

MEETING DATE: 01/26/09

AGENDA ITEM: **Authorization to issue a Request For Proposals to solicit bids to replace the City's Telephone and Voice Mail Systems**

ATTACHMENTS

		<u>Pages</u>
1	Request for Proposal for a VOIP Phone System	1-36

REQUEST FOR PROPOSAL

FOR THE

**City of Culver City
CALIFORNIA**



For a

Voice over Internet Protocol

Phone System

Culver City Bid # 1410

January 20, 2009

RFP Release – January 27, 2009

Mandatory Pre-Proposal Conference & Site Survey – February 17, 2009, 8:30 a.m.

Proposal due by March 19, 2009 at 5:00 p.m.

1 General

1.1 Background

The City of Culver City is located on the west side of Los Angeles near the intersection of the 10 and 405 freeways. It is a Charter City with a City Manager form of government and a 5 member elected City Council. Culver City has an estimated daytime peak population of 250,000. Culver City covers an area of 4.987 square miles. The City is home to Sony Picture Studios and has a mix of film related, light industrial, and corporate businesses in addition to being a bedroom community of West Los Angeles. The Kirk Douglas Theater and Town Plaza downtown area are the centerpieces of the City's continuing redevelopment efforts. Culver City is a full service city with Police, Fire, Public Works, and Transportation departments.

1.2 Objective

The City is looking for a Voice-over Internet Protocol (VoIP) Private Branch Exchange (PBX) Phone System and voice mail system, incorporating full featured Unified Messaging. The selected system will consist of a voice and data network with connections to all the required City sites, VLANs, Quality of Service (QoS) options, connections to the Internet, and connection to the independent Police network. The City wishes to migrate from voice T-1s to PRI and/or SIP trunks as part of this transition and gain the functionality available in areas such as e911 and caller ID. The voice/data network will be built as a secure and easy to administer network with flexibility to grow and be monitored with tools supplied as part of the package.

1.3 Scope of Work

1.3.1 Voice Communications System (VoIP PBX)

The City seeks a vendor to provide and install a Voice-over Internet Protocol (VoIP) Private Branch Exchange (PBX) Phone System to replace the City's existing telephone system. The implementation will include all necessary equipment and services required to migrate the City, its departments, and remote sites, from the current mixture of PBXs, to a centralized VoIP PBX system based at the City Hall data center.

1.3.2 Voice Messaging System (Voice Mail)

The VoIP Phone system will include an integrated Voice Messaging System (VoiceMail) component. The vendor will provide and install the voicemail system as an integral part of the overall VoIP Phone System. The voicemail system shall provide Automated Call Director functionality and other call management and navigation services.

1.3.3 Unified Communications

The VoIP Phone system will provide Unified Communications functionality. The vendor shall provide and implement the servers and software to provide integration with the City's current Microsoft Exchange/Outlook messaging platform.

1.3.4 Network Infrastructure Electronics

The VoIP Phone system will likely require the upgrade and/or installation of new/additional network switching and routing equipment. The vendor will be responsible to survey the City's current inventory on Network Infrastructure Electronics including: switches, routers, and related UPS devices.

1.3.5 Structured Cabling

To support additional phone locations and/or to support cabling performance requirements, additional structured cabling, and telecommunications infrastructure equipment may be required. The vendor will be responsible for surveying City facilities and recommending and/or providing facilities modifications and structured cabling systems.

1.3.6 Enhanced 911

The vendor shall include the planning, coordination, equipment and software to fully implement e911 services between the City and the LEC.

1.3.7 Training

The vendor shall include a comprehensive training program for two (2) City staff members. The training shall include all fundamental training modules for PBX and voicemail MACs, system maintenance, and operations.

1.3.8 Maintenance Services

In addition, the vendor shall include a maintenance services plan that will provide the City with maintenance troubleshooting and escalation support on an on-going basis.

1.3.9 Warrantees

The vendor shall include all necessary manufacturer's warrantees and recurring maintenance contracts.

1.3.10 Implementation Services

The vendor is responsible to provide a "turn-key" solution for the VoIP Phone system. The vendor is responsible to understand the City's technical and business environment and make all necessary recommendations, and modifications as necessary to insure the successful implementation and handover of the VoIP Phone system.

The vendor is responsible to provide a Project Manager, whom will work directly with City designated staff for as primary liaison for technical requirements.

It is the City's intent to take-over moves, adds, and changes, and operations of the VoIP Phone system, while contracting for maintenance and escalation support with the vendor.

Implementation tasks may include, but are not limited to:

- System analysis and Site Surveys of current networking equipment and power availability
- System architecture design
- Network Upgrade planning and communications
- Dial-plan development
- Structured Cabling and supporting Telecommunications Infrastructures
- System Survivability plan (Business Continuity and Disaster Recovery)
- Telecommunications Services requirements and coordination (PSTN)
- Automated Call Director (ACD) analysis, planning and implementation

- Unified Messaging planning and implementation
- Enhanced 911 coordination, planning and implementation
- Systems Implementation Plan and Resource Plan
- Weekly Status Reporting and Risk Plan
- Systems Documentation
- Knowledge Transfer & Training
- Maintenance and Escalation Support.

1.4 Current Environment

- 1.4.1 The City of Culver City (City/ the City) is currently utilizing voice originally installed in 1995 and data systems installed from 1998 through 2003. Due to the age of the systems and the advent of Voice over Internet Protocol (VoIP/VOIP) technology the City has determined it will move forward with a replacement of the existing systems. The City seeks a complete phone and voice mail system and the data network solution to support it.
- 1.4.2 The City currently uses 4 Mitel PBX's based on TDM technology interconnected to 2 VoIP based PBX's. An Octel voicemail system supports all City sites. The City currently uses voice T-1s and dual data T-1s for the Internet. The City is a Microsoft based network with Windows 2003/2008 server, Exchange 2003/2007, and Office 2003/2007.
- 1.4.3 Reference Appendix A – Voice and Data Systems by Site.
- 1.4.4 The City Hall Data Center is the primary point of connection to all City sites. The City's telecommunications infrastructure is built around a fiber optic network extending to all major City sites. Internal building risers are typically fiber optic. Copper connections extend from the data feed closets to the desktop computers or telephone locations in the office areas. Communications wiring is mixed consisting of:
- Single mode fiber to City Fire Stations 2 & 3 converted to multi-mode to connect to the Data Center.
 - Multi-mode fiber to all other major locations and internal data feed (IDF) closets within buildings at those locations.
 - Category 5 or 5E copper cabling from the IDF closets to the desktops.
 - Category 3 (majority) or 5 copper to telephone locations.
 - Off Premise Exchange (OPX) lines extend to a few locations which are not serviced by the City's fiber optic network.

2 Instructions to Vendor

- 2.1 The proposal must be submitted in accordance with the instructions contained herein.
- 2.2 Proposers are cautioned that proposals, which do not follow the form required by this RFP, will be subject to rejection without review. However, Bidders may include any additional material they wish. Additional material pertinent to a response item should reference the item.
- 2.3 The Bidder shall submit their response to the RFP in sealed package. Response will include one original and 3 complete copies (four sets) plus one electronic copy (CD's with MS Excel and

Word files. No PDF's except for technical manuals or brochures). The package shall be clearly marked stating the Bidder's Name, THE CITY OF CULVER CITY, VoIP System RFP-1410.

- 2.4 Bidder shall not modify the RFP or change the terms of the RFP.
- 2.5 The proposal must address all items detailed in the section Performance Requirements. If the vendor's solution does not comply with the performance requirements, an explanation of compatibility must be provided.
- 2.6 A Mandatory Pre-proposal conference will be held at 8:30 a.m. PST on February 17, 2009 in the City Hall Council Chambers. Following the Mandatory Pre-Proposal conference a site walk will be conducted. All Bidders intending to submit a proposal must attend. Failure to attend the conference and site survey will disqualify a Bidder from further consideration. The City will begin the pre-proposal conference promptly at 8:30 a.m. PST. Traffic in the area is extremely variable and attendees should therefore allow sufficient time. Sign in will be available once the conference has begun.
- 2.7 Before 5:00 p.m. PST, March 19, 2009, the proposal must be submitted to the Office of the City Clerk of the City of Culver City:

City of Culver City
Attn: City Clerk's Office
RFP 1410 VOIP System
9770 Culver Boulevard
Culver City, CA 90232

Note – Postmarks are NOT sufficient. The proposal must be received by the City Clerk's Office by 5:00 p.m. PST on March 19, 2009.

2.8 Schedule

The following dates and events will be used for this RFP process. In the event that the City determines that more than one proposal appears qualifying a Best and Final Offer (BAFO) process of refinement and clarification will be used to determine which proposer will be selected.

EVENT	DATES
Release RFP	January 27, 2009
Mandatory Vendor Meeting and Site Walk	8:30 AM February 17, 2009
Interim Questions Cutoff Date	5:00 PM; February 24, 2009
Response to Interim Questions	By March 4, 2009
Proposal Closing Date	At 5:00 PM; March 19, 2009

Select BAFO Finalists (If necessary)	TBD based on # of responses
Start BAFO Meetings (If necessary)	TBD
End BAFO Meetings (If necessary)	TBD
BAFO Proposal Closing Date (If necessary)	TBD
Contract Awarded	TBD
Start Implementation Meetings	TBD
Begin Hardware Delivery and Installation	TBD
Begin Acceptance Testing and Punch List	TBD
Conclude Acceptance and Punch List	TBD
First Day in Service	TBD

- 2.9 Questions must be submitted by email and be directed to:

David Leuck – Technical Services Manager

david.leuck@culvercity.org

The City will provide a complete listing of all questions and answers to by March 4, 2009.

