

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

REQUEST FOR PROPOSALS
Networked Video Surveillance
RFP# 250-31-10

Due:
AUGUST 10, 2010
10 a.m.

To: Will McDanel
Procurement Director
100 Ross St. 2nd Fl.
Pittsburgh, PA 15219

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Drawings Referenced in the Technical Specifications are provided on a CD and are available for pick-up from the HACP Procurement Department located at 100 Ross Street, 2nd Floor, Pittsburgh, PA 15219.

SECTION I INTRODUCTION

The HACP is a municipal corporation, formed under the U.S. Housing Act of 1937, codified at 42 U.S.C. Section 1401 et seq. as amended and the Housing Authority Law of Commonwealth of Pennsylvania codified at 35 P.C. 1542, et. seq. as amended. As such, the HACP is charged with providing "affordable decent, safe and sanitary housing for low-income persons."

The HACP has approximately 350 employees and services over 10,000 residents. The Authority itself maintains approximately 5208 units of rental housing; and, through its Section 8 program, funds the rental of more than approximately 5247 other units of privately owned housing.

Major operational departments include Property Management, Maintenance, Occupancy, Section 8, and Modernization & Development. Major administrative departments include Legal, Finance, Management Information Systems, and Human Resources. Our public and community relations departments are Community Affairs and Resident Self-Sufficiency. All departments work together to achieve the goals of the Authority that are set by the Board of Commissioners. Day to day decision-making rests with the Executive Director, who reports to the Board of Commissioners on a regular basis.

The Housing Authority of the City of Pittsburgh seeks proposals from persons or organizations qualified to provide the hardware, cabling, wireless, software, installation and technical services in connection with the implementation of a networked video surveillance system for the Housing Authority of the City of Pittsburgh (HACP).

The Authority is contemplating the award of a professional service contract or contracts in the form of the Sample Contract (**Attachment A**) through this solicitation process.

Any questions regarding this Request for Proposals should be in writing and directed to:

Will McDanel-Procurement Director
Housing Authority of the City of Pittsburgh
100 Ross Street 2nd Floor
Pittsburgh, PA 15219
412.456.5248 phone
412.456.5007 fax
Will.mcdanel@hacp.org

A complete proposal package may be obtained from:

Housing Authority City of Pittsburgh
Will McDanel Director of Procurement
100 Ross Street 2nd Floor
Pittsburgh, PA 15219
(412) 456-5248
FAX (412) 456-5007
Will.mcdanel@hacp.org

Following are the Key Dates associated with this Request for Proposals:

August 10, 2010
10:00 a.m.

Deadline for Submission of Proposals

Will McDanel – Procurement Director
Procurement Department
Housing Authority of the City of Pittsburgh
100 Ross St. 2nd Fl.
Pittsburgh, PA 15219

July 22 & 23, 2010
10:00 a.m.

Pre-submission Meeting:
Housing Authority City of Pittsburgh
Homewood North Community
FIC Building
1201 Mohler Street
Pittsburgh PA

July 28, 2010
10:00 a.m.

Deadline for the submission of written questions.

BID GUARANTEE: *[Applicable only if box is marked.]*

(XX) All bids must be accompanied by a negotiable bid guarantee which shall not be less than five (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company that meets the requirements set forth in Paragraph II.16 below and licensed to do business in the State of Pennsylvania. Certified checks must be made payable to HACP. Failure to submit a guarantee with the bid shall result in rejection of the bid. Bid guarantees submitted by unsuccessful bidders shall be returned to such bidders as soon as practicable after bid opening. *[Applicable only if box is marked.]*

() No Bonding Requirement

II.16. ASSURANCES OF COMPLETION: The bid package must include evidence of the bidder's ability to provide any item marked below if awarded the contract. *[Applicable only if box(es) below is/are marked.]*

() Fraud protection, employee dishonesty, and/or fidelity bond coverage in amounts of not less than \$_____.

(XX) Performance bond in a penal sum of one-hundred percent (100%) of the contract price.

() Payment bond in a penal sum of one-hundred percent (100%) of the contract price.

() No Bonding Requirement

All bonds required in this Paragraph II.19 must be submitted to HACP within ten (10) days after notice of contract award but prior to contract execution. Bonds must be obtained from surety companies acceptable to the U.S. Government and authorized to do business in the State of Pennsylvania. Individual sureties will not be considered. U.S. Department of Treasury Circular Number 570, published annually in the Federal Register, lists companies approved to act as sureties on bonds securing this contract and only such companies shall be accepted by HACP. Each bond shall clearly state the rate of premium and the total amount of the premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the performance or payment bond shall be on or after the execution date of the contract. Failure of the successful bidder to obtain the required assurance of completion within the time specified shall render the bidder ineligible for award.

2. SECTION II SCOPE OF SERVICES

The selected offeror will be responsible for the hardware, cabling, wireless, software, installation and technical services in connection with the implementation of a networked video surveillance system for the Housing Authority of the City of Pittsburgh (HACP).

The scope of services is specifically described below:

2.1. Project Intent

This document is a request for proposal ("RFP") for hardware, cabling, wireless, software, installation and technical services in connection with the implementation of a new networked video surveillance system for the Housing Authority of the City of Pittsburgh (HACP).

2.2. Site Visits

Two days will be devoted escorted tours of the sites. The escorted tours will provide access to the inside high rise buildings and recreation centers. Outdoor areas can be toured at the Bidder's discretion.

2.3. Site Priorities

HACP has identified the following sites as "high priority" and requests they be the first to be installed:

- Allegheny Dwellings
- Bedford

3. PROJECT OVERVIEW AND GENERAL INFORMATION

Housing Authority of the City of Pittsburgh (HACP) plans to install video surveillance in approximately seventeen communities. Each system will have local monitoring and NVR storage with live feeds to the HACP offices located on the 8th floor of 200 Ross Street in Pittsburgh. An existing fiber feed to the Pittsburgh Police terminates within 200 Ross Street, but must be extended to the 8th floor control room to permit the Police Department (PD) access the HACP system.

The installation at 200 Ross Street shall have the ability to monitor all sites within the Housing Authority network. This is the designated Head End for all monitoring. The monitoring center shall consist of a multi-monitor PC with the ability to deliver high end video graphics to at least 8 to 10 50" LCD displays. The video wall dimensions are 19' wide by 10' high and require window coverings. This is not a 24 hour manned site. All WAN feeds will come into this site and will terminate here, a gig core switch will be the connectivity for the video server and any monitoring PCs that will be connected to this private camera network.

3.1. The vendor shall furnish, install and configure the following five major components:

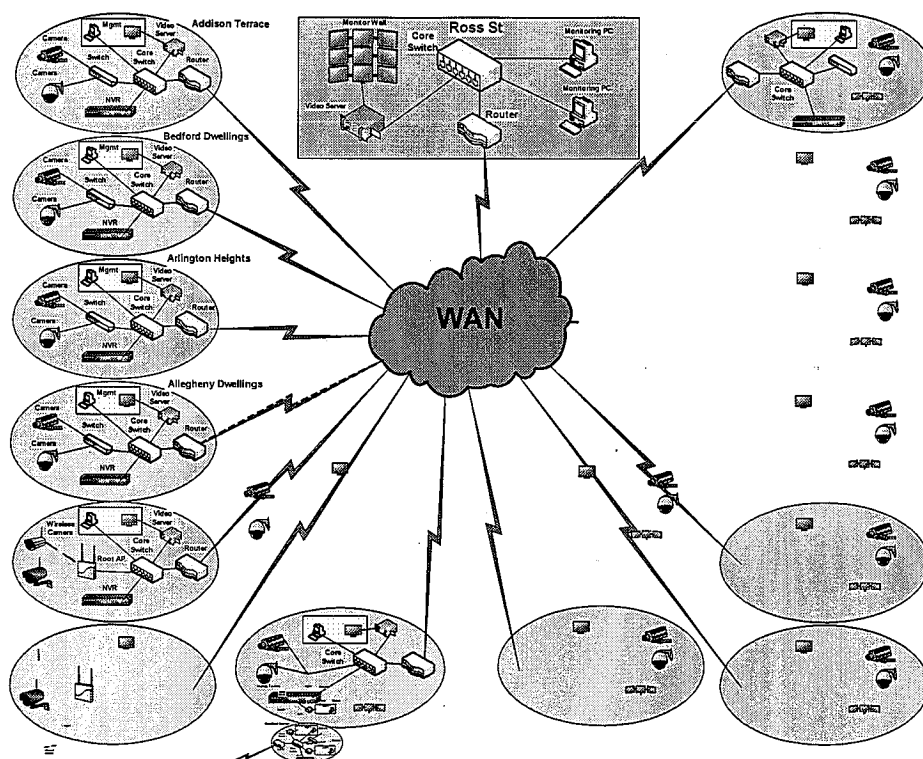
- 3.1.1. Surveillance Management System
- 3.1.2. Cameras
- 3.1.3. Cabled and Wireless Infrastructure
- 3.1.4. Local Area Network Equipment
- 3.1.5. Wide Area Network Connectivity

3.2. The system shall support devices from (but not limited to) the following manufacturers:

Axis	Bosch	Cannon	Digimerge
D-Link	JVC	Mobotix	JVC
Panasonic	Pelco	Philips	Samsung
Sanyo	Sony	Toshiba.	Verint

3.3. For export purposes, the system shall support 56-bit encryption of video. The 56-bit encryption shall meet the US Government requirements on export limits for encryption.

4. BACKGROUND INFORMATION – SYSTEM MAP AND SITE NARRATIVES



4.1 ADDISON TERRACE

Site Name: Addison Terrace

Management Office Address: 2025 Bentley Drive

Drawing References (existing and new): TO-1, T1-1, 2, 3, and 4

Spreadsheet Reference: Addison Terrace Tab

Community Description:

Addison Terrace is a family community with 781 walk-up apartments and 45 row houses in 53 buildings, a recreation center (Addison Hall), a facilities services building, and a newly renovated playground.

Site Physical Description: The community consists of fifty three (53) buildings along Bentley Street & Elmore Square with 3 dedicated parking lots, curb side parking, 2 basketball courts, and a playground.

The management office and recreation center are located in the newly renovated Addison Hall on Elmore Square.

There are 39 existing cameras currently located at Addison Terrace most of which are located outside and fed by Multi-Mode fiber from the facilities services building.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the basement of the management office at Bentley Drive. The Addison Hall building will be the new location to house all existing and new network equipment. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) if necessary.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All WAN circuits are terminated in the basement of the management office at Bentley Street. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work with the fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting. Three cameras will be located inside Addison Hall to monitor the activities within the recreation center & management offices. Three cameras will be located in the facilities services building to monitor equipment and & the main entrance. The spreadsheet lists all cameras and the image quality required for each. (Attachment K)

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Addison Terrace is a community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office or secretary's office at Addison Hall (to be determined) that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52" monitor to view 36 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

There is no room set aside for Pittsburgh Police surveillance.

Communications Infrastructure and Connectivity Design Narrative:

The site is served by HACP/City owned telephone poles that will be used to carry a new fiber distribution network that will be centralized in the management office in Addison Hall. The site plan (T0-1) details all existing telephone poles.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove and trim trees accordingly (preliminarily indicated on T0-1) to provide a clear field of view. Drawing (T0-1) is representative and the bidder retains responsibility for identifying specific trees to be removed or trimmed.

There is one additional Telephone Pole anticipated at this site.

4.2 ALLEGHENY DWELLINGS

Site Name: Allegheny Dwellings

Management Office Address: 1702 Belleau Drive

Drawing References (existing and new): T0-2 and T1-5

Spreadsheet Reference: Allegheny Dwellings Tab

Community Description:

Allegheny Dwellings is a family community with 284 walk-up apartments in seventeen buildings, a recreation center, a ball field and playground.

Site Physical Description:

The community consists of seventeen (17) multi-story walk-up buildings along Belleau and Sandusky streets with multiple dedicated parking lots, two cul-de-sacs, a playground and a section of "City Steps" between building clusters. City Steps are considered a City of Pittsburgh roadway/right of way.

The management office and network hub is in Building #8.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office in the rear of building #8. The equipment is mounted in a ½ rack located in a secured closet. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office in the front of building #8 which are then extended to the network closet. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities: The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting. Two cameras will be located in the new boxing ring located in the rear basement of building #5. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Allegheny Dwellings is a medium sized community with areas of significant concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

A NVR capable of storing 30 days.

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

The site is served by HACP/City owned telephone poles that will be used to carry a new fiber distribution network that is centralized in the management office in building #8. The site plan (T0-2) details all existing telephone poles.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove trees (preliminarily indicated on (T0-2) to provide a clear field of view. Drawing (T0-2) is representative and the bidder retains responsibility for identifying specific trees to be removed.

There are no additional Telephone Poles anticipated at this site.

4.3 ARLINGTON HEIGHTS

Site Name: Arlington Heights
Management Office Address: 2025 Arlington Avenue
Drawing References (existing and new): TO-7 and T1-6
Spreadsheet Reference: Arlington Heights Tab

Community Description:

Arlington Heights is a family community with 150 walk-up apartments in seven buildings, a recreation center, and a newly renovated playground.

Site Physical Description:

The community consists of seven (7) three story walk-up buildings along Arlington Street with two dedicated parking lots, a cul-de-sac and playground.

The management office and a recreation center are located in the rear of the building.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in a closet of the management office which is in the rear of the building on 2025 Arlington Avenue. The equipment is inside a small rack which is mounted to the wall.

The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity

- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the same management office closet in the rear of building located at 2025 Arlington Avenue. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting. Two cameras will be located inside the building to monitor the activities within the recreation center. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Arlington Heights is a small community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

The community has no current outside plant infrastructure. The site is served by HACP/City owned telephone poles that will be used to carry a new fiber distribution network that is centralized in the management office in the building. The site plans (T0-7) details all existing telephone poles.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove trees (preliminarily indicated on T0-7) to provide a clear field of view. Drawings (T0-7) are representative and the bidder retains responsibility for identifying specific trees to be removed.

There are no additional Telephone Poles anticipated at this site.

4.4 BEDFORD DWELLINGS

Site Name:	Bedford Dwellings
Management Office Address:	2305 Bedford Avenue
Drawing References (existing and new):	TO-3, T1-7 and 8
Spreadsheet Reference:	Bedford Dwellings Tab
Community Description:	

Bedford Dwellings is a family community with 28 buildings, and a recreation center (Hope Center).

Site Physical Description:

The community consists of twenty eight (28) three story walk-up buildings along Bedford Avenue with one dedicated parking lot, and curb-side parking.

The management office and recreation center are located in the Hope Center.

There are no existing cameras at Bedford Dwellings

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management building - 2305 Bedford Avenue.

The equipment is mounted in a 19" rack located in a secured closet. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management building located at 2305 Bedford Avenue. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting. Eight cameras will be located inside the Hope Center to monitor the activities within the center. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances

- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Bedford Dwellings is a small community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

There is no room set aside for Pittsburgh Police surveillance.

Communications Infrastructure and Connectivity Design Narrative:

The community has no current outside plant infrastructure. The site is served by HACP/City owned telephone poles that will be used to carry a new fiber distribution network that will be centralized in the Hope Center. The site plan (T0-3) details all existing telephone poles.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove and trim trees accordingly (preliminarily indicated on T0-3) to provide a clear field of view. Drawing (T0-3) is representative and the bidder retains responsibility for identifying specific trees to be removed or trimmed.

There are no additional Telephone Poles anticipated at this site.

4.5 CALIGUIRI

Site Name:	Caliguiri Plaza
Management Office Address:	801 E. Warrington Avenue
Drawing References (existing and new):	T0-8, T1-9, 10, 11 and 12
Spreadsheet Reference:	Caliguiri Plaza Tab

Community Description:

Caliguiri Plaza is an eleven story senior citizen high rise community with two dedicated parking lots.

Site Physical Description:

The community consists of one building on E. Warrington Avenue with two dedicated parking lots.

The management office is located on the first floor.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office on the first floor. The equipment is not rack mounted and is sitting under a desk. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed. The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces

- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office on a wall near the network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the building. All external cameras are mounted to the building. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Caliguiri Plaza is a quiet community with no areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

All new cabling will be installed into the management office.

Additional Site Preparation Required by the Bidder

The bidder will be required to trim/remove trees (preliminarily indicated on T0-8) to provide a clear field of view. Drawing (T0-8) is representative and the bidder retains responsibility for identifying specific trees to be removed.

4.6 CARRICK

Site Name: Carrick Regency
Management Office Address: 2129 Brownsville Road
GPS Address (if more accurate):
Drawing References (existing and new): T0-9, T1-13, 14, 15 and 16
Spreadsheet Reference: Carrick Regency Tab

Community Description:

Carrick Regency is a seven floor senior citizen community.

Site Physical Description:

The community consists of one high rise building on Brownsville Road with one dedicated parking lots.

The management office is located on the first floor.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office on the first floor. The equipment is not rack mounted and is sitting under a desk. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed. The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office near the network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the building. External cameras are mounted to the building. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Carrick Regency is a high rise community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

All cabling will be installed into the management office.

Additional Site Preparation Required by the Bidder

None

4.7 FINELLO

Site Name: Finello Pavilion
Management Office Address: 3206 Niagara Street
Drawing References (existing and new): TO-10, T1-17, 18 and 19
Spreadsheet Reference: Finello Pavilion Tab

Community Description:

Finello Pavilion is a family community with a seven-story high rise that has 60 one-bedroom units.

Site Physical Description:

The community consists of one (1) seven-story high rise with external parking lot.

The management office is located on the Main Floor and a community room is located in the Basement. There is a patio located off the community room.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office located on the ground floor of the high rise, the equipment is in a ½ rack mounted to the wall. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office at or near the equipment rack. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the buildings with only a few outdoor cameras utilizing existing telephone poles and buildings for camera mounting. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Finello Pavilion is a hi rise community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

Most, if not all, the cameras should be able to be fed with copper cabling and will not require fiber cabling.

Additional Site Preparation Required by the Bidder

Drawing (T0-10) is representative and the bidder retains responsibility for identifying specific trees to be removed or trimmed.

There are no additional Telephone Poles anticipated at this site.

4.8 GLEN HAZEL

Site Name: Glen Hazel

Management Office Address: 945 Roselle Court

Drawing References (existing and new): TO-4, T1-20, 21, and 22

Spreadsheet Reference: Glen Hazel Tab

Community Description:

Glen Hazel is a family community with a high rise and 54 walkup buildings, a recreation center, ball fields and playground.

Site Physical Description:

The community consists of a central high rise surrounded by single family homes, town homes and apartments along Johnson Street in the Hazelwood section of Pittsburgh.

The management office and a recreation center are located in the high rise (Building #21)

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office, hi rise (Building #21). The equipment is mounted in a ½ rack which is mounted to the wall. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed. The new video surveillance system infrastructure will consist of fiber, copper, and wireless LAN connected cameras, all camera connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6

- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office in the rear of building #21 and near the network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting. Two cameras will be located inside building #39 to monitor the activities within the recreation center. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative: Glen Hazel is a large community with a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

The community uses an existing Motorola Canopy Wireless system. The Bidder is to determine the ability to re-use or to replace with a new wireless system. The site plan (T0-4) details all existing telephone poles.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove trees (preliminarily indicated on T0-4) to provide a clear field of view and to ensure proper year round operation of the wireless infrastructure. Drawing (T0-4) is representative and the bidder retains responsibility for identifying specific trees to be removed.

There are no additional Telephone Poles anticipated at this site.

4.9 GUALITIERI

Site Name: Gualtieri Manor
Management Office Address: 2125 Los Angeles Avenue
Drawing References (existing and new): TO-11, T1-23, 24 and 25
Spreadsheet Reference: Gualtieri Manor Tab

Community Description:

Gualtieri Manor is a two-building complex (renovated school) with 27 apartments in the Beechview area of Pittsburgh.

The management office and a recreation center are located in the rear main level of the complex between the two buildings.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office. The equipment is not rack mounted and is sitting under a desk. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) if necessary.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office at or near the existing network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the buildings utilizing the building for external camera mounting. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Gualtieri Manor is a two-building complex with no real areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

All new cabling will route to the management office.

Additional Site Preparation Required by the Bidder

None

4.10 HAMILTON-LARIMER

Site Name: Hamilton-Larimer

Management Office Address: 6200 Auburn Street

Drawing References (existing and new): T0-12

Spreadsheet Reference: Hamilton-Larimer Tab

Community Description:

Hamilton-Larimer is a family community with walk up apartments in six buildings.

Site Physical Description:

The community consists of six buildings along Auburn Street. All camera coverage will be focused on the front of the complex and streets.

Site Local Area Network Point of Presence Location:

There is no local area network at Hamilton-Larimer. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment in the basement of Building #2. The bidder will also be responsible for adding additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s)

which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

There is no WAN connectivity to this site.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Hamilton-Larimer is a site that requires surveillance in the front of the buildings and in the parking areas along the roadways. There will not be a surveillance monitoring station on site.

The basement of Building #2 will house:

An NVR capable of storing 30 days.

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

All cabling will be installed into the basement of Building #2.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove and trim trees accordingly (preliminarily indicated on T0-12) to provide a clear field of view. Drawing (T0-12) is representative and the bidder retains responsibility for identifying specific trees to be removed or trimmed.

4.11 HOMEWOOD NORTH

Site Name: Homewood North
Management Office Address: 10 Albertise Street
GPS Address: 1201 Mohler Street
Drawing References (existing and new): T0-5, T1-26 and 27
Spreadsheet Reference: Homewood North Tab

Community Description:

Homewood North is a family community with 135 townhouse-style units in twenty buildings, and a recreation center (FIC).

Site Physical Description:

The community consists of 20 townhouse style buildings along Mohler, Upland, and Stranahan Streets with 3 dedicated parking lots (Heart, Ferris, & Nolan Courts).

The management office is located on the main floor of the FIC.

There are 20 existing cameras currently located at Homewood North most of which are located outside and fed via wireless from the FIC.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management building at 10 Albertise Street. The equipment is mounted in a ½ rack located in a secured closet. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed. The new video surveillance system infrastructure will consist of fiber, copper, and wireless LAN connected cameras, all camera connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office in the same secured closet as the network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is external to the buildings utilizing existing lamp posts for camera mounting. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Homewood North is a large community with any areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

The community uses an existing Motorola Canopy Wireless system fed from the FIC that has been deemed acceptable for reuse and expansion. The site plan (T0-5) details all existing lamp posts. The community has no current outside plant infrastructure. The site is served by HACP/City owned lamp posts that will be used to support a wireless network. The site plan (T0-5) details all existing lamp posts.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove and trim trees accordingly (preliminarily indicated on T0-5) to provide a clear field of view and to ensure proper year round operation of the wireless infrastructure. Drawing (T0-5) is representative and the bidder retains responsibility for identifying specific trees to be removed. There are 4 additional Lamp Posts anticipated at this site.

4.12 MAZZA PAVILION

Site Name:

Mazza Pavilion

Management Office Address:

920 Brookline Boulevard

Drawing References):

Spreadsheet Reference:

Mazza Pavilion Tab

Community Description:

Mazza Pavilion is a four story apartment building in Brookline. The building is currently empty and being completely renovated.

Site Physical Description:

The management office is located in the rear of the lowest level of the building.

Site Local Area Network Point of Presence Location:

The LAN equipment will be located in the management office. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure all new equipment. The bidder will also be responsible for providing UPS rack unit(s), patch panels as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All WAN circuits will need to be terminated in a adequate location and extended to the network equipment if needed. The circuit is currently provisioned to be a 10mbps MPLS link provided by Cavalier, the traffic to traverses the link will only be video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the building utilizing the building for external camera mounting. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative: Mazza Pavilion is a small community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

New cabling will be installed into the management office, the conduits/pathways to camera locations by others.

Additional Site Preparation Required by the Bidder

None

4.13 MORSE GARDENS

Site Name:

Morse Gardens

Management Office Address:

2416 Sarah Street

Drawing References (existing and new):

TO-13, T1-30, 31, 32, and 33

Spreadsheet Reference:

Morse Gardens Tab

Community Description:

70-unit building was once home to the Samuel F.B. Morse Elementary School. Morse Gardens' 1-bedroom apartments for senior citizens and persons with disabilities are spacious and modern. Features include an outdoor courtyard and a community room.

Site Physical Description:

Two buildings attached with an internal hallway.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the management office on the ground floor of the high rise. The equipment is not rack mounted and is sitting on a shelf in the management office. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) if necessary.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the management office and near the network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Morse Gardens is a small hi-rise community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19" monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

Communications cabling will be installed into the management office.

Additional Site Preparation Required by the Bidder

None.

4.14 MURRAY TOWER

Site Name: Murray Towers
Management Office Address: 2825 Murray Avenue
Drawing References (existing and new): TO-14, T1-34, 35, 36, 37 and 38
Spreadsheet Reference: Murray Towers Tab

Community Description:

Murray Towers is an eight-story high rise community.

Site Physical Description:

The community consists of 1 external parking lot.

The management office is located on the First Floor and a community room is located on the Third Floor.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the assistant management office on the ground floor of the high rise building. The equipment resides in a ½ rack which is mounted to the assistant manager's office wall.

