented.
- Emergency procedures shall be documented and distributed.
- Separate environments are required for development, test, quality assurance, production.
- Procedures shall require that no changes be made directly in the production environment without going through the development/test/quality assurance environments.
- Formal change control procedures for all systems must be developed, implemented and enforced.
- Where technically feasible, development software and tools must not be maintained on production systems.
- Source code for application or software must not be stored on the production system running that application or software.
- Privileged access to production systems by development staff must be restricted.

Application Logging, Audit Trails and Record Retention

- Audit trails for operating, application, and database systems shall exist and be reviewed
- Users and roles shall be tracked and reviewed
 - Maintain documentation
- All failed logon attempts shall be logged.
- All sensitive transactions and changes shall be logged and an audit trail created.
- Audit trails shall contain who made the change, when it was made, and what was changed.
- Only the security administrator shall have access to change or delete these logs or audit trails.
- Audit trails shall be reviewed by the business owner(s) and security administrator.
- Management reporting shall be produced through the application.
- Access reports by user and privilege shall be produced and reviewed periodically including access violation reports.

Contingency Planning, Disaster Recovery and Backup Management

- A business contingency plan and a disaster recovery plan for the application shall be documented and stored off-site, including escalation plan and current call tree.
- Plans shall be tested and the outcomes of the tests (success/failure) shall be documented.
- Regular backups of the application and the application data shall be stored off-site.
- Application executables shall be stored off-site or in escrow.
- Application configurations shall be documented and backed-up.
- Full system backup shall be encrypted.
- Backup procedures shall be documented.
- Tape maintenance shall include:
 - Periodically testing integrity of tape
 - Procedures for tape destruction due to faulty or scratched hardware.

Performance Monitoring

- Incident monitoring procedures shall be documented and incidents logs shall be reviewed to ensure that appropriate action is taken.
- Performance statistics shall be examined and reviewed periodically by system administrators/business owner(s).
 - If vendor(s) support the application, a service level agreement for uptime, performance monitoring, updates, etc shall be confirmed.
- Baseline tools or security products shall be used and checked on a quarterly basis.

Patch Management

- Patch management procedures and documentation
 - Procedures include testing, approvals, and distribution.
 - Documentation should include emergency procedures.
- Apply all new patches and fixes to operating system and application software for security.
- All security patches must be reviewed, evaluated and appropriately applied in a timely manner. This process must be automated, where technically possible.

T. Physical Protection

- Physical access to the application hardware shall be appropriately restricted.
 - Physical access secured by single authentication mechanism i.e. swipe card.
 - Physical security adequate for equipment (locked cabinets).
- Appropriate fire suppression systems shall be in place.
- Environmental condition adequately controlled (no water, dirt, clutter) and monitored.
 - Temperature and humidity monitoring shall be implemented.
- Security cameras installed in sensitive areas
- Power surge protection and emergency power backup are in place.
- All hardware and software assets must be inventoried.
- Visitors including maintenance personnel, to data center, server and network equipment storage facilities must be escorted at all times.

Anti-virus/Malware/ Integrity/Vulnerability Software Management

- Virus patch management procedures must be documented, including emergency update procedures.
- Anti-virus and software integrity checkers must be implemented to prevent and detect the introduction of malicious code or other threats.
- Virus software engines and definitions must be implemented and up-to-date.
- A remote distribution server shall be implemented for virus software updates and documentation on remote distribution shall be current and maintained.
- Intrusion detection system must be in place,
- All systems must have vulnerability scans performed before going into production and periodically thereafter. Appropriate action, such as patching or updating the system, must be taken to address discovered vulnerabilities.
- Host-based intrusion detection/ firewalls software must be installed and enabled on all systems to protect from threats and to restrict access. Incident response procedures must be in place to address any alerts identified and the Port Authority shall be notified of alerts and what action was taken to mitigate the issues.

- Monitoring systems must be deployed (e.g., intrusion detection/prevention systems) at strategic network locations to monitor inbound, outbound and internal network traffic.
- Monitoring systems must be configured to alert incident response personnel to indications of compromise or potential compromise.
- Procedures must be established to maintain information security during an adverse event.
- Firewalls shall be implemented.
- Firewall rules documentation shall be up-to-date.
- Network management connections must be performed from a secure, dedicated network.
- Network authentication is required for all devices connecting internal networks.

