

City of Waltham



DEPARTMENT OF INFORMATION TECHNOLOGY

Request for proposal for the procurement and installation an Enterprise-Class Wireless System.

Agenda

- **Project Objective**
- **Locations & Deployment Order**
- **Hardware**
- **SOW**
- **Cabling**
- **Equipment Distribution**
- **Configuration**
- **Question and Answer Period**

PROJECT OBJECTIVE

Procurement and installation of wireless equipment.

- 1. Wireless Access Points**
- 2. PoE Switching Equipment**
- 3. Cat6 and Fiber-optic runs**
- 4. Transceivers**
- 5. Cloud management**

PROJECT OBJECTIVE

Project must be completed by the end of December 2019.

LOCATIONS

SITES	ADDRESS	CONNECTION TYPE
Sites-1 (ITG)		
City Hall	610 Main St	Gateway Site
Government Center	119 School St	Fiber
Museum Building	21 Lexington St	Fiber
Community Center	510 Moody St	Gateway Site
Council On Aging	488 Main St	Fiber
Satellite offices (ITG)		
ICE Rink	295 Totten pond Rd	Gateway Site
Prospect Hill Park	314 Totten Pond Rd	Remote
Teen Center	14 Church St	Fiber
Engine 3	67 Willow St	Remote
Engine 4	35 Prospect St	Remote
Engine 7	104 Lake St	Remote
Engine 8	699 Trapelo Rd	Remote
Cemetery	203 Prospect St	Remote
Carter St Substation	11 Carter St	Fiber
Library	735 Main St	Fiber
Primary-Sites-2 (MUNI)		
MUNI-PD/911 Ops Center	155 Lexington St	Gateway Site
Management System		
	City-Wide	CLOUD management