- 2.10 Vendor shall certify that it is a Manufacturer Authorized Channel Partner as of the date of the submission of their offer, and that it has the certification/specialization level required by Manufacturer to support the product sale, product pricing, and installation, in accordance with the applicable Manufacturer certification/specialization requirements.
- 2.11 Unless otherwise specified, Vendor shall warrant that the products are new, in their original box. The Vendor confirms to have sourced all Manufacturer products submitted in this offer from Manufacturer or through Authorized Channels only in accordance with all applicable laws and policies at the time of purchase.
- 2.12 Vendor shall provide City with a copy of the End User license agreement, and shall warrant that all Manufacturer software is licensed originally to City as the original licensee authorized to use the Manufacturer Software.
- 2.13 In the event there are questions pertaining to the validity of the Manufacturer products. City reserves the right to verify the origin of the Manufacturer products with the manufacturer. In the event the Manufacturer Products have been acquired from un-authorized channels, City further reserves the right to reject the Vendor bid and/or return the products for a full refund.
- 2.14 By submitting a proposal the Bidder affirms that the Bidder is familiar with all the terms and conditions of this RFP and is sufficiently informed in all matters affecting the performance of the

work and provisions of labor, supplies, material, equipment and facilities called for in this RFP. Additionally, the Bidder affirms that the Proposal has been checked for errors and omissions and that all information provided is correct and complete.

2.15 No oral, telephonic or telegraphic Proposal or modification of Proposal will be considered.

2.16 Submittals

Proposers are required to submit the following with their proposal:

2.16.1 A letter of transmittal.

2.16.2 An executive summary.

2.16.3 Proposal addressing all items in Scope of Work - All proposals shall be signed in ink by the President, Chief Executive Officer, or individual authorized to act on behalf of the Company, with current Power of Attorney if applicable.

2.16.4 Systems Architecture Design Diagrams and Narrative

The vendor shall include a complete system architecture design. Diagrams shall be no larger than 11"x17". Diagrams shall depict logical system architecture including VoIP PBX equipment, voicemail equipment, unified messaging equipment, network equipment, network management, WAN and routing equipment, connectivity to PSTN or LEC equipment, survivability architecture, and e911 equipment. System Architecture Designs shall be accompanied by design narratives detailing the type and relationship of equipment and systems.

2.16.5 Implementation Plan and Schedule

The vendor shall include a detailed implementation plan that addresses all items in the scope of work. The implementation plan shall include a Gantt Chart detailing proposed tasks, estimated start/end dates, and city and vendor resources as required. The vendor will not be responsible to adhere to proposed dates for events or conditions outside the vendor's control, such as; procurement times, equipment availability and/or budget availability.

2.16.6 Implementation team resumes – including Project Manager, and lead technical in each area as required.

2.16.7 If Bidder is using sub-contractors, supply the names, addresses, and telephone numbers along with a brief description of work to be performed.

2.16.8 A copy of manufacturer's partner level certifications

2.16.9 A copy of applicable certifications for each technology system:

- Cisco Certified Internetworking Engineer (CCIE) certification for engineer in charge of LAN Equipment installation
- CCIE Voice certification for engineer in charge of IP Telephony installation
- Or equivalent-level certifications for other manufacturers' VoIP PBX, VoiceMail and Unified Messaging systems as applicable.

- 2.16.10 Sample configurations of actual installations at a City or other organization of similar size and configuration (the samples may have their specific site names removed from the samples and replaced with "SAMPLE City.")
- 2.16.11 VLAN configurations for the Sample installation
- 2.16.12 Sample configurations of voice Quality of Service (QoS) settings for WAN routers
- 2.16.13 References from five (5) other Southern California City Governments or organizations of similar size and configuration including a detailed description of the project and how it is similar, as well as a qualified reference contact, along with phone and email contact information, include project start and completion dates
- 2.16.14 Manufacturer's data sheets for equipment and software licenses
- 2.16.15 Vendor's processes for acquisition, delivery, asset tagging, staging, configuration, implementation and commissioning
- 2.16.16 Optional – Brochures, technical manuals, installation guides and user's guides giving technical and operational information about the Proposed system(s) and all instruments. These may be supplied on CD only.
- 2.16.17 A copy of the proposed maintenance contract, including: service level agreements (SLAs), multi-year incentives, and payment options.
- 2.16.18 Bid Form

The vendor shall use the attached bid form as a SAMPLE. The vendor shall provide detailed manufacturer's part numbers, description, list price, discount level, and proposed quantity.

The vendor shall include options for equipment maintenance contracts.

The vendor shall include a separate sheet for all installation, project management, planning, design and integration services so as to provide a total implementation cost that can easily be separated from the equipment and maintenance costs.

2.17 Disclosure of Contents of Proposal

All proposals accepted by the City shall become the exclusive property of the City. Upon opening, all proposals accepted by the City shall become a matter of public record and shall be regarded as public.

2.18 Right to Reject Any or All Proposals

The City reserves the right to reject any or all proposals, to waive technicalities or formalities, and to accept any proposal deemed to be in the best interest of the City. Where two or more Bidders are deemed equal, the City reserves the right to make the award to one of the two Bidders.

2.19 Rights to Submitted Materials

All proposals, inquiries, responses, or correspondence related to or in reference to this request for proposals, and all reports, charts, displays, schedules, exhibits, and other documentation submitted by the Bidders will become the property of the City when received.

2.20 The response to this RFP will be included as an exhibit of the contract.

2.21 Proposal Preparation Cost

Costs for developing proposals in response to this RFP are entirely the responsibility of the Bidders and shall not be chargeable to the City.

2.22 Evaluation Criteria

The following table provides the criteria for evaluating the proposals received:

Criteria	Value
Proposal Completeness	15%
Certifications – Individual and Partner level	10%
Scopes of Work	20%
Design & Implementation Plan	20%
References	20%
Cost Proposal	15%

3 Performance Requirements

3.1 Voice Communications System (VoIP PBX)

- 3.1.1 The proposed **Voice Communications System (VCS)** is expected to be a state-of-the-art platform offering digital technology and a basis on which to build future applications. The systems will feature Centralized Auto-Attendant, centralized Voice Mail (VM), Unified Communications (UC) and POTS/PRI/SIP trunk connectivity to LEC and LD carriers.
- 3.1.2 All major system components must be from the same manufacturer (switches, routers, IP PBX, VM, UC, e911).
- 3.1.3 Each site will require connectivity to a centralized Voice Mail system located at the City Data Center to deliver functionality for Call Coverage, Messaging, Auto Attendant, Menus, Guest and Information Mailboxes and Call Processing.
- 3.1.4 The proposed system must be electronic, computer-based, software-controlled, and employ IP switching techniques/technology.
- 3.1.5 The proposed Voice Communications Systems must be fully survivable (all features operational) in case of a down LAN connection (PRI, fiber link, etc.) at a site.
- 3.1.6 The system must be all of the same type (model) at each site and backup each other with the central location being the primary.
- 3.1.7 The system must be able to support analog phone connections at all sites.
- 3.1.8 In the case of a massive fiber link failure isolating an individual site or sites, that site must continue to operate on its own and process calls.
- 3.1.9 The site will have PRI and/or SIP trunks to the PSTN.
- 3.1.10 The VCS shall be able to take calls and voice mail messages if a site is isolated during a disaster.
- 3.1.11 The VCS shall upload voice mail messages to the centralized Voice Messaging System when links are re-established.
- 3.1.12 The VCS must provide intercept answer points for a prerecorded message for callers who dial DID numbers that are not in use. See Appendix F for the range of City DID numbers and their respective answer points.
- 3.1.13 Remote and LAN access capability is required so on and off-site System Administrators (Telecom Manager and Telecom Analyst) may access the systems from their remote office or residence. A minimum of two (2) users must be able to access the VCS simultaneously.
- 3.1.14 The VCS must have the capability of being accessed remotely by the awarded Bidder's Maintenance Center to perform diagnostic and maintenance routines.
- 3.1.15 The VCS must have the ability to proactively dial out to signal an alarm for major system failures. Such calls will be made to the awarded Bidder's Maintenance Center. The modem provided by the awarded bidder must be a callback modem.
- 3.1.16 The VCS must have the ability to send SNMP alerts to City personnel to notify of minor/major system events.

3.1.17 The Bidder's system supports a true transparent private network (VLAN) for applications including Coordinated Dialing Plan, Centralized Attendant Service, Centralized Voice Mail, call forwarding, etc.

3.1.18 The City wishes to leverage the flexibility of VoIP to enhance Disaster Recovery and Mitigation in the new design of the voice and data network. Presently services are centralized at the City Hall and Police sites. The desired system will be managed centrally but allow "self-healing" or independent operation of the phone systems in the event that secondary sites are cut off from the City Hall site.

3.1.19 The new data infrastructure must be secure. Network Access Control (NAC) tools should be in place to ensure rogue connections are identified, blocked, or brought up to standard before they are allowed to operate on the network.

3.2 Voice Messaging System (Voice Mail)

3.2.1 The proposed system must support a unified messaging solution that interfaces with the City's SMTP Microsoft Exchange 2003/2007 server so that email users can check their emails and voicemails from their Outlook email clients. The system will **not** store the voice mail messages on the Exchange server.

3.2.2 Calls encountering a ring-no-answer or busy condition would be automatically routed to the proposed system.

3.2.3 The proposed system must also provide callers with the option of transferring out of the system to a manned call coverage position.

3.2.4 The system should also have the capability of answering calls with an announcement that is specific to the employee being called.

3.2.5 Internal callers encountering a busy or ring-no-answer condition should be transferred automatically to the voice messaging system.

3.2.6 City personnel will be on the same centralized Voice Messaging System and will need to be able to access their messages, leave messages, create distribution lists, receive notification of message delivery, and use the system's features from internal telephones.

3.2.7 City personnel will be on the same centralized Voice Messaging System and will need to be able to access their messages, leave messages, create distribution lists, receive notification of message delivery, and use the system's features from remote/offsite telephones.