The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) if necessary.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity: All existing WAN circuits are terminated in the assistant management office at or near the network rack. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the buildings with only a few outdoor cameras utilizing an existing telephone pole and the building for camera mounting. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances.
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Murray is a high rise community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

There are 6 existing cameras at this site. Only 1 is external. Fiber and copper cabling will be needed for all new camera locations.

Additional Site Preparation Required by the Bidder

Drawing T0-14 is representative and the bidder retains responsibility for identifying specific trees to be removed or trimmed.

There are no additional Telephone Poles anticipated at this site.

4.15 NORTHVIEW HEIGHTS

Site Name: Northview Heights

Management Office Address: 525 Mt. Pleasant Road

Drawing References (existing and new): TO-6, T1-39, 40 and 41

Spreadsheet Reference: Northview Heights Tab

Community Description: Northview Heights is a family community with walk up apartments in seventy-three buildings, and a ten-story high rise building.

Site Physical Description:

The community consists of 73 buildings along Mt. Pleasant Road & Chicago, Hazlett, & Penfort Streets. There is 3 parking lots and curb side parking, a cul-de-sac, 2 baseball fields, and several playgrounds.

The management office is located on the first floor of the high rise and a recreation center is located in a building attached to the high rise building. There is also a dance studio located in Building #74.

There are 2 guard shacks monitoring vehicles entering and exiting the site. One is located on Mt. Pleasant Road and one located on Penfort Street.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the secretary's office at 525 Mt. Pleasant Rd. The equipment is located in a ½ rack which is mounted to a wall. The bidder will be responsible in providing an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed. The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the secretary's office at 525 Mt. Pleasant Rd and at or near the network rack. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The bidder is required to work the new fiber carrier (to be determined) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities: The majority of camera coverage is external to the buildings utilizing existing telephone poles and buildings for camera mounting. Seventy-Seven cameras will be located inside the High-Rise building to monitor the activities. One camera will be located in the Dance Studio. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Mt. Pleasant Road is a large community with many areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the secretary's office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52" monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in each of the two guard stations which will house:

A video server and (3) 19" monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

There are 64 existing cameras located outdoor and indoor. The existing outdoor cameras are fed with Multi-mode fiber.

Additional Site Preparation Required by the Bidder

The bidder will be required to remove and trim trees accordingly (preliminarily indicated on T0-6) to provide a clear field of view. Drawing (T0-6) is representative and the bidder retains responsibility for identifying specific trees to be removed or trimmed.

4.16 PA-BIDWELL

Site Name: PA-Bidwell
Management Office Address: 1014 Sheffield Street
Drawing References (existing and new): TO-15, T1-42 and 43
Spreadsheet Reference: PA-Bidwell Tab

Community Description:

PA-Bidwell is an eleven story apartment building located on the north side of Pittsburgh. The building has one external parking lot and an outdoor gazebo that require coverage.

Site Physical Description:

The community consists of one building with attached parking deck and outdoor gazebo. The management office and a recreation center are located on the first floor.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is mounted in a 19" rack which is located near the management office in a secured closet. If necessary the bidder will have to provide an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will be responsible in providing an additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the same secured closet. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice.

The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the buildings, with a few cameras utilizing existing telephone poles and the building for camera mounting. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the gazebo
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative

PA-Bidwell is a high rise community with only a few areas of concern with regard to the provision of robust imagery. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days..

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

The community has existing coax to cameras mounted on exterior light poles. The site plan (T0-15) details all existing telephone poles.

Additional Site Preparation Required by the Bidder

None

4.17 PRESSLEY ST

Site Name:	Pressley Street
Management Office Address:	601 Pressley St
Drawing References (existing and new):	TO-16, T1- 44 and 45
Spreadsheet Reference:	Pressley Street Tab

Community Description:

Pressley Street is a sixteen story high rise building on Pittsburgh’s North side.

Site Physical Description:

The community consists of one (16) sixteen story high rise on Pressley Street with two dedicated parking lots.

The management office is located on the first floor.

Site Local Area Network Point of Presence Location:

The existing LAN equipment is located in the assistant management office on the ground floor of the building. There currently is a network rack mounted to the wall in the office that contains all of the network equipment for the site. The bidder will have to provide an adequate location and rack unit(s) to properly secure the existing and new equipment. The bidder will also be responsible for adding additional UPS rack unit(s) as needed.

The new video surveillance system infrastructure will consist of fiber and copper LAN connected cameras, the fiber connections will need to terminate into high port density access layer switch(s). The access layer switch(s) will be up linked to a core/distribution switch(s) which will act as an aggregation point. The core/distribution switch(s) should provide the following functionality:

- Gig interfaces
- Inter-Vlan routing
- QoS
- Vlan Trunking
- Port Aggregation
- Stackable

The LAN will also consist of a locally attached NVR(s) to provide recording/playback of all site cameras. The NVR(s) should support the following

- Adequate storage space
- Compression
- Gigabit connectivity
- RAID 6
- Dual Fan and Power Supplies

Existing Wide Area Network Connection(s) Location and Capacity:

All existing WAN circuits are terminated in the assistant management office on the ground floor of the building at or near the existing network equipment. The circuit is currently a 10mbps MPLS link provided by Cavalier, the traffic that traverses the link is only video and voice. The existing MPLS connection will be used for video. The bidder is required to work the MPLS carrier (Cavalier) to design an optimal QoS policy that will handle voice and the new video bandwidth requirements.

Monitoring Location and Description of Required Capabilities:

The majority of camera coverage is internal to the building. External cameras are either mounted to the building or to existing light poles. The spreadsheet lists all cameras and the image quality required for each.

Level of Surveillance Detail Required:

- *Detection* (20ppf) should be provided at building entrances
- *Detection* (20ppf) should be provided at parking lots
- *Recognition* (40ppf) should be provided at the playground
- *Strong Identification* (60ppf) should be provided at foot traffic choke points such as elevators, stairwells, sidewalk egress points and inside the recreation center.

Surveillance Design Narrative:

Pressley Street is a high rise structure that has armed on site security. It is a very secure location that requires some additional imagery in the stairwells and ingress and egress. A surveillance monitoring station will be established in the management office that will house:

An NVR capable of storing 30 days.

A video server and 50 – 52” monitor to view 36 simultaneous camera shots

A surveillance monitoring station will be established in the guard station that will house:

A video server and (3) 19” monitors to view up to 27 simultaneous camera shots

The room dimensions are pending final equipment configuration.

The telecom closet dimensions are pending final equipment configuration.

Communications Infrastructure and Connectivity Design Narrative:

All cabling will be installed into the management office.

Additional Site Preparation Required by the Bidder

None

4.18 200 ROSS STREET

Site Name: HACP Offices
Management Office Address: 200 Ross Street

Description:

The installation at 200 Ross Street shall have the ability to monitor all 16 sites within the Housing Authority. This is the designated Head End for all monitoring. The monitoring center shall consist of a multi-monitor PC with the ability to deliver high end video graphics to at least 8 to 10 50" LCD displays. The video wall dimensions are 19' wide by 10' high and require window coverings. This is not a 24 hour manned site. All WAN feeds will come into this site and will terminate here, a gig core switch will be the connectivity for the video server and any monitoring PCs that will be connected to this private camera network.

The Site Wide and Local Area Network Point of Presence Location

5 TECHNICAL SPECIFICATIONS – CAMERAS

- 5.1 Image Sensor: 1/4 inch or 1/3 inch
- 5.2 Lens: Bidder to specify to meet established coverage patterns.
- 5.3 Resolution: 4CIF (740X480), HD (1280X720), Full HD (1920X1080), 1.3MP (1280X1024), 2MP (1600X1200)
- 5.4 Minimal Illumination: 0.18 lux
- 5.5 Compression: X.264
- 5.6 Auto White Balance Normal/Wide
- 5.7 Auto Back Focus - Yes
- 5.8 Controls: Pan 112° (+56° to -56°) Tilt 54° (+5° to - 49°)
- 5.9 Day/Night Imaging (Color Cut) – Yes
- 5.10 Infrared Illuminators – Yes as needed. Bidder to determine if IR is required to supplement existing lighting. *Use 4CIF Cameras in low light conditions.*
- 5.11 Maximum Frame Rates : 1920X1080 15 FPS
- 5.12 Power Requirement: POE (IEEE802.3.af), 48 VDC transformer power from light pole connections (277v).
- 5.13 Certifications UL6500/cUL (AC Power Adaptor); FCC,
- 5.14 Class B; RoHS Compliant
- 5.15 Connectivity Ethernet: 10BASE-T/100BASE-TX (RJ45)
- 5.16 Alarm Input/Output: Yes (1 Alarm In/1 Alarm Out)
- 5.17 Protocols: IPv4, IPv6, TCP/IP, UDP/IP, FTPc, FTPs, DHCPc, DNS (Resolver), DDNS, ARP, ICMP, SMTP, NTPc, RNCp

6. TECHNICAL SPECIFICATIONS – HOUSINGS

- 6.1 Outdoor Locations will be enclosed in vandal-resistant housings with heater and blower or equivalent. They will be pole mounted and building mounted.
- 6.2 Indoor Locations shall be dome or elevator vandal resistant housings. They will be mounted in ceiling tiles, and on hard walls/ceilings.

6.3 Housings must accommodate copper/fiber media converters, and PTZ motor units when specified.

7. TECHNICAL SPECIFICATIONS -CABLING INFRASTRUCTURE

7.1 Cable Requirements

7.1.1 All inside cabling installed as part of this project shall be new and concealed in new or existing pathway structures described below unless otherwise agreed to in writing by HACP and be in conformance to all applicable codes and standards including, but not limited to, EIA/TIA 569, EIA/TIA 606, NEC Section 110, FCC Part 15, the Building Industry Consulting Service International Codes, and Local and State Building Codes.

7.1.2 All new inside cabling at a minimum shall be labeled at each end with a permanent tag or label utilizing the alphanumeric scheme.

7.1.3 All cabling, cable tray, raceway, conduits, hangers, wiremold, gang boxes, faceplates, jacks, and other miscellaneous equipment not installed by HACP's electrical contractor shall be supplied and installed by Bidder. Bidder shall supply and install all necessary equipment, hardware, & accessories to properly install the above mentioned pathways. Refer to Scope of Work by Building to see which buildings will have gang boxes, pull strings, & conduit installed by HACP's electrical contractor.

7.1.4 Cables installed inside conduits with direct or indirect contact to steam lines, hot water lines or other high temperature objects shall be of the type designed for high temperature operation.

7.1.5 In buildings not being completely renovated the Bidder may use existing telecommunications gang boxes if they exist in the same location as faceplates marked on the prints. If the Bidder uses an existing gang box and the old cable is still in use, the Bidder must leave the existing cable in place until the time of cut-over. All horizontal cabling which have faceplates located on non-fishable walls shall be installed in raceway from the ceiling to the faceplate. If the wall is fishable then the Bidder shall fish the cable down the wall to the faceplate location.

7.1.6 All cables shall be installed in cable tray, raceway, conduit, etc. as shown on prints. All cables not located above drop ceiling and/or in fishable walls shall be installed in raceway, cable tray, or conduit as shown on the prints. All Bidder install riser conduits shall be 4" metallic conduit unless otherwise specified on prints.

7.2 Cutting and Patching

7.2.1 The Bidder shall not carry out any cutting of openings in a building without written approval by HACP's Project Manager.

7.2.2 All cutting shall be done only by mechanics skilled in the trade. All cutting and patching of existing masonry shall be performed by masonry mechanics. Masonry saws shall be used for cutting all stone, brick or concrete masonry units.

7.2.3 All cutting shall be done in conformance to All Applicable Codes and Standards. Newly cut openings shall not weaken or damage any structural part of the building nor can they, in the opinion of HACP, alter the aesthetic look and feel of a building. The Bidder also shall ensure such openings will not interfere with existing piping, wiring, utilities and other items concealed in the structure to be cut. If such interference exists, the Bidder at no additional cost to HACP shall remedy it.

7.2.4 All damages resulting from the cutting shall be made good and the Bidder shall repair all surfaces disturbed by this work to its original condition and finish.

7.3 Fire Stopping

7.3.1 New and existing raceways, cable trays, and cables for power, data, and communications systems penetrating non-rated and fire-rated floors, walls, and other partitions of building construction shall be fire stopped where they penetrate new or existing building construction. All penetrations shall be fire stopped. This includes drywall penetrations to fishable walls.

7.3.2 Fire stopping shall be accomplished by using a combination of materials and devices, including penetrating raceway, cable tray, or cables, required to make up a complete fire stop.

7.3.3 Verify that cabling and other penetrating elements and supporting devices have been completely installed and temporary lines and cables have been removed.

7.3.4 Selected systems shall not be less than the hourly time delay ratings for each respective fire-rated floor, wall, or other partition of building construction. Fire stop for each type of communications penetration shall conform to requirements of an independent testing laboratory design.

7.3.5 Perform all necessary coordination with trades constructing floors, walls, or other partitions of building construction with respect to size and shape of each opening to be constructed and device or system approved for use in each instance.

7.3.6 Use materials that have no irritating or objectionable odors when fire stopping is required in existing buildings and areas that are occupied.

7.3.7 Provide damming materials, plates, wires, restricting collars, and devices necessary for proper installation of fire stopping. Remove combustible installation aids after fire-stopping material has cured.

7.3.8 All fire stops shall be installed in accordance with the manufacturer's instructions in order to maintain the specific rating assigned by the independent testing laboratory.

7.3.9 Existing raceways, cable trays, conduits, sleeves, and cabling that penetrate existing building construction shall be fire stopped to the extent necessary to fill cavities that may exist between existing building construction and existing communications penetrations or existing conduit sleeve, and between existing conduits and existing conduit sleeve.

7.3.10 Assemblies consisting of individual steel hat type restricting collars filled with intumescent type materials that completely surround communications penetration shall be used for nonmetallic raceways and cabling.

7.3.11 Rigid galvanized pipe sleeves shall be installed where PVC conduit passes through masonry walls, bearing walls and floors. The sleeves shall be cut flush with the wall and partition surface but shall extend one (1) inch above a finished floor. The sleeves shall be properly installed and firmly secured in place. Openings around penetrations through fire-resistance rated walls, partitions, floors or ceilings shall be fire stopped using approved methods to maintain the fire resistance ratings in conformance of All Applicable Codes and Standards including, but not limited to, N.E.C. Article 300-21. (See Attachment 1)

7.3.12 If in the process of construction, the Bidder encounters breaches in any existing firewalls that are not properly sealed; the Bidder shall notify HACP prior to commencing work. This is intended to limit Bidder liability for repair and to permit HACP the opportunity to correct the problem.

7.3.13 If in the process of construction, it is necessary to cut through a smoke barrier, HACP personnel shall be notified, and the passage shall be sealed according to local fire codes.

7.4 Placement of Horizontal and Backbone Cables

7.4.1 Cable and components shall be visually inspected for proper installation. Cable stress, such as that caused by tension in suspended cable runs and tightly cinched bundles, should be minimized. Cable ties used to bundle cables should be applied loosely to allow the cable tie to slide around the cable bundle. The cable ties should not be cinched so tightly as to deform the cable sheath. Cable placement should not deform the cable sheath. Only plenum rated Velcro tie wraps are acceptable. All Velcro tie wraps used outside of the Telecommunications Rooms shall be plenum rated.

7.5 Separation from Utilities

Cables shall not share the same conduit, channel or sleeve with electrical apparatus, and must be spaced far enough away from electrical service and equipment to prevent any electromagnetic interference. Bidder's standard installation cost should be to install cable by use of approved hangers and rings.

7.6 Special Tools

The Bidder shall furnish any special installation equipment or tools necessary to properly complete the installation. This may include tools for terminating cables, communications devices, jack stands for cable reels or cable wenchers.

7.7 Innerduct

All indoor fiber optic cables shall be installed in plenum-rated white innerduct.

7.8 Measuring Tapes and Pull Lines

A pull string shall be installed with every new faceplate to facilitate future cable installation. This string shall be tied to the cable tray in the hallway.

7.9 Painting

- 7.9.1 Touch up marred and bared surfaces of primed, galvanized, finish painted equipment, materials and accessories installed. New conduit installation is NOT to be painted unless otherwise noted on drawings.
- 7.9.2 Restore patched surfaces as close to the original condition and finish as reasonably possible. Where patching occurs in smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received two coats of primer and two coats of finished paint.
- 7.10 Cable Hangers and Supports
- D-rings, Bridle Rings, or J-hooks are acceptable between the cable tray and the wall transition and must be spaced no farther apart than four (4) feet.
- 7.11 Conduits
- 7.11.1 The Bidder shall not exceed conduit runs of 100 feet without using appropriately sized pull boxes between sections. LB and LM fittings will not be used in place of pull boxes. A single conduit run shall never have more than 180 degrees of bends. Bidder is responsible for supplying and installing all pull boxes to transition between riser conduits and cable tray and between floors where necessary.
- 7.11.2 The Bidder shall be responsible for determining if conduits are required for the installation of cable in a building. The Bidder will be responsible for meeting the fire code requirements for internal building conduits. The conduits shall be manufactured in accordance with U.L. standards and conform to the requirements of All Applicable Codes and Standards.
- 7.11.3 All newly installed conduits and pathways shall be filled to no more than 40% capacity. Pull strings with a minimum test rating of 200 lb. shall be installed in all conduits. If, in the opinion of the Bidder, new conduits will be filled to more than 40% capacity, the Bidder shall provide this information and price it as a separate line item of the Bid quote.
- 7.11.4 All ends of conduits shall be kept covered with capped bushings, gas caps, or threaded plugs to prevent entry of water or any foreign substance. Wood or other porous types of plugs shall not be used.
- 7.11.5 Pull boxes shall be constructed with #12 gauge galvanized sheet steel or better. Suitable doors or covers shall be provided. They shall be securely fastened to the boxes with machine screws. The boxes shall not have any holes or openings other than those used for the conduits. Double lock nuts and OZ Type B bushings shall be used as fastening for conduits smaller than 1-1/4". All pull boxes in Milton shall be painted to match the cable tray & riser conduits.

- 7.11.6 Conduits containing fiber cables with sweeps and bends shall not exceed the maximum bend radius (10 times the outside diameter) of the fiber cable. No conduit with an internal diameter of 2" or less will have a bend radius of less than 6 times the internal diameter of the conduit. No conduit larger than 2" will have a bend radius of less than 10 times the internal diameter of the conduit.

7.12 Sleeves

Rigid galvanized pipe sleeves shall be installed where conduit passes through masonry walls, bearing walls and floors. The sleeves shall be cut flush with the wall and partition surface but shall extend one (1) inch above a finished floor. Locations where sleeves are needed are not shown on the prints. Bidder shall assume each time a cable goes through a wall; a new sleeve shall be installed. Sleeves may be installed through walls instead of installing cable tray through walls as shown on the prints; however the Bidder must install the conduit to match cable capacity of the cable tray. The sleeves shall be properly installed and firmly secured in place. Openings around penetrations through fire-resistance rated walls, partitions, floors or ceilings shall be fire stopped using approved methods to maintain the fire resistance ratings in conformance of All Applicable Codes and Standards including, but not limited to, N.E.C. Article 300-21.

7.13 Metallic Surface Raceways

All raceway shall be metallic.

7.14 Communications Grounding and Bonding

- 7.14.1 Provide labor, material, equipment, supervision and any applicable permits as may be required to comply with local, state or federal codes to furnish, install and test a Telecommunications Grounding Busbar (TGB) system in the Telecommunications Room.

- 7.14.2 Bidder shall be responsible for grounding all necessary cabling and equipment in all Telecommunications Rooms to the TGB's.

- 7.14.3 Work shall comply with the latest edition of the National Electrical Code.

- 7.14.4 All cutting and patching necessary to achieve the desired outcome shall be accomplished by the Bidder.

- 7.14.5 Bidder shall not daisy-chain rack grounding. All racks must have either a separate ground cable or connect to a bus cable that serves all racks.

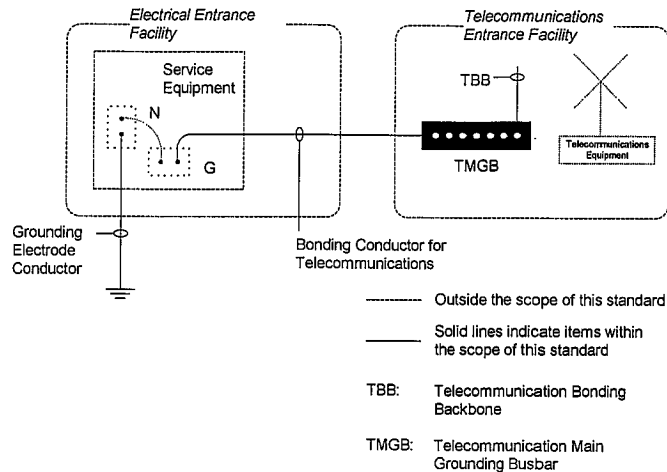
- 7.14.6 Bonding Conductor for Telecommunications (BCT) from TGB to the electrical power ground.

- 7.14.7 Contractor shall use #6 AWG insulated grounding wire with two-hole copper compression lugs to attach to racks and the TGB which in turn is connected to building steel in area of TR or Server Room.

- 7.14.8 Electrical resistance at this point of attachment must be less than 0.5 ohms when measured with a Fluke ohmmeter.

7.15 TIA/EIA Grounding Example

The bonding conductor for telecommunications shall bond the TMGB to the service equipment (power) ground. The figure below schematically depicts connectivity to the service equipment (power) ground.



Schematic of connectivity to the service equipment (power) ground

7.16 Common Structured Cabling and Enclosures Materials & Methods

7.16.1 The latest edition of referenced standards (from the latest available draft in the case of proposed standards) shall be the controlling document. Where the standards appear to conflict with one another, the one with the most stringent requirements shall be applicable.

- 7.16.1.1 ANSI/ICEA S-90-661
- 7.16.1.2 CSA
- 7.16.1.3 UL 444
- 7.16.1.4 ANSI/TIA/EIA-568-A
- 7.16.1.5 ISO/IEC 11801
- 7.16.1.6 CENELEC EN50173: 1995
- 7.16.1.7 NEC, NFPA70
- 7.16.1.8 NEMA WC-63/66

7.17 Exterior Communication Pathways

Bidder use existing telephone/power poles marked on prints. All poles are to be considered HACP property. .

7.18 Patch Panels

7.18.1 The patch panels in the TRs shall be marked and labeled by the Bidder so that each Cat-6 cable can be associated with a specific RJ-45 at a specific workstation. Hand written labels are unacceptable. Bidder shall provide all new patch panels as shown on the drawings. No existing patch panel shall be re-used.

7.18.2 All patch panels for the horizontal cabling shall be Category 6 certified and numbered (labeled) consecutively in each rack.

7.19 Fiber Termination Shelves - LIU & LDS

- 7.19.1 The Lightguide Intermediate Unit (LIU)/Lightguide Distribution Shelf (LDS) shall provide cross-connect, interconnect or splicing capabilities.
- 7.19.2 The LIU/LDS shall consist of a modular enclosure with retainer rings in the slack storage section to limit the bending radius of fibers. These enclosures shall be rack mountable.
- 7.19.3 The LIU/LDS shall have a "window" section to insert connector panels for mounting connectorized fibers.
- 7.19.4 The LIU/LDS shall provide terminating capability for 12, 24, 48, 72, etc... Duplex SC connectors depending on the requirements of HACP.
- 7.19.5 The Bidder shall supply and install fiber patch cord organizer panels as required and detailed in the Specifications and Drawings. The jumper management panels shall be rack mountable, and shall be installed in the rack immediately below the fiber termination shelf. These may be internal and integral to the fiber termination shelf.

Cable Management - Vertical & Horizontal

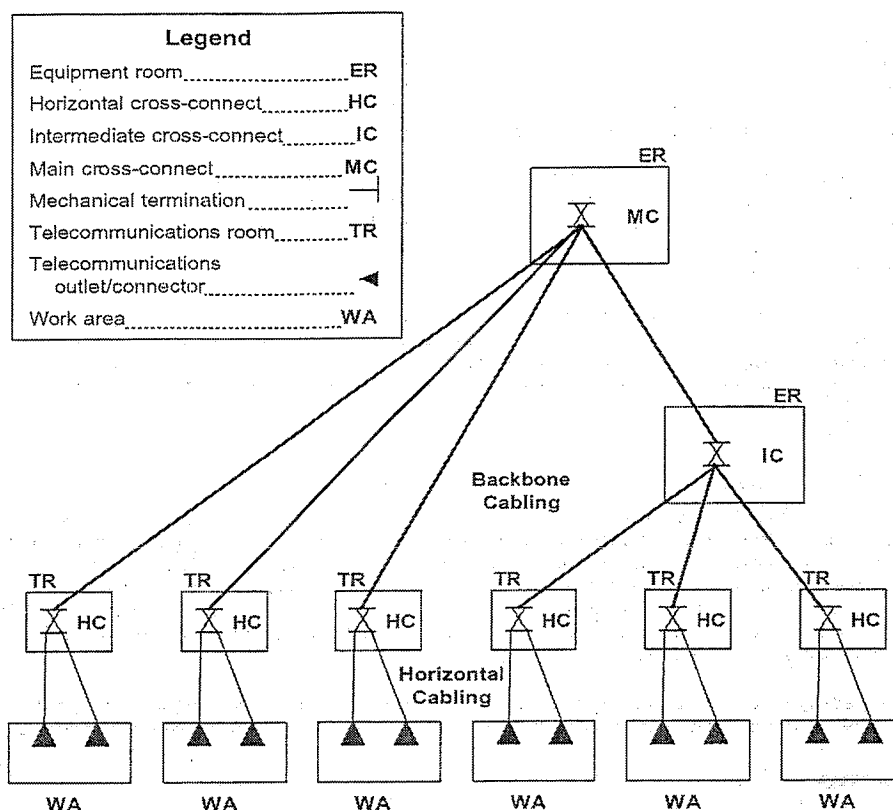
Each new rack will have vertical and horizontal cable management. A horizontal management shelf or panel will be installed between each patch panel and proposed switch locations. A vertical management chase will connect racks to each other. Refer to the rack front view drawings for quantities.