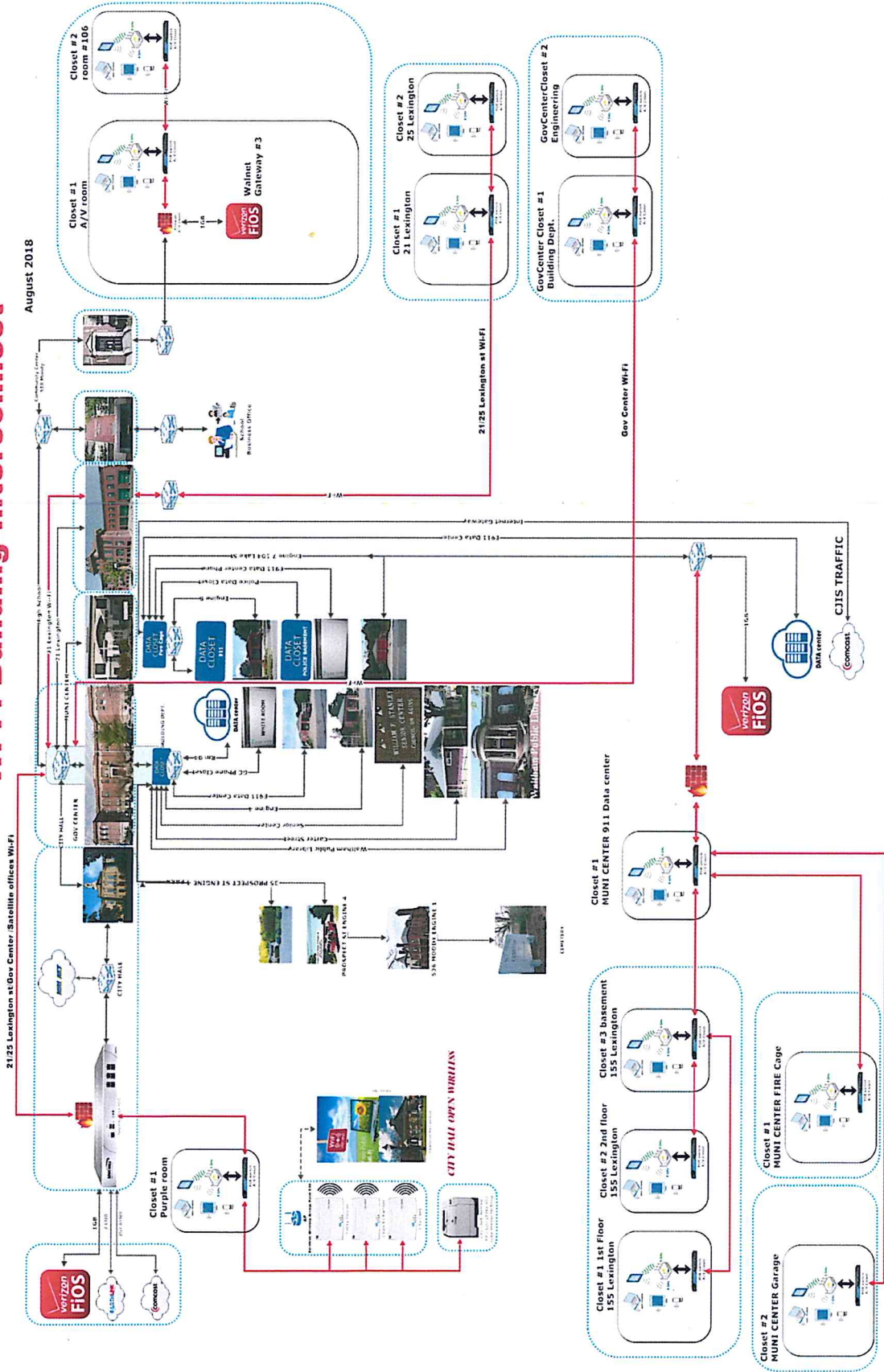
LOCATIONS DEPLOYMENT SEQUENCE

SITES	DEPLOYMENT SEQUENCE	CONNECTION TYPE
Sites-1 (ITG)		
City Hall	1	Gateway Site
Government Center	2	Fiber
Museum Building	3	Fiber
Community Center	4	Gateway Site
Council On Aging	5	Fiber
Satellite offices (ITG)		
ICE Rink	6	Gateway Site
Prospect Hill Park	7	Remote
Teen Center	8	Fiber
Engine 3	9	Remote
Engine 4	10	Remote
Engine 7	11	Remote
Engine 8	12	Remote
Cemetery	13	Remote
Carter St Substation	14	Fiber
Library	15	Fiber
Primary-Sites-2 (MUNI)		
MUNI-PD/911 Ops Center	17	Gateway Site
Management System	0	CLOUD management

SYNOPTIC VIEW

Wi-Fi Building-Interconnect

August 2018



HARDWARE

- 1. Wireless Access Points**
 - 1. AP (indoor standard)**
 - 2. AP (indoor high performance)**
 - 3. AP (outdoor high performance)**
- 2. PoE Switching Equipment**
 - 1. Standard PoE Switch 8, 16, 24 ports**
 - 2. Power Injectors (in the case of 1 AP / location)**
- 3. Cat6 and Fiber-optic runs (Single Mode)**
- 4. Transceivers (Single Mode)**
- 5. Gigabit infrastructure**

Scope of Work

- 1) Supply 97 Wireless Access Points. We anticipate approximately 97 access points will be needed to meet our current objectives. Additional access points may be needed for hallways and larger gathering spaces such as auditoriums and gymnasiums.
- 2) Provide number of additional APs for selected area if required.
- 3) Supply labor and equipment to install, configure, mount and test 97 Wireless Access Points.
- 4) Configuration of Access Points with Wireless LAN Infrastructure
- 5) Integrate these Wireless Access Points with Cloud Management System.

Scope of Work

- 6) Dedicated data wiring from each location to the patch panel
- 7) Each Wireless Access Point must be wired directly between it and the nearest Main/Intermediate Distribution Frame.
- 8) Wiring installation must include all necessary components to connect to/with but not limited to: Cat6 patch panels, patch cables, needed jacks and mounting equipment.
- 9) Provide Power over Ethernet LAN switches with related components for the Wireless Infrastructure.

Scope of Work

- 10) Supply labor and materials to wire listed areas with 97 Category 6 cables from the access point to the cat6 patch panel in the nearest Intermediate Distribution Frame M/IDF Wiring closet.
- 11) All proposals are required to have line item pricing and manufacturers part numbers included in the proposal document.
- 12) Provide costs of configuration installation defined as professional services in the Sites Cost Summary Form.
- 13) If the City Of Waltham elects to discontinue annual maintenance payments because of lack of funding, what is the impact on the functioning of the Wireless infrastructure? Will it continue to operate? Can it still be managed?