Wireless Device

- Devices shall use WPA/WPA2 and AES encryption or better.
- Devices shall disallow broadcasting of the SSID.
- All default parameters shall be changed.
- Devices shall have MAC address filtering enable or some type of Authority-approved(??) authentication mechanism in place.

Web Application Vulnerabilities and Controls

- The following best practice and standards from these three web sites shall be followed:
 - The Open Web Application Security Project (OWASP) - www.owasp.org
 - www.webappsec.org (a consortium of web application security professionals)
 - Center for Internet Security (CIS) – www.cisecurity.org
- Perform data validation & integrity checks for field values and ensure the HTML special characters are stripped for all HTML request.
- Do not allow site pages to be cached by user browsers.
- All sensitive, personal or confidential data (including SSN, passwords, session IDs for sensitive applications, confidential or sensitive business transactions, etc.) shall be transmitted between browser and server within an SSL-encrypted session (or other encrypted transmission) and are encrypted in the database at rest.
- All sensitive and personal data shall be masked and encrypted were possible.
- Legal Issues:
 - The site shall have a privacy statement and term of usage.
 - American Disability Act – Section 508 shall be taken into account during the development process due to the requirement that federal agencies’ electronic and information technology must be accessible to people with disabilities.
- Web Authentication: To prevent passwords from being passed in the clear, have authentication occur within an SSL encrypted tunnel. Use SSL (certificate) to protect the password.
- Password Reset:
 - For internal applications, reset passwords via the helpdesk or security administrator of the site
 - For external applications, send temporary password to known e-mail address, that must be changed upon login and/or
 - Have customer service reset after the user has been validated.
 - If possible, use two factor authentications like Secure ID fobs.

Credit Card Processing Checklist

- If credit cards are accepted, PCI Standards (PCI DSS v3.0) shall be followed and the process shall be PCI compliant. Ensure all vendors and consultants are required to be PCI compliant. Attachment - The payment card application shall be PCI compliant (PA-DSS v3.0).
- A segregated network and/or an approved Point of Sale terminal shall be in place for the system or terminal used to process credit card transactions.
- The credit card processor standard and requirements shall be followed, i.e. maintain transaction data for two years.
- Maintain the security of the customer information, including not storing credit numbers, the cardholder CVC/CVV numbers or any of the data from the magnetic strip on the credit card.
- Maintain the transaction data for contesting chargebacks, ensure that the processor fees are appropriate and do reconciliations of the transactions processed and the money deposited in the Port Authority bank accounts.
- The appropriate Port Authority functional areas shall be kept aware of credit card processing activity and shall be involved applying for the Merchant ID for MasterCard/Visa, Discover and American Express.
- Create a privacy policy and procedure for staff and consultants.
- Perform quarterly vulnerability scans of the network that contains the credit card processing, annual PCI reviews according to the PCI DSS, and annual system penetration testing.
- Perform the appropriate annual assessment and provide a report on compliance (ROC) which state shows compliance.

Disaster Recovery

- The Disaster Recovery plan shall include at a minimum the following areas.
 - Business Impact Analysis
 - Critical Time Frame
 - Application System Impact Statements
 - Recovery Strategy & Approach
 - Recovery Time Objectives (RTO)/Recovery Point Objectives (RPO) for all critical systems.
 - Disaster Definition
 - Detailed Recovery Steps for each Disaster Definition
 - Escalation Plans and Decision Points
 - System Components - An inventory of the criticality of systems (including but not limited to software and operating systems, firewalls, switches, routers and other communication equipment).
 - Disaster Recovery Emergency Procedures
 - Plan Procedure Checklist
 - Disaster Recovery Team Organization
 - Salvage Team & Team Responsibilities
 - Disaster Recovery Responsibilities
 - Essential Position – Require back-up personnel to be assigned.

- Contacts information Disaster Recovery Team and critical vendors - this area shall be reviewed semi-annually for updates and changes.
- Post-Disaster – Detail what steps need to be taken to move from disaster mode back to normal operations.
- Contingency plans (e.g., business continuity plans, disaster recovery plans, continuity of operations plans) must be established and tested regularly.
- Backup copies of procedures, software, and system images shall be taken regularly and moved offsite.
- Backups and restoration must be tested regularly.