3.2.8 The VCS shall support Windows PC based soft phones.

3.2.9 The VCS shall support remote internet users over VPN.

3.2.10 The VCS shall support at least 20 telephones at each remote site.

3.2.11 The VCS shall include a system failure and alarm messaging system.

3.2.12 The VCS shall provide Enhanced 911 support.

3.2.13 The proposed system must be capable of automatically switching a caller to the called party's voice mailbox under the circumstances described above.

3.2.14 The proposed system must be capable of automatically notifying a user, via a message waiting indication on the user's set and/or a stutter dial tone (on analog sets) that a message is waiting.

3.2.15 The lamp must automatically extinguish after the message has been delivered.

3.3 PBX Features

3.3.1 Call Forward - Busy Line Calls directed to a busy line are routed to an alternate station, voice mail or to the attendant. The systems must be able to forward internal calls only, external calls only or both, depending on system programming.

3.3.2 Call Coverage – The Proposed system must provide a minimum of three (3) call coverage points for the primary extension with the last coverage point having the option of being the Voice Processing System. The ability to determine call coverage paths by Time of Day / Day of Week is also required

3.3.3 Call Forward - No Answer

3.3.3.1 This allows the systems to direct calls to another destination (including off-site destinations), if the original station does not answer within a programmable period of time. The systems must be able to forward internal calls only, external calls only or both, depending on system programming.

3.3.3.2 It is desirable to have the timing parameters for Forwarding - No Answer controlled by an individual station or a group of stations, not simply as a system parameter, which applies to all stations.

3.3.3.3 Call Forward - Variable Allows station users to program any internal number as a forward destination, so that calls to the user's number and calls forwarded to the user's number will immediately forward to the programmed number without adding an additional ring cycle.

3.3.4 Direct Inward Dial (DID)

3.3.4.1 Incoming calls from the exchange network can be completed to specific stations without attendant assistance.

3.3.4.2 The systems must have the ability to forward DID calls to the consoles, voice messaging or another station, if the DID station dialed is busy or does not answer.

3.3.4.3 Calls received on DID extensions must be able to hunt to and from another DID extension and/or non-DID extensions.

3.3.4.4 Calls made to DID numbers that do not exist or are not assigned, must be routed to the attendant console or to a DID intercept device or to voice mailbox for an appropriate recording.

3.3.5 Direct Outward Dialing To permit outgoing calling without attendant assistance.

3.3.6 Distinctive Ringing

3.3.6.1 The systems must produce separate ringing tones for internal calls or external calls.

3.3.6.2 The systems must be capable of out pulsing DTMF tones from a telephone set keypad during a call.

3.3.7 Forced Authorization Codes

3.3.7.1 Forced authorization codes may be dialed for all long distance calls.

3.3.7.2 The systems must have the capability of excluding some prefixes from the forced authorization requirement.

3.3.7.3 The code will be dialed from the keypad of the telephone set or via a one-button dialing key.

- 3.3.7.4 Forced authorization codes must be up to 9-digits. The systems must be programmable to require as many as 12-digits in the future.
- 3.3.7.5 The forced authorization code required for any long distance call must be reported as a field with that call's SMDR record.
- 3.3.8 Hunting
 - 3.3.8.1 Circular - an arrangement that allows the hunting to start with a called line and then proceed in a pre-arranged order to eventually utilize all lines in the group (sequential and non-sequential numbers) and complete the call to the first idle line.
 - 3.3.8.2 Terminal - an arrangement which will proceed in a pre-arranged order through sequential or non-sequential numbers completing the call to the first idle station line but stopping if the last line in the hunt group is busy.
 - 3.3.8.3 Secretarial - an arrangement that permits several different lines to hunt to the same common line.
- 3.3.9 Remote Maintenance Capability
 - 3.3.9.1 The systems must allow a remotely located service person to be connected through modem or the Internet to the central processors to test or modify the program after first entering an authorization code.
- 3.3.10 Attendant Console
 - 3.3.10.1 The display must show the original extension that was called (if the call was DID or an internal station caller) and the original extension to which the console extended a call, regardless of subsequent extensions or of other stations to which the call may have forwarded or hunted.
 - 3.3.10.2 Attendant must have the capability of conferencing at least five external and three internal lines simultaneously and then releasing the attendant from the call.
 - 3.3.10.3 All Calls Attendant console must have the capability of transferring all calls. A station user participating in a 2-party call may call the attendant for transferring the call or any other assistance.
 - 3.3.10.4 The attendant should be able to set the volume of console signals, such as tones and bells.
 - 3.3.10.5 To allow the attendant to confirm that a line is actually in use by establishing a "monitoring" connection to an apparently busy line.
 - 3.3.10.6 The attendant must be able to place a call on hold at the console while conducting other call answering and routing activities. The console must have the capability of holding at least six calls while processing additional incoming calls.
 - 3.3.10.7 Calls must be able to be "parked" and "unparked" from any extension within the VCS.
 - 3.3.10.8 The attendant must have the ability to search individuals by last name, department or extension number and then to extend the call to that location with a single keystroke.
 - 3.3.10.9 A talk path will be opened to allow duplex conversation with the originating station.
 - 3.3.10.10 The system must have the capability of switching to night mode, regardless of traffic in progress, without disconnecting incoming, but yet, unanswered calls.
 - 3.3.10.11 Individual departments (tenants) should be able to put their respective phones into "night mode" without affecting other department(s) extensions.
 - 3.3.10.12 The Proposed system must provide the ability to terminate individual DID extension numbers on the attendant console terminal.

- 3.3.10.13 The system must allow the attendant to consult privately with one party on a call without the other party hearing the conversation.
- 3.3.10.14 Any station must be capable of being connected to a trunk by the console attendant. The station must then be able to dial any desired number.

3.4 Voice Mail

3.4.1 Voice Messaging Feature Requirements

- 3.4.1.1 Forwarding - A voice message stored in the system for one user should be able to be directed to another system user.
- 3.4.1.2 Forwarding with Annotation - A user should be able to add explanatory comments to a message to be forwarded.
- 3.4.1.3 Message Delivery Notification - A user should be able to request the system to provide notification when a message is delivered to the recipient.
- 3.4.1.4 System Prompts By-Pass - An experienced user should be able to by-pass voice prompts when interacting with the system.
- 3.4.1.5 Multiple Greetings - the system must permit the user to pre-record a minimum of three (3) personal greetings that may be stored and used at the discretion of the user.
- 3.4.1.6 Forward to voice mail immediate - Forward a caller to a user's Voice Mail without having to wait for the caller to hear ringing until the call forward times out.
- 3.4.2 Message Delivery
 - 3.4.2.1 Distribution Lists - The system must allow a single subscriber to broadcast message to a distribution list of other system subscribers.
 - 3.4.2.2 Forward/Reverse - Users should be able to skip forward and backward through their messages.
 - 3.4.2.3 Messages Waiting Count - The system should automatically report the number of messages waiting for delivery.
 - 3.4.2.4 Replay - Users should be able to replay messages stored in their mailboxes.
 - 3.4.2.5 Save/Delete - Users should be able to save or delete specific messages in their mailboxes.
 - 3.4.2.6 Time/Date Stamp - The system should automatically record and report the time and date each message was received.
 - 3.4.2.7 Out Dial Notification - The system should inform subscribers of new messages by ringing a telephone or notifying a pager when the user is off-site.
 - 3.4.2.8 Urgent Message Delivery - The system should allow callers and subscribers to mark a message urgent.
 - 3.4.2.9 Transfer/Address by Name - Allows a user to redirect a Voice Mail message to another subscriber by spelling user's name.
 - 3.4.2.10 Automatic Reply - User should be able to respond to a party that has sent a voice message without having to dial the sender's message box number.
 - 3.4.2.11 Volume Control - Allows a user to control the volume at which the messages are played back.
 - 3.4.2.12 Return Receipt Request/Notification - The system must present the subscriber/sender with the option of requesting a return receipt for message delivery. The system must create and deliver a message that notifies the sender of the time and date on which the recipient took delivery of the return receipt request message.

- 3.4.2.13 Append and Forward - The system must allow the recipient to record a new message to the beginning of a received message and to forward the aggregate message to another subscriber. (This excludes messages marked private).
- 3.4.3 System
 - 3.4.3.1 Access Devices Supported - The proposed system should accept voice messages from any telephone. Only users with DTMF telephones can operate and control the full range of system features.
 - 3.4.3.2 Calling Party Transfer – The proposed system must provide a calling party with the option to exit the system and reach a telephone system attendant console, user referral extension and any other telephone extension.
 - 3.4.3.3 Message Waiting Indicators - The system must be able to light the message waiting indicator on the user's telephone instrument, provide stutter dial tone, and out dial notification to off-site personnel.
 - 3.4.3.4 System Administration - All system parameters and user profile information should be under the control of the system administrator.
 - 3.4.3.5 The system should collect and report on the message activity of individual users and the system as a whole (e.g., messages sent and received, message length and retention period).
 - 3.4.3.6 The system should identify those users with no activity
 - 3.4.3.7 The system should create random passwords upon creating a new voice mail box.
 - 3.4.3.8 The system should require users to change their password upon login to their new voice mail box.
 - 3.4.3.9 TDD Support and TDD Prompts - The Proposed system must be able to provide TDD (telecommunications devices for the deaf) support, including prompts in TDD tones.
 - 3.4.3.10 Customized System Greeting - The system must offer the ability to record a customized system greeting, such as, "Hello, welcome to ABC Company," in place of, "Hello, this is the Voice Mail System."
 - 3.4.3.11 Audio Messaging Interchange Specification (AMIS) or VPIM Compliant- The Proposed system must be AMIS/VPIM compliant as an option, allowing subscribers to exchange voice messages with users of any other AMIS/VPIM compatible voice messaging system, including the ability to dial international sites if required in the future.
 - 3.4.3.12 Office System Integration - The Proposed system must allow for a two-way message notification protocol, allowing the system to exchange message header information with a customer-provided electronic mail application.
 - 3.4.3.13 The system must support standards (such as TAPI) for interfacing with LAN based electronic mail and fax server systems.
- 3.4.4 Automated Attendant System Requirements
 - 3.4.4.1 Automated Attendant System (AAS) must be able to answer incoming calls automatically on the first ring, and permit the caller to reach a department or individual station without operator assistance, by prompting the caller to dial up to a four or five digit code, the appropriate extension number or the called party's name. In the event of a misdialled number or if the caller dials an extension w/o an associated voice mail box the system must transfer the caller to the appropriate answering point for that telephone. This may or may not be the central/main attendant.