Scope of Work

- 14) What is the alternative so the infrastructure will continue to operate and managed?
- 15) Provide as an option, cost and enumerate additional equipment needed so the system can be managed in the event funding becomes unavailable.
- 16) Include in your price any other equipment deemed necessary for the complete installation of the wireless network infrastructure.

Cabling

All installations shall be done professionally in such a way as to minimize the aesthetic impact of the historic interiors of some of the sites involved. All cabling and conduits shall be run inside walls, ceilings, or existing wire raceways wherever possible. Wherever this is not possible, wiring shall be routed in such a manner as to minimize its visibility and shall be painted to match the surface to which it is attached.

All cabling work should conform and meet City of Waltham Wire Department Specifications Department Specifications

Equipment Distribution

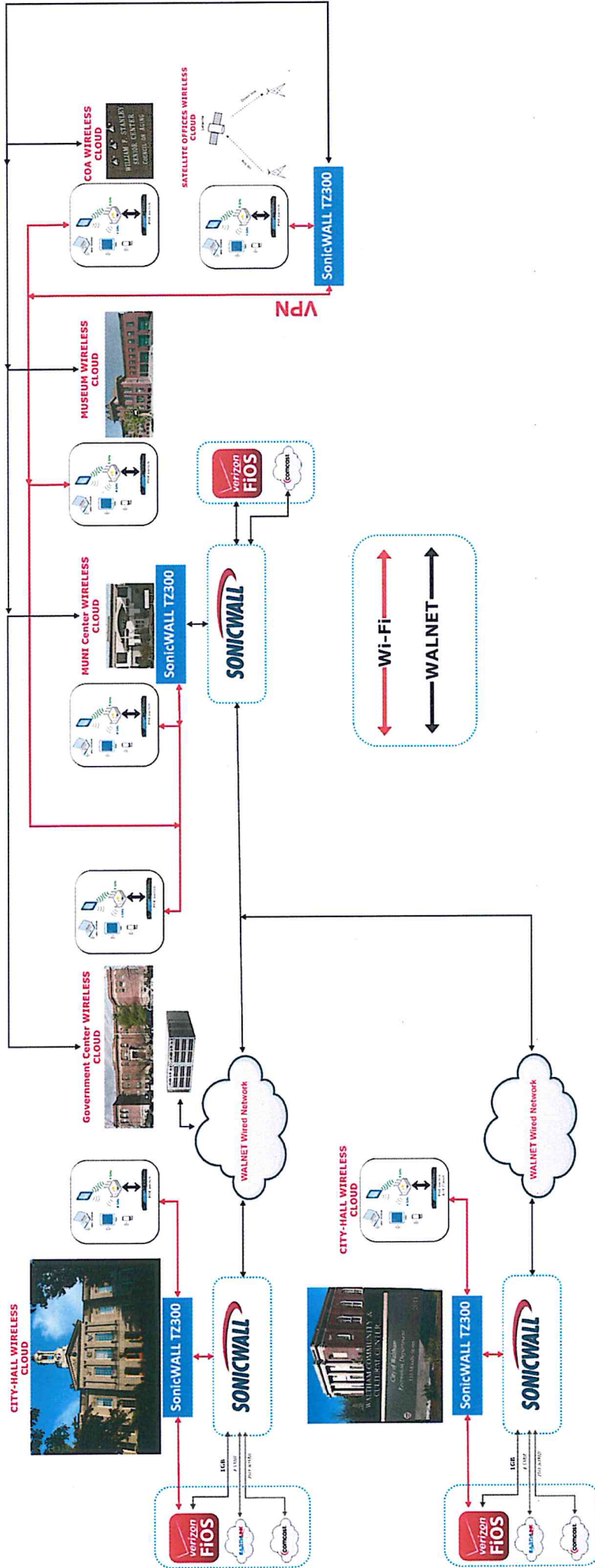
SITES	AP-Indoor	AP-Indoor-HP*	AP-Outdoor-HP*	CABLING	PoE SWITCH-24	PoE SWITCH-8	PoE Injector	FIBER RUNS	TRANSCEIVERS*	SonicWall TZ300p
Sites-1 (ITG)										
City Hall	18		2	20	1					
Government Center	21			21	2			1	2	
Museum Building	10			10	2			1	2	
Community Center	7	2		9	1	1				
Council On Aging	7			7	1					
Satellite offices (ITG)										
ICE Rink				3		1				
Prospect Hill Park	2			2			2			
Teen Center	1			1			1			
Engine 3	1						1			1
Engine 4	1						1			1
Engine 7	1						1			1
Engine 8	1						1			1
Cemetery	1						1			1
Carter St Substation	1						1			
Library	3						3			
Sites-2 (MUNI)										
MUNI-PD/911 Ops Center	14			15	4	2		3	6	
TOTAL	89	2	6	97	11	4	12	5	10	5