ATTACHMENT M: APPLICATION AND SDLC CONTROLS CHECKLIST

General

- Overview of the application, what the function is, who uses the application, and where it is physically located.
- Documented procedures, flowcharts and process maps for the application.
- Federal Risk and Authorization Management Program (FedRAMP) Certification
- ISO27001 Certification
- Criminal Justice Information Services security policies and procedures (CJIS) compliant for law enforcement information and systems.
- Background check shall be performed on all personnel.
- In the System Development Life Cycle (SDLC), ensure that there are application development and coding standards:
 - Comply with NIST 800-64 Security Considerations in the Information System Development Life Cycle
 - Compliance with Payment Card Industry (PCI) Payment Application Data Security Standard (PA-DSS) Requirements (e.g. Visa, Master Card, etc).
 - Comply with the American Disability Act – Section 508 shall be considered during the development process due to the requirement that federal agencies’ electronic and information technology is accessible to people with disabilities.
 - Adhere to the recommendation provide by the Open Web Application Security Project (OWASP) - www.owasp.org, the Web Application Security Consortium - www.webappsec.org (a of professionals) and the Center for Internet Security (CIS) – www.cisecurity.org
- A Business contingency plan and a disaster recovery plan for the application shall be documented.
- Application executables shall be stored off-site or in escrow.

SDLC Phases

- Initial phase shall include a preliminary risk assessment that defines the potential impact of a breach of security and threats to the environment and system, as well as dictate the basic security needs of the system.
- Acquisition / Development phase shall include documenting the system security environment and functional requirements. This phase shall define the configuration management plan, contingency plan, incident response plan, security awareness and training plan, rules of behavior, risk assessment, security test and evaluation results, system interface requirements, compliance requirements and plan of action and milestones.
- Implementation phase shall include processes to validate and verify that the functionality required are described in the specification and are included in the deliverables. In addition, system testing of the functionality and security controls shall be done to ensure that they meet the requirements and mitigate the risks identified through the risk assessment. Also, the application and any developed software and configuration shall be in an escrow account and updated as changes are made to the system.
- Operations / Maintenance Phase shall establish an initial baseline of the system and implement a process for an effective change management process for the system. In addition, periodic testing and evaluation of the system shall occur to ensure compliance with the established security requirement and any compliance controls that govern the

system as well as verify the effectiveness system controls over time. Also, the application and any developed software and configuration shall be in an escrow account and updated as changes are made to the system.

- Disposition Phase shall include a process for migrating information to a new system and archiving historical data, as necessary. This phase shall also include a migration/transition process from one system to another. Also, this phase shall include a cyclical analysis of current compliance requirements and future technology changes that may render the technology in use obsolete, development of new system requirements for a future system, and begin the process of the acquisition or development of a new system. In addition, media shall be sanitized to ensure that data is deleted, erased, and written over as necessary and hardware and software disposal are in accordance with the Information Security Handbook.

Logical Security and Hardening of operating system/database/application:

- Disable and/or remove unnecessary ports/services.
- Remove all manufacturer samples from the production system. Scripts must be removed from production systems, except those required for the operation and maintenance of the system.
- Default, public, and guest accounts shall be secured/locked/removed.
- Change all default passwords; delete all default content and login scripts.
- Use secure encrypted remote access methods.
- If the application is a web application, log (and monitor) web traffic and trend the activity looking for abnormal activity.
- Ensure that appropriate security and vulnerability assessment tools are running.
- At login, last user login shall not display.
- Inventory listing of hardware and software shall be current and maintained.
- All users are required to read the Agency Policy Computing Resource Administrative Instruction (AI 15-4.03) and sign an acknowledgement of the Agency IT Acceptable Use Code of Conduct policy prior to account activation.
- Procedures to grant/modify/delete access shall be documented.
 - Access request forms for adding/modifying/deleting users shall be used.
 - Account expiration for contractors and consultants.
 - Accounts adequately identify the user – no generic accounts
- Ensure that security administrator procedures exist to:
 - Create/remove application access in a timely manner
 - Review user roles/permissions
- Validate that all users have accessed the application within the past 90 days.
 - Review dormant accounts
 - Inactive accounts shall be removed.
- Each user must have a unique user ID as described in the Port Authority Standard and Guidelines.
- All accounts must have an individual or business group assigned to be responsible for account management.
- Review of audit trails and system approvals must be performed independent and retained to document the implementation of these security controls