- 3.4.4.2 On-site customer administration of all system parameters.
- 3.4.4.3 Multiple menus and associated decision trees through the single-digit prompting.
- 3.4.4.4 Restrict the transfer of calls to specific extensions or groups of extensions by Time of Day and Day of Week.
- 3.4.4.5 The automated attendant should have the ability to run different scripts based on Time of Day, Day of Week, and Holiday schedules.
- 3.4.4.6 The AAS, in conjunction with the voice mail requirements, AAS must be configured to support the call processing applications. The system must also be able to prioritize channels between voice messaging and the automated attendant.

3.4.5 Security

- 3.4.5.1 Password-Protected Subscriber Mailboxes - Each system user must use a password to gain access to the system.
- 3.4.5.2 Password-Protected Call Processing Mailbox - the system must provide the means of allowing selected groups of users access to sensitive information through special password protected mailboxes.
- 3.4.5.3 Default Password Check - The system must have the capability to prompt new subscribers to change from the system default password to a unique personal password.
- 3.4.5.4 Mailbox Lock-Up Protection - The system must lock a voice mailbox after a preset number of invalid access attempts. The locked mailbox must still accept messages, but entry into the mailbox to retrieve messages is denied until it is reset by the system administrator or until an amount of time prescribed by the system administrator has elapsed.
- 3.4.5.5 Automatic Number Identification (ANI) Tracking - The system must have the ability to capture and record the telephone number of an incoming call in the message header, in order to help trace the source of anyone attempting unauthorized system access.
- 3.4.5.6 System-Level Passwords - Access to service utilities and to the system administration database must be controlled by separate system-level passwords.
- 3.4.5.7 System Security Reports - The system must provide the ability to monitor and audit password usage and unauthorized access attempts.
- 3.4.5.8 Password and Message Scrambling - The system must automatically encrypt passwords and messages before storing them on disk.

3.5 UPS

- 3.5.1 The selected Bidder will provide a UPS/battery system or rectifier/battery system that will provide system back-up electrical power for a period of two hours at each IDF and MDF location that will support both voice and supplied data communications devices.
- 3.5.2 The Voice Communication System and Voice Messaging system must have Advanced Power Company (APC) style agents capable of gracefully shutting down the system in the event of a mass power outage and depletion of UPS batteries.

3.6 Network Equipment

- 3.6.1 The City requires enterprise network equipment to implement an L3 and L4 (Layer 3 & 4) IP network service over an Ethernet switching fabric, which will encompass the core, distribution, and local access components of the City's network architecture. The following high-level points characterize the network architectural direction of the City:

- 3.6.1.1 To the maximum extent that market offerings make it feasible, the City shall acquire network products adhering to industry supported standards and pre-standard specifications from recognized standards-making bodies, such as the IEEE Project 802 and the IETF. Verify that all components conform to well recognized standards.
- 3.6.1.2 1 Gb/s segments will be deployed, as the City requirements dictate, which will constitute the entire backbone, core network, and some special user distribution and local access segments. Switched segments to network end-stations, switches, and routers will be full duplex.
- 3.6.1.3 The City will run various L4 Internet transport protocols, including TCP, User Datagram Protocol (UDP), and others as robust implementations become available and requirements warrant. Verify that this solution will support this.
- 3.6.1.4 Although the City expects to continue to run IPv4 for the near to intermediate future, it is expected that a transition to IPv6 will be implemented at an appropriate point, perhaps motivated by such features as authentication, Quality of Service (QoS) priorities, and L3 address space expansion. This solution will support easy transition to IPv6.
- 3.6.1.5 End-stations will be organized logically into VLANs.
- 3.6.1.6 It is the City's objective to provide an Integrated Services IP packet network to support both traditional loss-sensitive/delay-tolerant flows (e.g. ftp transfers) and loss-tolerant/delay-sensitive real-time flows (e.g. playback video streaming applications). This solution supports these types of traffic giving high quality response.
- 3.6.2 Switched Architecture
 - 3.6.2.1 The City requires a network with an Ethernet MAC-frame-switched architecture, with the exception of L3 packet switching for inter-VLAN operations and routing to external destinations.
 - 3.6.2.2 Provide conceptual drawings of the configurations called for. Attach referencing this item number.
 - 3.6.2.3 Provide a description of how end-to-end connectivity is provided for all required protocols, and include all switches and router protocols used to provide connectivity (i.e. Spanning Tree, RIP, OSPF, P-NNI, etc.).
 - 3.6.2.4 Describe what differentiates your product from your competition. Attach referencing this item number.
- 3.6.3 Gigabit Technical Specifications
 - 3.6.3.1 All Gigabit Ethernet switches must support Layer 3 switching for IP.
 - 3.6.3.2 All Gigabit Ethernet switches must have at least a 50G switching fabric.
 - 3.6.3.3 All switches must support Policy and Port based VLANs.
 - 3.6.3.4 All Layer 3 implementations should be standards-based. No proprietary protocols or pre-standard protocols should be used to implement routing.
 - 3.6.3.5 All Copper Switch ports must be 10/100/1000 auto-sensing, and be able to support full duplex communications.
 - 3.6.3.6 All Gigabit Ethernet switches must have wire-speed forwarding for Layer 2 and Layer 3 on 10/100 and Gigabit ports.
 - 3.6.3.7 Preferred deterministic latency is under 10 microseconds for both Layer 2 and Layer 3. If the proposed solution does not achieve this latency, state the latency specifically for Layer 3.

- 3.6.3.8 Gigabit Ethernet switches must be able to use and understand OSPF, RIP II for routing purposes.
- 3.6.3.9 Gigabit Ethernet switches should support at least 10,000 MAC and 2,000 routing table entries.
- 3.6.3.10 Gigabit Ethernet switches must support 802.1d Spanning Tree as well as multiple spanning tree groups.
- 3.6.3.11 Gigabit Ethernet switches must support 802.1Q VLAN trunking.
- 3.6.3.12 Gigabit Ethernet switches must support conversation steering/port mirroring to allow packet monitoring.
- 3.6.3.13 Ethernet switches must support at least 2,000 VLANs.
- 3.6.3.14 Redundant power supplies in the core MDF switch.
- 3.6.3.15 Redundant CPU's in the core MDF switch.
- 3.6.3.16 Describe switch operating system in the core MDF switch.
- 3.6.4 Hardware Architecture and Operations
 - 3.6.4.1 The City requires high-speed, highly efficient L2/L3 switches in all locations to implement an enterprise-wide configuration of Ethernet switching fabrics and an L3 switching hierarchy.
 - 3.6.4.2 L3 protocols at all locations must include RIP v1, RIP v2 and Layer 3 ACLs.
- 3.6.5 Media Applications
 - 3.6.5.1 The City requires an IP network service that will support real-time flow (e.g. video-streaming) applications in both unicast and multicast configurations.
- 3.6.6 Quality of Service
 - 3.6.6.1 The City requires an IP network service providing QoS assurances for both traditional data and multimedia network service applications. This requirement has two distinct parts: Classes of Service (CoS) and end-to-end Quality of Service (QoS) provision by resource reservation.
- 3.6.7 Network Security
 - 3.6.7.1 The City requires one integrated scheme of network service user authentication and authorization for access to specific applications and data resources. This scheme should be based upon appropriate (see below) standards, as initial product implementations become available.
- 3.6.8 Network Management
 - 3.6.8.1 The City desires an efficient SNMP-based network-management system.
 - 3.6.8.2 The City requires the implementation of SNMPv3.
 - 3.6.8.3 Provide summary information on the features and functionality of your management application software package and its user interfaces. The City requires tools to isolate network elements that cause network service failures and/or performance degradation.
 - 3.6.8.4 The City requires a system that provides for moves-and-changes and inventory control. The system should allow:
 - 3.6.8.4.1 Firmware upgrade on switches and devices.
 - 3.6.8.4.2 Graphical map and system status notification of network trouble spots.
 - 3.6.8.4.3 Allow you to manage IP telephones.
 - 3.6.8.4.4 Allow control of VLAN registration and policy

3.6.8.4.5 Management of policy as well as access control lists.

3.7 Structured Cabling

3.7.1 Copper Horizontal Cabling – The vendor is responsible to identify locations where new or additional structured cabling is required.

3.7.1.1 Copper horizontal cabling shall comply with the following Category 6 industry standards:

3.7.1.1.1 ANSI/TIA/EIA 568B.2

3.7.1.1.2 ANSI/ICEA S-90-661

3.7.1.1.3 NEMA WC66

3.7.1.1.4 ISO 11801.

3.7.1.2 Category 6 copper horizontal cabling shall be used for the network connectivity between the workstation endpoint, to the intermediate distribution frame (IDF), or to the MDF if the workstation endpoint is in the same vicinity of the MDF.

3.7.1.3 Category 6 copper horizontal cabling shall not exceed 100 meters in total length.

3.7.1.4 The vendor shall provide and install a complete end-to-end network drop from workstation wall plates, to the IDF or MDF termination point.

3.7.1.5 There cable shall not be exposed within any interior location except within the IDF/MDF location

3.7.1.6 The vendor shall provide surface-mounted wall-plates, and raceway to fully encase all cabling

3.7.1.7 Any new drop location shall include at least two (2) Category 6 connections.

3.7.1.8 Where not available, the vendor shall install an appropriately sized wall- or rack-mounted termination patch panel, and associated wire management.