7.20 Rack Mounted Power Protection (UPS) and Power Strips

- 7.20.1 19" rack mount power strips must be supplied by the Bidder for each rack purchased.
- 7.20.2 UPS systems must supply 2 hours of support to electronics.

7.21 Backbone Cabling

This figure presents the general topology for the interior backbone cabling system. Detailed backbone diagrams are supplied in the accompanying drawing set.



7.22 Inside and Outside Plant Requirements - Recognized Media

7.22.1 Optical Fiber cable (ANSI/TIA/EIA-568-B.3)

7.22.2 100-ohm twisted-pair cable (ANSI/TIA/EIA-568-B.2)

7.22.3 Recognized cables, associated connecting hardware, jumpers, patch cords, equipment cords, and work area cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.2 and ANSI/TIA/EIA-568-B.3.

7.23 Cable Sheath

The PVC sheath shall have improved frictional properties, allowing it to be pulled through conduit without the use of lubricants.

Optical Fiber Backbone Cabling

Multi-mode Optical Fiber cable, 50/125 μm (ANSI/TIA/EIA-568-B.3)

Single-mode Optical Fiber cable (ANSI/TIA/EIA-568-B.3)

The multi-core fiber riser cable shall be plenum rated and consist of multiple multi-mode 50 micron fibers. In locations where plenum cable is not required, Bidder may provide non-plenum rated fiber cable.

The fiber cable shall be UL listed and the fibers shall be constructed of Corning glass materials. Real-time test results must be provided on installed fiber.

All Optical Fibers shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of this specification.

Factory Optical Fiber splices are not allowed.

The cable shall be suitable for installation in building riser systems, in conduit, in cable tray or in innerduct. All dielectric cable materials shall be all dielectric (no conductive material).

Cable shall carry an OFNR rating (Optical Fiber Non-Conductive Riser).

The outer sheath shall be marked with the manufacture's name, date of manufacture, fiber type, flame rating, UL symbol, and sequential length markings every two feet.

All new outdoor cables shall be armored since there is not sufficient room for innerduct. All armored fiber cables shall be properly grounded in the TR's.

All fibers in each cable shall be guaranteed to meet the following specifications:

Max. Tensile Strength

During Installation: 1332 Newton (300 lb. force) (no irreversible change in attenuation)

Long Term: 600 N (135-lb. force)

Max. Tensile Strength

During Installation: 1000 Newton (226 lb. force) (no irreversible change in attenuation)

Long Term: 100 N (67 lb. force)

Temperature Range:

Storage: -40 to +70C (no irreversible change in attenuation)

Operating: -40 to +70C

Humidity Range:

Humidity range shall be 0 to 100%.

7.24 Bending Radius:

7.24.1 During Installation: 20 times cable diameter

7.24.2 No Load: 10 times cable diameter

7.25 Tight Buffered Fiber

Each fiber riser cable shall be a multi-fiber building cable with tight buffered fibers.

7.26 Change In Attenuation

7.26.1 When tested in accordance with FOTP-3, "Procedure to Measure Temperature Cycling Effects on Optical Fibers, Optical Cable, and Other Passive Fiber Optic Components", the average change in attenuation over the rated temperature range of the cable shall not exceed 0.50 dB/km with 80% of the measured fibers not exceeding 0.26 dB/km.

7.26.2 Bandwidth (min.)

7.26.3 @ 850-nm 500-MHz*km

7.26.4 @ 1300-nm 500-MHz*km

7.27 Discontinuity

No multi-mode Optical Fiber shall show a point discontinuity greater than 0.2 dB at the specified wavelengths. Such a discontinuity or any discontinuity showing a reflection at that point shall be cause for rejection of that fiber by HACP.

7.28 Multi-Mode 50 Micron Optical Fibers

All multi-mode fiber shall be 50 micron.

7.29 Optical Fiber Cabling Bend Radius & Maximum Pulling Tension

- 7.29.1 The bend radius for intra-building 2 and 4-fiber horizontal Optical Fiber cable shall not be less than 26 mm (1 in) under no-load conditions. When under a maximum tensile load of 222 N (50 lbf), the bend radius shall not be less than 50 mm (2 in).
- 7.29.2 The bend radius for intra-building Optical Fiber backbone cable shall not be less than that recommended by the manufacturer. If no recommendation is known, then the applied bend radius shall not be less than 10 times the cable outside diameter under no-load conditions and not less than 15 times the cable outside diameter when the cable is under tensile load.
- 7.29.3 The bend radius for inter-building Optical Fiber backbone cable shall not be less than that recommended by the manufacturer. If no recommendation is provided or known, then the bend radius shall not be less than 10 times the cable outside diameter under no-load conditions and not less than 20 times the cable outside diameter when the cable is under a tensile load up to the rating of the cable, usually 2670 N (600 lbf).
- 7.30 Optical Fiber Splicing and Termination
 - Optical Fiber splices, fusion or mechanical, shall not exceed a maximum optical attenuation of 0.3 dB when measured in accordance with ANSI/EIA/TIA-455-34, Method A (factory testing) or ANSI/EIA/TIA-455-59 (field testing). Optical Fiber splices, fusion or mechanical, shall have a minimum return loss of 20 dB for multi-mode, 26 dB for single-mode, when measured in accordance with ANSI/EIA/TIA-455-107.
- 7.31 Copper Inside & Outside Plant Requirements – Recognized Media
 - 7.31.1 100-ohm twisted-pair cable (ANSI/TIA/EIA-568-B.2)
 - 7.31.2 The Bidder shall provide new horizontal cable to connect each communications faceplate and information location to the TR. Refer to prints for quantities of cables to be pulled to each faceplate location. All Cat-6 cabling shall be plenum rated with a white outer jacket color.
- 7.32 Distance of Horizontal Run
 - The length for each individual run of horizontal data cable shall not exceed 90 meters (295 feet). If necessary, additional TR locations may be added to maintain the required distances. Bidder has the responsibility to identify these situations in the response to this Bid.
- 7.33 Maximum Pulling Tension
 - The maximum pulling tension of 4-pair 23 AWG UTP cable shall be 110 N (25 lbs). For multi-pair backbone cable, manufacturer's pulling tension guidelines shall be followed.
- 7.34 Minimum Horizontal Cable Bend Radius
 - The minimum bend radius, under no-load conditions, for 4-pair unshielded twisted-pair (UTP) cable shall be four times the cable diameter.
- 7.35 Faceplates and Connectors

- 7.35.1 The communications faceplate shall be specified & provided by the Bidder. All faceplates must have blank plugs to fill unused jack locations. Bidder shall coordinate the faceplate colors with the architect.
- 7.35.2 RJ-45 jacks shall be installed in the communication faceplates. Refer to the supplied drawings for the quantity of cables for each faceplate. All four pairs of wires from the Category 6 cable(s) shall be attached to the 110 contacts of the RJ-45 jack. Bidder shall coordinate the RJ-45 outlet colors with the architect.
- 7.36 Measuring Tapes and Pull Lines
A pull string shall be installed with every faceplate to facilitate future cable installation. This string shall be tied to the nearest J hook or D ring.
- 7.37 Connecting Hardware Termination
- 7.37.1 Cables should be terminated with connecting hardware of the same manufacturer and performance category or of the equipment necessary to create a certified "balanced" Category 6 installation. The transmission characteristics of the cable and connector categories have been specified such that the impact of connectors, patch cords, and cross-connect jumpers on link performance are minimized.
- 7.37.2 Connector and cable components that meet these requirements are not sufficient in themselves to ensure adequate installed cabling system performance. As with all cabling media, additional considerations that may degrade transmission performance of installed cabling systems include cabling practices that relate to connector terminations, cable management, the use of cross-connect jumpers or patch cords, and the effects of multiple connections in close proximity.
- 7.37.3 Installed transmission performance of components that meet requirements of different performance categories (i.e., cables, connectors, and patch cords that are not rated for the same transmission capability) shall be classified by the least performing component in the link.
- 7.37.4 To maintain the cable geometry, remove the cable sheath only as much as necessary to terminate the cable pairs on the connecting hardware. The connecting hardware manufacturer's instructions for cable sheath strip-back shall be followed.
- 7.37.5 When terminating the Category 6 cables, the cable pair twists shall be maintained to within 13 mm (0.5 in) from the point of termination. For best performance when terminating cable on connecting hardware, the cable pair twists should be maintained as close as possible to the point of termination.
- 7.38 Patch Cords, Equipment Cords, Work Area Cords, and Jumpers

7.38.1 Cross-connect jumpers and cables used for patch cords should be of the same performance category or higher as the horizontal cables to which they connect. Patch cords are also used for equipment cords and work area cords. Patch cords should not be field terminated. To minimize return loss degradation, unjacketed jumper wire shall not be made in the field by removing the jacket in large part or its entirety from a previously jacketed cable.

7.38.2 Recognized cables, associated connecting hardware, jumpers, patch cords, equipment cords, and work area cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.2 and ANSI/TIA/EIA-568-B.3.

7.39 Copper Patch Cords

7.39.1 The Bidder shall supply 1 Cat-6 patch cord for every new run.

7.39.2 The data patch cords shall be certified to meet or exceed ANSI/TIA/EIA 568-B.2 and the characteristics of the horizontal cabling with lengths of 4 and 6 feet for the TR terminations.

7.39.3 The minimum inside bend radius, under no-load conditions, for four-pair UTP patch cables shall be .26 inch. The minimum inside bend radius, under no-load conditions, for four-pair SC-TP patch cables shall be .5 inch.

7.40 Fiber Patch Cords

7.40.1 Fiber jumper cables shall be used for Optical Fiber cross-connects and interconnects.

7.40.2 An aramid yarn and a jacket of flame retardant PVC shall cover the fiber cladding.

7.40.3 The multi-mode fiber patch cords shall be terminated with LC-LC connector plugs both of ceramic material on each end depending on HACP's requirements.

7.40.4 The Bidder shall supply 3 meter Simplex LC to LC fiber patch cords. The fiber cords shall meet or exceed ANSI/TIA/EIA 568-B.3.

7.40.5 The Optical Fiber patch cords shall consist of 1-fiber cables (simplex), of the same fiber type as the Optical Fiber channel, terminated with connectors at both ends.

7.41 Channel Testing

The channel test configuration is to be used by system designers and users of data communications systems to verify the performance of the overall channel. The channel includes up to 90 m (295 ft) of horizontal cable, a work area equipment cord, a telecommunications outlet/connector, an optional transition/consolidation connector, and two connections in the telecommunications room. The total length of equipment cords, patch cords or jumpers and work area cords shall not exceed 10 m (33 ft). The connections to the equipment at each end of the channel are not included in the channel definition. The channel definition does not apply to those cases where the horizontal cabling is cross-connected to the backbone cabling.

7.42 Applicable Testing Standards

7.42.1 Testing shall be in accordance with the following standards:

7.42.2 ASTM D 4566-94, Standard Test Method for Electrical Performance Properties of Insulation and Jackets for Telecommunications Wire and Cable, 1994

7.42.3 ANSI/TIA/EIA-568-B.1, Commercial Building Telecommunications Standard, 2001.

7.43 Applicable Copper Testing Parameters

7.43.1 Wire map

7.43.2 Length

7.43.3 Insertion loss

7.43.4 Near-end crosstalk (NEXT) loss

7.43.5 Power sum near-end crosstalk (PSNEXT) loss

7.43.6 Equal-level far-end crosstalk (ELFEXT)

7.43.7 Power sum equal-level far-end crosstalk (PSELFEXT)

7.43.8 Return loss

7.43.9 Propagation delay

7.43.10 Delay skew

7.44 Testing Category 6 (CAT-6) Cabling

7.44.1 Test results shall include a record of test frequencies, cable type, conductor pair and cable (or Outlet) I.D., measurement direction, test equipment type, model, serial number, date, reference setup and crew member name(s).

7.44.2 Printouts generated for each cable by the wire (or fiber) test will be submitted as part of the documentation package. The Bidder will also furnish this information in electronic form on CD. These CD's shall contain the electronic equivalent of the test results as defined by the bid specification and be of a format readable from Microsoft Word (ver. 6.0). Alternately, the Bidder shall provide a licensed copy of the software required to view and print the data. The Bidder shall furnish 1 copy of the data and display (if applicable) software.

7.45 Fiber Link Testing

An Optical Fiber link segment is the passive cabling, to include cable, connectors, and splices (if present), between two Optical Fiber connecting hardware termination points. A horizontal link segment is from the telecommunications outlet/connector to the horizontal cross-connect.

7.46 Power Meter Requirements

End-to-end attenuation tests shall be measured and performed in one direction on all fibers with an optical power meter. Multi-mode fibers shall be tested at 850- μ m and 1300- μ m. Single-mode fibers shall be tested at 1310- μ m and 1550- μ m.

7.47 Horizontal Link Attenuation

Attenuation tests shall be less than 2.0 dB based upon two connector pairs, plus 295 ft. of cable.

Optical Fiber Cable Type	Wavelength μm	Max Attenuation (dB/km)	Minimum information transmission capacity for overfilled launch (MHz KM)	Copper Labeling Format
50 μm Multimode	850	3.5	500	
	1300	1.5	500	

The patch panels in the TRs shall be marked and labeled by the Bidder so that each Cat-6 cable can be associated with a specific RJ-45 at a specific workstation. Patch panels shall also be labeled 1, 2, 3, 4, etc. Hand written labels are unacceptable. All faceplate labels shall be on paper labels with clear covers. All labels on Cat-6 patch panels shall not cover the patch panel port numbers.

7.48 Fiber Labeling Format

The fiber termination shelves in the TRs and Server Room must be labeled by the Bidder so that each strand can be readily identified and cross-referenced.

7.49 As-Built Documentation

The Bidder shall provide the HACP with AutoCAD (.dwg) format as-built prints of the installation detailing exact cable tray and riser routes, any moves, adds, & changes, etc.

8 WIRELESS INFRASTRUCTURE

8.1 Security and Encryption

- 8.1.1 40 bit, 104 bit WEP keys
- 8.1.2 128 bit, 256 bit AES keys (WPA2, end-to-end data)
- 8.1.3 MAC address filtering
- 8.1.4 Digitally signed firmware files
- 8.1.5 Digital certificates on nodes

8.2 Traffic Prioritization

- 8.2.1 Quality of Service (QoS 802.1p)

8.3 Wireless Interface

- 8.3.1 IEEE 802.11a/n ad hoc
- 8.3.2 3X3 MIMO with 2 streams
- 8.3.3 Transmit power up to 400 mW per stream
- 8.3.4 Frequency ranges
- 8.3.5 5.15 – 5.25 GHz
- 8.3.6 5.25 – 5.35 GHz
- 8.3.7 5.470 – 5.725 GHz
- 8.3.8 5.725 – 5.825 GHz

- 8.3.9 Receive sensitivity (typical) 2.4 GHz, DSSS
- 8.3.10 6 Mbps: -90 dBm 54 Mbps: -73 dBm 5 GHz
- 8.3.11 6 Mbps: -90 dBm 54 Mbps: -73 dBm
- 8.3.12 Ability to configure 20 and 40 Mhz channel bandwidth
- 8.3.13 Dynamic Frequency Selection (DFS)
- 8.3.14 Transmit Power Control (TPC)
- 8.4 Network Ports
 - 8.4.1 Two 10/100/1000 Mbps Ethernet ports with weatherproof connectors, LED activity indicator
 - 8.4.2 IEEE 802.3, 802.3u compliant
 - 8.4.3 CSMA/CD 10/100 autosense
 - 8.4.4 Ports 2, 3 PSE Power over Ethernet per 802.3af
- 8.5 Enclosure
 - 8.5.1 Cast aluminum NEMA-4X/IP66 enclosure
- 8.6 Power
 - 8.6.1 AC Input: 100–240 VAC, 50–60 Hz, 0.9 A
 - 8.6.2 DC Input: 12 VDC $\pm$ 15%, 5 A
 - 8.6.3 Ports 2 and 3: IEEE 802.3af compliant PoE (PSE), consumption
- 8.7 Environmental Specifications
 - 8.7.1 Operating temperature: -40°C to +60°C
 - 8.7.2 Storage temperature: -40°C to +85°C
 - 8.7.3 Humidity (non-condensing): 10% to 90%
 - 8.7.4 Storage humidity (non-condensing): 5% to 95%
 - 8.7.5 Maximum altitude 15,000 feet (4600 meters)
- 8.8 Accessories
 - 8.8.1 Antennas
 - 8.8.2 Bracket for pole and wall mounting
 - 8.8.3 Outdoor weatherized Ethernet cables.
- 9 DIGITAL VIDEO MANAGEMENT SERVER (DVMS) General Requirements
 - 9.1 The DVMS shall be a fully distributed solution, designed for multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors.
 - 9.2 The DVMS shall allow for an unlimited number of network video recorders to be connected to a single master network video recorder across multiple sites.
 - 9.3 The system shall support any combination of master and slave servers to provide flexibility and scalability in the overall system configuration.
 - 9.4 The DVMS shall be configured for support of e-directory allowing users to be added to the system.
 - 9.5 Each Media Server shall be mapped to a specific port and this port shall be forwarded through the firewall to the network video recorder's internal IP address.
 - 9.6 The DVMS shall consist of the following three components:
 - 9.6.1 Surveillance System Server, which further consists of the following add-on modules or services:

- 9.6.1.1 Administrator Application.
- 9.6.1.2 Download Manager.
- 9.6.1.3 Media Server Application
- 9.6.1.4 Client Viewer.
- 9.6.1.5 Remote Client Viewer.
- 9.6.1.6 Viewer – For Database Exported Video Recordings.
- 9.6.1.7 Central Alarm Management Module.
- 9.6.2 Network Video Recorder (NVR)
- 9.6.3 Matrix Monitor Server
- 9.7 The DVMS shall include support for a graphical Central Alarm Management application module. The alarm management module shall allow for the continuous monitoring of the operational status and event-triggered alarms from system servers, cameras and other external devices. The alarm management module shall support graphical displays with interactive icons to display the status of cameras and other inputs.
- 9.8 The DVMS shall include a Software Development Kit (SDK) that shall offer important capabilities for integrating the system with third-party software. The SDK shall enable the user to:
 - 9.8.1 Retrieve live and recorded video in several ways:
 - 9.8.1.1 In raw data format either encoded or decoded, or
 - 9.8.1.2 As a window to be resized and shown embedded in another application.
 - 9.8.2 Create plug-in components for the client Viewer.
 - 9.8.3 Control the operation of Matrix Monitor.
 - 9.8.4 Retrieve alarm / event information.
 - 9.8.5 Integrate data sources for the Transaction Data module.
- 9.9 The DVMS shall provide connectivity with third-party systems and devices using the OPC (Object-Linking and Embedding Process Control) Data Access set of communication standards. The supported third-party systems shall include industrial automation and SCADA (Supervisory Control and Data Acquisition) systems. The DVMS shall support the following commands and interfaces:
 - 9.9.1 Get configuration.
 - 9.9.2 Get server CPU load.
 - 9.9.3 Get camera status and frame rate.
 - 9.9.4 Get camera and global events.
 - 9.9.5 Set events.
 - 9.9.6 Set Matrix Monitor live view and play back.
- 9.10 The DVMS shall include a stand-alone Viewer application to be included with video exported from the Client Viewer application. The Viewer application shall allow recipients of the video to browse and play back the exported video without installing separate software on their computers.
- 9.11 The DVMS shall include support for E-Directory to allow users to be added to the system. Use of E-Directory requires that a server running E-Directory, acting as a domain controller, be available on the network.

- 9.12 The DVMS shall be designed to support each component on the same computer for efficiency in smaller systems or each component on separate systems for large system deployments.
- 9.13 Video Device Drivers - Video device drivers are installable program components used for controlling / communicating with the cameras / devices connected to a network video recorder. Video device drivers for supported devices are automatically loaded during the initial installation of the system. Newly released device drivers may be downloaded from the manufacturer's website if the user is connecting a device for which the driver is not already loaded.
- 9.14 The DVMS shall incorporate fully integrated Matrix functionality for distributed viewing of any camera in the system from any computer with the Client Viewer or Matrix Monitor application installed.
- 10 SURVEILLANCE SYSTEM SERVER
- 10.1 If more than one Media Server is installed, the Surveillance System Server shall support the assignment of any of the Media Servers (software running on the Surveillance System Server) to function as a master, and any of the Media Servers to function as slaves, thus allowing the user to connect to all Media Servers in the system by connecting to only a master Media Server.
- 10.2 The Surveillance System Server shall support the use of separate networks, VLANs or switches for connecting the cameras to the network video recorders to provide physical network separation from the clients and facilitate the use of static IP addresses for the devices.
- 10.3 The Surveillance System Server shall support H.264, MPEG-4 (both ASP and SP), and MJPEG compression formats for the video stream from all devices including analog cameras connected to encoders, DVRs, and IP cameras connected to the system.
- 10.4 The Network Video Recorders shall have the option to record the native frame rate and resolution (NTSC or Megapixel) supplied by the camera or as configured from the Administrator Application.
- 10.5 Multi-stream Support. The Surveillance System Server shall support H.264 optimized multi-streaming. The system shall allow a single video stream from a device to be independently recorded at one specified frame rate by the network video recorder, and viewed by Client Viewers or Remote Client Viewers using a different frame rate setting.
- 10.6 The Surveillance System Server shall support the PTZ protocols of the supported devices as listed above. The Surveillance System Server shall support both Absolute positioning PTZ protocols to move the camera to a specific X, Y, and Z set of coordinates positions, as well as, relative positioning PTZ protocols to move the camera a relative amount based on the camera's current position.
- 11 ADMINISTRATOR APPLICATION
- 11.1 The Administrator Application shall provide a feature-rich administration window for system configuration and day-to-day administration of the system. Within the Administrator Application, the following shall be selectable to allow specific system administration setup functionality:
- 11.1.1 Service Manager.
- 11.1.2 Scheduler.

- 11.1.3 General Settings.
- 11.1.4 Archive Setup.
- 11.1.5 Import DVDs.
- 11.1.6 Matrix.
- 11.1.7 Add Device.
- 11.1.8 Edit Device.
- 11.1.9 Remove Device.
- 11.1.10 Settings.
- 11.1.11 I/O Setup.
- 11.1.12 Event Buttons.
- 11.1.13 Generic Events.
- 11.1.14 I/O Control.
- 11.1.15 Exit.
- 11.2 Service Manager - The Service Manager shall provide status and control of the network video recorder as follows:
 - 11.2.1 Status:
 - 11.2.1.1 network video recorder is Running.
 - 11.2.1.2 network video recorder is Stopped.
 - 11.2.1.3 network video recorder is Paused.
 - 11.2.2 Control:
 - 11.2.2.1 Start.
 - 11.2.2.2 Resume.
 - 11.2.2.3 Pause.
 - 11.2.2.4 Cancel.
- 11.3 Camera Alert Scheduler - The system shall supply a user interface for scheduling camera (device) alerts and other device functions. The features shall include:
 - 11.3.1 Set specific schedules for each individual camera/device.
 - 11.3.2 Set and clear a specific time span, on a per day basis.
 - 11.3.3 Zoom in on a specific schedule time period to granularly set and clear specific time periods in finer detail.
 - 11.3.4 Copy, paste, and paste to all a specific time schedule.
 - 11.3.5 Schedule individual devices to:
 - 11.3.5.1 Go on-line.
 - 11.3.5.2 Go to speed-up mode to capture higher frame rate video during an event.
 - 11.3.5.3 Send an email upon an event.
 - 11.3.5.4 Send an SMS (Short Message Service, also known as "text messaging" for mobile devices) and SNMP messages upon an event.
 - 11.3.5.5 Select a specific time schedule to patrol and select a patrol scheme for PTZ patrolling.
 - 11.3.5.6 Select a start event for conditional recording when on-line.