- The application shall have the PA’s warning banner on the login screen. The application shall have a warning banner, terms of use, and/or privacy statement that was approved by the Port Authority on the login screen.
- Access Control List (ACL) shall include:
 - Current list of ACL
 - Creation and updates to ACL
 - Testing and approvals of ACL
- Limit administrative and user account privilege and access.
- Segregation of duties and areas of responsibility must be implemented where appropriate.
- Whenever segregation of duties is not technically feasible, other compensatory controls must be implemented, such as monitoring of activities, audit trails and management supervision. The PA must approve these compensating controls.
- Roles shall be set up with least access required to perform job responsibilities.
- Roles shall have a segregation of duties/roles.
- Document system accounts such as administrator, root, oracle, and sys.
- Document user/group access rights
- Users/groups shall be set up with least access required to perform job responsibilities.
- The system shall have an access role that will allow read only access to all application, database and operating system screens, functions, logs and reports.
- Implement access control at the database level (i.e. user roles and permissions, passwords, secure links)

Password Controls

- Ensure that password controls for the system are consistent with these requirements or are more stringent
 - Passwords must be at least 10 alphanumeric characters long
 - Passwords must be changed every 90 days (administrators every 30 days)
 - Passwords must not be shared
 - Password complexity enable (capital letter, number, special character)
 - contain at least two upper and lowercase alphabetic characters,
 - contain at least one number (0-9)
 - contain at least one special character (e.g.-+};>_?&\$%#).
 - Accounts shall be locked after a three logon failures
 - Passwords shall not be the same account name
 - No concurrent login capabilities
- End user accounts shall be disabled (not deleted) after 60 days of non-use.
- Password file shall be securely stored with limited access and encrypted.
- Application forces initial passwords to be changed and the initial passwords shall not be easily guessable.
- Maintain a password dictionary; password history shall be set to 5.
- Set “automatic session timeout” to 15 minutes of inactivity and require user to log back in with valid ID and password.
- Smartphones and smart device, where capable, shall leverage biometric access to provide the most security for the least inconvenience.

Application Interface and Data Management Controls

U. Data Validation & Input Controls

- The application shall have input controls to verify the validity of the data entered.

V. Data Retention and Management

- All data shall be classified according to its sensitivity (confidential, etc) and protected accordingly.
- Data archive strategy shall be documented and in place including specifications for how long active data is kept. These retention periods shall be in compliance with the PA record retention policies.

W. Application Interfaces

- Interface file shall be secured and archived.
- Reconciliation of data shall be done on a batch record and totals. Detail data reconciliations shall be completed on periodic basis.
- Application databases/interfaces shall have the necessary controls to prevent processing of inaccurate, duplicate, or unauthorized transactions and inaccurate outputs.
- Controls to ensure that all data is processed and accounted for shall be in place.
- Rejected items shall be logged, tracked and resolved in a timely manner.

Change Management

- Application executables shall be stored off-site or in escrow.
- Application configurations shall be documented and backed-up.
- Processes and tools shall be used to report, track, approve, fix, and monitor changes on the application.
- The application and all changes to the application shall be tested before being put into production.
 - Documentation of approval for change and evidence of testing shall be in place.

Application Logging and Audit Trails

- Changes to users and roles shall be tracked and reviewed.
- All failed logon attempts shall be logged.
- All sensitive transactions and changes shall be logged and an audit trail created.
- Audit trails shall contain who made the change, when it was made, and what was changed.
- Only the security administrator shall have access to change or delete these logs or audit trails.
- Audit trails shall be reviewed by the business owner(s) and security administrator

Performance Monitoring \ Management Reporting

- Management reporting shall be produced through the application.
- Transaction logs shall be maintained.
- Incident monitoring procedures shall be documented and incidents logs shall be reviewed to ensure that appropriate action is taken.
- Performance statistics shall be examined and reviewed periodically by system administrators/business owner(s).