SITES COST SUMMARY FORM

SITES	Equipment	Professional Services	Cabling	TOTAL
Sites-1 (ITG)				
City Hall	\$	\$	\$	\$
Government Center	\$	\$	\$	\$
Museum Building	\$	\$	\$	\$
Community Center	\$	\$	\$	\$
Council On Aging	\$	\$	\$	\$
Satellite offices (ITG)				
ICE Rink	\$	\$	\$	\$
Prospect Hill Park	\$	\$	\$	\$
Teen Center	\$	\$	\$	\$
Engine 3	\$	\$	\$	\$
Engine 4	\$	\$	\$	\$
Engine 7	\$	\$	\$	\$
Engine 8	\$	\$	\$	\$
Cemetery	\$	\$	\$	\$
Carter St Substation	\$	\$	\$	\$
Library	\$	\$	\$	\$
Primary-Sites-2 (MUNI)				
MUNI-PD/911 Ops Center	\$	\$	\$	\$
Management System	\$	\$	\$	\$
TOTAL	\$	\$	\$	\$
			GRAND TOTAL	\$

In your price, provide breakdown of the annual cost for maintenance and support for year 2, 3, 4, and up to 5 years.

SYNOPTIC VIEW



Configuration

Management System must Support the following:

1. MAC based authentication.
2. 802.1x based authentication and 802.1x supplicants.
3. WPA2/AES link layer encryption.
4. WEP link layer encryption.
5. WPA/TKIP link layer encryption.
6. Integration with Microsoft Active Directory and content filtering system.
7. Provide multiple levels of access for guest, BYOD, and staff segregation based on Active Directory policies.
8. Username/password authentication or token-based access.
9. Web-based authentication.

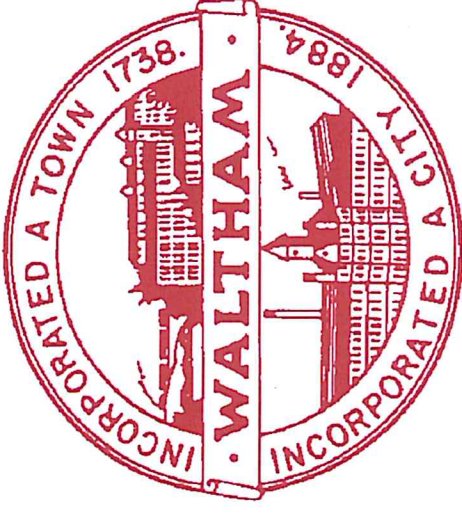
Configuration

1. The solution should be capable of utilizing captive portal technology to allow guest access. Captive portals should be able to display terms and conditions.
2. User-ID management using Two-factor authentication (2FA) or (MFA) integration to address new security concerns, and as well legacy single-factor authentication (SFA) when required.
3. Authentication factors should include,
 - a. Knowledge factor (password, PIN or some other type of shared secret)
 - b. Possession factor (ID card, security token, smartphone or other mobile device)
 - c. Inherence factor (Biometrics)
 - d. Location factor (Device location, geographical source tracking or GPS data)
 - e. Time factor (Time window)

Configuration

1. One SSID per geographical location, same for remote sites.
2. Three user cases of Guest, BYOD, & Employee.
 - a. Guest – General Internet only.
 - b. BYOD – Internet only with MAC auth.
 - c. Employees – Secure WLAN access with AD authentication (Approved City owned devices).

City of Waltham



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QUESTIONS?