4 Appendixes

4.1 Appendix A – Voice and Data by Site

SITE	PBX	Phones	Data Port Count Used/Available	Computers
City Hall	Mitel PBX	302	406/484	278
Fire Station 1		60	28/36	15
Senior Center	P-node	46	36/48	24
Police Dept	Mitel PBX	166	242/264	140
Transportation	Mitel PBX	71	89/96	64
Public Works	P-node	27	36/48	38
Fire Drill Yard		6	1/12	4
Transfer Station		15	17/32	11
VMC	Mitel PBX	45	34/36	11
Teen Center	P-node	12	6/12	4
Plunge		5	2/12	3
Fire Station 2	VoIP PBX	22	18/24	16
Fire Station 3 (existing)	VoIP PBX	12	8/ 24	6
Fire Station 3 (new)	Proposed VoIP PBX	23	32/48	10
Ivy Substation	POTS Lines	4	0	0
Various Parks	POTS Lines	10	0	0

4.2 Appendix B – Detailed Description by Site

1.1.1. City Hall, 9770 Culver Boulevard

- 1.1.2. Voice Communications System: Mitel SX-2000 Light PBX, Octel VMX200 voice mail servicing the entire enterprise. Approximately 450 digital and analog phone sets/devices, 96 DID trunks, 96 Outbound trunks, 16 OPX lines, 8 Centrex backup lines, and a centralized call accounting system, with overhead paging located at Fire Station 1.
- 1.1.3. LAN/Data Systems: The Local Area Network is 10/100/1000 TCP/IP switched Ethernet. A Cisco Catalyst 4506 serves as the core switch. Six IDF closets and a parking level IDF contain a mix of Cisco and Bay Networks switches. Dual data T-1s provide Internet connection through a Cisco ASA 5520 and Cisco router.
- 1.1.4. Cable Infrastructure: Offsite fiber optic cables home run to the Data Center and are mounted on a main rack. Fiber optic risers provide 12 multi-mode strands to each of six IDF closets and 24 multi-mode strands to a parking level IDF in the City Hall building. 2 Voice CAT3 and 2 Data CAT5 at work station locations.
- 1.1.5. This site presently services phone needs for City Hall, Fire Station #1 and the Senior Center.
- 1.1.6. Police Department, 4040 Duquesne Avenue.
- 1.1.7. Voice Communications System: Mitel SX-2000 Light PBX, approximately 200 digital and analog phone sets/devices, 18 DID circuits, 18 outbound trunks, 16 OPX circuits, 8 Centrex backup lines, overhead paging.
- 1.1.8. LAN/Data Systems: The Local Area Network is 10/100 TCP/IP Ethernet. A Bay Networks core switch and Bay Networks switches provide networking for the Police Department. The Police Department Data Center consists of two rooms. One has the primary connections for incoming fiber and the existing telephone system. The other room has the primary servers. Fiber risers link the phone room with the second floor IDF and Auxiliary Building IDF which both contain Bay Networks switches.
- 1.1.9. Cable Infrastructure: Multi-mode fiber connects the Police Department to City Hall's Data Center and to the second floor IDF and Auxiliary Building IDF. Copper patch panels connect the server room to the telephone room with the core switches. 2 Voice CAT3 and 2 Data CAT5 at work station locations.
- 1.1.10. This site presently services the main Police building (three floors) and the Police Auxiliary building.
- 1.1.11. Transportation, 4343 Duquesne Avenue.
- 1.1.12. Voice Communications System: Mitel SX-2000 Light PBX, approximately 250 digital and analog phone sets/devices, 8 Centrex backup lines, and overhead paging. The Mitel PBX is networked to the City Hall PBX using a dedicated T-1 and uses the City Hall centralized voicemail system.
- 1.1.13. LAN/Data Systems: The site head-in at the Main Data Feed (MDF) is fiber optic to a Cisco switch. From the MDF there is a 12 strand fiber riser to an IDF. The MDF and IDF have a mix of Cisco and Bay Network switches.
- 1.1.14. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Transportation site to the City Hall Data Center. A 12 strand multi-mode fiber riser connects the MDF to the IDF. 2 Voice CAT3 and 2 Data CAT5 at work station locations.
- 1.1.15. Public Works, 9505 Jefferson Boulevard.

- 1.1.16. Voice Communications System: Mitel peripheral node servicing approximately 50 Mitel digital phones and 15 analog phone sets/devices.
- 1.1.17. LAN/Data Systems: The site head-in at the Main Data Feed (MDF) is fiber optic to a Cisco switch.
- 1.1.18. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Public Works site to the City Hall Data Center. 2 Voice CAT3 and 2 Data CAT5 at work station locations.
- 1.1.19. Drill Yard, 9275 Jefferson Boulevard.
- 1.1.20. Voice Communications System: 6 digital and analog phone sets/devices are extended from Public Works building via a buried underground 50 pair cable.
- 1.1.21. LAN/Data Systems: Nortel data hub via fiber from Public Works building.
- 1.1.22. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Drill Yard site to the Public Works building. 2 Voice CAT3 and 2 Data CAT5 at work station locations.
- 1.1.23. Transfer Station, 9255 Jefferson Boulevard.
- 1.1.24. Voice Communications System: 14 digital and analog phone sets/devices are extended from Public Works building via a buried underground 50 pair cable.
- 1.1.25. LAN/Data Systems: Nortel data hub via fiber from Public Works building.
- 1.1.26. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Transfer Station site to the Public Works building. 1 Voice CAT3 and 1 Data CAT5 at work station locations.
- 1.1.27. Senior Center, 4095 Overland Boulevard.
- 1.1.28. Voice Communications System: Mitel peripheral node connected via fiber servicing approximately 40 Mitel digital phone sets and 15 analog phone/devices. 4 Centrex emergency backup phone lines.
- 1.1.29. LAN/Data Systems: Cisco data hub connected via fiber from City Hall. The MDF connects via fiber to a Cisco hub in the IDF.
- 1.1.30. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Senior Center to the City Hall Data Center. 2 Voice CAT3 and 2 Data CAT5 at work station locations. A fiber riser connects the MDF to the IDF.
- 1.1.31. Veteran's Memorial Complex (VMC), 4117 Overland Boulevard.
- 1.1.32. Voice Communications System: Mitel SX-2000 Light PBX, approximately 50 digital and 15 analog phone sets/devices, 8 Centrex backup lines. The Mitel PBX is networked to the City Hall PBX via dedicated multi-mode fiber link and uses the City Hall centralized voicemail system.
- 1.1.33. LAN/Data Systems: The site head-in at the Main Data Feed (MDF) is fiber optic to a Cisco switch. From the MDF there is a 12 strand fiber riser to the Teen Center and Plunge. There is a mix of Cisco and Bay Network switches.
- 1.1.34. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Veteran's Memorial Complex to the City Hall Data Center. 2 Voice CAT3 and 2 Data CAT 5 at work station locations.

- 1.1.35. Teen Center, 4153 Overland Boulevard.
- 1.1.36. Voice Communications System: Approximately 10 Mitel digital and 5 analog phones/devices are extended from VMC building via a Mitel peripheral node.
- 1.1.37. LAN/Data Systems: Nortel data hub connected via fiber from the VMC.
- 1.1.38. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Teen Center to the VMC MDF. 2 Voice CAT3 and 2 Data CAT5 at 12 work station locations.
- 1.1.39. Plunge, 4175 Overland Boulevard.
- 1.1.40. Voice Communications System: Approximately 5 Mitel digital and 4 analog phones/devices are extended from the Teen Center via a 50 pair cable.
- 1.1.41. LAN/Data Systems: Cisco data hub connected via fiber from the Teen Center.
- 1.1.42. Cable Infrastructure: A 12 strand multi-mode fiber cable connects the Plunge IDF to the Teen Center IDF. 2 Voice CAT3 and 2 Data CAT5 at 12 work station locations.
- 1.1.43. Ivy Substation, 9070 Venice Boulevard.
- 1.1.44. Voice Communications System: Approximately 10 stations, 2 OPX lines extended from the Police Department Mitel PBX
- 1.1.45. LAN/Data Systems: Data needs serviced by a DSL connection.
- 1.1.46. Cable Infrastructure: Separate voice and data cables not necessarily up to City communications standards.
- 1.1.47. Note: Ivy Substations is currently rented out and not occupied by City staff. This proposal requests optional future solution(s) for extending phone/data service to this facility if required in the future.
- 1.1.48. Fire Station 1, 9600 Culver Boulevard.
- 1.1.49. Voice Communications System: 30 digital and 18 analog phone sets/devices are extended from City Hall via a buried underground 50 pair cable.
- 1.1.50. LAN/Data Systems: Cisco data hub connected via fiber from City Hall. Bay Networks hub in Fire Garage IDF connected to MDF in main building.
- 1.1.51. Cable Infrastructure: A 24 strand multi-mode fiber cable connects Fire Station 1 to the City Hall MDF. 2 Voice CAT 3 and 2 Data CAT 5 at work station locations. 12 strands multi-mode fiber connects MDF to IDF in Fire Garage building.
- 1.1.52. Fire Station 2, 11252 Washington Boulevard.
- 1.1.53. Voice Communications System: Arreva VoIP PBX, 18 VoIP phones and 4 analog phones/devices, 4 Centrex backup lines.
- 1.1.54. LAN/Data Systems: Cisco data hub connected via fiber from City Hall.
- 1.1.55. Cable Infrastructure: A 48 strand single -mode fiber cable connects Fire Station 2 to the City Hall Data Center. 2 Voice CAT 3 and 2 Data CAT 5 at work station locations.
- 1.1.56. Fire Station 3, 11304 Segrell Way.
- 1.1.57. Fire Station 3 will move all systems to a new building in Spring/Summer 2009. The current phone system will move to the new location.