- 11.3.5.7 Select a stop event for conditional recording when on-line.
- 11.4 General Settings – The general setting menu shall allow general administrative setup as follows:
 - 11.4.1 Password protection. Enable/disable password protection for administrative settings with the ability to change the administrative password.
 - 11.4.2 Manual startup of recording – Set the manual recording time in seconds, and to set the maximum recording time in seconds.
 - 11.4.3 Central Monitoring Connections setup - Set the login name, password, IP port number, and IP address.
 - 11.4.4 PTZ patrolling settings - Set the time (in seconds) to resume normal patrolling after an event occurs or after manual control of a PTZ is used.
 - 11.4.4.1 Logfile settings – Set the logfile directory path, and days to log.
 - 11.4.4.2 Event Recording settings - Set a separate event recording settings directory path, and select the time span (in days) to keep event recordings.
- 11.5 Set Advanced system settings – Set-up how the system will send email and SMS messages to notify specific personnel of certain camera/device events. These Advanced system settings shall incorporate:
 - 11.5.1 Enable/disable sending an email upon camera failure.
 - 11.5.2 Enable/disable sending an SMS message upon camera failure.
 - 11.5.3 Enable/disable camera startup upon a remote request.
 - 11.5.4 Enable/disable the creation of a default schedule for new cameras/devices added to the system.
 - 11.5.5 Set email settings – the following email setup options shall be provided:
 - 11.5.6 Enable/disable email while the network video recorder is running.
- 11.6 Enable/disable email from within the Client Viewer. This feature shall enable/disable users to send evidence files as an email attachment.
- 11.7 Set-up email account information:
 - 11.7.1 Recipients.
 - 11.7.2 Sender email address.
 - 11.7.3 Outgoing SMTP (Simple Mail Transport
 - 11.7.4 Protocol) server name.
 - 11.7.5 Enable/disable email server login.
 - 11.7.5.1 Username.
 - 11.7.5.2 Password.
 - 11.7.6 Subject text.
 - 11.7.7 Message text.
- 11.8 Enable/disable the inclusion of an image in the email.
- 11.9 Minimum time between email transmissions.
- 11.10 Test – Send a test email using the current email settings.
- 11.11 Set SMS messaging settings
- 11.12 The following SMS messaging setup options shall be provided:

- 11.12.1 Enable/disable SMS messaging.
- 11.12.2 Set the GMS modem communication port.
- 11.12.3 Set the SIM card PIN code.
- 11.12.4 Set the SIM card PUK code.
- 11.12.5 Set the SMS central phone number.
- 11.12.6 Set the recipient phone number.
- 11.12.7 Set a prescribed message.
- 11.12.8 Set the minimum time between SMS message transmissions.
- 11.12.9 Test – Send a test SMS message using the current email settings.
- 11.13 Archive Setup – The system shall provide a user interface for archive setup. The Archive setup user interface shall be provided to manage the storage of recorded video by moving the recorded video in a current database to an archive. Archive setup shall provide the ability to configure the following settings and control attributes:
 - 11.13.1 Enable Archiving – Enable/disable archiving.
 - 11.13.2 Path - Path to the directory to be used for archiving.
 - 11.13.3 The archive directory may be located anywhere on the network and may be stored on a different storage media than the database storage media.
 - 11.13.4 Automatic Path Selection: This option shall allow the automatic selection of a path should a specific drive become full or otherwise unavailable.
 - 11.13.5 Delete Backup Databases - Delete old databases in the backup directory that are older than a selectable number of days.
 - 11.13.6 Default - Define if the archive directory shall be automatically set to the network video recorder's default archive path. All archiving shall be directed to the network video recorder's archive directory unless otherwise defined.
 - 11.13.7 Schedule - Schedule when the intervals of the archiving process will start.
 - 11.13.8 Email Notification - Send an email if there is an archive error.
 - 11.13.9 SMS Notification - Send an SMS message if there is an archive error.
 - 11.13.10 Automatic Deletion of Old Archives – Automatically delete old archives if disk space is needed.
- 12 NETWORK VIDEO RECORDER
 - 12.1 The network video recorders shall be used for recording video feeds and for communicating with cameras and other devices.
 - 12.2 The system shall support an unlimited number of network video recorders. One or more network video recorders will be used at each site in the system depending on the number of cameras or physical system configuration.
 - 12.3 The network video recorder shall support the use of pre and post recording on motion/event recording. The pre and post recording time period shall be selectable in seconds.

- 12.4 Each network video recorder shall have a default storage area. A storage area is a directory where the database content, primarily recordings from the connected cameras is stored. Recordings from the connected cameras shall be stored in individual camera databases. The system shall allow an unlimited amount of storage to be allocated for each connected device.
- 12.5 The system shall allow archiving to be enabled on a per camera basis and allow the user to define which archiving drive shall be used for each camera.
- 12.6 The network video recorder shall utilize high performance ISCSI and SCSI disk drives for on-line storage and shall allow the use of lower cost SATA drives for the RAID arrays for on-line archive storage. Use of on-line archiving shall ensure that data is always readily available. Review from either the on-line or the archive storage shall be transparent to the user.
- 12.7 The on-line archiving capability shall be transparent and allow Client Viewer users to browse archive recordings without the need to restore the archive video to a local hard drive for access.
- 12.8 The system shall allow the system administrator (Administrator) to define storage areas for the databases of specific cameras or define new storage areas on the network video recorder or on a connected network drive. To protect against lost recordings in the event a connected network drive becomes unavailable the system shall allow the option to repair or to archive.
- 12.9 The Surveillance System Server shall support database retention based on a selectable number of maximum records, minutes, hours, or days. The database retention settings shall regulate how long recordings shall remain in a camera's database before the recordings can be archived.
- 12.10 The Surveillance System Server shall support Archiving (the automatic transfer) of recordings from a camera's default database to another location on a time-programmable basis without the need for user action or initiation of the archiving process. Archiving shall allow the duration of the camera's recordings to exceed the camera's default database capacity. Archives shall be located on either the network video recorder computer or on a connected network drive. If the storage area on a network drive becomes unavailable for recording the system shall have the ability to trigger actions such as the automatic sending of email alerts to necessary personnel.
- 12.11 The system shall allow efficient creation and management of the network video recorder's archives.
- 12.12 The network video recorder(s) shall have the ability to support multiple Network Interface Cards (NIC) and support connection to the cameras, DVRs and encoder devices on a network separate from the Client Viewer.
- 12.13 The network video recorder shall maintain a continuous log of server status messages that are available for viewing via a status icon in the system tray.
- 12.14 Bandwidth Management
 - 12.14.1 The network video recorder shall offer the following options for managing the bandwidth utilization (device dependent).
 - 12.14.1.1 CODEC selection –H.264.

- 12.14.1.2 Resolution.
 - 12.14.1.3 Frame Rate.
 - 12.14.1.4 Compression.
 - 12.14.1.5 Bandwidth setting.
 - 12.14.1.6 Fixed or variable bit rate setting.
 - 12.15 From the Client Viewer, users shall have the option of having video images continually streamed or only updated on motion to conserve bandwidth between the Client Viewer and the network video recorder.
- 13 MEDIA SERVER
- 13.1 The Media Server is a service running on the Surveillance System Server. The main function of the Media Server is to manage client connections to the Surveillance System Server.
 - 13.2 The Media Server shall be configured using a separate Media Server Administrator user interface.
 - 13.3 The Media Server Administrator user interface shall allow the configuration of the following information:
 - 13.4 Server Configuration – The Media Server Administrator user interface shall allow configuration of client connections with the Media Server. The configuration parameters for the client connections shall include:
 - 13.4.1 Name – Surveillance System Server name.
 - 13.4.2 Port – The IP port used for connecting to the
 - 13.4.3 Media Server. The default is port 80.
 - 13.4.4 Enable Outside Access – A user interface to select if the system can be accessed from a client PC that has an IP address that is outside of the local IP address range. This function is used to allow access from a remote PC over the Internet.
 - 13.4.5 Outside Address – An IP address that can be used by a client PC to access the system from outside the local IP address range.
 - 13.4.6 Outside Port – The port to be used by a remote PC to access the system from outside the local IP address range.
 - 13.5 Local IP Ranges – This setting shall allow the Media Server Administrator to add and delete multiple local client PC IP address start and end ranges. The Media Server shall allow client connections that fall within the Local IP Ranges.
 - 13.6 Maximum Number of Clients – This setting shall limit the maximum allowable clients that can have an active session with the Media Server.
 - 13.7 User Administration – This portion of the Media Server Administration user interface shall allow the Media Server Administrator to add, delete, and change the privileges of users within the system. It shall support:
 - 13.7.1 Add Basic User – Shall allow the addition of a user's unique Username and Password.
 - 13.7.2 Add Windows User – Shall use Windows E-Directory to assign users from a selection of users that already have a Windows login assigned within the system.

- 13.7.3 Delete – To delete an existing user.
- 13.7.4 Change Password – To re-enter a new password for an existing user.
 - 13.7.5 For Add Basic User and Add Windows User, the Media Server Administrator user interface shall further allow the configuration of each user's rights at both a global level and at a camera level as follows:
 - 13.7.5.1 Global User Rights:
 - 13.7.5.1.1 View Live – The Administrator shall be able to allow/deny a user to view live video.
 - 13.7.5.1.2 Browse – The Administrator shall allow/deny a user to view recorded video via the client software.
 - 13.7.5.1.3 Setup - The Administrator shall allow/deny a user to access the client Setup menus via the client software.
 - 13.7.5.1.4 Edit Shared Views.
 - 13.7.5.1.5 Edit Private View.
 - 13.7.5.2 User Rights for Camera – For the configuration of user rights for each camera/device, the system shall present the Administrator a list of all available cameras/devices in the system. The Administrator shall have the ability to select which cameras/devices will be available to each end-user. For each camera/device that is made available to a specific end-user, the following rights (enable/disable) for each camera/device shall be:
 - 13.7.5.2.1 Live viewing.
 - 13.7.5.2.2 PTZ control.
 - 13.7.5.2.3 PTZ Preset Positions.
 - 13.7.5.2.4 Outputs.
 - 13.7.5.2.5 Events.
 - 13.7.5.2.6 Listen to microphone.
 - 13.7.5.2.7 Talk to speaker.
 - 13.7.5.2.8 Start Recording.
 - 13.7.5.2.9 Browse.
 - 13.7.5.2.10 AVI/JPG Export.
 - 13.7.5.2.11 Database Export.
 - 13.7.5.2.12 Sequences.
 - 13.7.5.2.13 Smart Search.
- 13.7.6 Master/Slave Media Server Setup.
 - 13.7.7 The Media Server Administrator shall allow for any Media Server to function as a Master Media Server (Master). Each Master can be assigned a series of Media Server Slaves (Slaves). From the client, by selecting a Master,

the client will be able to view and manage all cameras/devices connected to each Master, plus all cameras/devices assigned to each Master. The parameters for the Master/Slave Media Server Setup shall be:

- 13.7.7.1 Designate a specific Media Server as a Master.
- 13.7.7.2 Add Slaves – The user interface shall allow the input of each Slave server's server name, and IP port. Each Slave shall be added to a list of assigned Slaves for each Master.
- 13.7.7.3 Delete Slave – The user interface shall allow the Administrator to delete a specific Slave from a list of Slaves available to a Master.
- 13.7.8 Log Files – The Media Server Administrator shall allow the selection of how long to keep Media Server log files.
- 13.7.9 Audit Log – Audit logging is the logging of client and user actions. The Media Server Administrator user interface shall allow the following configuration settings:
 - 13.7.9.1 Enable/disable audit logging.
 - 13.7.9.2 Days to keep the audit log.
 - 13.7.9.3 The minimum frequency to log events.
- 13.7.10 Language Support and XML Encoding – The Media Server Administrator shall provide a pull-down list of available languages to be used by the Media Server and clients.

14 DOWNLOAD MANAGER

- 14.1.1 A Download Manager shall be used to assist users to download various system software modules and/or to upgrade existing software modules on their computers. The Download Manager shall consist of two components: A Download Manager Welcome (Web) Page, and a Download Manager configuration tool.
- 14.1.2 Download Manager Welcome (Web) Page – The Download Manager Welcome (Web) Page shall be generated by the Surveillance System Server as specified through the Download Manager configuration tool. Upon an end-user typing in the IP address of the Surveillance System Server in a web-browser, the Download Manager will present a Welcome Page to the end-user with a series of available software modules, language options and upgrades to choose from. These options shall include:
 - 14.1.2.1 Client Viewer – From the Download Manager
 - 14.1.2.2 Welcome Page, the end-user can download the Client Viewer software module and install it on their PC.
 - 14.1.2.3 Remote Client Viewer – Allows the end-user to run a web-based client viewer without the need for software installation of a resident viewer.

15 CLIENT VIEWER

- 15.1 The Client Viewer shall allow users to connect to the Media Server for initial authorization. Upon authorization the Client Viewer will allow connection to the network video recorder(s) for access to video recordings.
- 15.2 The Client Viewer shall provide users with a comprehensive suite of features including:
 - 15.2.1 Viewing live video from cameras on the surveillance system.
 - 15.2.2 Playing back recordings from cameras on the surveillance system, with a selection of advanced navigation tools, including an intuitive timeline browser.
 - 15.2.3 Creating and switching between an unlimited number of views, each able to display video from up to 64 cameras from multiple servers at a time. The system shall allow views to be created which are only accessible to the user or to groups of users.
 - 15.2.4 Creating special views for widescreen monitors.
 - 15.2.5 Using multiple screens as well as floating windows for displaying multiple views simultaneously.
 - 15.2.6 Quickly substituting one or more of a view's cameras with other cameras.
 - 15.2.7 Viewing a "slideshow" of images from several cameras in sequence in a single camera position view. This view of several cameras in sequences in a single view is called a carousel.
 - 15.2.8 Viewing video from selected cameras in greater magnification and/or higher quality in a designated hotspot.
 - 15.2.9 Receiving video triggered through the Matrix Monitor application including live video upon event.
 - 15.2.10 Include HTML pages and static images (e. g. maps or photos) in views.
 - 15.2.11 Controlling PTZ cameras.
 - 15.2.12 Using digital zoom on live video, as well as, recorded video.
 - 15.2.13 Activating manually triggered events.
 - 15.2.14 Activating external outputs (e. g. lights and sirens)
 - 15.2.15 Using sound notifications for attracting attention to detected motion or events.
 - 15.2.16 Getting quick overview of sequences with detected motion.
 - 15.2.17 Getting quick overviews of detected alerts or events.
 - 15.2.18 Quickly searching selected areas of video recording for motion (also known as Smart Search).
 - 15.2.19 Skipping gaps during playback of recordings.
 - 15.2.20 Configuring and using several different joysticks.
 - 15.2.21 Printing images, with optional comments.
 - 15.2.22 Copying images for subsequent pasting into word processors, email, etc.

- 15.2.23 Exporting recording (e.g. for use as evidence) in AVI or JPEG database formats.
- 15.2.24 Using pre-configured as well as customizable keyboard shortcuts to speed up common actions.
- 15.2.25 Selecting between a number of language versions, independent of language used on main surveillance system via the down load of language packages.
- 15.2.26 Communicating with remote audio devices, including microphones and speakers via a local microphone and speaker.
- 15.2.27 Wiping and washing of supported PTZ cameras using assigned keyboard shortcuts or joystick buttons.
- 15.3 The Smart Client Viewer shall have the ability to adjust the display parameters for the video images from the network video recorder to optimize bandwidth utilization.
- 15.4 The Client Viewer shall have the capability to serve as a host to third- party applications through the use of a plug-in component.
- 15.5 The Client Viewer shall be installed on remote user's computers.
- 15.6 The Client Viewer shall provide a Graphical User Interface (GUI) and feature Live, Browse and Setup tabs for the convenient access of live and recorded video as well as camera properties and display quality.
- 15.7 The Client Viewer shall support the following languages: English, Spanish, Japanese, Italian, French, German and Danish. Each user shall have the option of using a different language based on the downloading of language packages.
- 15.8 The Client Viewer shall support the use of keyboard shortcuts for control of standard features.
- 15.9 The operator shall have the ability to use digital zoom where the zooming is performed in the image only. This functionality shall be the default for fixed cameras.
- 15.10 The Client Viewer shall be equipped with a context-sensitive help system that covers the full Client Viewer functionality for operators to instantly get help on a certain topic.
- 15.11 The Live tab shall allow the user to trigger manual events, control outputs, select audio inputs, and control PTZ cameras.
- 15.12 The Client Viewer shall support the following multiple viewing options:
 - 15.12.1 Floating Window – Allows the selected view to be duplicated as a new floating view which may be moved to other connected monitors by dragging the image.
 - 15.12.2 Send view to a primary monitor (a full-screen view on a PC's main monitor), or secondary monitor (a full-screen view on another monitor).
 - 15.12.3 Create views of up to 64 cameras each.
- 15.13 Carousel – The Carousel feature shall allow the sequencing display of cameras in a view window. Multiple carousels may be defined to allow all view windows to display sequences of cameras. The operator shall have the ability to select the default display time or to enter a custom display time for each camera in the carousel. From inside the camera view the operator shall have the option to manually switch to the next or previous camera in the carousel camera list as well as pausing at the current camera. When switching from one camera to the next the transition phase shall be completely smooth without any delay.

- 15.14 Hot Spot – The Hot Spot feature shall allow one position of a view to be designated as a hot spot and allow the camera displayed in the hot spot window to be viewed in a higher image quality setting or higher frame rate than that of the other windows in the view. This feature shall minimize bandwidth utilization by only pulling selected higher quality / higher frame rate images from the network video recorder. The hot spot window in the view shall be identified by an orange border around the image.
- 15.15 Static Image – The Static Image feature shall allow any position of a view to be used for displaying maps or other images of interest to the user.
 - 15.15.1 Matrix Window – A window that is used to display cameras on demand or by an external event.
 - 15.15.2 Dynamic Actions – The operator shall be able to assign outputs, PTZ presets, events, and views as actions to joystick buttons and as keyboard shortcuts. The actions shall be ordered in categories to optimize the ease of use.
 - 15.15.3 HTML Page – The HTML Page feature shall allow for several navigation functions within the Client Viewer including.
 - 15.15.4 Allow web pages to be opened in Client Viewer views.
 - 15.15.5 Switching between views by clicking on a text description of the view in the HTML Page. For example; “Go to Shared Group 1 View 1”
 - 15.15.6 Switching between different views by clicking on an interactive map area. For example; a site or building floor plan with interactive colored zones inserted as a HTML page would allow the user to switch views to a camera displaying images of the specific part of the site or building.
 - 15.15.7 Allowing maps to be created from standard image files (JPEG, GIF, TIF, etc.).
 - 15.15.8 Allowing HTML scripting for use in creating buttons for view navigation.
- 15.16 The Client Viewer shall allow the user to select events and manually trigger the selected event to occur. The event window shall list all events grouped by server and camera/device that the event is associated with.
- 15.17 The Client Viewer shall allow actions to be taken with a specific camera by right-clicking on the camera’s live video window. The actions for a specific camera shall be:
 - 15.17.1 Start/stop recording for a predefined period in minutes – This action shall force the system to record, or stop recording live video, regardless of settings. The predefined period to start/stop recording shall be configurable by the Administrator.
 - 15.17.2 Copy – This action will copy a current live image from the camera to the PC clipboard.
 - 15.17.3 Camera – This action will present a menu of available cameras and will allow the user to select a different camera for the given live view position in the live view user interface.
 - 15.17.4 Sound Notification – This action will allow the toggling of <mute> and <unmute> of a sound notification upon an event or detected motion.
 - 15.17.5 PTZ Presets – This action will allow the selection of a preset from a list of presets assigned to the specific camera.

- 15.17.6 Matrix – This action will force a manual trigger of the live video feed to a Matrix Monitor recipient.
- 15.17.7 Send Camera – This action will send the camera's video to a specific position within the live view user interface.
- 15.18 The Client Viewer shall feature an Output Control user interface to allow the user to manually activate an external output port on a device. The user interface shall list all selectable outputs grouped by server and camera/device that the output is attached to.
- 15.19 The Client Viewer shall allow the user to control a PTZ camera within each displayed view, provided that the user has been granted the proper privileges by the Administrator. Depending on camera capabilities / camera model the typical method for controlling the PTZ functions is as follows: when the mouse cursor is placed on the video image the cursor pointer shall automatically change to a crosshair indicating the camera has PTZ capabilities. Re-centering the camera's field-of-view shall be accomplished by left clicking the crosshair on the area of interest within the image. Controlling the zoom function shall be accomplished by holding down the left mouse button and selecting a percent zoom from a scale of 0% to 100% or by use of the mouse wheel.
- 15.20 Additional control feature for PTZ cameras (device dependent) includes the ability to draw a rectangle around the area of interest to zoom the camera in for closer examination. The size of the rectangle shall be proportionate to the level of zoom, i.e., the smaller the rectangle the greater the zoom level achieved.
- 15.21 The Client Viewer shall feature a PTZ controls rendered on the user interface that provides eight directional and home positions.
 - 15.21.1 The PTZ controls shall provide a digital zoom feature for the user to digitally zoom in on the displayed image without affecting the recording or the display of the camera on other Client Viewer applications.
 - 15.21.2 An overview image in the view shall display the normal field-of-view and the digital zoom area in a highlighted box to provide the user with spatial awareness.
 - 15.21.3 The PTZ control window shall allow the user to select pre-defined presets for PTZ cameras and thus move the selected camera to the preset.
- 15.22 On the Live tab, the current camera state shall be displayed on the title bar of the live view item window. A camera shall indicate that it is in live mode by a green 'Live', in recording mode by a red 'REC' and in stopped mode by a yellow 'Stopped'.
- 15.23 The Setup tab System Overview window shall allow view layouts to be set-up with cameras, carousels, hotspots, HTML pages, static images and the Matrix Monitor feature. The Setup tab Properties window shall allow camera properties to be set including; image quality, and frame rate.
- 15.24 The Setup tab shall allow the creation of camera groups and views to be utilized by the Live and Browse tabs. Camera groups and views shall be named according to user requirements. Any combination of the connected cameras shall be displayed.
- 15.25 The Browse tab shall allow the user to select the views for playback of recorded video. Views are defined in the Setup tab.

- 15.25.1 The system shall allow for live or playback video to switch to full quality for a selected camera when the camera's view is maximized unless "Keep when maximized" is selected and the stored camera settings are not set to full quality settings. If "Keep when maximized" is selected, the quality settings for the camera that are stored in the system will be used.
- 15.25.2 The Browse tab shall display motion-activated sequences for the selected camera in a drop down menu. Each sequence shall be represented by a line with the date, start time, and duration. A drop down preview screen shall allow the user to view the recorded sequence.
- 15.25.3 The Browse tab shall display Alerts defined as bookmarked events in the System Manager.
- 15.25.4 The Browse tab Time Navigation user interface shall display a time line for each camera to represent recorded video sequences. The sequences shall be color coded to indicate motion-activated sequences. The time line band shall be highlighted based on the camera view selected in the display. The window shall allow video sequences for the displayed cameras to be review simultaneously.
- 15.25.5 The window shall provide controls for:
 - 15.25.5.1 First / last image.
 - 15.25.5.2 Next / previous sequence.
 - 15.25.5.3 Next / previous image for selected camera.
 - 15.25.5.4 Playback forward / reverse.
 - 15.25.5.5 Playback speed.
 - 15.25.5.6 Skip gaps during playback.
 - 15.25.5.7 Search by time / date.
- 15.25.6 The Browse tab search user interface shall allow an area of interest in an image to be searched for motion by time. Search parameters shall include sensitivity and interval. A grid feature shall allow only specific regions of interest to be searched.
- 15.25.7 The Browse tab Print user interface shall allow a surveillance report to be printed from the image with specific information including the camera name, capture time, print time, user and user notes. The surveillance report shall be printed to any network-connected printer.
- 15.25.8 The Browse tab Export user interface shall allow the selection of start and stop times for exporting video from a camera/device source. The export file format shall be selectable to be either AVI/JPEG or a native database file format.

- 15.25.8.1 AVI/JPEG format – Provides options for export format type (AVI/JPEG), timestamp, frame rate (full/half), digital zoom export, and AVI CODEC. Video clip may be exported to desktop or a specific file path. The audio input from a microphone connected to a camera/device associated with the video being exported shall automatically be included in the AVI export.
 - 15.25.8.2 Database Export – Supports the export of up to 16 cameras. Provides options for including audio input associate with each video input, security options including compressing and/or encrypting exported database and destination options including desktop or a specific file path. Includes option for a viewer to be attached to the exported file.
 - 15.25.9 The Browse tab PTZ control window shall allow the digital zoom feature to operate when viewing recorded video.
 - 15.26 Shortcut – The system shall allow the user to program numerical keyboard shortcuts for camera views. The shortcut number shall be displayed with the view description in the Live and Browse displays. The shortcut shall allow the user to change views with 2 to 3 keyboard entries.
 - 15.27 The Properties window shall allow the user to configure the following settings:
 - 15.27.1 Image Quality – Options shall include Full, Super High (for Megapixel cameras), High, Medium and Low.
 - 15.27.2 Keep Image Quality When Maximized – Upon maximizing a specific camera image in a full view window pane, the user shall have the option to:
 - 15.27.3 Use the selected Image Quality set for the specified camera,
or
 - 15.27.4 Use the maximum Image Quality available from the camera device regardless of the Image Quality set for the device in the system.
 - 15.28 Frame Rate – Options shall include Unlimited, Medium and Low.
 - 15.29 Maintain Image Aspect Ratio – Will allow original image aspect ratio to be maintained in the display or allow the image to be scaled to the display.
 - 15.30 Update Image on Motion – Will allow bandwidth from the network video recorder to be conserved by only updating the image display on motion.
 - 15.31 Sound on Motion Detection – Will allow an audible alert to be generated when motion is sensed in the camera image to alert users.
 - 15.32 Sound on Event – Will allow an audible alert to be generated upon an event to alert users.
- 16 REMOTE CLIENT VIEWER
- 16.1 The web-based Remote Client Viewer shall offer live viewing of up to 16 cameras and include PTZ control with joystick and event / output activation. The Playback function shall give the user concurrent playback of up to 9 recorded videos with date, alert sequence or time searching.
 - 16.2 View Support – The Remote Client Viewer shall support shared and private server-based views with a layout of up to 4x4. Any of these views shall have the ability to contain a combination of cameras, images, and HTML page view items.