Web Application Vulnerabilities and Controls

- Sessions IDs:
 - Ensure sessions IDs are difficult to spoof/guess.
 - Session IDs shall be long (at least 30-40 digits for secured applications) and contain alphanumeric characters
 - Session IDs shall be unique, random and non-predictable.
 - Session IDs shall expire after a reasonable time limit (1-3 hours) or for inactivity (10-15 minutes)
 - Ensure session IDs are negotiated whenever a user crosses a secured boundary (from an unsecured to a secured portion of the site)
 - Ensure session IDs are transferred only within an SSL session.
- Cookies:
 - Session cookies shall be assigned randomly (non-sequential).
 - Ensure that session cookies/tokens are non-persistent and are not written to a user's browser history or cache. Use a server-based session cookie/token.
 - Ensure session cookies expire and are removed from the server for elapsed time (30 minutes-2 hours) or inactivity (10-15 minutes)
 - Invalidate the session cookie/token on the server when the user logs out or leaves the site.
- Use the Post HTTP Methods to transfer information from the browser to the server.
- Preventing Hacking Reconnaissance:
 - HTTP Status Error Codes shall be monitored.
 - Never use default names for directories, (e.g., document root, CGI directories, etc.)
 - DNS (Domain Name Services) zone transfer – Ensure default names are changed because these are keywords hackers are searching, (e.g. “gateway”, “firewall”, and “proxy”).
- Store User dependent Data in a Session table:
 - Whenever possible, only the session ID shall be stored on the browser and sent with each request
 - All other user-specific and session-specific variables shall be stored on the server in a session table.
- Perform data validation & integrity checks for field values and ensure the HTML special characters are stripped for all HTML request.
- At a minimum, applications shall strip all (HTML) meta-characters (e.g. <, >, &, etc.), including OS and related SQL meta characters, from user input.
- Restrict the use of the hidden fields.
- Ensure that ID, passwords and system comments are not be included in scripts and pages.
- Ensure the application will not process SQL commands from the user browser
- Do not allow site pages to be cached by user browsers.
- Error Messages:
 - Applications shall trap all specific system error messages, especially those from other infrastructure components that reveal information about the application internals.
 - Ensure that only generic messages with little to no information content are sent to the user's browser.
- Use certificates on the site so that users can confirm they are on the right site.

- A formal “content management” process (and supporting tools) shall be in place to provide change controls, approvals, version controls, and security over changes to web site content to prevent unauthorized changes.
- Validate links periodically to identify dead or misdirected links for correction
- Systems monitoring shall be in place for the server and other relevant devices including the use of automated systems management tools.
- Backups of the website including web server configuration files, static content files, script directories and etc. regularly.
- Secure application, logs, encryption keys, certificates and passwords on the production box. If possible move them to another secured or restrict access to administrators only.
- Web Authentication: To prevent passwords from being passed in the clear, have authentication occur within an SSL encrypted tunnel. Use SSL (certificate) to protect the password.
- Access Controls:
 - Ensure that separation of duties occur at the two levels of access control for web applications: Functional access controls (URL –based) and Data-level access control (handled within application)
- Password Reset:
 - For internal applications, reset passwords via the helpdesk or security administrator of the site
 - Send forgotten password to known e-mail address or via customer service screens after the user has been validated for customer service application.
- Conduct regular audits, vulnerability testing, security scanners and MD5 hash comparisons of the production site. (MD5 – An algorithm that produces a checksum that is revalidated to detect any modification to sensitive hidden form fields, files, directories, etc.)
- All sensitive or confidential data (including passwords, session IDs for sensitive applications, confidential or sensitive business transactions, etc.) shall be transmitted between browser and server within an SSL-encrypted session.

MBE/WBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT PA 3760C/ 11-15

Instructions: Submit one MBE/WBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT form for each MBE/WBE firm used on this Contract. To avoid undue repetition, the following terms, as used in this Agreement, shall be construed as follows: Bidder/Proposer/Respondent - can used interchangeably and mean any Contractor, Consultant, Supplier, or Vendor who submits a response to this solicitation.