- 1.1.58. Voice Communications System: Arreva VoIP PBX, 10 VoIP phones and 4 analog phones/devices, 4 Centrex backup lines.
- 1.1.59. LAN/Data Systems: Cisco data hub connected via fiber from City Hall.
- 1.1.60. Cable Infrastructure: A 48 strand single -mode fiber cable connects Fire Station 3 to the City Hall Data Center. 2 Voice CAT 3 and 2 Data CAT 5 at work station locations.
- 1.1.61. City Parks (Blair Hills, Blanco Park, Culver West Park, El Marino Park, Syd Kronenthal Park, etc).
- 1.1.62. Voice Communications System: Voice needs at City Parks are serviced by OPX to a City PBX or POTS lines directly from the PSTN. Culver West, Syd Kronenthal, and Blanco Park are currently serviced by OPX lines.
- 1.1.63. LAN/Data Systems: Data needs are serviced by DSL connection. Currently only Culver West uses DSL service.
- 1.1.64. Cable Infrastructure: Parks facilities have minimal voice and data cabling.

4.3 Appendix C – Police Department Concerns

- 3.1 City uses a “flat” network topology where all IP devices have the same IP scheme and subnet except for the Police Department.
- 3.2 Currently the Police Department operates on two independent networks. The VCS and the VLANs for separate voice and data at the PD will have to be implemented. A third VLAN for the Police legacy network will be required.
- 3.3 One network is used for Police Department personnel usage and the other is to provide access to legacy record keeping databases. DOJ prohibits having non-secure connections to sensitive data. Only authorized Public Safety personnel will have access to the legacy VLAN.
- 3.4 Since the City and PD networks are separate, VLANs are required to facilitate voice traffic from one network to the other. The PD will remain on a separate VLAN for other data access. The Bidder’s solution must provide for security and integrity of the separate data networks, and allow VoIP.
- 3.5 The City and PD networks are kept separate due to Department of Justice requirements to prohibit unauthorized personnel from accessing DOJ information. Successful bidders’ staff will have to undergo DOJ checks before they can work on the City’s systems.
- 3.6 Internetworking City Network and Police Network via VLANs and other technology will be a design issue that must be approved. There is a trust/firewall structure in place presently.
- 3.7 The City and PD phone PBX’s are currently networked with Mitel MSDN technology. This is a proprietary technology that does not require any data network resources. Moving to a VoIP technology, it is apparent that the two networks (CH and PD) will have to be interconnected. The Bidder must propose a method of interconnecting the two networks for the purpose of sharing the proposed voice communications systems located at all City locations into and out of the Police Department’s own VCS and to prohibiting penetration of data traffic into PD’s network from devices outside of PD premises.
- 3.8 The PD Mitel PBX is interconnected with the PD E-911 system to allow Public Safety personnel to receive/place calls through to the City’s PBX’s. It is required that the VCS solution be able to interconnect via ONS/OPX lines.
- 3.9 The VCS solution must pass caller ID/ANI/DNIS to and from the VCS and the Public Safety E-911 system.

Appendix D – Data Port and Phone Count by Location

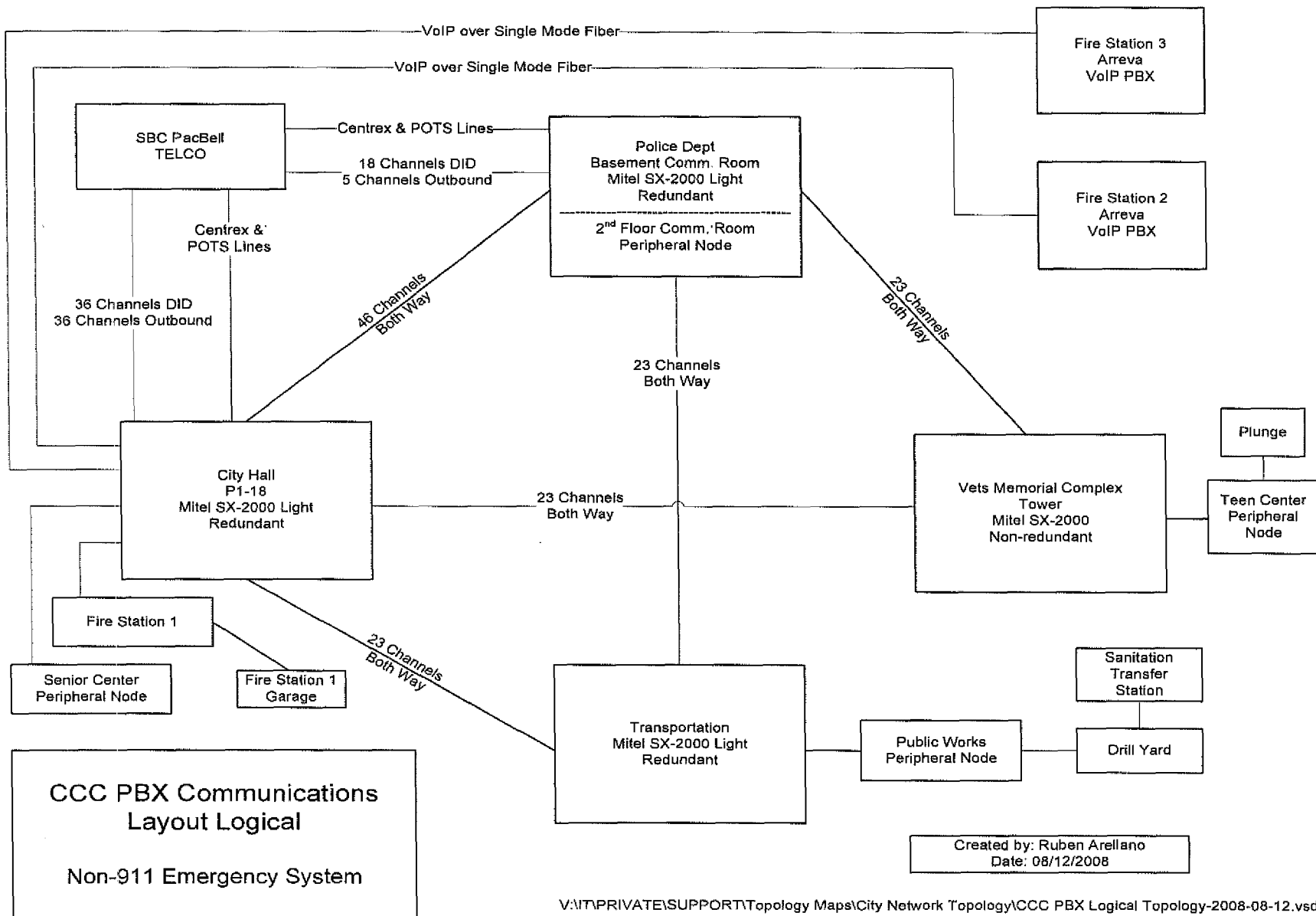
Model Name	CAT5e Used/Avail	Fiber Used/Avail	IP Address (opt.)	Location	Mitel Digital Phone s	Analo g Lines
Cisco Catalyst 2950 Series	37/48	1/2	N/A	City Hall, Acct IDF, 1st Flr (1a)	53	6
Cisco Catalyst 2950 Series	47/48	1/2	N/A	City Hall, Acct IDF, 1st Flr (1a)		
CH-WIFI	2/16	0/0	N/A	City Hall, Acct IDF, 1st Flr (1a)		
Bay Stack 350-24T	24/24	0/2	192.168.40.136	City Hall, Graphics IDF, 1st Flr (1b)	35	10
Cisco Catalyst 2950 Series	47/48	1/2	N/A	City Hall, Graphics IDF, 1st Flr (1b)		
Bay Stack 350-24T	21/24	0/2	192.168.40.141	City Hall, Engr IDF, 2nd Flr (2a)	75	15
Bay Stack 350-24T	21/24	0/2	192.168.40.142	City Hall, Engr IDF, 2nd Flr (2a)		
Bay Stack 350F	12/12	1/2	N/A	City Hall, Engr IDF, 2nd Flr (2a)		
Bay Stack 350-24T	24/24	1/2	192.168.40.140	City Hall, Engr IDF, 2nd Flr (2a)		
Bay Stack 350F	1/12	1/2	N/A	City Hall, Housing IDF, 2nd Flr (2b)	15	5
Bay Stack 350-24T	24/24	0/0	192.168.40.138	City Hall, Housing IDF, 2nd Flr (2b)		

Catalyst 2950 Series	41/48	1/2	N/A	City Hall, Housing IDF, 2nd Flr (2b)		
Cisco Catalyst 2950 Series	48/48	1/2	N/A	City Hall, CMO IDF, 3rd Flr (3b)	35	5
Bay Stack 350-24T	0/24	1/2	192.168.40.144	City Hall, CMO IDF, 3rd Flr (3b)		
Cisco Catalyst 2900 LX Series	9/12	0/0	N/A	City Hall, Redev IDF, 3rd Flr (3a)	32	6
Bay Stack 350-24T	24/24	1/2	192.168.40.143	City Hall, Redev IDF, 3rd Flr (3a)		
Bay Stack 350-24T	17/24	0/2	192.168.40.118	City Hall, Redev IDF, 3rd Flr (3a)		
Bay Stack 350	7/12	1/2		City Hall, P1-18 Comm Rm	3	7
3COM Super Stack	0/12	0/0	N/A	PD, 2nd Flr IDF	55	19
Bay Stack 350-24T	24/24	1/2	172.16.1.6	PD, 2nd Flr IDF		
Bay Stack 350-24T	24/24	1/2	172.16.1.7	PD, 2nd Flr IDF		
Bay Stack 350-24T	21/24	0/2	172.16.1.8	PD, 2nd Flr IDF		
Bay Stack 350-24T	23/24	0/2	192.168.40.137	PD, 2nd Flr IDF		
Model Name	CAT5e Used/Avail	Fiber Used/Avail	IP Address (opt.)	Location	Mitel Digital Phone s	Analo g Lines
Bay Stack 350-24T	22/24	0/2	172.16.1.1	PD Basement IDF	65	27

Bay Stack 350-24T	21/24	0/2	172.16.1.2	PD Basement IDF		
Bay Stack 350-24T	24/24	0/2	172.16.1.3	PD Basement IDF		
Bay Stack 350-24T	24/24	1/2	172.16.1.4	PD Basement IDF		
Bay Stack 350-24T	24/24	0/2	172.16.1.5	PD Basement IDF		
Bay Stack 350-24T	23/24	1/2	192.168.4.139	PD Basement IDF		
Bay Stack 350F	12/12	0/2	N/A	PD Basement IDF		
Bay Stack 350F	24/24	0/2	N/A	Transportation IDF, 1st Flr	33	13
Bay Stack 350-24T	24/24	0/2	N/A	Transportation IDF, 1st Flr		
Cisco Catalyst 2950 Series	23/24	0/2	N/A	Transportation IDF, 1st Flr		
Bay Stack 350-24T	17/24	1/2	N/A	Transportation IDF, 2nd Flr	19	6
Bay Stack 350-24T	13/24	1/2	192.168.40.248	Transfer Station, IDF	6	4
NetGear DS108	4/8	0/0	N/A	Transfer Station, Trailer	4	2
Bay Stack 350-12T	1/12	1/2	192.168.40.129	Drill Yard IDF	3	3
Bay Stack 350-24T	18/24	1/2	N/A	Public Service IDF	19	9
Bay Stack 350-24T	18/24	0/2	192.168.40.148	Public Service IDF		
Cisco Catalyst 2950 Series	17/24	2/2	N/A	Senior Center IDF Main	18	6

Cisco Catalyst 2950 Series	19/24	1/2	N/A	Senior Center IDF Lunch Rm	15	7
Bay Stack 350F	12/12	0/2	192.168.40.121	VMC Tower IDF	32	13
Bay Stack 350-24T	22/24	2/2	192.168.40.149	VMC Tower IDF		
Bay Stack 350-24T	6/24	2/2	N/A	Teen Center IDF	9	3
Bay Stack 350F	2/12	1/2	192.168.40.132	Plunge IDF	3	2
Bay Stack 350F	17/24	1/2	192.168.40.147	FS1 IDF	26	6
Model Name	CAT5e Used/Avail	Fiber Used/Avail	IP Address (opt.)	Location	Mitel Digital Phone s	Analo g Lines
Bay Stack 350F	8/12	1/2	N/A	FS1 Garage IDF	23	5
Cisco 3560 POE	18/24	1/2	N/A	FS2 IDF	18	4
Cisco 3560 POE	8/24	1/2	N/A	FS3 IDF	8	4

Appendix E



Appendix F

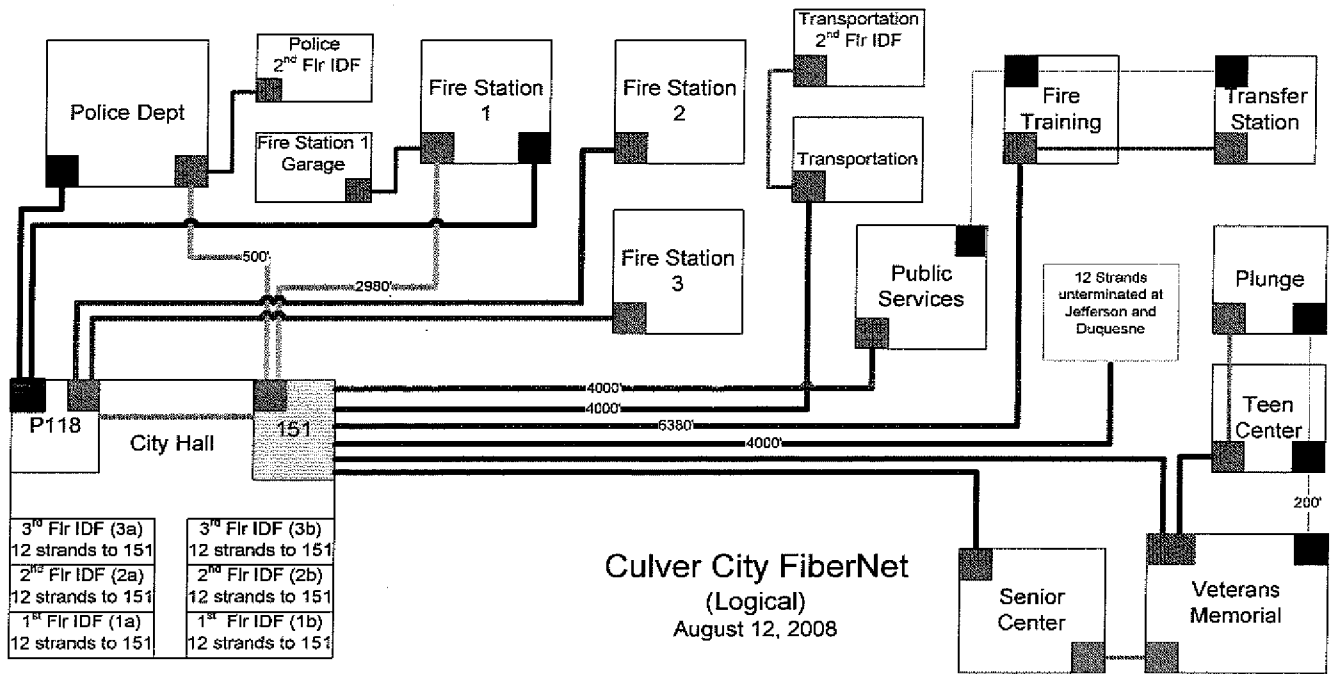
City DID numbering allocation and their respective answer points by site.

Site/Department	DID Range	Answer Point
City Hall		
Building Safety	5800 thru 5824	5800
CAO	6000 thru 6039	6000
City Attorney	5660 thru 5674	5660
City Clerk	5851 thru 5859	5851
Community Development	5700 thru 5709	5700
Credit Union	6060 thru 6069	6060
Enforcement Services	5932 thru 5940	5940
Finance	5850 thru 5889	5850, 6006,
Finance (Budget & Finance)	6006 thru 6016	6006
Fire Administration	5900 thru 5920	5900
Fire Station 1	6810 thru 6809	6810
Fire Station 1 Garage	6840 thru 6849	6840
Housing	5780 thru 5799	5780
Information Technology	5950 thru 5998	5950
Personnel	5640 thru 5651	5640
Planning	5710 thru 5759	5710
PW/Engineering	5600 thru 5629	5600
Redevelopment	5760 thru 5789	5760
Risk Management	5675 thru 5686	5680
Senior Center	6700 thru 6799	6700
Police Department	6100 thru 6399	6100, 6200, 6300
Transportation/Public Works		
Fire Drill Yard	6870 thru 6879	6870
Purchasing	6550 thru 6559	6550

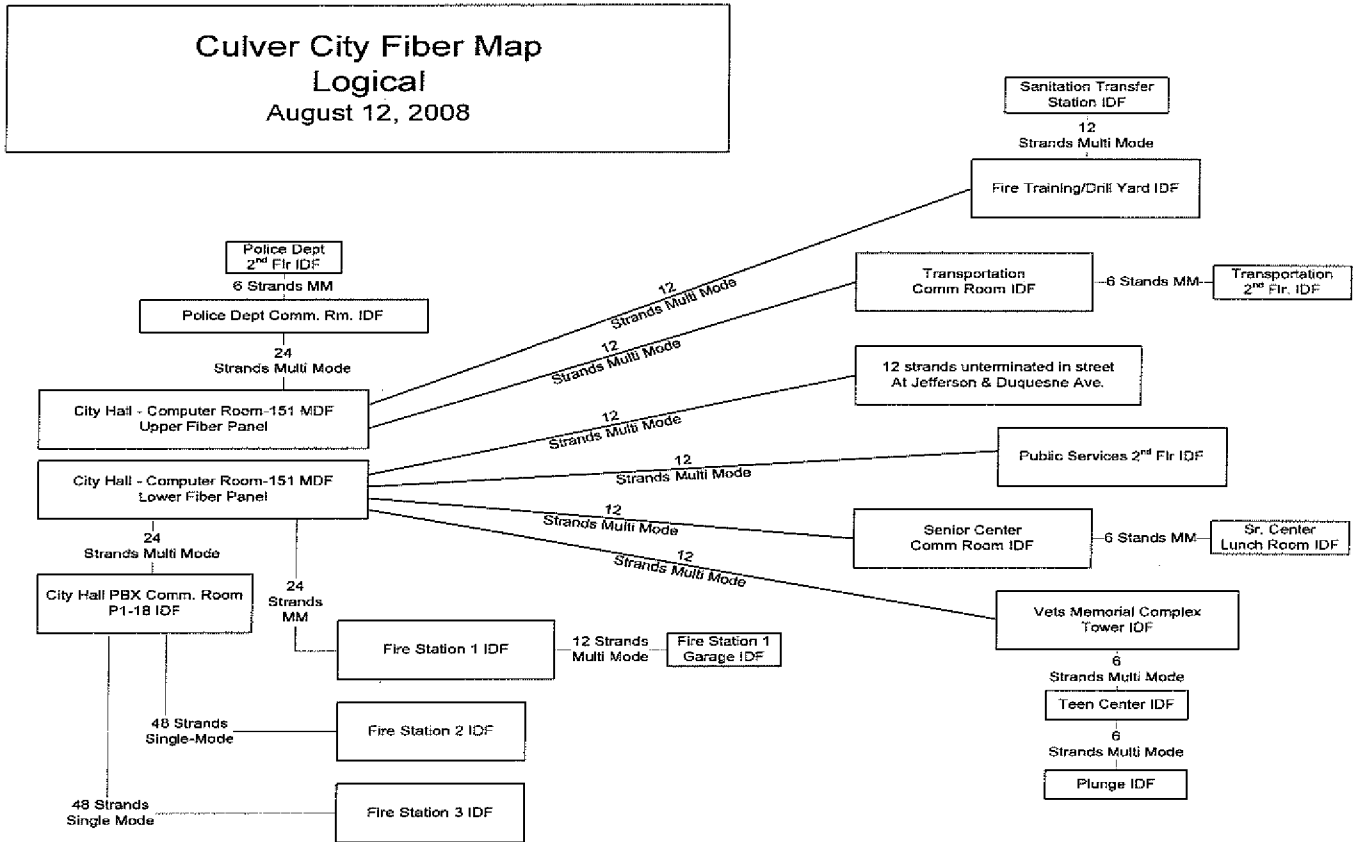
PW/ Transfer Station	6400 thru 6414	6400
PW/Facilities	6425 thru 6482	6420
PW/Maintenance	6420 thru 6429	6420
PW/Street Maintenance	6420 thru 6599	6420
Transportation Admin	6505 thru 6568	6500
Transportation Maintenance	6512 thru 6567	6525
Transportation Transit	6508 thru 6569	6525
Fire Station 2	6820 thru 6829	6820
Fire Station 3	6830 thru 6839	6830
Veteran's Memorial Complex		
VMC Division	6625 thru 6633	6625
Recreation	6650 thru 6684	6650

Note: Some extension may reside at a site not necessarily within their respective number pool assignment. The System must be capable of supporting this through ARS or some other means that should not be too difficult or cumbersome to achieve. The City will determine if the method employed is satisfactory to the City.

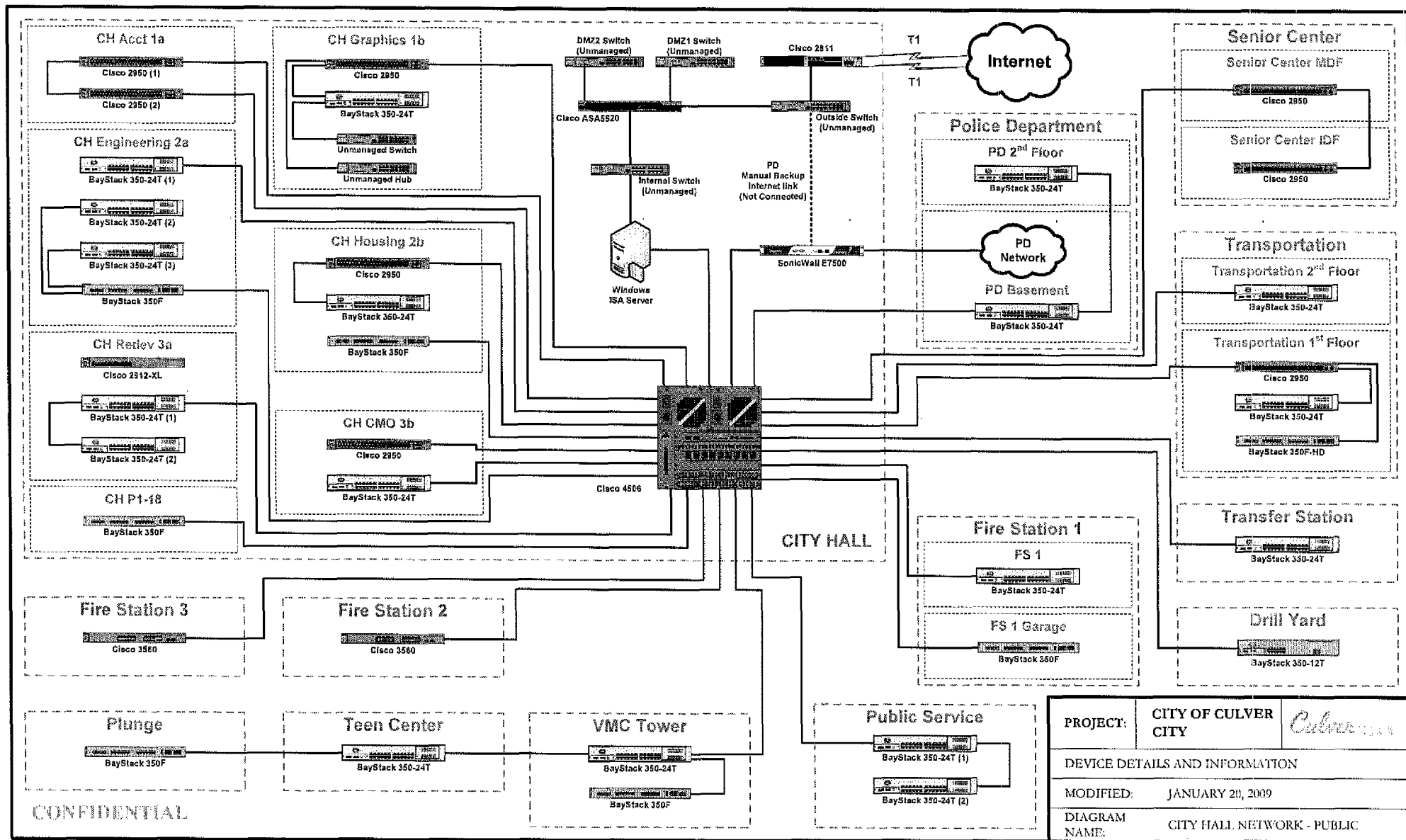
Appendix G



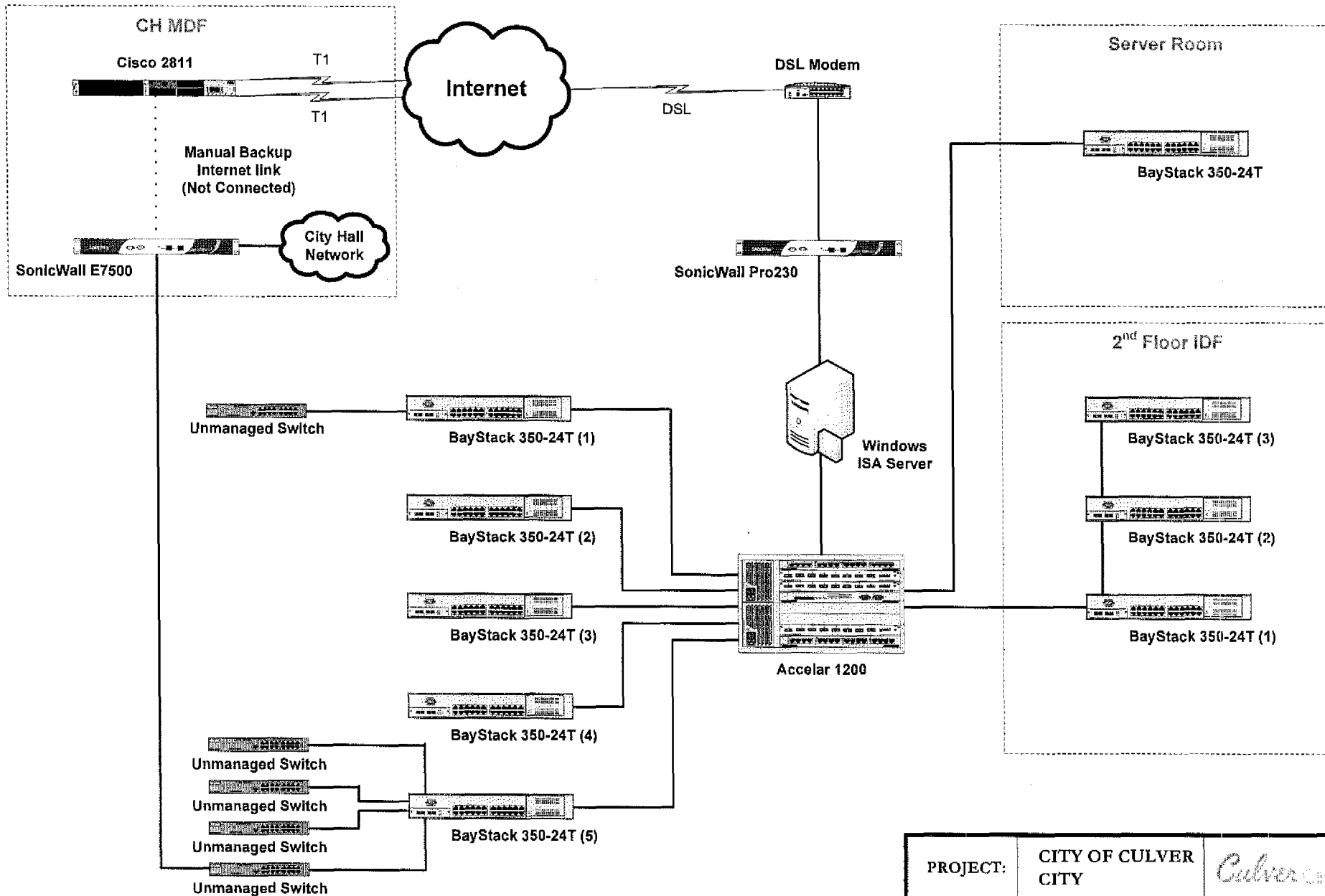
Appendix H



V:\PRIVATE\SUPPORT\Topology Maps\City Network Topology\CCC Optical Fiber Map-2008-08-12.vsd



CONFIDENTIAL



CONFIDENTIAL

PROJECT:	CITY OF CULVER CITY	<i>Culver City</i>
DEVICE DETAILS AND INFORMATION		
MODIFIED:	JANUARY 20, 2009	
DIAGRAM NAME:	POLICE DEPARTMENT NETWORK - PUBLIC	