- 16.3 Base User Authentication – The Remote Client Viewer shall support logon using the Media Server account database which requires user name and password credentials.
- 16.4 Microsoft E-Directory Support – The Remote Client Viewer shall support logon using the NTLM (NT LAN Manager) challenge handshake with Microsoft Domain Controllers and the local Microsoft Windows user account database on the Management Server.
- 17 VIEWER – FOR EXPORTED VIDEO RECORDINGS
 - 17.1 The DVMS shall provide a standalone Viewer that is used to view exported recorded video database files.
 - 17.2 The Viewer shall run from an .exe file and therefore shall not require the installation of software in order to view exported video.
 - 17.3 The Viewer user interface shall provide the following:
 - 17.3.1 Camera Layout viewing area. This area shall be a viewing area for the camera(s) recorded video.
 - 17.3.2 Control Panel area to input data and select control functions within the Viewer.
 - 17.3.3 Playback Controls that includes controls to:
 - 17.3.4 Skip forward/back to the most recent/oldest recording for a selected camera.
 - 17.3.5 Skip forward/back to the next/last recording sequence for a selected camera.
 - 17.3.6 Move forward/back to the next/previous image for a selected camera.
 - 17.3.7 Play forward, play backward and stop playback.
 - 17.3.8 Slow to Fast speed control to select how fast the video playback speed shall be.
 - 17.4 Timeline – A graphical timeline bar showing both recorded video (denoted in green) and motion present recorded video (denoted in red).
 - 17.5 Time/Date Selector – Input fields to specify the time/date of recorded video to be viewed.
 - 17.6 Menu Bar and Toolbar to allow the selection of Viewer features The Menu Bar and Toolbar features shall incorporate:
 - 17.6.1 Settings Controls:
 - 17.6.1.1 The Camera Layout viewable area shall allow for the selection of 1x1, 2x2, 3x3, 4x4 camera matrix views.
 - 17.6.1.2 The Settings Controls shall allow the selection of various time spans that the viewable timeline covers from start to end. The options shall be 1 hour, 2 hours and 12 hours.
 - 17.6.2 Single View – The selection of Single View shall show a single camera view for the selected camera in the Camera Layout area.
 - 17.6.3 Multiple View – The selection of Multiple View shall show all cameras that are available within the Camera Layout area.
 - 17.6.4 Database Information Controls:
 - 17.6.4.1 Database Information Controls shall be provided to allow the user to select a specific camera and audio source.

- 17.6.4.2 Data shall be provided indicating the number of records and the database record limit in the database.
 - 17.6.5 Motion View – The selection of Motion View shall present the user with a graph of the amount of motion over a given time span.
 - 17.6.6 Alarm Overview – The selection of Alarm Overview shall provide the user with a list of all motion sequences and events that occurred in the database. By selecting a specific motion sequence or event, the corresponding video is played in the Camera Layout area.
 - 17.6.7 Image Controls – The Image Controls shall include digital zoom in/out, digital pan/tilt within the image, image smoothing, de-interlacing/odd-line/even-line controls, and image scaling.
 - 17.6.8 Export Controls – The Export Controls shall allow the user to export a subset of the database to an AVI, database, or JPEG/WAV file. The Export controls shall allow the user to input the start and stop times for the video to be exported.
 - 17.6.9 Print Controls – The Print Controls shall provide fill-in text fields for the operator's name, company name, and notes. Upon selecting print, a printout will be sent to the default printer.
 - 17.6.10 Smart Search Controls – The Smart Controls provides for searching one or more areas for motion within a recorded video database based on a user defined start and stop time. Motion search areas can be selected/deselected areas shown on a grid that is overlaid on the image.
- 18 MATRIX MONITOR
- 18.1 The system shall allow the configuration and use of Matrix Monitors. An administrative setup application shall be provided for the Matrix Monitor. The administrative setup application shall include a configuration tab and an event tab.
 - 18.2 Configuration Tab – Selecting the configuration tab shall provide status and allow configuration of individual computer displays to be used as Matrix Monitors. The configuration tab shall provide the following user interfaces:
 - 18.2.1 Status window – The status window shall list all Matrix Monitor recipients in the system. Specifically, the status window shall show for each Matrix Monitor recipient in the system:
 - 18.2.2 A user defined name for each Matrix
 - 18.2.3 Monitor recipient.
 - 18.2.4 IP address.
 - 18.2.5 IP port number.
 - 18.2.6 Password.
 - 18.2.7 Enable/disable status for Matrix Monitor video to be displayed by Matrix Monitor recipients using the Client Viewer.
 - 18.2.8 A user interface to add, clear, and update Matrix Monitor settings.
 - 18.3 Event Tab – The Event tab shall allow for the configuration of live video to be presented by Matrix Monitors upon selected predefined events.

- 18.3.1 The Event tab configuration menu shall provide an easy to use interface to select events to trigger live viewing of video on the Matrix Monitors recipients.
- 18.3.2 The Event tab configuration menu shall provide an easy to use interface to select which video feed / device is to be displayed on the Matrix Monitor recipient upon occurrence of a specific event.
- 18.4 Add Device – The system shall provide a wizard for adding new cameras/devices. The Add Device wizard will provide easy to use prompts for inputting the following device data:
 - 18.4.1 Input an IP Address or select the use of DNS host names.
 - 18.4.2 Use default IP port numbers 80 for HTTP and 21 for FTP or input new IP port numbers, or specify the use of other port numbers.
 - 18.4.3 Device administration password.
 - 18.4.4 Auto device type detection or the option to select the camera/device type from a menu.
 - 18.4.5 Set a custom name to identify the camera/device in the system.
 - 18.4.6 A camera settings button shall be provided to configure PTZ communication ports and view status, change the camera name, and assign a camera number to be used in conjunction with a shortcut key within the Client Viewers.
- 18.5 Edit Device – The system shall provide a means to edit the data input via the Add Device wizard. The data that can be edited shall be:
 - 18.5.1 Those parameters listed previously that are input using the Add Device wizard.
 - 18.5.2 Device type detection or the option to select the device type from a menu.
- 18.6 Remove Device – The system shall provide a list of available cameras/devices. When a camera/device is selected by the user and the Remove Device button is selected, the device will be removed from the system.
- 18.7 Settings – The system shall provide a user interface for setting up camera and recording settings. The primary user interface shall allow the configuration for Speedup Settings upon the occurrence of motion/event. Additional configuration settings shall include: Recording Settings, Database Settings, Live Settings, Audio, iPIX configuration for 360 degree views, and Motion Detection Settings. The user interface will have sub- menus to allow camera/device specific settings for Image Quality, Event Notification, Output Settings, and Motion Detection Settings.
 - 18.7.1 Speed-up Settings – Upon motion or event detection, a selectable Speedup frame rate shall be provided to provide better video quality. The frame rate shall be selectable <seconds, minutes, or hours>.
 - 18.7.2 Recording Settings – The Recording Settings are used to select when and how video is stored in the recording database. Recording Settings shall be configurable based on the following parameter settings:

- 18.7.2.1 Frame Rate – Selectable frame rate <seconds, minutes, or hours>.
 - 18.7.2.2 Enable Speedup of higher frame rate video upon Motion and/or On Event.
 - 18.7.2.3 Select start and stop events to enable the Speedup Settings based on the selection of events from Start and Stop event lists.
 - 18.7.2.4 Select when to store images in the recording database, with the options to store: Always, Never, or Conditionally based upon Motion, and/or On Event. For conditional storage of images, the system shall provide the ability to select Start and Stop events to enable image storage based on the selection of events from Start and Stop event lists.
 - 18.7.2.5 Pre and Post recording times. The system will record video before and after Motion and/or On Event based on the Pre and Post recording times.
- 18.8 Database Settings – Database Settings shall manage attributes of the overall database used to store the recorded video. This allows the user to decide how the recorded video should be stored and managed. Configuration parameters shall include:
- 18.8.1 Maximum record limit to be stored in the database. When this limit is reached, the system will automatically archive the database.
 - or
 - 18.8.2 Maximum time-span limit to be stored in the database with the option to input time in minutes, hours, or days. When this time limit is reached, the system will automatically archive the database.
 - 18.8.3 Automatically archive the database, when the database is full.
 - 18.8.4 Automatically delete archives older than a selectable number of days to optimally use the available storage area.
 - 18.8.5 Select a custom directory path name to store the database. The directory path may include a path to external network attached storage devices.
 - 18.8.6 Select an action upon a database failure including options to repair, scan, delete, or archive. This feature allows the system to intelligently respond to database failures in an organized manner.
- 18.9 Live Settings – The system shall allow multi-streaming. Using the multi-streaming feature, the user shall have the option to view live video at either the normal recording video frame rate, or at the Speedup frame rate. This allows the system to minimize bandwidth usage by using a single video stream from a camera/device, yet provide two different frame rates: one for recording and the other for live viewing.
- 18.10 Audio Settings – The system shall allow an audio input to be associated with a device's video feed. For audio input selection, the system shall allow the selection of a default microphone from a list of microphones available in the system. Likewise for audio output, the system shall allow the selection of a default speaker from a list of speakers available in the system.

- 18.11 IPIX Settings – The system shall allow the enablement and configuration of 360 degree panoramic viewing.
- 18.12 Motion Detection Settings – The system shall allow triggering for recording and events based on motion detection.
 - 18.12.1 Adjust Motion Detection - Adjustments for motion detection noise sensitivity and motion sensitivity shall be provided to exclude false motion detection of small objects and noise in the video image.
 - 18.12.2 Define Exclusion Regions – Provides a means to include/exclude regions for motion detection. The system shall provide an image from the camera/device. The image shall have a grid overlay to guide the user in the selection/de-selection of regions to include/exclude for motion detection. Alternatively, an automatic setting shall be available to allow the system to select the optimal motion detection settings.
- 18.13 Image Quality Settings – The ability shall be provided to fully configure the image quality settings for a camera/device (device dependent).
 - 18.13.1 Image Format / CODEC Selection – H.264.
 - 18.13.2 Resolution:
 - 18.13.2.1 Megapixel.
 - 18.13.2.2 4CIF
 - 18.13.3 Compression - Shall be selectable from a minimum to a maximum image quality setting.
 - 18.13.4 Brightness – Selectable from minimum to maximum.
 - 18.13.5 Contrast - Selectable from minimum to maximum.
 - 18.13.6 Color - Selectable from minimum to maximum.
 - 18.13.7 Rotate Image – To allow the image to be rotated by 90 degrees or 180 degrees.
 - 18.13.8 Control Mode - For MPEG-4 and H.264 this setting shall allow for the selection of either variable bit rate or constant bandwidth usage over the network.
 - 18.13.9 Control Priority – Shall allow the selection of the dominant video quality setting to control the image including the selection of: Frame Rate, Bit Rate, or Image Quality.
 - 18.13.10 Target Bit Rate – The system shall allow the setting of the desired target bit rate in Kbit/s.
 - 18.13.11 Bandwidth - Shall be selectable for unlimited, or a specified Kbit or Mbit per second setting.
 - 18.13.12 Synchronize Time and Include Time in Image – The system shall provide the option to synchronize time between the camera/device and the system, as well as, include a time stamp within the image.

- 18.13.13 Event Notifications – A user interface for configuring Event Notifications shall be provided to allow the Administrator to select which available events will be used as active events to generate notifications. The Event Notification user interface shall provide an easy method for adding and removing active events by selecting events from a master list of all available events.
- 18.13.14 Outputs - A user interface for configuring Outputs shall be provided to allow for the activation of outputs for a device upon either: Manual Control, or Motion Detection activation. The Outputs sub-menu shall provide an easy method for adding and removing output activation upon Manual Control by selecting outputs from a master list of all outputs available in the system. Likewise, the user interface shall independently provide an easy method to add and remove output activation upon Motion Detection by selecting outputs from a master list of all outputs available in the system.
- 18.13.15 I/O Setup – The system shall provide a user interface for configuring inputs and outputs for each camera/device within the system. In the I/O Setup menu, the Administrator shall be able to define and edit both input events and output events. To achieve this functionality, the system shall provide the following I/O Setup user interface:
 - 18.13.16 Add New Event – Add New Event shall provide a list of all input events available for a given camera/device. The user interface shall allow for the selection of one or more of the available input events to be enabled. Additionally, for each input event selected, the user interface shall provide a means to assign and/or edit the following:
 - 18.13.17 Event Name.
 - 18.13.18 Enable/disable email if the event occurs.
 - 18.13.19 Enable/disable an image from a camera to be included in the email upon event <select camera from list of all available cameras>.
 - 18.13.20 Enable/disable an SMS message if the event occurs.
 - 18.13.21 Optionally add a timer event to end the input event sequence or to generate a new event. The Administrator will be prompted to input the event name and duration of the timer event in seconds or minutes.
- 18.14 Add New Output Event – Add New Output Event shall allow the Administrator to specify the setting for an output from a camera/device. The Output Event configuration settings shall include:
 - 18.14.1 Selection of available output options (device dependent).
 - 18.14.2 Keep output for a specified time period. The specified time period can be set in either 1/10th of seconds, or seconds.
 - 18.14.3 External Output Name.

- 18.15 Add VMD (Video Motion Detection) Event– Selecting the Add VMD Event button shall assign an input event to the selected camera/device.
- 18.16 Edit Selected (Event) – Selected (Event) shall allow the modification of:
 - 18.16.1 Selection/de-selection of all available input events.
 - 18.16.2 Event Name.
 - 18.16.3 Enable/disable email if the event occurs.
 - 18.16.4 Enable/disable an image from a camera to be included in the email upon event <select camera from list of all available cameras>.
 - 18.16.5 Enable/disable an SMS message if the event occurs.
 - 18.16.6 Optionally add/change a timer event to end an event sequence or to start a new event. The Administrator will be prompted to input the event name and duration of the timer event in seconds or minutes.
- 18.17 Remove Selected (Event) – Selecting the Remove Selected (Event) shall delete the selected event for the selected camera/device.
- 18.18 Advanced – Related to events, the system shall allow the setting of advanced network settings. The network settings shall consist of:
 - 18.18.1 FTP Server Port.
 - 18.18.2 Alert Port.
 - 18.18.3 SMTP Port.
 - 18.18.4 Polling Interval (in 1/10th seconds).
- 18.19 Event Buttons – The system shall support manually triggered events from the Client Viewer. These manually triggered events are called Event Buttons and can be used to start and stop events, to send email/SMS notifications, or to trigger outputs. Selecting of the Event Buttons button in the Administrator Application shall launch a dialog for adding manual events using the following configuration settings:
 - 18.19.1 Add New Event – Add New Event shall provide a list of all input events available for a given camera/device.
 - 18.19.2 The menu shall allow for the selection of one or more of the available input events to be enabled. Additionally, for each Input event selected, the user interface shall provide a means to assign and/or edit the following:
 - 18.19.3 Event Name
 - 18.19.4 Enable/disable email if the event occurs.
 - 18.19.5 Enable/disable an image from a camera to be included in the email upon event <select camera from list of all available cameras>.
 - 18.19.6 Enable/disable an SMS message if the event occurs.
 - 18.19.7 Optionally add a timer event to end an event sequence or start a new event. The Administrator will be prompted to input the event name and duration of the timer event in seconds or minutes.
- 18.20 Generic Events – Generic Events are custom-made events that are generated based on data from external systems. The DVMS shall provide for the configuration, editing and use of Generic Events as follows:
 - 18.20.1 Generic Event Name. Event Protocol <TCP>, or <UDP>.

- 18.20.2 The DVMS system shall generate Generic Events based on the match between predefined user input text strings and the text within a received TCP or UDP packet from a third-party system. A user interface shall be provided to input an 'Event Substring' and/or 'Event Message Include'. The user interface shall provide a tool for using Boolean operators to form Event Message text strings.
- 18.20.3 Event Rule <Search> or <Match> selection. Selection of 'Search' shall produce events if the Event Substring/Event Message Include string text is found in the received TCP or UDP packet. The selection of 'Match' will only generate an event if the Event Substring/Event Message Include string is an exact match of the received TCP or UDP packet.
- 18.20.4 The Generic Events user interface shall allow for the removal of Generic Events.
- 18.20.5 I/O Control – I/O Control provides a graphical mapping of all system events (i.e., Available Events), to specific outputs. The I/O Control menu shall allow for the assignment and unassignment of outputs to Available Events.

19 LOCAL AREA NETWORK

- 19.1 The LAN topology to support the IP Video Surveillance System should follow a Hierarchical or Collapsed Core model:
 - 19.1.1 Core Layer
 - 19.1.2 Distribution Layer
 - 19.1.3 Access Layer
- 19.2 The LAN should provide the following capabilities:
 - 19.2.1 High availability
 - 19.2.2 Scalability
 - 19.2.3 Simplicity
- 19.3 Local Area Network Requirements:
 - 19.3.1 Power-over-Ethernet (POE) - 10/100/1000 ports that support 802.3af PoE
 - 19.3.2 Quality of Service (QoS) - DSCP/TOS-based prioritization and Rate limiting
 - 19.3.3 Security – IGMP Snooping, ACLs, SNMP v2-v3, SSH
 - 19.3.4 Multicast – IGMP, Sparse/Dense
 - 19.3.5 Management - Intuitive web-based management for deployment & configuration
 - 19.3.6 IP Addressing – VLSM, IPv4
 - 19.3.7 Routing – Inter-Vlan routing, Link State, PBR (policy based routing)
 - 19.3.8 VLANs – Multiple broadcast domains
- 19.4 Rack Mounted UPS/Battery Backup requirements:
 - 19.4.1 Input Capacity: 2200VA
 - 19.4.2 Power Compatibility: United States, North America
 - 19.4.3 Input Voltage: +/- 25% at a line input, single phase

- 19.4.4 Input frequency: 50 or 60 Hz +/- 5%
- 19.4.5 Output Voltage (on battery): Pure sine wave at +/- 5% of nominal, +/- 10% of nominal after low battery warning
- 19.4.6 Output frequency (on battery): 50 or 60 Hz +/- 5%
- 19.4.7 Output Voltage Regulation (AVR): AVR automatically increases output 15% above input voltage if -9% to -25% of nominal. AVR decreases output voltage if +9% to +25% of nominal
- 19.4.8 Spike Protection: 320 Joules, 2ms
- 19.4.9 Unit Input Protection: Breaker for overload and short circuit protection
- 19.4.10 EMI/RFI Filter: 10dB at 0.15MHz, 50dB at 30MHz
- 19.4.11 Overload Protection: UPS automatic shutdown if overload exceeds 110% of nominal at 60 seconds and 125% at 3 seconds
- 19.4.12 Transfer time: 2/4ms, including detection time
- 19.4.13 Battery short recharge time: 8 hours to 90% of full capacity
- 19.4.14 Backup time: 85-95 min
- 19.4.15 Weight: 28 kg (61.6 lbs)
- 19.4.16 Rack Size: 3U
- 19.4.17 Tower Dimension (WxDxH) mm: 483 x 351 x 130
- 19.4.18 Multiple LED and audio indicators of power and surge levels
- 19.4.19 Interface: RS-232C Bi-Directional Communication port
- 19.5 17.5. Gigabit Ethernet-Multimode Transceiver requirements:
 - 19.5.1 850nm VCSEL
 - 19.5.2 Data Rate: 1.25Gbps, NRZ
 - 19.5.3 Single +3.3V Power Supply
 - 19.5.4 RoHS Compliant and Lead-free
 - 19.5.5 AC/AC Differential Electrical Interface
 - 19.5.6 Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
 - 19.5.7 Duplex-LC Connector
 - 19.5.8 Compliance with specifications for IEEE 802.3z Gigabit Ethernet at 1.25Gbps
 - 19.5.9 Compliance with ANSI specifications for Fiber Channel applications at 1.06Gbps
 - 19.5.10 Eye Safety
 - 19.5.11 Designed to meet Laser Class 1 comply with EN60825-1
- 19.6 Network Video Recorder (NVR) requirements:
 - 19.6.1 The Server shall be designed to run on a Windows platform, supporting both Desktop and Server class operating systems.

19.6.2 The Server shall run as a Window's Service. This service shall run as part of the local service account. This service shall be running as long as the system is booted and has started Windows. It shall not require the user to be logged in.

19.6.3 The Server will store settings in SQL Express and shall not require a full MS-SQL license.

19.6.4 The service shall connect to the camera and handle streaming to the server. It shall not require each client to connect to individual cameras. This service shall allow the cameras to be placed on one network and the clients on a separate network using a different IP range.

20 WIDE AREA NETWORK

20.1 The WAN (secured under separate bid) will be a combination of existing MPLS circuits to hi rise communities and new dedicated fiber (1 gig), with the Ross Street location as the central monitoring site.

20.1.1 The WAN circuits for remote sites will be sized to support multiple constant video streams back to the head end at Ross Street for monitoring. These are primarily outdoor camera views from non-hi rise locations. The spreadsheets highlight the selected camera views in yellow.

20.2 WAN Edge Unit Device requirements:

20.2.1 L3 Routing - Distance Vector and/or Link State routing protocols.

20.2.2 Quality of Service (QoS):

20.2.2.1 Diff Serv and/or IP Precedence Tagging

20.2.2.2 Rate limiting

20.2.2.3 Structured QoS Policy to easily define multiple queues

20.2.2.4 Dedicated Video and Voice Queues for Prioritization

20.2.3 Gigabit and/or 10 Gigabit capability

20.2.4 Management - Intuitive web-based management for deployment & configuration

20.2.5 Security - ACLs, SNMP v2-v3, SSH

20.2.6 Multicast support – PIM, Sparse/Dense mode

20.2.7 Vendor maintained for support

20.3 The WAN should provide the following capabilities:

20.3.1 High availability

20.3.2 Scalability

20.3.3 Simplicity

21 DVMS NETWORK/PHYSICAL SECURITY

21.1 NAT Firewall Support. The system shall support port forwarding, which shall allow clients from outside of a Network Address Translation (NAT) firewall to connect to network video recorders without using a VPN.

21.2 Port Numbers – Network security is of the utmost important when at all possible secure protocols should be utilized. The system shall use the following default ports for specific purposes.

- 21.2.1 Port 22 (inbound and outbound): Used for SFTP (Secure File Transfer Protocol) traffic. Used for uploading and downloading information and files including sending event messages from some devices. This is the preferred method of file transfer.
- 21.2.2 Port 25 (inbound and outbound): Used when Recording Servers listen for SMTP (Simple Mail Transfer Protocol) information; some devices use SMTP (email) for sending event messages.
- 21.2.3 Port 443 (inbound and outbound): Used for HTTPS (Hypertext Transfer Protocol Secure) traffic between the Surveillance System Server and cameras, Remote Client Viewers, and Client Viewers. This is the preferred method of communication all attempts should be made to choose a vendor's software that supports HTTPS/SSL.
- 21.2.4 Ports 1024 and above (outbound only): Used for HTTP traffic between cameras/devices and the Surveillance System Server.
- 21.2.5 Port 1234: Used when Recording Servers listen for alert socket/TCP information; some devices use TCP for sending event messages.
- 21.2.6 Port 12345: Used for communication between Client Viewer and Matrix Monitor recipients.
- 21.3 System Logging
 - 21.3.1 The system shall generate log files in editable text format. The log files shall track the overall DVMS operation and usage. The log files shall be stored in a local file directly or other user defined file directory as specified by the Administrator. The Administrator shall have the option to specify how long the log files shall be retained by the system (in days).
 - 21.3.2 The specific log files generated by the system shall be as follows:
 - 21.3.2.1 Administrative Application Log Files – This log file shall log activity performed by the DVMS Administrator. The file name shall provide a descriptive name prefix followed by a date code. The file type extension shall end in “.log”.
 - 21.3.2.2 Recording Server Log Files – This log file shall log activity performed using the Recording Server service. The file name shall provide a descriptive name prefix followed by a date code.
 - 21.3.2.3 Event Log Files – This log file logs events that occur in the system including input and output events. The Event Log file shall be viewable in both the Client Viewer and Viewer.
 - 21.3.2.4 Image Server Log Files - This log file shall log activity performed using the Image Server service. The file name shall provide a descriptive name prefix followed by a date code.

- 21.3.2.5 Image Server Audit Log Files – This log file shall log activity performed using the Remote Client Viewer, Client Viewer, and PDA Server/Client. The file name shall provide a descriptive name prefix followed by a date code.
 - 21.3.2.6 Image Import Service Log Files – This log file logs activity related to fetching pre-alarm images from cameras/devices for storage in the database. The file name shall provide a descriptive name prefix followed by a date code.
 - 21.3.2.7 Export Log Files – This log file logs activity related to database exporting. By default, the log file shall be stored on the local computer desktop or other file directory as specified by the Administrator using the General Settings menu in the Administrator Application. The file name shall provide a descriptive name prefix followed by a date code. As with the exported database files themselves, the Export Log Files may be encrypted and/or compressed, whereas the file extension will be modified to “.mzi” or “.men”.
 - 21.3.2.8 Log Check Log Files – This log file shall provide an integrity check of the other log files to guard against tampering and/or corruption of the log files. The file name shall provide a descriptive name prefix followed by a date code.
 - 21.3.2.9 Each log file will be generated daily, unless the system function is not used.
 - 21.4 **Physical Security** – All network equipment shall be maintained in a secure location to ensure that unauthorized personnel does not tamper or have access to any network or DVMS related equipment. All server/network racks shall be of a lockable type. It is preferable that any network/server cabinet enclosures be soundproof and heat dissipating. All equipment that cannot be housed in a locked cabinet shall be secured in a locked room.
- 22 IMPLEMENTATION MANAGEMENT
- 22.1 Project Plan and Implementation Schedule
 - 22.1.1 The Bidder must provide a detailed implementation plan that lists tasks, milestones, and deadlines as part of this response. During the contract negotiation, a binding implementation schedule will be developed jointly between HACP and the successful Bidder. Mandatory in person weekly status meetings between the Bidder and HACP personnel will be part of the schedule.
 - 22.1.2 The Bidder’s project manager will be required to submit a progress schedule at every meeting. This schedule shall list tasks, responsible party, deadline, information required to complete task, and status of the task.
 - 22.2 De-Installation of Existing Equipment
 - 22.2.1 A list of all existing cameras is provided. Winning bidder is to de-install and pack cameras in the empty new camera boxes. Bidder is encouraged to provide an alternative to re-use cameras (with modifications to make them IP enabled) or to provide HACP an optional credit, removing them from sites.

22.2.2 Any other existing equipment, housings, radio networking equipment, and cabling that will not be reused must be removed from the sites.

23 TRAINING AND POST CUTOVER SUPPORT

23.1 The Bidder shall provide comprehensive training for employees as part of the bid price. If the Buyer requires training in addition to that described in the RFP, the Bidder shall provide such training at additional, but reasonable, cost. The Buyer reserves the right to train the support staff of their choice.

23.2 System Administration Training

23.2.1 The Buyer shall be provided with the capability to complete all ongoing system administration functions.

23.2.2 The Bidder shall provide system administration training for two (2) personnel to be designated by the Buyer.

23.3 Repair and Maintenance Training

23.3.1 The Bidder shall provide training on the maintenance and replacement of cameras, housings, and any modular components included in the design.

23.4 All documents shall be current as of date of delivery. The Bidder shall provide annual documentation updates to reflect any system changes, additions or deletions made by the Bidder. Electronic documentation must be searchable. The Bidder shall provide the following paper and electronic documentation for the system:

23.4.1 New Data Network One-Line Diagrams

23.4.2 LAN Equipment Configurations

23.4.3 WAN Router Configurations

23.4.4 Equipment Inventory

24 SYSTEM ACCEPTANCE

24.1 Acceptance Period

24.1.1 Prior to the start of the Acceptance Period, as defined herein, the Products shall be powered up for a period of one week.

24.1.2 Prior to the final completion of the installation of the Products, the Bidder shall test the Products in accordance with manufacturer's published procedures. At such time as all such tests have been completed to the Bidder's satisfaction, the Bidder shall give Buyer written notice thereof and notice of the cutover date.

24.2 Acceptance Criteria:

24.2.1 No major failures for 30 consecutive days. Calendar restarts if a major failure occurs.

24.2.2 All documentation and as-builds are delivered and approved.

24.2.3 All requested training delivered/completed satisfactorily.

25 LIMITED PRODUCT WARRANTY

25.1 General

The Bidder warrants that for the Warranty Period specified below, the Products, including software, shall be free from defects in material and workmanship and shall function substantially in accordance with the manufacturer's specifications ("Warranty"). The Warranty Period shall begin on the date of Product Acceptance as specified in this RFP and continue for one year. The Warranty entitles Buyer to Maintenance Service (as defined below) for the Products during the Warranty Period.

The Bidder shall, during the Warranty Period, repair or replace the Products remotely or at Buyer's site without charge for parts or labor. The Bidder has the option to repair or replace Products with new or like new Products, and any Products returned shall become the Bidder's property. Repair or replacement shall not extend the Warranty Period.

25.2 Software Upgrades

The Buyer recognizes the importance of maintaining the operating system software at current levels. The vendor shall commit to installing all system patches as they are released and all upgrades within six months of release as part of the maintenance contract.

25.3 Forfeit Of Warranty

Buyer shall forfeit all Warranty and maintenance Service rights if, during the Warranty Period Buyer or a third party: (a) fails to follow applicable installation, operation, maintenance, or environmental requirements; (b) alters, modifies, enhances, repairs or disassembles the Products without the Bidder's written consent; (c) abuses, misuses or damages the Products; or (d) relocates Products without the Bidder's written consent. Warranty and Maintenance Service do not cover Products damaged by acts, omissions or events beyond the Bidder's control, including power failure or surges that exceed the manufacturer's specifications. At Buyer's request, the Bidder will service non-covered failures at the Bidder's then current time and materials rates.

25.4 Repair Of System Components By Factors Beyond Bidder's Control

Warranty Maintenance Service does not cover Product failures caused by other than normal wear and tear, including failures caused by acts, omissions or events beyond the Bidder's control, such as power failure or surges which exceed the manufacturer's specifications of surge protection equipment installed by the Bidder. The Bidder will service non-covered failures at the Buyer's request at the Bidder's then-current time and materials rates. If upon the Buyer's request, the Bidder dispatches a service technician to the Buyer's site and the Bidder determines that there is no Product failure or that the Bidder's Warranty Maintenance Service does not cover the failure, the Bidder may charge the Buyer the Bidder's time and material rates. The Bidder shall provide a listing of the Bidder's time and materials rates that shall remain fixed during the Warranty Period.

25.5 Exclusion From Warranty Maintenance Service

The Bidder shall provide a plan for repair or replacement of the Products in the event of a catastrophic event such as an earthquake, fire or flood. Repair for any system components damaged by factors outside of the Bidder's control shall be performed, wherever possible, to the same schedules and specifications as for any other repair.

26 MAINTENANCE RESPONSIBILITY

26.1 Support Personnel Certification

The Bidder shall provide and update as necessary the list of manufacturer certified repair personnel. Certified personnel shall be defined as those repair personnel who have attended the manufacturer's training classes on the type and model equipment installed at the Buyer's location(s), who have the proper experience and licenses for the work to be performed, and

who are recognized by the manufacturer as “qualified” technical support personnel. Only certified repair personnel as described above shall be considered as adequate for response to a failure.

26.2 RESPONSE TIME

Buyer shall be entitled to Maintenance Service under the terms of this Agreement during the Warranty Period (“Warranty Maintenance Service”). Warranty Maintenance Service covers Product failures caused by normal wear and tear. Warranty Maintenance Service shall entitle the Buyer to Product repair or replacement, at the Bidder’s option, without additional charge for parts or labor. The Bidder may use new or like new parts, and any parts replaced shall become the Bidder’s property. The Buyer shall provide the Bidder with access required to perform Warranty Maintenance Service. If the Bidder determines that the Buyer has a major failure and the Bidder is unable to remotely correct the failure, the Bidder shall dispatch a technician without regard to the time of day or the day of the week to arrive at the installation site within four (4) hours of the major failure. If the Bidder determines that the Buyer does not have a major failure and the Bidder is unable to remotely correct the minor failure, the Bidder shall dispatch a technician to the installation site the next business day, except when the request for service for non-major failures shall be performed by the Bidder between 8:00 a.m. and 4:30 p.m., local time, Monday through Friday, except Bidder Holidays. In any of the above cases, the technician must be certified on the equipment in need of repair or upgraded.

ABBREVIATIONS/REFERENCE STANDARDS

- ANSI - American National Standards Institute
- AP - access provider
- ASTM - American Society for Testing and Materials
- ATM - asynchronous transfer mode
- AWG - American Wire Gauge
- BICSI - Building Industry Consulting Services International
- CATV - community antenna television
- CCIA - Computer Communications Industry Association
- EF - entrance facility
- EIA - Electronic Industries Alliance
- ELFEXT - equal level far-end crosstalk
- EMI - electromagnetic interference
- EMS - energy management system
- EP - entrance point
- ER - equipment room
- FCC - Federal Communications Commission
- FDDI - fiber distributed data interface
- FEXT - far-end crosstalk
- FOCIS - Fiber Optic Connector Intermateability Standard
- FTR - Federal Telecommunications Recommendation
- HC - horizontal cross-connect
- HVAC - heating, ventilation, and air conditioning

- IC - intermediate cross-connect
- IEC - International Electrotechnical Commission
- IEEE - The Institute of Electrical and Electronics Engineers
- IS - Interim Standard
- ISDN - integrated services digital network
- ISO - International Organization for Standardization
- LAN - local area network
- LED - light emitting diode
- Mb/s - megabits per second
- MC - main cross-connect
- MUTOA - multi-user telecommunications outlet assembly
- NCS - National Communications System
- NEC - National Electrical Code
- NEMA - National Electrical Manufacturers Association
- NESC - National Electrical Safety Code
- NEXT - near-end crosstalk
- NFPA - National Fire Protection Association
- NVP - nominal velocity of propagation
- PSELFEXT - power sum equal level far-end crosstalk
- PSFEXT - power sum far-end crosstalk
- PSNEXT - power sum near-end crosstalk
- ScTP - screened twisted-pair
- STP - shielded twisted-pair
- TR - telecommunications room
- TGB - telecommunications grounding busbar
- TIA - Telecommunications Industry Association
- TSB - Telecommunications System Bulletin
- UL - Underwriters Laboratories
- US - United States
- UTP - unshielded twisted-pair
- WA - work area
- X - cross-connect
- Design, manufacture, test, and install telecommunications cabling networks per manufacturer's requirements and in accordance with NFPA-70 (National Electrical Code(r)), state codes, local codes, requirements of authorities having jurisdiction and particularly the following standards:
 - ANSI/TIA/EIA-526-7, Optical Power Loss Measurements of Installed Single-mode Fiber Cable Plant.
 - ANSI/TIA/EIA-526-14-A, Optical Power Loss Measurements of Installed Multi-mode Fiber Cable Plant.
 - ANSI/TIA/EIA-568-B.2, Commercial Building Telecommunications Cabling Standard; Part 2: Balanced Twisted-Pair Cabling Components.
 - ANSI/TIA/EIA-568-B.3, Optical Fiber Cabling Components Standard.

- ANSI/TIA/EIA-569-A, Commercial Building Standard for Telecommunications Pathways and Spaces.
- ANSI/TIA/EIA-570-A, Residential Telecommunications Cabling Standard.
- ANSI/TIA/EIA-606, Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
- ANSI/TIA/EIA-607, Commercial Building Grounding/Bonding Requirements.
- ANSI/TIA/EIA-758, Customer-Owned Outside Plant Telecommunications Cabling Standard.
- ASTM D 4566, Standard Test Methods For Electrical Performance Properties Of Insulations And Jackets For Telecommunications Wire And Cable.
- IEC 60603-7, Connectors for Frequencies below 3 MHz for use with Printed Circuit Boards, Part 7: Detailed Specifications for Connectors, 8-way Including Fixed and Free Connectors with Common Mating Features.
- NFPA Part 70 (NEC).
- BICSI -- Telecommunications Distribution Methods Manual.
- BICSI -- Cabling Installation Manual.

28. Drawings

- 28.1. All drawings provided with this Bid package follow the proposed Division 27 standard of the Construction Standards Institute (CSI). These scaled drawings may be used for distance estimation purposes.
- 28.2. It shall be understood that the drawings provided with the specification package are diagrammatic. They are included to show the intent of the specifications and to aid the Bidder in bidding the job. The Bidder shall make allowance in the bid proposal to cover whatever work is required to comply with the intent of the plans and specifications.

SECTION III GENERAL REQUIREMENTS

An Offeror may be an individual or a business corporation, partnership, firm, joint venture or other legal entity duly organized and authorized to do business in the City of Pittsburgh, financially sound and able to provide the services being procured by HACP.

If an Offeror has been debarred, suspended or otherwise lawfully precluded from participating in any public procurement activity, such firm shall disclose that information in its offer, which may be sufficient ground for disqualification. If the selected firm fails to disclose such information and HACP discovers it thereafter, then HACP could terminate the contract.

Each Offeror must be in good standing with HACP, and any Federal, State or Municipality that has or has had a contracting relationship with the firm. Therefore, if a Federal, State or Municipal entity has terminated any contract with an Offeror for deficiencies or defaults, that Offeror is not eligible to submit a Response to this Solicitation.

If Offeror is not in good standing with HACP, and/or any Federal, State or Municipality this must be disclosed.

Offeror must have and maintain all necessary insurance to cover malpractice liability and workers' compensation and submit proof of it with their proposal submission.

SECTION IV CONTENT OF RESPONSE DOCUMENTS

Offerors submitting Proposals should fully read and comprehend the *Instructions to Offerors Non-Construction* provided in **Attachment B** and *General Conditions – Non Construction* provided in **Attachment C**. Proposals received without all of the required information may be deemed non-responsive. Offerors must submit one original plus three (3) paper copies of their technical proposal and one (1) electronic copy in .PDF format on a CD, and one (1) original paper, one (1) paper copy and (1) electronic copy in .PDF format of the fee proposal. Proposals must include, in the same order as below and using the forms attached hereto, the following information, exhibits and schedules:

1. General Information

1. Letter of Interest (Cover letter)
2. Type of Organization; Corporation, Partnership, Joint Venture or Sole Proprietorship. Names of shareholders, partners, principals and any other persons exercising control over the Firm.
3. Description of the Offeror's capacity including staff resources
4. Organizational Certifications:
 - (a) Copies of Certificate of Incorporation, Partnership Agreement, Joint Venture or other organizational document.
 - (b) A corporate resolution signed by the Secretary of the Corporation and notarized, certifying the name of the individual(s) authorized to sign the offer, the contract and any amendments thereto.

2. Previous Related Experience

1. Describe why Offeror feels its organization is qualified to provide the requested services. Provide information about Offeror's past experience of same or similar services. Such listing shall include at least the following information for a minimum of three (3) references.
 - i. Name of the contracting entity. If the Offeror has performed work for any housing authority, including HACP, that housing authority must be listed as a reference.
 - ii. Name, title and a telephone number of a contract person for each identified contracting entity to permit reference checks to be performed. The identified party must be one who has first-hand knowledge regarding the operation of the contracted facility or project and who was involved in managing the contract between the Offeror and the contracting entity.

C. Proposed Staffing and Sub-consultants Responsibilities and Qualifications

Provide the following information relative to the proposed staffing and sub-consultants for this contact:

1. Provide background information regarding each identified Staff member that accurately describes his or her employment history and relevant experience providing services similar to those described in this Request for Proposals.
2. Description of the Scope of Services for at least five (5) projects in which the Staff and/or sub-consultant has provided services similar to those described in this Request for Proposals. Please include the individual's role in each project and all relevant aspects of each project.

D. Methodology

Project Approach: Provide a brief narrative of the Offeror's approach to the services described in this Request for Proposals. Availability: Describe the availability of the Staff proposed and the turnaround time for each request to be made by the Authority.

E. Certifications and Representations of Offerors

Each Offeror must complete the Certifications and Representations of Offerors provided in **Attachment D**.

3. Minority and Women Business Participation Plan

HACP MBE and WBE Goals. It is the policy of HACP to ensure that Minority Business Enterprises (MBEs) and Women-owned Businesses (WBEs) are provided maximum opportunity to participate in contracts let by HACP. In accordance with Executive Order 11625, HACP has established a minimum threshold of eighteen percent (18%) of the total dollar amount for MBE utilization in this contract. HACP has established a seven percent (7%) minimum threshold for participation of WBEs, and, HACP strongly encourages and affirmatively promotes the use of MBEs and WBEs in all HACP contracts. For these purposes, an MBE is defined as "any legal entity other than a joint venture, organized to engage in commercial transactions, that is at least fifty-one percent (51%) owned and controlled by one or more minority persons." Also, a minority person is defined as a member of a socially or economically disadvantaged minority group, which includes African-Americans, Hispanic-Americans, Native-Americans, and Asian-Americans. A WBE/MBE is defined as "any legal entity other than a joint venture, organized to engage in commercial transactions, that is at least fifty-one percent (51%) owned and controlled by a female. All MBE/WBE contractors and sub-contractors must be certified as such by some recognized certification entity.

Proposals submitted in response to this solicitation **MUST** include an MBE/WBE participation plan which, at a minimum, demonstrates "Best Efforts" have been taken to achieve compliance with MBE/WBE goals. HACP's Procurement Policy defines "Best Efforts" in compliance with MBE/WBE goals to mean that the contractor must certify and document with its bid or proposal that it has contacted in writing at least ten (10) certified MBE/WBE subcontractors to participate in the proposed contract with HACP or lesser number if the contractor provides documentation that ten (10) certified MBE/WBE contractors could not be identified. Each contractor shall certify as to same under penalty of perjury and shall submit the back-up documentation with its bid or proposal. **Any bid or proposal received from a contractor that does not contain such**

certification and back-up documentation acceptable to HACP will be deemed non-responsive by HACP.

If you have any questions regarding the HACP MBE/WBE goals please contact Will McDanel, Director of Procurement, by e-mail at Will.McDanel@hacp.org or by contacting him at, 100 Ross Street, 2nd Floor, Pittsburgh PA 15219, telephone (412) 456-5000 ext. 8501. Proposals must demonstrate how the Offeror intends to meet or exceed these goals. Also, complete the table provided in **Attachment E** and include with your proposal.

4. Section 3 Participation

Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701, et seq.) (the "Act") requires the Housing Authority of the City of Pittsburgh to ensure that employment and other economic and business opportunities generated by financial assistance from the Department of Housing and Urban Development ("HUD"), to the greatest extent feasible, are directed to public housing residents and other low income persons, particularly recipients of government housing assistance, and business concerns that provide economic opportunities to low and very low income persons.

To comply with the Act HACP requires its contractors to provide equal employment opportunity to all employees and applicants for employment without regard to race, color, religion, sex, national origin, disability, veteran's or marital status, or economic status and to take affirmative action to ensure that both job applicants and existing employees are given fair and equal treatment.

The goal of this policy is to obtain a reasonable level of success in the recruitment, employment, and utilization of HACP residents and other eligible persons and/or businesses by contractors working on contracts partially or wholly funded with HUD monies. HACP shall examine and consider a contractor's potential for success in providing employment and business opportunities to those covered under Section 3 prior to acting on any proposed contract award. In response to any RFP, RFQ or IFB HACP will require submission of the Section 3 Opportunities Plan and roster of current employees, and certification that the bidder will comply with the requirements of Section 3 either by hiring Section 3 employees to directly perform under the contract or by committing a dollar amount to HACP's Section 3 program in an amount consistent with the chart below. **Any proposal received from a Offeror that does not contain a section 3 participation plan will be deemed non-responsive by HACP**

Below are the HACP Section 3 Guidelines as listed in the HACP Program Manual:

RESIDENT HIRING REQUIREMENTS / RESIDENT HIRING SCALE

TOTAL LABOR DOLLARS USE TOTAL CONTRACT AMOUNT FOR SERVICE CONTRACTS	RESIDENT LABOR AS A % OF TOTAL LABOR 1. DOLLARS
Labor dollars \$25,000 but less than \$100,000	10% of the labor dollars
\$100,000, but less than \$200,000	9% of the labor dollars
At least \$200,000, but less than \$300,000	8% of the labor dollars
At least \$300,000, but less than \$400,000	7% of the labor dollars
At least \$400,000, but less than \$500,000	6% of the labor dollars
At least \$500,000, but less than \$1 million	5% of the labor dollars
At least \$1 million, but less than \$2 million	4% of the labor dollars
At least \$2 million, but less than \$4 million	3% of the labor dollars
At least \$4 million, but less than \$7 million	2% of the labor dollars
\$7 million or more	½ to 1 % of the labor dollars

****A copy of HACP's Section 3 Program Manual is available for download at www.HACP.org**

A copy of HUD's Section 3 requirement is provided in **Attachment F**. If you have any questions regarding the Section 3 Requirements or would like to discuss goals and planning for Section 3 Requirements please contact Lynn Dixon, Employment Services Coordinator, by e-mail at Lynn.Dixon@hacp.org or by contacting her at Housing Authority of the City of Pittsburgh, 2305 Bedford Avenue, Pittsburgh PA 15219, telephone (412) 395-3950 ext. 1023. Proposals must demonstrate how the Offeror intends to meet or exceed the Authority's Section 3 requirements. Proposals submitted without a Section 3 plan may be deemed nonresponsive.

5. Fee Proposal

In a separate sealed envelope, provide the Offeror's fee proposal. The fee proposal should include a detailed cost breakdown. (**Attachment H**)

6. Firm Demographics

Provide demographic description of all employees of your firm using the table provided in **Attachment G**

7. TIN/W-9 Form

Complete a W-9 Request for Tax Payer Identification Number and Certification, as provided in **Attachment I**.

8. MBE/WBE Letter of Intent

Complete a Letter of Intent for **each** MBE/WBE firm contacted, as provided in **Attachment J**.

SECTION V EVALUATION CRITERIA

The Evaluation Committee will evaluate and will score each proposal that is submitted as a complete response. It is noted that the proposed Fee will be evaluated separately. Responses may receive a maximum score of one hundred (100) points subdivided as follows:

Experience of Offeror:**Maximum 20 points**

Demonstrated successful experience and capability of the proposed staff and sub-consultants proposed for this project in providing the services described in this Request for Proposals.

Capacity:**Maximum 20 points**

Demonstrated ability of the Offeror to provide the resources (staffing, equipment, office facilities and other) necessary for the timely and efficient implementation of HACP's goals and objectives as described in this solicitation.

Proposed Fee:**Maximum 20 points**

Proposed rates and level of service are reasonable and appropriate in relation to the services requested.

Methodology:**Maximum 15 points**

The Offeror's proposed methodology is reasonable and logical and will ensure that HACP requirements will be met and indicates that the Offeror has a clear understanding of the scope of services required.

MBE/WBE Participation**Maximum 10 points**

Demonstrated experience and commitment of the Offeror to assist the HACP in meeting its requirement and goals related to Minority/Women Business Participants.

Section 3**Maximum 15 points**

Demonstrated commitment to assist the HACP in meeting its requirements and goals related to Section 3.

Deductions

Points may be deducted for failure to submit all required documents or for submitting irrelevant or redundant material.

SECTION VI PROCUREMENT AND AWARD PROCESS

Pursuant to 24 C.F.R. Section 85.36 (d)(3), The described goods and/or services are being procured as described in Section II of this solicitation. The following instructions are intended to aid Offerors in the preparation of their Proposals:

A. Pre-Submission Conference

A pre-submission conference and site visits will be conducted on **Thursday and Friday July 22-23, 2010 beginning at 10 a.m. at the FIC Building at the Homewood North Community**. Nothing discussed or expressed at the Pre-Submission Conference will change, alter, amend or otherwise modify the terms of this Solicitation unless a subsequent written amendment (addendum) is issued. Verbal responses by HACP's representatives shall not constitute an amendment or change to this Solicitation.

Material issues raised and addressed at the Pre-Submission Conference shall be answered solely through an addendum to this Solicitation. Likewise, ambiguities and defects of this Solicitation raised at the Pre-Submission Conference shall be corrected by a written amendment only, which, if issued, shall form an integral part hereof.

Although not mandatory, all prospective respondents are strongly encouraged to attend the Pre-Submission Conference. Failure to attend will not excuse the legal contractual duty imposed by this Solicitation and the subsequent contract on each respondent to familiarize itself with the request for proposals.

Each firm shall submit in writing to the Contract Manager to request additional information as follows:

1. Describe any items, information, reports or the like, if any, that the Proposer will require from the HACP in order to comply with the scope of Services.
2. Identify any revisions to the Sample Contract that the Proposer will require in order to provide the services identified herein. Proposers are required to submit requests for revisions to the Contract, if any, to the HACP in writing at the time of proposal submission.

B. Amendments to Solicitation

Any and all amendments to this Solicitation shall be sent by certified mail, return receipt requested, electronic mail, and/or by fax, to all potential Offerors who attend the Pre-Submission Conferences and/or receive the solicitation materials.

Notwithstanding any information that may be contained in the Solicitation and amendments thereto, Offerors are responsible for obtaining all information required thus enabling them to submit Responses.

C. Submission of Proposals and/or Amendments to Proposals; Deadlines

Responses may be hand-delivered or sent by certified or registered mail, return receipt requested, to the following address:

Will McDanel
Procurement Director
Housing Authority of the City of Pittsburgh
100 Ross St. 2nd Fl.
Pittsburgh, PA 15219

Proposals must be received at the above address no later than **August 10, 2010 at 10:00 a.m.**, regardless of the selected delivery mechanism.

Each Response will be date-time stamped immediately upon its receipt at HACP to document its timeliness. Any Proposal received after the specified deadline shall be automatically rejected and will be returned unopened except as identified in the Instructions to Offerors attached hereto.

Any amendments to a response must be received before the specified response due date and time established for the delivery of the original Proposal except as identified in the Instructions to Offerors attached hereto.

D. Evaluation and Award Process

HACP staff will review each Proposal to determine if it was complete and if it was responsive to this Request for Proposals. HACP may allow an Offeror to correct minor deficiencies in its Proposal that do not materially affect the Proposal.

All Proposals determined to be complete and responsive will be provided to an HACP Evaluation Committee. HACP's Evaluation Committee will evaluate the Proposals utilizing the criteria established in Section V of this Request for Proposals.

HACP reserves the right to interview Offerors in the competitive range, request additional information from selected Offerors and/or negotiate terms and conditions with selected Offerors.

HACP will perform a responsibility determination of the highest ranked Offeror which may include reference and financial background checks.

HACP will award a contract to the highest-ranked Offeror or Offerors determined to be responsive and responsible and whose offer is in the best interest of HACP.

HACP shall not be responsible for and will not reimburse any Offeror for any cost(s) associated with preparing a proposal.

A Proposal submitted by an Offeror does not constitute a contract, nor does it confer any rights on the Offeror to the award of a contract. A letter or other notice of Award

or of the intent to Award shall not constitute a contract. A contract is not created until all required signatures are affixed to the contract.

Prior to contract execution of any professional service contracts which have a potential amount of \$25,000.00 or greater, the selected firm may be required to appear before and present a Minority and Woman Owned Business participation plan to the City of Pittsburgh Equal Employment Opportunity Review Commission for approval. Any HACP contract which has a potential amount of \$50,000.00 or more is subject to approval by the HACP Board of Directors.

ATTACHMENT A
SAMPLE PROFESSIONAL SERVICE CONTRACT
FOR

This Agreement is made as of _____ between HOUSING AUTHORITY OF THE CITY OF PITTSBURGH, a body corporate and politic created under the provisions of the Housing Authorities Law, as amended, having its principal office at 200 Ross Street, Pittsburgh, Pennsylvania 15219 ("**Authority**"), and _____, having its principal office at _____, Pittsburgh, PA 152__ ("**Contractor**").

PREAMBLE

Authority desires the Contractor to provide _____

Contractor desires to provide to the Authority _____

AGREEMENT

In consideration of the mutual covenants and promises set forth herein, the parties hereto, intending to be legally bound hereby, agree as follows:

1. **Engagement.** Authority hereby engages Contractor to render the following services set forth on **Exhibit A** (the "**Services**").

Contractor hereby accepts such engagement and covenants that Contractor will devote and will cause its employees to devote their best efforts, knowledge and skill to the performance of the Services and such additional services as may be mutually agreed upon by Authority and Contractor.

It is understood that the Contractor's Services shall be rendered at such times and places as directed by Authority.

Authority may at any time make changes to the Services to be performed. If any such change causes an increase or decrease in the rates or the time required for performance of the

Services, Authority shall make an equitable adjustment in the rates and the time required for performance of the Services, and shall modify this Agreement accordingly.

2. **Contractor Conflicts.** Contractor agrees that neither Contractor nor its employees shall, directly or indirectly, engage in any activity, which would detract from Contractor's ability or its employees' ability to apply their best efforts, knowledge and skill to the performance of the Services. Contractor is charged with the responsibility to promptly disclose to Authority any situations that may create possible conflicts of interest so that appropriate action can be taken to address such situations. No member, official, or employee of Authority, during his or her tenure or for one year thereafter, shall have any interest in this Agreement or the proceeds thereof.

Contractor may not participate in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved.

In the event Contractor is or becomes aware of a conflict of interest and fails to disclose the conflict to Authority; the Authority may immediately terminate this Agreement pursuant to paragraph 7(ii)(b) hereof.

3. **Compensation.** In full compensation for the Services to be rendered by Contractor to Authority hereunder, Authority agrees to pay Contractor for the Services in accord with the Fee Schedule set forth on **Exhibit B**; however, the compensation of costs for services not to exceed _____. No work or expenses for which an additional cost or fee will be charged by Contractor shall be furnished without the prior written consent of Authority.

Contractor shall submit monthly invoices to Authority, which invoices shall include an itemization of the hours expended by Contractor and Contractor's employees and the nature of the Services performed and shall be prepared in a form reasonably satisfactory to Authority.

Contractor shall use its reasonable business efforts to submit invoices within 45 days of rendering Services.

All invoices should be mailed to: Housing Authority of the City of Pittsburgh
201 Kirkpatrick Street
Pittsburgh, PA 15219
Attn: Invoicing and Receiving

Authority shall use its reasonable business efforts to process and pay each such invoice within 30 days of its receipt.

4. **Term.** The commencement date for performing the Services shall be _____ through _____, with an option for the Authority to extend for _____, unless sooner terminated as provided herein.

5. **Contractor's Obligations.** Contractor shall comply with the following:

(a) If requested, Contractor will submit monthly written narrative progress reports to the Authority. Contractor shall retain all records in connection with this Agreement or the Services provided herein for a period of three years after all payments required herein are made and all other pending matters are closed.

(b) This Agreement is subject to and incorporates herein the provisions of the U. S. Department of Housing and Urban Development regulations and the sections of the Code of Federal Regulations that are applicable to said program.

(c) The rules and regulations of the Office of Management and Budget (OMB) Circular A-133 apply. If the Contractor is a non-profit organization incorporated or registered to do business in Pennsylvania under the laws of the Commonwealth of Pennsylvania, Contractor shall provide a copy of its annual Audit or Review, whichever is required to the Pennsylvania Bureau of Charitable Organizations.

(d) If Contractor is a Subrecipient or pass-through entity, Contractor must comply with applicable regulations pertaining to this Agreement.

6. Insurance Contractor will obtain and maintain (a) workers' compensation insurance in accordance with State Workers' Compensation Law; and (b) liability insurance with a combined single limit of not less than \$100,000 per occurrence with insurers reasonably acceptable to the Authority. Authority will be named as an additional insured on each of such liability policies and such coverage shall be on a primary and non contributory basis. Contractor will deliver to Authority certificates evidencing such policies prior to the commencement of the Services, and will deliver evidence of the renewal or replacement of such policies at least 30 days prior to the expiration thereof. Each of such policies will contain a waiver of the insurer's rights of subrogation against Authority.

7. Termination

(i) The Authority may terminate this Agreement for convenience upon 30 days' prior written notice to the Contractor.

(ii) This Agreement shall terminate automatically without notice upon the occurrence of any of the following events:

(a) A material breach of this Agreement by Contractor;

(b) Contractor or Contractor's employees engaging in conduct materially injurious to the Authority or to itself/themselves, including but not limited to acts of dishonesty or fraud, commission of a felony or a crime of moral turpitude, or alcohol or substance abuse;

(c) Contractor's refusal to substantially perform the Services;

- (d) Contractor becomes insolvent or makes a general assignment for the benefit of creditors; or
- (e) Contractor files a petition in bankruptcy or such petition is filed against Contractor.

Authority shall be liable only for payment for Services rendered prior to the effective date of termination. If this Agreement is terminated pursuant to subparagraphs (a) or (c) Authority may take over the Services and prosecute the same to completion by contract or otherwise, and Contractor shall be liable for any additional costs incurred by Authority. Authority may withhold any payments to Contractor, for the purpose of set-off or partial payment, as the case may be, of amounts owed to Authority by Contractor.

8. Minority/Women Participation. Contractor shall use its best efforts to ensure that minority-owned businesses and women's business enterprises shall have the maximum opportunity to participate in the performance of contracts and subcontracts financed, in whole or in part, with federal funds provided under this contract. In this regard, Contractor shall take all necessary steps in accordance with 24 CFR 85.36(e), to ensure that minority-owned businesses and women's business enterprises have the maximum opportunity to compete for and perform contracts. Contractor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts assisted by the U.S. Department of Housing and Urban Development.

Failure of Contractor to carry out the requirements set forth in 24 CFR 85.36(e) shall constitute a breach of contract and, after notification from the U.S. Department of Housing and Urban Development or Authority, may result in termination of this contract or such other remedy as is deemed appropriate.

For the purposes hereof, a minority-owned business shall mean sole proprietorship, partnership or corporation-owned, operated and controlled by minority group members who have at least 51% ownership. The minority group members must have operational control and interest in capital and earnings commensurate with their respective percentage of ownership. Furthermore, to qualify as a minority-owned business, the business must be certified as an MBE by either the City of Pittsburgh, Allegheny County, Commonwealth of Pennsylvania or some other governmental entity whose certification is acceptable to Authority. Minority group members include, but are not limited to, African-Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans and Hasidic Jewish American.

A women's business enterprise is defined as a sole proprietorship, partnership or corporation owned, operated and controlled by women who have at least 51% ownership. Women must have operational control and interest in capital and earnings commensurate with their respective percentage ownership. Furthermore, to qualify as a women's business enterprise, the business must be certified as a WBE by either the City of Pittsburgh, Allegheny County, Commonwealth of Pennsylvania or some other governmental entity whose certification is acceptable to Authority.

In the event of a contractor's failure to comply with the equal employment opportunity and affirmative action provisions, including the affirmative action undertaking outlined in its proposal, or with any of the rules, regulations or orders referenced within this contract, HACP, at its discretion, may exercise any one or more of the following rights and remedies:

- i. cancel, terminate or suspend the contract in whole or in part
- ii. recover from the Contractor, by set off against the unpaid portion of the contract, as liquidated damages and not as a penalty, an agreed upon sum for each day that the contractor fails to comply with the contract, the sum being fixed and agreed upon by and between contractor and HACP because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages which HACP would sustain in the event of such a breach
- iii. such other rights and remedies (which are cumulative and not exclusive) available under applicable law on in equity.

9. Acceptance of the Services. Authority has the right to review and/or require correction of any Services provided by Contractor. Contractor shall make any required corrections to any Service within 10 days at no additional charge. The payment of any invoice by Authority does not indicate acceptance of Services provided. Further, the Authority reserves the right at any time to reject or disapprove any Service provided. If Contractor fails to make the necessary corrections within a reasonable time after notice to do so from the Authority, or if the submission of any corrected Service remains unacceptable, the Authority may immediately terminate this Agreement pursuant to paragraph 7(ii)(a) hereof or reduce the hourly rate to reflect the reduced value of the Services provided.

10. Confidential Information. Contractor agrees that Contractor will not knowingly reveal to a third party or use for Contractor's own benefit, either during or after the term of this Agreement, without the prior written consent of Authority, any confidential information pertaining to the business and affairs of Authority, its officers, employees and directors obtained while working with Authority except for information clearly established to be in the public record.

11. Representation and Warranties of Contractor. Contractor hereby represents and warrants to Authority that Contractor is not a party to or otherwise subject to or bound by any contract, agreement or understanding which would limit or otherwise adversely affect Contractor's ability to perform the Services or which would be breached by Contractor's execution and delivery of this Agreement or by the performance of the Services.

12. Indemnification. Contractor agrees to indemnify and hold Authority harmless from any and all claims, damages, liabilities, costs and expenses (collectively "Claims") arising out of or in connection with Contractor's or its employees' performance of the Services on behalf of Authority.

13. **Independent Contractor.** Contractor shall perform the Services hereunder as an independent contractor and not as an agent or employee of the Authority. Contractor shall be responsible for paying any and all required Federal, state or local taxes arising from the performance of the Services. Contractor agrees to remove any employee from the performance of the Services at the request of Authority.

14. **Copyright.** No material produced in whole or in part under this Agreement shall be subject to copyright in the United States or in any other country. Authority shall have unrestricted authority to publish, disclose, distribute, and otherwise use, in whole or in part, any reports, data, or other materials and documentation prepared by Contractor under this Agreement.

15. **Inspections; Work Product.** Pursuant to 24 CFR 85.36(i)(10) and (11), access shall be given by Contractor to Authority, the United States Department of Housing and Urban Development, the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and records of Contractor which are directly pertinent to this Agreement for the purpose of making an audit, examination, excerpts, and transcriptions. All required records shall be retained for three years after Authority makes final payment and all other pending matters on which Contractor performed Services are closed.

All work product produced by Contractor, including Contractor's employees, in accordance with this Agreement shall become the sole property of Authority in perpetuity. "Work product" shall include all records and other documents resulting from the Services performed under this Agreement. It is understood that Authority may reproduce any such work product without modifications and distribute such work product without incurring obligations for additional compensation to Contractor.

16. **Return of Authority Property.** Promptly after termination of this Agreement, Contractor shall return and shall cause its employees to return to Authority all property of the Authority then in Contractor's possession, including without limitation papers, documents, records, files, computer disks and confidential information, and shall neither make nor retain copies of the same. Authority's obligation to make final payment to Contractor following termination, including without limitation accrued but unpaid fees under paragraph 3 hereof, shall be contingent upon Contractor's compliance with this paragraph.

17. **Third Party Solicitation.** Contractor warrants that Contractor has not retained any company, firm or person to solicit or secure this Agreement and has not paid or agreed to pay any company, firm or person any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of this Agreement.

18. **Release.** Prior to final payment under this Agreement, or prior to settlement upon termination of this Agreement, and as a condition precedent thereto, Contractor shall execute and deliver to Authority a final release ("**Release**"), in a form acceptable to Authority, of all claims against Authority by Contractor under and by virtue of this Agreement, other than such claims, if any, as may be specifically excepted by Contractor in stated amounts set forth therein.

19. **Disputes.** All disputes arising under or related to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.

- (a) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the Authority against the contractor shall be subject to a written decision by the Contracting Officer.
- (b) The Contracting Officer shall, within 30 days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
- (c) The Contracting Officer's decision shall be final unless the Contractor
 - 1) Appeals in writing to a higher level in the Authority in accordance with the Authority's policy and procedures;
 - 2) Refers the appeal to an independent mediator or arbitrator; or
 - 3) Files suit in a court of competent jurisdiction. Such appeal must be made within 30 days after receipt of Contracting Officer's decision.
- (d) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action under or relating to the contract, and comply with any decision of the Contracting Officer.

20. **Notices.** All notices or other communications to either party by the other shall be deemed given when made in writing and deposited with the United States Postal Service addressed as follows:

If to the Authority: Housing Authority of the City of Pittsburgh

200 Ross Street, ____ Floor
Pittsburgh, PA 15219

And a copy of the notice or other communication should be sent to:

Housing Authority of the City of Pittsburgh
100 Ross St. 2nd Fl.
Pittsburgh, PA 15219
Attn: Kim Detrick, Contract Manager

If to Contractor: _____

Attn: _____
() _____

21. **Compliance with Law.** Contractor shall comply with all Federal, State and Local laws, regulations ordinances and codes relating to the operation and activities of Authority and all Services performed pursuant to this Agreement, including, but not limited to completing the following items which shall be attached as exhibits:

- (a) Non-Debarment Certificate (Exhibit C)
- (b) Certification re: Lobbying (Exhibit D)
- (c) Disclosure of lobbying activity (Exhibit E)
- (d) Conflict of Interest (Exhibit F)

22. **Transfer by Contractor.** Contractor shall not transfer all or any part of its rights or obligations herein to any person or legal entity.

23. **Miscellaneous.** The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision. This Agreement embodies the entire Agreement between the parties hereto and supersedes any and all prior or contemporaneous, oral or written understandings, negotiations, or communications on behalf of such parties. This Agreement may be executed in several counterparts, each of which shall be deemed original, but all of which together shall constitute one and the same instrument. The waiver by either party of any breach or violation of any provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach or violation hereof. This Agreement is executed in and shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. This Agreement may only be amended by written agreement of both parties hereto. This Agreement shall inure to the benefit of the Authority, its successors and assigns.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

SIGNATURE PAGE TO
PROFESSIONAL SERVICE CONTRACT
FOR

HOUSING AUTHORITY OF THE CITY
OF PITTSBURGH

Date: _____

By: _____
Contracting Officer

Vendor Name

Date: _____

By: _____

Title: _____

Date: _____

By: _____
Witness

EXHIBIT A

SCOPE OF SERVICES

The scope of services is specifically described below:

Scope would be inserted here.

SAMPLE

EXHIBIT B
FEE SCHEDULE

Contractor will be paid based on the following:

Fees to be inserted following award.

Total Cost not to exceed: \$ _____

SAMPLE

EXHIBIT C - CERTIFICATION OF PROPOSER**REGARDING DEBARMENT SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

(Proposer) _____ certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency;
2. Have not within a three year period preceding this bid been convicted of or had civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or Local) transaction or contract under a public transaction: violation of Federal or State antitrust statutes or commission of embezzlement, thief, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three year period preceding this bid had one or more public transaction (Federal, State or Local) terminated for cause or default.

If the Proposer is unable to certify to any of the statements in this certification, the Proposer shall attach an explanation to this certification.

(Proposer) _____ CERTIFIES
OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF
THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND
UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET SEQ.
ARE APPLICABLE THERETO.

Signature and Title of Authorized Official

EXHIBIT D - CERTIFICATION REGARDING LOBBYING

I, _____,
Hereby Certify on (Name and Title of Authorized Official)

Behalf of _____ that
(Subcontractor)

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency. A Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL "Disclosure Form to Report Lobbying", in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature and Title of Authorized Official

EXHIBIT E - DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

Public Reporting Burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, researching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Please do not return your completed form to the Office of Management and Budget send it to the address provided by the sponsoring agency.

1. Type of Federal Action: ☐ a. contract ☐ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance	2. Status of Federal Action: ☐ a. bid/offer/application ☐ b. initial award ☐ c. post-award	3. Report Type: ☐ a. initial filing ☐ b. material change For Material Change Only year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: _____ Prime _____ Subawardee Tier _____, if known: Congressional District, if known:		5. If reporting entity in No. 4 if Subawardee, enter name and address of Prime. Congressional District, if known:
6. Federal Department/Agency:		6. Federal Program Name/Description: CFDA Number, if applicable:
8. Federal Action Number, if known:		9. Award Amount, if known: \$
10a. Name and Address of Lobbying Registrant (If individual, last name, first name, MI):		b. Individuals performing services (Include address if different from No. 10a) (last name, first name, MI):
I. Information requested through this form is authorized by Sec 319, Pub L. 101-121, 103 Stat. 750, as amended by Sec. 10: Pub. L. 104-65, Stat 700 (31 U.S.C. 1352). This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the above when this transaction was made entered into. This disclosure is required pursuant to 31 U.S.A.C. 1352. This information will be reported to the Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.		Signature _____ Print Name _____ Title: _____ Telephone No.: _____ Date: _____
Federal Use Only		Authorized for Local Reproduction Standard Form LLL (1/96)

INSTRUCTIONS FOR COMPLETION OF SF-LLL DISCLOSURE OF LOBBY ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment of any lobby entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information in the space on the form is inadequate. Complete all items that apply for both the initial filing and material change reports. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobby activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or a subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is in the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee" then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFOA) number for grants, cooperation agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract, grant or loan award number, the application/proposal control number assigned by the Federal agency. Include prefixes e.g. RFP-DE-90-00).
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.
(b) Enter the full names of the individual (s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual or will be made planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box (es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box (es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date (s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal Official (s) or employee (s) contacted of the officer (s) employee (s) or Member (s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet (s) is attached.
16. The certifying individual shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response. Including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other respect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget. Paperwork Reduction Project (0348-004-5), Washington, D.C. 20503.

EXHIBIT F - CONFLICTS OF INTEREST

_____("Contractor") certifies
that:

1. No employee, officer, or agent of the Housing Authority of the City of Pittsburgh ("HACP") participated in the selection, or in the award or administration of the Contractor's Agreement with HACP, which would involve a conflict of interest, real or apparent. A conflict would arise when (i) a HACP employee, officer or agent, (ii) any member of his or her immediate family, (iii) his or her parents (iv) his or her business associates or (v) an organization that employs, or is about to employ, any of the foregoing, receives a payment from the Contractor or any affiliate thereof, or has a financial or other interest in the Contractor or the Contractor's Agreement with HACP.
2. Contractor shall not enter into any contract, subcontract or agreement with any officer, agent or employee of HACP during his or her tenure nor for one year thereafter shall any officer, agent or employee of HACP have any interest, direct or indirect, in the Contract Agreement, including the proceeds thereof.

CONTRACTOR

Date: _____, 2010

By: _____

Name: _____

Title: _____

(f) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(g) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful offer that makes its terms more favorable to the HA will be considered at any time it is received and may be accepted.

(h) If this solicitation is a request for proposals, proposals may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before award. Proposals may be withdrawn in person by a offeror or its authorized representative if the identity of the person requesting withdrawal is established and the person signs a receipt for the offer before award. If this solicitation is an invitation for bids, bids may be withdrawn at any time prior to bid opening.

7. Contract Award

(a) The HA will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the HA, cost or price and other factors, specified elsewhere in this solicitation, considered.

(b) The HA may

- (1) reject any or all offers if such action is in the HA's interest,
- (2) accept other than the lowest offer,
- (3) waive informalities and minor irregularities in offers received, and (4) award more than one contract for all or part of the requirements stated.

(c) If this solicitation is a request for proposals, the HA may award a contract on the basis of initial offers received, without discussions. Therefore, each initial offer should contain the offeror's best terms from a cost or price and technical standpoint.

(d) A written award or acceptance of offer mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. If this solicitation is a request for proposals, before the offer's specified expiration time, the HA may accept an offer, whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the HA.

(e) Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract.

8. Service of Protest

Any protest against the award of a contract pursuant to this solicitation shall be served on the HA by obtaining written and dated acknowledgment of receipt from the HA at the address shown on the cover of this solicitation. The determination of the HA with regard to such protest or to proceed to award notwithstanding such protest shall be final unless appealed by the protestor.

9. Offer Submission

Offers shall be submitted as follows and shall be enclosed in a sealed envelope and addressed to the office specified in the solicitation. The proposal shall show the hour and date specified in the solicitation for receipt, the solicitation number, and the name and address of the offeror, on the face of the envelope.

It is very important that the offer be properly identified on the face of the envelope as set forth above in order to insure that the date and time of receipt is stamped on the face of the offer envelope. Receiving procedures are: date and time stamp those envelopes identified as proposals and deliver them immediately to the appropriate contracting official, and only date stamp those envelopes which do not contain identification of the contents and deliver them to the appropriate procuring activity only through the routine mail delivery procedure.

[Describe bid or proposal preparation instructions here:]

ATTACHMENT C

General Conditions for Non-Construction Contracts

Section I – (With or without Maintenance Work)

U.S. Department of Housing and Urban Development

Office of Public and Indian Housing

Office of Labor Relations

OMB Approval No. 2577-0157 (exp. 12/31/2011)

Public Reporting Burden for this collection of information is estimated to average 0.08 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Reports Management Officer, Office of Information Policies and Systems, U.S. Department of Housing and Urban Development, Washington, D.C. 20410-3600; and to the Office of Management and Budget, Paperwork Reduction Project (2577-0157), Washington, D.C. 20503. Do not send this completed form to either of these addressees.

Applicability. This form HUD-5370-C has 2 Sections. These Sections must be inserted into non-construction contracts as described below:

- 1) Non-construction contracts (without maintenance) greater than \$100,000 - use Section I;
- 2) Maintenance contracts (including nonroutine maintenance as defined at 24 CFR 968.105) greater than \$2,000 but not more than \$100,000 - use Section II; and
- 3) Maintenance contracts (including nonroutine maintenance), greater than \$100,000 - use Sections I and II.

Section I - Clauses for All Non-Construction Contracts greater than \$100,000

1. Definitions

The following definitions are applicable to this contract:

- (a) "Authority or Housing Authority (HA)" means the Housing Authority.
- (b) "Contract" means the contract entered into between the Authority and the Contractor. It includes the contract form, the Certifications and Representations, these contract clauses, and the scope of work. It includes all formal changes to any of those documents by addendum, Change Order, or other modification.
- (c) "Contractor" means the person or other entity entering into the contract with the Authority to perform all of the work required under the contract.
- (d) "Day" means calendar days, unless otherwise stated.
- (e) "HUD" means the Secretary of Housing and Urban Development, his delegates, successors, and assigns, and the officers and employees of the United States Department of Housing and Urban Development acting for and on behalf of the Secretary.

2. Changes

- (a) The HA may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed or supplies to be delivered.
- (b) If any such change causes an increase or decrease in the hourly rate, the not-to-exceed amount of the contract, or the time required for performance of any part of the work under this contract, whether or not changed by the order, or otherwise affects the conditions of this contract, the HA shall make an equitable adjustment in the not-to-exceed amount, the hourly rate, the delivery schedule, or other affected terms, and shall modify the contract accordingly.
- (c) The Contractor must assert its right to an equitable adjustment under this clause within 30 days from the date of receipt of the written order. However, if the HA decides that the facts justify it, the HA may receive and act upon a

- proposal submitted before final payment of the contract.
- (d) Failure to agree to any adjustment shall be a dispute under clause Disputes, herein. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.
- (e) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written consent of the HA.

3. Termination for Convenience and Default

- (a) The HA may terminate this contract in whole, or from time to time in part, for the HA's convenience or the failure of the Contractor to fulfill the contract obligations (default). The HA shall terminate by delivering to the Contractor a written Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall: (i) immediately discontinue all services affected (unless the notice directs otherwise); and (ii) deliver to the HA all information, reports, papers, and other materials accumulated or generated in performing this contract, whether completed or in process.
- (b) If the termination is for the convenience of the HA, the HA shall be liable only for payment for services rendered before the effective date of the termination.
- (c) If the termination is due to the failure of the Contractor to fulfill its obligations under the contract (default), the HA may (i) require the Contractor to deliver to it, in the manner and to the extent directed by the HA, any work as described in subparagraph (a)(ii) above, and compensation be determined in accordance with the Changes clause, paragraph 2, above; (ii) take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable for any additional cost incurred by the HA; (iii) withhold any payments to the Contractor, for the purpose of off-set or partial payment, as the case may be, of amounts owed to the HA by the Contractor.
- (d) If, after termination for failure to fulfill contract obligations (default), it is determined that the Contractor had not failed, the termination shall be deemed to have been effected for the convenience of the HA, and the Contractor shall be entitled to payment as described in paragraph (b) above.
- (e) Any disputes with regard to this clause are expressly made subject to the terms of clause titled Disputes herein.

4. Examination and Retention of Contractor's Records

- (a) The HA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to:
 - (i) appeals under the clause titled Disputes;
 - (ii) litigation or settlement of claims arising from the performance of this contract; or,
 - (iii) costs and expenses of this contract to which the HA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

5. Rights in Data (Ownership and Proprietary Interest)

The HA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

6. Energy Efficiency

The contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under this contract is performed.

7. Disputes

- (a) All disputes arising under or relating to this contract, except for disputes arising under clauses contained in Section III, Labor Standards Provisions, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
- (b) All claims by the Contractor shall be made in writing and submitted to the HA. A claim by the HA against the Contractor shall be subject to a written decision by the HA.
- (c) The HA shall, with reasonable promptness, but in no event in no more than 60 days, render a decision concerning any claim hereunder. Unless the Contractor, within 30 days after receipt of the HA's decision, shall notify the HA in writing that it takes exception to such decision, the decision shall be final and conclusive.
- (d) Provided the Contractor has (i) given the notice within the time stated in paragraph (c) above, and (ii) excepted its claim relating to such decision from the final release, and (iii) brought suit against the HA not later than one year after receipt of final payment, or if final payment has not been made, not later than one year after the Contractor has had a reasonable time to respond to a written request by the HA that it submit a final voucher and release, whichever is earlier, then the HA's decision shall not be final or conclusive, but the dispute shall be determined on the merits by a court of competent jurisdiction.
- (e) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the HA.

8. Contract Termination; Debarment

A breach of these Contract clauses may be grounds for termination of the Contract and for debarment or denial of participation in HUD programs as a Contractor and a subcontractor as provided in 24 CFR Part 24.

9. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the HA under the contract may be assigned to a bank, trust company, or other financial institution. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership approved by the HA.

10. Certificate and Release

Prior to final payment under this contract, or prior to settlement upon termination of this contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the HA a certificate and release, in a form acceptable to the HA, of all claims against the HA by the Contractor under and by virtue of this contract, other than such claims, if any, as may be specifically excepted by the Contractor in stated amounts set forth therein.

11. Organizational Conflicts of Interest

- (a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under this contract and a contractor's organizational, financial, contractual or other interests are such that:
 - (i) Award of the contract may result in an unfair competitive advantage; or
 - (ii) The Contractor's objectivity in performing the contract work may be impaired.
- (b) The Contractor agrees that if after award it discovers an organizational conflict of interest with respect to this contract or any task/delivery order under the contract, he or she shall make an immediate and full disclosure in writing to the Contracting Officer which shall include a description of the action which the Contractor has taken or intends to take to eliminate or neutralize the conflict. The HA may, however, terminate the contract or task/delivery order for the convenience of the HA if it would be in the best interest of the HA.
- (c) In the event the Contractor was aware of an organizational conflict of interest before the award of this contract and intentionally did not disclose the conflict to the Contracting Officer, the HA may terminate the contract for default.
- (d) The terms of this clause shall be included in all subcontracts and consulting agreements wherein the work to be performed is similar to the service provided by the prime Contractor. The Contractor shall include in such subcontracts and consulting agreements any necessary provisions to eliminate or neutralize conflicts of interest.

12. Inspection and Acceptance

- (a) The HA has the right to review, require correction, if necessary, and accept the work products produced by the Contractor. Such review(s) shall be carried out within 30 days so as to not impede the work of the Contractor. Any

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- Form HUD-5370-C (10/2006)

16. Equal Employment Opportunity

During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
- (b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to (1) employment; (2) upgrading; (3) demotion; (4) transfer; (5) recruitment or recruitment advertising; (6) layoff or termination; (7) rates of pay or other forms of compensation; and (8) selection for training, including apprenticeship.
- (c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
- (d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, or federally assisted construction contracts under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
- (i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontractor or purchase order as the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the

Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

17. Dissemination or Disclosure of Information

No information or material shall be disseminated or disclosed to the general public, the news media, or any person or organization without prior express written approval by the HA.

18. Contractor's Status

It is understood that the Contractor is an independent contractor and is not to be considered an employee of the HA, or assume any right, privilege or duties of an employee, and shall save harmless the HA and its employees from claims suits, actions and costs of every description resulting from the Contractor's activities on behalf of the HA in connection with this Agreement.

19. Other Contractors

HA may undertake or award other contracts for additional work at or near the site(s) of the work under this contract. The contractor shall fully cooperate with the other contractors and with HA and HUD employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or HA employee.

20. Liens

The Contractor is prohibited from placing a lien on HA's property. This prohibition shall apply to all subcontractors.

21. Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

- (a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- (b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.
- (c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of

- apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- (d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- (e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
- (f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

22. Procurement of Recovered Materials

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

ATTACHMENT D

**Certifications and
Representations
of Offerors
Non-Construction Contract**

 U.S. Department of Housing
and Urban Development
Office of Public and Indian Housing

Public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

This form includes clauses required by OMB's common rule on bidding/offering procedures, implemented by HUD in 24 CFR 85.36, and those requirements set forth in Executive Order 11625 for small, minority, women-owned businesses, and certifications for independent price determination, and conflict of interest. The form is required for nonconstruction contracts awarded by Housing Agencies (HAs). The form is used by bidders/offers to certify to the HA's Contracting Officer for contract compliance. If the form were not used, HAs would be unable to enforce their contracts. Responses to the collection of information are required to obtain a benefit or to retain a benefit. The information requested does not lend itself to confidentiality.

1. Contingent Fee Representation and Agreement

(a) The bidder/offeror represents and certifies as part of its bid/offer that, except for full-time bona fide employees working solely for the bidder/offeror, the bidder/offeror:

(1) ☐ has, ☐ has not employed or retained any person or company to solicit or obtain this contract; and

(2) ☐ has, ☐ has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) If the answer to either (a)(1) or (a) (2) above is affirmative, the bidder/offeror shall make an immediate and full written disclosure to the PHA Contracting Officer.

(c) Any misrepresentation by the bidder/offeror shall give the PHA the right to (1) terminate the resultant contract; (2) at its discretion, to deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

2. Small, Minority, Women-Owned Business Concern Representation

The bidder/offeror represents and certifies as part of its bid/offer that it:

(a) ☐ is, ☐ is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) ☐ is, ☐ is not a women-owned small business concern. "Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) ☐ is, ☐ is not a minority enterprise which, pursuant to Executive Order 11625, is defined as a business which is at least 51 percent owned by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals.

For the purpose of this definition, minority group members are:

(Check the block applicable to you)

☐ Black Americans ☐ Asian Pacific Americans

☐ Hispanic Americans ☐ Asian Indian Americans

☐ Native Americans ☐ Hasidic Jewish Americans

3. Certificate of Independent Price Determination

(a) The bidder/offeror certifies that—

(1) The prices in this bid/offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder/offeror or competitor relating to (i) those prices, (ii) the intention to submit a bid/offer, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid/offer have not been and will not be knowingly disclosed by the bidder/offeror, directly or indirectly, to any other bidder/offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder/offeror to induce any other concern to submit or not to submit a bid/offer for the purpose of restricting competition.

(b) Each signature on the bid/offer is considered to be a certification by the signatory that the signatory:

(1) Is the person in the bidder/offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above (insert full name of person(s) in the bidder/offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder/offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

- (c) If the bidder/offeror deletes or modifies subparagraph (a)2 above, the bidder/offeror must furnish with its bid/offer a signed statement setting forth in detail the circumstances of the disclosure.

4. Organizational Conflicts of Interest Certification

- (a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under a proposed contract and a prospective contractor's organizational, financial, contractual or other interest are such that:

- (i) Award of the contract may result in an unfair competitive advantage;
- (ii) The Contractor's objectivity in performing the contract work may be impaired; or
- (iii) That the Contractor has disclosed all relevant information and requested the HA to make a determination with respect to this Contract.

- (b) The Contractor agrees that if after award he or she discovers an organizational conflict of interest with respect to this contract, he or she shall make an immediate and full disclosure in writing to the HA which shall include a description of the action which the Contractor has taken or intends to eliminate or neutralize the conflict. The HA may, however, terminate the Contract for the convenience of HA if it would be in the best interest of HA.

- (c) In the event the Contractor was aware of an organizational conflict of interest before the award of this Contract and intentionally did not disclose the conflict to the HA, the HA may terminate the Contract for default.

- (d) The Contractor shall require a disclosure or representation from subcontractors and consultants who may be in a position to influence the advice or assistance rendered to the HA and shall include any necessary provisions to eliminate or neutralize conflicts of interest in consultant agreements or subcontracts involving performance or work under this Contract.

5. Authorized Negotiators (RFPs only)

The offeror represents that the following persons are authorized to negotiate on its behalf with the PHA in connection with this request for proposals: (list names, titles, and telephone numbers of the authorized negotiators):

6. Conflict of Interest

In the absence of any actual or apparent conflict, the offeror, by submission of a proposal, hereby warrants that to the best of its knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement, as described in the clause in this solicitation titled "Organizational Conflict of Interest."

7. Offeror's Signature

The offeror hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

Signature & Date:

Typed or Printed Name:

Title:

ATTACHMENT E - SPECIAL PARTICIPATION SUMMARY**I. SMALL BUSINESS PARTICIPATION**

Is the Offeror a Small Business as defined by the size and standards in 13 CFR 121?

Yes _____ No _____

II. MINORITY BUSINESS PARTICIPATION

Is the Offeror classified as a Minority Business Enterprise as defined in Art. 2, Part C of HUD-5369-C?

Yes _____ No _____

If "No", area any Consultants/sub-contractors classified as Minority Business enterprises?

Yes _____ No _____

If "Yes", please fill in the following chart:

Consulting Firm(s) (MBE)	\$ Value Contract	% of Fee

III. WOMEN-OWNED BUSINESS PARTICIPATION

Is the Offeror classified as a Woman-Owned Business Enterprise as defined in Art. 2, Part C of HUD-5369-C

Yes _____ No _____

If "No", area any Consultants/sub-contractors classified as Women-Owned Business Enterprises?

Yes _____ No _____

If "Yes", please fill in the following chart:

Consulting Firm(s) (WBE)	\$ Value Contract	% of Fee

Offeror: _____

RFP#: _____

Due Date: _____

ATTACHMENT F - Section 3 Clause/Participation Plan

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative or workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with Section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of Section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b)

ATTACHMENT G - Firm Demographics

			Male								Female								# of American Minorities
		All employees	White American	African American	Hispanic American	Asia American	Hasidic Jew American	Other American Minority	Foreign	Total Males	White American	African American	Hispanic American	Asia American	Hasidic Jew American	Other American Minority	Foreign	Total Females	
Partner																			
Associate																			
Professional																			
Secretarial																			
Clerical																			
Other																			
Total																			

Explain all other American Minority:

ATTACHMENT H

**Networked Video Surveillance
FEE SHEET**

PRICE IS TO BE LISTED PER THE FOLLOWING:

Total Project Cost: \$ _____

Name (Printed): _____

Title: _____

Address: _____

Phone: _____

Signature: _____

Please include this sheet with the following sheet (page 125) in a separate sealed envelope

SITE	Video Components		Cabling Components		Site Preparation/Trees	
	Materials	Labor	Materials	Labor	Materials	Labor
Addison						
Allegheny						
Arlington						
Bedford						
Caliguiri						
Carrick						
Finello						
Glen Hazel						
Gualtieri						
Hamilton-Larimer						
Homewood North						
Mazza						
Morse						
Murray						
Northview Heights						
PA Bidwell						
Pressley St						
Totals						

Performance Bond

Other Costs (Itemize)

Bid Total

Please include the previous page (124) with this page in a separate sealed envelope.

ATTACHMENT I

W-9 Form (Rev. October 2007) Department of the Treasury Internal Revenue Service	Request for Taxpayer Identification Number and Certification	Give form to the requester. Do not send to the IRS.
Print or type See Specific Instructions on page 2.	Name (as shown on your income tax return)	
	Business name, if different from above	
	Check appropriate box: ☐ Individual/Sole proprietor ☐ Corporation ☐ Partnership ☐ Limited liability company. Enter the tax classification (D=disregarded entity, C=corporation, P=partnership) ▶ ☐ Exempt payee ☐ Other (see instructions) ▶	
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
	List account number(s) here (optional)	
Part I Taxpayer Identification Number (TIN) Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see <i>How to get a TIN</i> on page 3. Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.		
Part II Certification Under penalties of perjury, I certify that: 1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and 2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and 3. I am a U.S. citizen or other U.S. person (defined below). Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. See the instructions on page 4.		
Sign Here	Signature of U.S. person ▶	Date ▶
General Instructions Section references are to the Internal Revenue Code unless otherwise noted.		
Purpose of Form A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA. Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to: 1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued), 2. Certify that you are not subject to backup withholding, or 3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income. Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.		
Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are: • An individual who is a U.S. citizen or U.S. resident alien, • A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, • An estate (other than a foreign estate), or • A domestic trust (as defined in Regulations section 301.7701-7). Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income. The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases: • The U.S. owner of a disregarded entity and not the entity.		

Cat. No. 10231X

Form W-9 (Rev. 10-2007)

Instructions for completing this form can be found at <http://www.irs.gov/pub/irs-pdf/fw9.pdf>

Attachment J

<Date>

<Name Of MBE or WBE Contact Person>

<Name of MBE or WBE firm>

<Address>

<City>, <State> <Zip>

Re: <Name of HACP Project>

Dear <Name of Contact Person at MBE or WBE Firm>

<Name of Prime Bidder> has submitted a bid for the above referenced project to the Housing Authority City of Pittsburgh (HACP).

If we are the successful bidders and awarded the contract, <Name of Prime Bidder> intends to utilize <Name of proposed MBE or WBE firm> as follows:

Scope of Proposed Services: _____

Estimated Dollar Value: _____

Please call should you have any further questions. We thank you for your continuing interest.

Sincerely,

<Contact Person from Prime Bidder>

<Contact Person from MBE/WBE>

(Signature)

(Signature)

(Name)

(Name)

Community		Location	MFG.	MOD.	TYPE
Addison Terrace					
PA 1-1	MA	PELCO DX8000	FIBER	W/BURNER	
	1	Bentley & Nigh	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	2	Bentley & Deviller	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	3	Bentley Front Parking	PELCO	PTZ SPEC III	
	4	2121 Bentley Rear	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	5	Bentley (Basketball Ct)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	6	Devillers	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	7	Bentley Rear Parking	PELCO	PTZ SPEC III	
	8	2165 Elmore Square	PELCO	PTZ SPEC III	
	9	320 Elmore (Playground)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	10	2025 Bentley (Bus Stop)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	11	300 Elmore Sq.	PELCO	PTZ SPEC III	
	12	2026 Grove Place	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	13	2161 Elmore	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	14	Grove	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	15	2174 Elmore Square	PELCO	PTZ SPEC III	
	16	2169 Elmore	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	MB	PELCO DX8000	FIBER	W/BURNER	
	1	2118 Bentley Drive (B #37)	PELCO	PTZ SPEC III	
	2	2192 Elmore Drive (B #14)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	3	Central Front	PELCO	PTZ SPEC III	
	4	2130 Bentley Drive (B # 35)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	5	2124 Bentley Drive (B # 36 and 37)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	6	Bentley and Neigh Way (B # 44)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	7	Rose Street (B #53)	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	8	322 Elmore Sq.	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	9	Addison Hall Rec Center	PELCO	PTZ SPEC III	
	10	Grove	PELCO	PTZ SPEC III	

	11	2192 Elmore Square	PELCO	PTZ SPEC III	
	MC	PELCO DX8100	COAX	W/BURNER	
	1	Back parking lot	PELCO	PTZ SPEC III	
	2	Front Entrance	Samsung	SID-40CVA	Dome
	3	Lobby	Samsung	SID-40CVA	Dome
	4	Rear Entrance	Panasonic	Super Dynamax II	Dome
	5	Rear Parking Lot	Panasonic	Super Dynamax II	Dome
	6	Gas Pumps	Panasonic	Super Dynamax II	Dome
	7	Front Entrance Parking Lot	Panasonic	Super Dynamax II	Dome
	8	Parking Lot	PELCO	PTZ SPEC III	
	9	Basement Door Entrance	Panasonic	Super Dynamax II	Dome
	10	Bentley Parking Lot	Panasonic	Super Dynamax II	Dome
	11	Side Parking Lot	PELCO	PTZ SPEC III	
	12	Central Basement	Panasonic	Super Dynamax II	Dome
Arlington Heights				W/BURNER	
	1	Office	Samsung	SID-40CVA Super Dynamic	
	2	Parking Lot-Cordell	Panasonic	BX2 Dedicated Micro	
Bidwell		Dedicated Micros Sprite 2	coax	No Burner	
PA 1-5	1	Front Entrance	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	2	Front Patio	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	3	Rear Entrance	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	4	Community Entrance	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	5	Loading Dock	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	6	Doctor's Office	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	7	Front Door	Samsung	SID-40CVA	Dome
Caliguiri Plaza		Dedicated Micros Sprite 2	coax	No Burner	
PA 1-41	1	Rear Parking Lot	Panasonic	Super Dynamic II	Dome
	2	Stairwell Door	Panasonic	Super Dynamic II	Dome
	3	Breezeway	Panasonic	Super Dynamic II	Dome
	4	3rd Floor Door	Samsung	SID-40CVA	Dome

	5	Front Door	Security Camera Direct	CDC-3026HR	Dome
	6	Front Entrance	Panasonic	Super Dynamic II	Dome
Carrick Regency		Dedicated Micros Sprint 2	coax	No Burner	
PA 1-46	1	Rear Lot	PELCO	ICS110-CRV39A	Dome
	2	Rear Door	Panasonic	Super Dynamia II	Dome
	3	Rear Stairway Door	PELCO	ICS110-CRV39A	Dome
	4	Front Entrance	Samsung	SID-40CVA	Dome
Finello		DVR PELCO 8000	coax	22" Flat Screen Monitor	Tote Vision
	1	Rear	PELCO	ICS-D0110A	Dome
	2	Patio	PELCO	ICS-D0110A	Dome
	3	Side Garage	PELCO	ICS-D0110A	Dome
	4	Entrance Door	PELCO	ICS-D0110A	Dome
Mazza			coax		
	1		Samsung	SID-40CVA	Dome
Glen Hazel	M1	PELCO DX8000		MOTOROLA WIRELESS	W/BURNER
PA 1-33	1	Johnson Street (857)	PELCO	PTZ SPEC IV	
	2	Roselle Drive (985)	PELCO	PTZ SPEC IV	
	3	46 Roselle Drive	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	4	46 Roselle Drive	PELCO	PTZ SPEC IV	
	5	Maintenance Shop	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	6	Rec. Center	PELCO	PTZ SPEC IV	
	7	Rivertfront Drive	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	8	Upper Johnson	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	9	Gazebo/Roselle Ct.	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	M2	PELCO DX8000		MOTOROLA WIRELESS	W/BURNER
	1	Lower Johnson	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	2	643 Johnson	PELCO	PTZ SPEC III	
	3	657 Johnson	PELCO	PTZ SPEC III	
	4	679 Johnson	PELCO	PTZ SPEC III	
	5	679 Johnson	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm

Attachment K

List of Current Cameras

	6	737 Johnson	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 2.8-12mm
	7	737 Johnson	PELCO	PTZ SPEC III	
coax	8	Front Door	SDL	COC3026HR	Dome
coax	9	Back Door	Bosch		Dome
coax	10	Stairwell	Bosch		Dome
coax	11	Front Door	Bosch		Dome
coax	12	Upper Parking Lot	Bosch		Dome
coax	13	2nd Floor Stairwell Door	Bosch		Dome
coax	14	Lower Parking Lot	Bosch		Dome
	M3	PELCO DX4500		MOTOROLA WIRELESS	W/BURNER
	1	Loading Area	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	2	Vending Area	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	3	Elevator 2nd FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	4	2nd FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	5	Elevator 3rd FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	6	3rd FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	7	Elevator 4th FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	8	4th FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	9	Elevator 5th FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	10	5th FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	11	Elevator 6th FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	12	6th FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	13	Elevator 7th FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	14	7th FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	15	Elevator 8th FL	SPECO	VL-648/RVF	4-9mm VF Lens Dome
	16	8th FL Rear	SPECO	VL-648/RVF	4-9mm VF Lens Dome
Gualtieri		Dicated Micros Sprite 2	coax	DVR 22" Monitor	
	1	Front Door	PELCO	ICS-D0110A	
	2	Back Entrance		SCD-CDC302GHR	black dome
	3	Front Door Entrance		10-15 years old	color (square)
	4	Side Entrance		10-15 years old	color (square)
	5	Rear Parking Lot			color (square)
Homewood North	M1	PELCO DX81000		MOTOROLA WIRELESS	W/BURNER

List of Current Cameras

7/12/2010 5

Murray Towers		Dedicated Micros Sprite	coax	22" TV MONITOR		
	1	Parking Lot	Panasonic	WV-CL924A		enclosure
	2	Parking lot entrance	Samsung	SID-40CVA		
	3	4th Floor Stairwell exit	Samsung	SID-40CVA		
	4	3rd Floor Stairwell exit	Samsung	SID-40CVA		
	5	Lobby interior	Samsung	SID-40CVA		
	6	Entrance Outside				black dome
Northview Heights	M1	Dedicated Micros Sprite 2	coax	No Burner		
High-rise	1	1st Floor	Silent Witness			b/w Dome
PA 1-9	2	2nd Floor	Silent Witness			b/w Dome
	3	3rd Floor	Silent Witness			b/w Dome
	4	4th Floor	Silent Witness			b/w Dome
	5	5th Floor	Silent Witness			b/w Dome
	6	6th Floor	Silent Witness			b/w Dome
	7	7th Floor	Silent Witness			b/w Dome
	8	8th Floor	Silent Witness			b/w Dome
	9	9th Floor	Silent Witness			b/w Dome
	10	10th Floor	Silent Witness			b/w Dome
	11	1st Floor Hallway	Samsung	SID 40CVA		Dome
	12	Basement Entry	Silent Witness			b/w Dome
	13	Lobby	Samsung	SID 40CVA		Dome
	14	Right Elevator	Silent Witness			b/w

	15	Left Elevator	Silent Witness		b/w	
	16	10th Floor [Right of Elev.]	Silent Witness		b/w Dome	
	M2	Dedicated Micros Sprite 2	coax	No Burner		
	1	2nd Floor	Silent Witness		b/w Dome	
	2	5th Floor	Silent Witness		b/w Dome	
	3	3rd Floor	Silent Witness		b/w Dome	
	4	6th Floor	Silent Witness		b/w Dome	
	5	8th Floor	Silent Witness		b/w Dome	
	6	9th Floor	Silent Witness		b/w Dome	
	7	Glazer Stairwell	Silent Witness		color Dome	
	8	Basement Stairwell	Silent Witness		color Dome	
	9	Boiler Room	Silent Witness		color	
	10	Gym Entrance	Silent Witness		color	
	11	Rear Entrance	Panasonic	WVCP474 or WVCL924A w/lens	WV LZ80/2 Tamron 12.8-12mm	
	12	Front Ramp	Silent Witness		color	
	13	Office Entrance	Silent Witness		color	
	14	Glazer Door	Silent Witness		color	
Northview Heights						
Downstairs	M1	PELCO DX8000	Fiber	W/BURNER		
PA 1-9	1	Penfort & Mt Pleasant	PELCO	PTZ SPEC III		

List of Current Cameras

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Attachment K

List of Current Cameras

	3	Outside Pole Lic. Plate	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
	4	Outside Pole Enter	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
Pressley Street		Dedicated Micros Sprite 2	Net VU	coax W/BURNER	
PA 1-17	1	Loading Dock	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
	2	Rear Entry	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
	3	North Parking Lot	GBC		Ball
	4	Front Entrance	PELCO	ICS110-CRV39A	Dome
	5	North Stairwell	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
	6	North Parking Lot	PELCO	ICS110-CRV39A	Dome
	7	Community Room	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
	8	Canel Stairwell	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm
	9	Community Room	Samsung	SID-40CVA	Dome
	10	Front Entrance Door	Samsung	SID-40CVA	Dome
	11	Canel Stairwell	Samsung	SID-40CVA	Dome
			Security Camera Direct		
	12	North Stairwell	Security Camera Direct	CDC-3026HR	Dome
			Security Camera Direct		
	13	Elevator Lobby	Security Camera Direct	CDC-3026HR	Dome
	14	North Parking Lot	Panasonic	WVCP474 or WVCL924A w/lens	WVLZ80/2 Tamron 12.8-12mm