CONTRACT NUMBER AND TITLE: _____

PROPOSER:

Name of Firm: _____

Address: _____
 _____ Telephone: _____

Email Address: _____

MBE/WBE:

Name of Firm: _____

Address: _____ Telephone: _____

Description of work to be performed by MBE/WBE: _____

Calculation (supply only): _____

The Proposer is committed to utilizing the above-named MBE/WBE for the work described above. The estimated dollar value of this work is \$ _____
 or
 _____% of the total contract amount of \$ _____. The anticipated start date is _____ and the anticipated completion date is _____

AFFIRMATION of MBE/WBE

The above-named MBE/WBE affirms that it will perform the portion of the Contract for the estimated dollar value as stated above.

By: _____ Date: _____

 MBE/WBE – Print Name and Title Signature of Principal or Officer of

I _____ (print name), an officer of _____ (company name), certify that I have read the PA 3749 MBE/WBE Participation Plan and Affirmation Statement and the information contained in it is true. I fully understand that any false statement within this submittal may prevent the company and/or the undersigned from being found to be responsible Bidders/Proposers in connection with future agreements. In addition, any false statement within this submittal may subject the company and/or the undersigned to criminal charges in the state and federal courts of New York and New Jersey.

Signature of Proposer _____ Title _____ Date _____

Please Note: Only 60% of the expenditure to a MBE/WBE material supplier will be counted toward the MBE/WBE goal. Please show calculation above. Example: \$100,000 x 60% = \$60,000

estimated MBE/WBE dollar value of work. Plan cannot be accepted without calculation.

Officer of Proposer must have ACKNOWLEDGEMENT BY NOTARY PUBLIC completed on the reverse side.

ACKNOWLEDGEMENT BY NOTARY PUBLIC

PA 3760C

MBE/WBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT (reverse)

ACKNOWLEDGEMENT

of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public
My commission expires:

ATTACHMENT N - OFFICE OF BUSINESS DIVERSITY AND CIVIL RIGHTS

MODIFIED MBE/WBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT PA 3760D / 11-15

Instructions: Submit one Modified MBE/WBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT form for each MBE/WBE firm used on this Contract. To avoid undue repetition, the following terms, as used in this Agreement, shall be construed as follows: Bidder/Proposer/Respondent - can used interchangeably and mean any Contractor, Consultant, Supplier, or Vendor who submits a response to this solicitation.

CONTRACT NUMBER AND TITLE: _____

PROPOSER:

Name _____ of _____ Firm: _____

_____ Address: _____

_____ Telephone: _____

Email Address: _____

MBE/WBE:

Name of Firm: _____

Address: _____ Telephone: _____

Description of work to be performed by MBE/WBE: _____

Calculation (supply only): _____

Proposer is committed to utilizing the above-named MBE/WBE for the work described above. The estimated dollar value of this work is \$ _____

or _____

% of the total contract amount of \$ _____. The anticipated start date is _____ and the anticipated completion date is _____

AFFIRMATION of MBE/WBE

The above-named MBE/WBE affirms that it will perform the portion of the Contract for the estimated dollar value as stated above. By: _____ Date: _____ MBE/WBE - Print Name and Title Signature of Principal or Officer of

If the Proposer does not receive award of the Contract, any and all representations in this MBE/WBE Participation Plan and Affirmation Statement shall be null and void. I _____ (print name), an officer of _____ (company name), certify that I have read the PA 3749A MBE/WBE Participation Plan and Affirmation Statement and the information contained in it is true. I fully understand that any false statement within this submittal may prevent the company and/or the undersigned from being found to be responsible Bidders/Proposers in connection with future agreements. In addition, any false statement within this submittal may subject the company and/or the undersigned to criminal charges in the state and federal courts of New York and New Jersey.

Signature of Proposer _____ Title _____ Date _____

Please Note: Only 60% of the expenditure to a MBE/WBE material supplier will be counted toward the MBE/WBE goal. Please show calculation above. Example: \$100,000 x 60% = \$60,000 estimated MBE/WBE dollar value of work. Plan cannot be accepted without calculation.

Officer of Proposer must have ACKNOWLEDGEMENT BY NOTARY PUBLIC completed on the reverse side.

ACKNOWLEDGEMENT BY NOTARY PUBLIC

PA 3760D

MODIFIED MBE/WBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT (reverse)

ACKNOWLEDGEMENT
of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public

My commission expires: