## Santa Barbara Police Station Building Assessment Study

12/9/2010



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## I. A. Purpose of Report

The purpose of this report is to evaluate and summarize the physical condition of the existing City of Santa Barbara Police Station Building at 215 East Figueroa Street in Santa Barbara, California. The Building Assessment Study is based on a recent review and analysis of the performance of the various existing building systems, components and infrastructure in relation to current safety codes, accessibility codes, and minimum building system performance standards.

The recommended system improvements included in this report quantify the physical improvements needed to bring the building to a level of safety, accessibility, interior climate control and energy efficiency appropriate for this type of facility. This report will also quantify the costs associated with the recommended system improvements illustrated in this report.

## I. B. Essential Services Facility

The City of Santa Barbara Police Station provides some of the "essential services" required in the event of an emergency, on par with hospitals, schools and fire stations. "Essential services" means that the facility must be capable of performing its continuous operations during and immediately after any natural disaster to maintain order in the City. In 1986, the California Legislature determined that buildings providing essential services should be capable of providing those services to the public after a disaster. Their intent in this regard was defined in legislation known as the Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "...designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds." Key building attributes that set this type of building apart from a standard building are the following:

Backup Emergency Power Redundant Communications Systems Stronger Structure: 50% increase in Seismic Design Forces when compared to a standard office structure. Not Located in a Flood Plain Increased Building and Site Security

The police station houses some functions that are critical to the basic safety and operations of a City, specifically in the event of an emergency. The following is a list of functions that occur in the current Santa Barbara Police Station:

911 Call Response Center

City's Criminal and DMV Data Storage Center Criminal Holding Cells Criminal Interrogation Rooms Chemical Weapons Storage Crime Scene Evidence Laboratory Secure Evidence Storage Facility Police Department Armory and Ammunition Central Communications Systems for Radio Communications Police Locker Rooms – Storage for Officers' Daily use Equipment Special Weapons and Tactics (SWAT) Team Supplies Public Access Lobby to the Police Services to Access Records and Pay Fines Booking

The intent is that these essential facilities will sustain minimal structural and nonstructural damage and therefore can be immediately occupied following an earthquake for emergency response. As the local component of the California Emergency Agency's emergency response network, the Santa Barbara Police Station is essential to the statewide continuity plan, which prepares for delivery of vital governmental services and operations under all conditions.

## I. C. Methodology

Over the course of the last decade, various building components and systems of the Santa Barbara Police Station have been analyzed by engineering and building system consultants as they relate to various proposed improvements to the building, or as part of the relocation feasibility study for the police facilities related to those improvements. This report presents the information provided by each of these building assessment reports, and combines them into a comprehensive summary of the building conditions so that informed decisions can be made about future improvements to the Santa Barbara Police Station.

Each of the building's major systems has been addressed separately in this report. Each section includes a summary of the system's current condition, and identifies recommended improvements to bring the system up to an acceptable level of performance. Also included are any indirect triggers, such as code requirements for additional improvements, replacement of systems and finishes that would be disturbed by another portion of the work, and remediation of hazardous materials that would be disturbed by this work.

Estimates of Probable Construction Cost for these specific improvements are extracted from these studies and combined to align with proposed building options in Section IV of this report.

## I. D. Connectivity of Proposed Improvements

Due to the age of the structure, the condition of the building infrastructure, the current code requirements, and the interconnectivity of each of the building components, many of the building systems cannot be upgraded without requiring other supporting systems to be upgraded.

As the overriding basis of this report, it was assumed that the primary objective of any improvements to the building would be to increase the seismic performance of the building to "Life Safety" levels as defined by the American Society of Civil Engineers in Standard Number 41 (ASCE 41). ASCE 41 defines a performance level of "Life Safety" as the condition where the post-earthquake structure remains stable and has significant reserve capacity, with hazardous nonstructural damage controlled.

Based on the recommendations of the seismic report, the proposed upgrades to the structure would be distributed throughout the building. This work alone cannot be performed due to disruptions to other building systems and conditions. The seismic work calls for strengthening work to columns, shear walls, floor and ceiling diaphragms, and the replacement of heavy ceilings in over 50% of the building area to improve the safety and function of the overall structure during a significant seismic event.

To perform the recommended seismic structural improvements, the following items would need to be addressed:

Partial lead and asbestos removal; Partial electrical system removal; Partial mechanical system removal; and Partial interior ceiling and partition removal.

Since the building is going to be isolated for the partial asbestos/lead removal directly required by the structural improvements, it provides and opportunity to remove all of the asbestos/lead from the building at one time. Since some of the mechanical equipment and duct work would need to be moved or altered to accommodate the proposed structural upgrade elements, it does not make sense to reinstall the existing obsolete equipment after the seismic work is completed, or to install new mechanical equipment to the remaining existing system that is non-functional.

Many of the ceilings will be removed per the recommendation of the structural engineer and this would provide the opportunity to replace the ductwork throughout the building so that the issue with the deteriorating insulation on the interior of the ductwork, and the lack of outside conditioned air could be

addressed. Reinstallation of lighting in the ceilings to be removed, and recircuiting for the new mechanical equipment will require the upgrade of electrical distribution components that are obsolete and do not have replacement parts. Emergency power system deficiencies would not be triggered by the proposed structural improvements, however it would be economically favorable to improve these systems in coordination with the other building system upgrades.

The Fire Department has determined that the proposed scope of the seismic upgrade will trigger the code requirement to install an automatic fire sprinkler system throughout the building.

The scope of the aforementioned work related to the structural strengthening of the building will trigger full Americans with Disabilities Act (ADA) compliance throughout the building as required by code in all areas of work. ADA compliance has many components (See Section III.H) however, the replacement of the doors, door frames and locksets throughout the building will trigger the need to bring the building up to modern standards for security as a part of this work.

The proposed structural improvements would also trigger hazardous material remediation clearance from the County of Santa Barbara Fire Department as a part of the permit to improve the existing building. The site has been identified as having petroleum contamination from a former leaking underground fuel tank, with a plume that extends under the existing building. Costs for the cleanup need to be considered in any future proposed scenario, including the sale of the building.

The following building system summaries, in Section III of this report, outline the specific condition of these systems and the recommended improvements. We will outline a range of comprehensive building improvement levels that take this interconnectivity of building systems into account.



## II. A. History of the Building and Police Dept. Evaluation Assessments

The existing police department facility was originally constructed in 1959. The building has been studied multiple times, starting in 1986, and common findings are as follows: the site lacks adequate parking and security, the site and building are not fully accessible to those with disabilities, the building is undersized to function as a centralized police station, and the building infrastructure is failing.

#### Project Background List:

The following is a list of previous studies, reports, meeting minutes, and memos prepared on the potential renovation of the SBPD available for reference:

1986-1991	Police Headquarters Facility Expansion Study: Enlarged Site Leach Mounce Architects
1986	Police Facility Considerations Santa Barbara Police Department
12/07/98	Site Needs Summary Leach Mounce Architects
12/15/98	Proposed Police & Fire Dept Administration Facility Remodel Agenda - Meeting Minutes 3 - Penfield & Smith
06/01/99	SB Police Facility Comparative Analysis: New vs. Remodel Penfield & Smith
06/01/99	Police Department Central Facility Cost Estimate Penfield & Smith
06/22/99	Memorandum: Proposed SB Police Facility Concept Proposed by Peter Ehlen
01/10/00	Police Headquarters – Need for Space Meeting Minutes Penfield & Smith
02/02/00	Police Headquarters Meeting Notes Penfield & Smith
02/16/00	Police Headquarters Legal Questions City of Santa Barbara Public Works Interoffice Memo
02/26/08	SB Police Station – Building HVAC Systems Study MEC – Mechanical Engineering Consultants
03/08	SB Police Station – Energy Power Evaluation JMPE Electrical Engineering Lighting Design

03/03/08	City of Santa Barbara: ADA Transition Plan Update Gilda Puente-Peters Architects
10/08	Keeping Santa Barbara In Shape: Infrastructure Financing Report for the City of Santa Barbara Infrastructure Financing Taskforce
11/13/08	Pre-renovation Asbestos and Lead Based Paint Survey (Revised)
12/15/08	Baseline Asbestos Air Sampling Report Criterion Environmental, Inc.

## II. B. Programmatic Use of the Building

#### **Buildings – Physical Configuration**

The existing Main Building on Figueroa Street consists of a basement, first floor, and partial second floor, totaling 24,164 net square feet. The Police Department also rents a 9,608 net square foot two-story Annex building at 222 East Anapamu Street. The Annex provides space for various administrative activities.

In the Main Building, the basement floor-to-ceiling height is 8'-8" which severely limits the ability to provide for proper HVAC ducting in the ceiling and house office-type functions. The optimum floor-to-ceiling height is 10'-6" for a building with an 8'-0" ceiling height.

#### Internal Organization

#### Basement Level:

Support infrastructure is located in the basement level such as the data center/sever room, IT room, the radio equipment room, the main mechanical equipment rooms, emergency generator room, and the telephone room. Officer readiness functions are also located here: the men's locker rooms, men's showers, fitness center, firing range, range master's offices, weapons storage, SWAT storage, emergency services storage, and the 911 call response center. The main meeting space, the Murphy Room, the motorcycle garage and the refrigerated evidence storage facility are also on this level.

#### First Floor:

The first floor houses the public interface services for the police department, with the public lobby, records department, parking department, photo identification services, and public interview rooms. The watch commander's offices and the report writing rooms for the patrol officers, the detective pool, and the narcotics detectives are housed on this level. Critical evidence functions are on this level such as the crime lab, the property/evidence storage room, the drug storage room, and the homicide storage room are housed on this level. Critical criminal booking functions are also on this level, such as the live scan identification station, the

holding cells, the polygraph room, the intoxilizer room, and the suspect interview rooms. Employee support services such as the break room, the women's locker room and showers are located on this level.

Second Floor:

The second floor of the police station houses the administrative offices and business center for the police department, with a small conference room.

Plans of the existing building (attached) delineate the 28 departments in both buildings. The plans are color coded to identify related departments and to show existing furniture layouts and sizes of each department.

#### Personnel

The Police Department main building currently accommodates 127 employees and the leased annex houses 55 employees. The buildings are operational 24 hours a day, 7 days a week. Many of the administrative support personnel only use the facility during typical business hours. However, various departments maintain shifts around the clock allowing for shared office space.

## II. C. Plans of Existing Facility and Site

(See attached)

Vicinity Map





EXISTING FIRST FLOOR PLAN

Attachment B



EXISTING SECOND FLOOR PLAN

Attachment C



CLOR	DEPARTMENT NAME	SIZE
A	ADMINISTRATIVE STAFF	2395 SQF
в	ADMINISTRATIVE SERVICES	2472 SQF
CI	PARKING DEPARTMENT	1015 SQFT
C2	RECORDS DEPARTMENT	1526 SQF1
D	DETECTIVES	1894 SQF1
E	PATROL / WATCH COMMAND	2245 SQF
F	EMERGENCY OPERATIONS CENTER	1004 SQF1
G	CRIME LAB	328 SQFT
н	HOLDING CELLS	767 SQFT
1	PROPERTY/EVIDENCE	1575 SQF1
J	NARCOTICS DETECTIVES	515 SQFT
ĸ	FURNITURE STORED LONG-TERM	
L	LIVESCAN	51 SQFT
M	POLYGRAPH	84 SQFT
N	MEN AND WOMEN'S LOCKER ROOMS	2929 SQF
0	FIRING RANGE	1995 SQF1
P	MOTORCYCLE PARKING	409 SQFT
Q	SWAT LOCKER/ARMORY/WEAPONS	221 SQFT
R	WORKOUT/WEIGHT ROOM	462 SQFT
5	RADIO RM/IT/SERVER/TELE/COMM	993 SQFT
т	911 CALL CENTER	819 SQFT
U	REFRIGERATED EVIDENCE STORAGE	147 SQFT
v	CHEMICAL WEAPONS	39 SQFT
W	FIREARMS/AMMUNITION	39 SQFT
X	I.T. DEPARTMENT	1183 SQFT
٢	BICYCLE STORAGE/MAINTENANCE	792 SQFT
Z	EXTERIOR PROPERTY STORAGE	
AA	VEHICLE COUNT	



Attachment D



A	ADMINISTRATIVE STAFF	2395 SQFT
В	ADMINISTRATIVE SERVICES	2472 SQFT
CI	PARKING DEPARTMENT	1015 SQFT
C2	RECORDS DEPARTMENT	1526 SQFT
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Z	EXTERIOR PROPERTY STORAGE	
AA	VEHICLE COUNT	

DEPARTMENT NAME

RM#	ROOM NAME	NET AREA
201	BEAT COORDINATOR	192 SFQT
202	TACTICAL PLANNING	109 SQFT
203	ADMIN SERVICES SGT	98 SQFT
204	D.A.R.E. OFFICE	112 SQFT
205	PERMITS	261 SQFT
206	COORIDOR	180 SQFT
207	CORRIDOR	165 SQFT
208	COPY ROOM/STORAGE	215 SQFT
209	TRAINING/RECRUITMENT	126 SQFT
210	TRAINING/RECRUITMENT	119 SQFT
211	STORAGE	279 SQFT
212	DIVISION COMMANDER	150 SQFT
213	ADMIN DIV SUPERVISOR	136 SQFT
214	ASSIST DIV COMMANDER	138 SQFT
215	PARKING STORAGE	17 SQFT
216	HALLWAY	260 SQFT
217	BRIEFING ROOM	234 SQFT
218	WOMEN'S RESTRM	65 SQFT
219	MEN'S RESTRM	72 SQFT
220	PARKING ENFORCEMENT	108 SQFT
221	PARKING PEO	115 SQFT
222	COMM. CLOS.	20 SQFT
223	OPEN CORRIDOR	153 SQFT
224	OPEN STAIRS	52 SQFT
225	ELEVATOR	39 SQFT
226	I.T. OFFICE	281 SQFT
227	CRIME ANALYSIS	93 SQFT
228	I.T. OFFICE	105 SQFT
229	I.T. OFFICE	128 SQFT
230	I.T. OFFICE	114 SQFT
231	I.T. OFFICE	129 SQFT

Attachment E



COLOR	DEPARTMENT NAME	SIZE
A	ADMINISTRATIVE STAFF	2395 SQFT
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CI	PARKING DEPARTMENT	1015 SQFT
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X	I.T. DEPARTMENT	1183 SQFT
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Z	EXTERIOR PROPERTY STORAGE	
AA	VEHICLE COUNT	





Attachment F





Attachment G

## III. A. Structural Analysis of Building

#### 1. Performance of Existing Structural System

The performance of the existing structural system in the police station building was evaluated by Coffman Engineers in October of 2010. This is a summary overview of Coffman Engineering's findings.

The existing Santa Barbara Police Station Building was designed and constructed in the 1950's using the construction practices of that time. The building is a concrete structure with interior and exterior perforated shear walls. On the first floor there are several discontinuous shear walls supported by the concrete girders and concrete columns. The shear resisting elements of the building were designed before modern detailing and analysis techniques were developed and they are not in compliance with modern building codes.

The building is located near two earthquake faults and the potential ground motion from activity on these faults could result in poor seismic performance of the building during an earthquake event.

#### a. Results of Destructive Testing

Destructive testing on the concrete and reinforcing steel was performed under the guidelines of ASCE41. The concrete samples found a wide range of compressive strengths and the mean minus one standard deviation value of the findings was 2,523 psi. The concrete design values used in the study are appropriate for Basic Safety Objective (BSO) of Life Safety Building Performance Level (LS) at BSE-1. However, the large variations in concrete strength found through these tests (4,815 to 2,196 psi) would not be appropriate for the Enhanced Rehabilitation Objectives of Immediate Occupancy at BSE-1. Additional testing could be performed at a later time to lower the coefficient of variation of these tests. Structural rebar samples were consistent in their yield values (51.2 and 51.2 ksi) and are consistent with the original design calculations.

#### b. Results of Linear and Non Linear Structural Analysis

The existing structure was computer modeled using a Linear Dynamic Procedure (LDP), based on ASCE41, simulating difference performance and earthquake hazard levels. This linear analysis identified wall piers, spandrels that were severely overstressed in shear and flexure. This LDP model was used to understand the dynamic behavior of the structure and to act as a benchmark for elevating the results of the Nonlinear Static Procedure of ASCE41. The final analysis shows that the retrofitted building would be able to achieve an enhanced Life Safety performance level and approach an Immediate Occupancy performance at 2/3 MCE (maximum credible event) event levels. A proposed retrofit scheme of infilling strategic openings in existing shear walls, shotcreteing shear walls for added strength, using Fiber Reinforced Polymers to strengthen columns and spandrels, addition of out of plane anchorage to the second floor roof, and infilling the notch in the first floor roof to complete the roof diaphragm was developed based on the linear analysis and were tested with the nonlinear analysis of the computer model.

#### c. Structural Performance of Non-Building Elements

The report recommends removal of the heavy suspended plaster ceilings. They were constructed without sway bracing or compression struts and pose a significant falling hazard during a major earthquake. The failure of the ceilings could block egress and cause injury to occupants. This scope of recommended work greatly increases the footprint of the structural work in the building.

#### d. Anchorage of Equipment and Architectural Elements

The report has noted that the evidence storage system, bookcases and other furniture items are not attached to walls or braced to the structure and pose an additional hazard in the event of a seismic event that could also block means of egress and cause injury to occupants.

#### 2. Recommended Structural Improvements and Future Retrofit Scenarios

The proposed structural improvements as outlined in the Coffman Engineers Report will provide enhanced "Life Safety" to occupants while also reducing earthquake damage to the building. However, earthquake damage to the retrofitted structure is anticipated due to the age, original design and concrete reinforcing detailing of the original structure. The "Immediate Occupancy" level of seismic performance requires very strict limits on damage. The report states that a retrofit scheme that would achieve the "Immediate Occupancy" seismic performance on this 1959 building, given some of the existing detailing, is impractical. The heavy plaster ceilings should be removed, and equipment and furnishings should be braced to reduce hazards in the event of an earthquake.

## III. B. Mechanical System Analysis

#### 1. Performance of Existing Mechanical Systems

The performance of the existing electrical systems in the police station building was evaluated by MEC Mechanical Engineers in February 2008, as a study related to infrastructure upgrades being considered as a part of the locker room renovation project. This is a summary overview of MEC's findings.

a. Energy Efficiency

The main chiller and the main boiler are in poor condition and are oversized for the building area they are currently serving, resulting in poor efficiencies and continued maintenance. Over the years, as the existing centralized system began to fail, small independent package units were installed as an affordable way to maintain minimum levels of climate control in the building. These additional systems have caused the chiller to freeze up on occasion calling for additional maintenance. Overall the existing HVAC system configuration is very inefficient compared with modern systems, and the overall performance is compromised by the redundant systems.

#### b. Occupant Comfort Performance

Fresh air and temperature control are poor in most areas of the building due to antiquated controls, poor ventilation rates, and improper air balance. Maintainability is also poor due to the multiple system types and improper sizing and balancing. The large air handler in the western mechanical room provides unconditioned outside air to the basement, including the men's locker rooms and shower areas, resulting in poor temperature control. The Murphy Room in the basement has two undersized ceiling mounted units that condition and recirculate the air in the room. Undersized and unconditioned fresh air is provided to this room through a separate system, resulting in inadequate fresh air delivery when the room is fully occupied. During the recent fires, when the Murphy Room was serving as the Emergency Operations Center and it was filled to capacity, portable air conditioners had to be temporarily utilized so the room could continue to be used.

Interior mechanical ductwork insulation from unit AH-1 has deteriorated in some areas where it blows out of the supply registers onto the desks and ceiling surfaces.

The ceiling space is used as a return air plenum in portions of the building. This plenum has surfaces where non-friable asbestos is present, which does not pose a heath hazard if undisturbed. Seismic work is required in these areas, which will disturb some areas of asbestos, and require its remediation. This condition would complicate the occupancy of the building during construction.

#### c. Recommended Mechanical System Improvements

The report recommends demolition of the existing chiller, boiler, rooftop condenser, and associated air handlers and piping. They recommend installing two new air cooled high efficiency chillers, two high efficiency boilers, one dual duct air handler, new fan coils, and new ductwork where insulation has deteriorated. A new exhaust system should be installed to adequately ventilate the basement level locker rooms and restrooms. The obsolete controls should be replaced with a modern direct digital control system for the entire building. New return ducts will be installed to eliminate

the use of the return air plenum. The two chiller system will provide some redundancy if one of the chillers is down for maintenance, the other chiller could be used to partially serve the building. The proposed new mechanical system has been calculated to be a minimum of 25% more efficient than the existing system.

## III. C. Plumbing System Analysis

#### 1. Performance of Existing Plumbing Systems

The performance of the existing plumbing systems in the police station building was evaluated by Poirier + Associates and MEC Engineering in March 2008, as a study related to infrastructure upgrades being considered as a part of the locker room renovation project. This is a summary overview of their findings.

#### a. Water Conservation

We identified that the majority of the existing plumbing fixtures throughout the building did not meet current City of Santa Barbara water conservation standards, with the exception of the recently remodeled public lobby restrooms. Water conservation performance could be improved with the replacement of the fixtures with higher performing current models.

#### b. Head Clearances and Abandoned Plumbing

When the original police station was constructed, the basement level was intended as storage space and the plumbing was suspended off the underside of the first floor structure. Over the years this space has been converted to occupied space, and this suspended plumbing creates head clearance issues throughout the basement level, particularly in the men's locker rooms. Some of this overhead piping is no longer in use.

#### c. Backwater Valve

The building was not originally designed with a backwater valve as required by current building codes. If there were a backup of the City sewer system, the sewer could overflow into the basement level. Of concern is that the sewer exits the building near the 911 response center, and if a sewer backup were to occur, it would most likely happen in this vicinity.

#### d. Seismic Shut-Off Valve

The natural gas service to the building does not have a seismic shut-off valve to automatically turn the gas off in the event of an earthquake.

#### e. ADA Compliance

Many of the existing plumbing fixtures and restroom layouts do not meet the ADA requirements and would need to be replaced or relocated to meet the specific clearance requirements of the access code.

#### 2. Recommended Plumbing System Improvements

The existing plumbing fixtures should be replaced with water conserving type fixtures as the building is remodeled or disturbed by renovation projects. Abandoned piping should be removed, and existing overhead piping in the basement should be relocated below grade in areas to be renovated. A backwater valve should be installed at the sewer connection to the street, and upper level sewer piping should be isolated from the basement plumbing to avoid a backup overflow into the basement. A seismic automatic shut off valve should be installed on the gas service line.

## III. D. Electrical System Analysis

#### 1. Performance of Existing Electrical Systems

The performance of the existing electrical systems in the police station building was evaluated by JMPE Electrical Engineering in March 2008, as a study related to infrastructure upgrades being considered as a part of the locker room renovation project. This is a summary overview of the findings.

#### a. Transformers, Panels and Switchgear

JMPE found that the main switchboard, the transformer and the distribution panel are obsolete and no longer have replacement parts available. The older subpanels throughout the building are obsolete and have no available replacement parts.

When the lobby was remodeled in 2004, there were numerous problems with the existing electrical system. In the end, the subpanels in this area were replaced due to the lack of available parts.

#### b. Emergency Power Systems

The Combined Communications Center, the main data room, and some other minor areas of the building are on emergency power fed by two gasoline powered generators. It is essential to have emergency power to the whole facility to allow continuous police service in the event of a disaster that resulted in an electrical failure. The existing emergency transfer switches are old and undersized to serve the whole facility.

#### c. Energy Efficiency

The lighting is a mixture of original fixtures of marginal efficiency. The lighting should be upgraded in areas to be disturbed by the seismic work, and ceiling removal. The overall electrical savings for upgrading the lighting throughout the building would result in significant savings. JMPE found that the transformer serving the building is very inefficient, with a loss rate of approximately 5% of the power going through the transformer.

#### 2. Recommended Electrical System Improvements

Replace the main switchboard, the distribution panel and provide a new energy efficient transformer. Replace the emergency transfer switch, install a larger diesel generator and put the whole police station on emergency back-up power. Replace the obsolete panels, the motor control center and all obsolete subpanels throughout the police station. (Please note: upgrades to the mechanical systems in the building will require some of these infrastructure upgrades due to the obsolete nature of the electrical delivery systems.)

## III. E. Communications Infrastructure Analysis

#### 1. Performance of Existing Communication Systems

The performance of the existing communication systems in the police station building was evaluated in 2009 as it related to the logistics regarding temporary relocation of the police functions during the proposed renovation of the SBPD. As this work only related to the costs associated with the relocation of these communication items, additional discussions with City Facilties personnel were held, regarding the condition of the existing communications systems. The following City staff were contacted regarding these building systems: Calli Marquez, Radio Communications; Kim Frith, Fiber Optics; and Jim Fink and Russ Douglas, telephone systems. This is a summary overview of these discussions and findings.

The City's Combined Communications Center, located within the Police Department Headquarters, is made up of six individual "stations". Three or four of these are constantly in operation with the remainder available for use during emergencies. Stations each consist of a CAD System with three computer monitors and one PC, a Radio Control System with one monitor and one PC and a 911 Call-taking System, also with one monitor and one PC. The CAD System utilizes fiber optic cabling and is maintained and updated by Police Department Information Technology (IT) staff. The Radio Control System operates on standard network cable and is maintained by Public Works Electronic Maintenance staff. And, finally, the 911 call-taking system relies upon a service contract with a vendor such as AT&T or Verizon and utilizes proprietary cabling.

The existing radio communications system is a functional hardwire control system and the current radio base station is 12 years old. The backup units to the main radio equipment are old and obsolete. This equipment would only be used in the event of a failure of the primary radio equipment. The police communications system will probably convert to a narrow band system in the next few years. The system when replaced will have microwave links rather than wire control. The system currently lacks a logging recorder for the 911 system of

calls received and dispatch. The funding for these system upgrades may be coming from another source through the police department.

The antennas on the roof of the police station allow the radio system to communicate with the officers around the City. Radio coverage has been reduced by the construction of the large buildings to the southwest of the SBPD building, as they have blocked direct antenna connection with the SB airport. A larger taller antenna is needed to regain that direct radio coverage. The satellite dish on the roof was installed for police training, and is no longer in use. There is an antenna on the roof of the Annex that is currently being used to reach the Airport and the Hope Reservoir antennas. If the Annex building is not going to be used by the SBPD, these antennas will need to be relocated or replaced onsite.

The phone system is old but operational, and serviceable. A new phone system would cost around \$40,000 but is not needed at this time. Existing individual phones throughout the police station are also in working order. Each new phone would cost \$150.00 each if replaced. There is an abundance of abandoned telephone and communication wiring located above the ceiling throughout the building.

The fiber optic system that connects the SBPD with the City fiber network, via fiber running under Figueroa Street to Anacapa Street, is new. It terminates in the basement level near the radio room. It could be extended to another termination point in the building if the data center were to be relocated to another part of the building in the future. The fiber optic extends to the Annex building and would probably be disturbed if any site work occurred where this line is running between the two buildings.

#### 2. Recommended Communication Infrastructure Improvements

Remove the abandoned communication wiring above the ceiling in areas being disturbed by construction, and remove the unused satellite dish on the roof. If exterior building alterations are proposed, work with the City radio department to find a suitable location for a new antenna that can reestablish adequate radio coverage. The existing fiber optic terminal in the basement can be maintained and extended to the new data center and 911 center locations, if relocated within the building. The radio base station, radios, phone and phone system can continue to be used, and can be replaced under separate funding sources in the future.

## III. F. Automatic Fire Protection System Analysis

1. Performance of Existing System

There is no fire sprinkler system installed in the existing Police Station building. Current California Building Code, Municipal Code 8.04, and California Fire Code would require a new building of this size to be fully protected with a fire sprinkler system. Since the existing building predated the fire sprinkler requirements, the building can remain without fire sprinkler protection as long as no significant upgrades are made.

#### 2. Requirements for Installation of Automatic Fire Protection

According to Municipal code 8.04 as part of the City's amendments to the 2007 California Fire Code, as of September 11, 2009, automatic fire sprinklers will be required throughout a commercial building when a remodel involves greater than 50% of the existing floor area of the structure, or if there is an addition to any commercial building other than a single family residence (R-3). Floor area computations shall be counted in the aggregate for remodels from the effective date of this ordinance (9/11/09).

#### 3. Recommended Fire Protection System Improvements

The extent of the proposed seismic strengthening of the building would trigger the municipal code's requirement for a building-wide fire sprinkler system. The installation of a fire sprinkler system would reduce the amount of structural damage to the building in the event of a fire. Non-water type automatic chemical fire suppression systems could be installed in the data center to reduce potential loss of data in the event of a fire.

## III. G. Asbestos and Lead Based Paint Analysis

## 1. Summary of Asbestos/Lead Report

Criterion Environmental, Inc. (CEI) performed a pre-renovation survey of asbestos containing materials and lead based paint in the police department building in October & November 2008. Following is a summary of CEI's findings:

## a. Asbestos Containing Materials (ACM)

- 1) ACM found in 44 rooms, clos. & corridors, 47% of bldg. SF
  - a) Friable (in 29 rooms, clos. & corridors)
    - i. Thermal System Insulation (TSI) on Pipe Elbows
    - ii. "Popcorn" Ceilings
  - b) Non-Friable (37 rooms & closets)
    - i. Floor Tile
    - ii. Floor Tile Mastic
    - iii. Cove Base Mastic
    - iv. Roof Penetration Mastic
    - v. Exterior Window Putty

2) No Asbestos Detected (NAD) – 25 rm., clos. & corr., 53% of bldg.

## b. Lead Paint

- 1) CEI found positive lead samples in 9% (23 out of 244) of the samples shot. Positive lead samples were found in 9 rooms (17% of bldg. SF) and taken from the following building components:
  - a) Pipe
  - b) Stair Tread
  - c) Stair Stringer
  - d) Handrail
  - e) Ducting
  - f) Shielding (Range)
  - g) Framing
  - h) Porcelain Sink
  - i) Wall Tile
  - j) Wood Eaves
  - k) Concrete Floor

## 2. Recommended Remediation

The above referenced materials are commonly found in older buildings like the Santa Barbara Police Station building. As long as the materials are not disturbed they present a low risk to occupants. Based on the current scope of the proposed seismic retrofit, the asbestos should be fully removed.

See Appendix III.G for drawings indicating the specific locations of the hazardous materials.

## III. H. Accessibility Analysis

1. Summary of Accessibility Report

Gilda Puente-Peters Architects (GPPA) performed an accessibility survey in the police department building July 9, 2007. A full range of ADA non compliance issues were identified, from minor compliance issues such as nonconforming signage which are easily addressed, to major compliance issues such as non accessible levels and rooms, which would require major alterations to accommodate. The following is a summary of GPPA's findings:

## a. Survey Areas

- 1) Public Right of Way 9 locations non-compliant.
- 2) Site 10 locations non-compliant.
- 3) Building 112 locations non-compliant.
- b. The following issues were identified in the above 3 survey areas:

- 1) slopes & cross-slopes (ramps, sidewalks, driveways, path of travel)
- 2) detectable warnings
- 3) signage
- 4) protruding objects
- 5) handrails
- 6) uneven stair riser & treads
- 7) contrasting color surfaces/striping
- 8) mounting heights
- 9) nonconforming elevator
- 10) 3rd floor wheel chair access
- 11) narrow & heavy Doors & gates
- 12) door hardware
- 13) narrow Corridors
- 14) Maneuverable clearances & knee clearances
- 15) Drinking fountains
- 16) Restrooms & Locker Rooms
- 17) Assistive Listening Devices

#### 2. Recommended Remediation

In an email dated 9/22/2010, Inspection/Plan Check Supervisor, Chris Hansen, summarized the City of Santa Barbara's requirements for ADA compliance of the facility with the following guidelines:

- a. Remove all barriers in all areas being remodeled.
- b. Remove barriers in areas that support remodeled areas (i.e. entrance serving remodeled areas, route to remodeled areas, restrooms serving remodeled areas)

Based on the scope of the proposed seismic structural work, the entire building will need to be brought up to ADA compliance.

## III. I. Parking Analysis

#### 1. Existing Parking Provided

The Police Department currently has 85 parking spaces on site and 35 spaces provided at the adjacent "Annex" property.

#### 2. Parking Demand Calculations

a. <u>Required Parking per Zoning Ordinance</u>

According to the City of Santa Barbara Zoning Ordinance, the SBPD is located in the Central Business District which requires 1 parking space per 500 square feet of net floor area. There is also a reduction for buildings over 10,000 SF but less than 30,000 SF, which allows for 90% of the required parking spaces to be provided. Main Building: 24,164 net sf/500 sf = 48 spaces X 90% = 44 spaces Annex Building: 9,608 net sf/500 sf = 20 spaces Total for existing facility: 64 parking spaces required

Although compliant with the minimum parking requirements per the zoning ordinance, the facility requires additional parking to function smoothly. The police department has 50 city vehicles, and provides no onsite public parking for visitors.

#### b. Police Station Parking Demand

The Facility Expansion Study, done in 1986, determined that 225 parking spaces would be needed. Another study, the Site Needs Study dated 12/7/1998 by Leach Mounce Architects, determined that 248 parking spaces would be required to provide for the vehicles and trailers in the Police Department's fleet plus additional parking for employees and visitors.

#### 3. Recommendations

The actual functional demand of the police station operations exceeds the required parking by the City of Santa Barbara Zoning Ordinance. Additional parking should be provided onsite or nearby to accommodate the actual parking needs of the facility. The only way to accommodate this additional parking with the existing building footprint would be through the construction of a parking structure on site.

See attached for existing on site parking and proposed parking structure layouts.





## III. J. Security

#### 1. Site Access Control

Parking for Police vehicles and employees is currently unsecured, and can be accessed by anyone. The existing site has access from Figueroa (two points) and Anapamu Streets (one point), but is not fenced, controlled or monitored. There are no public parking accommodations located on site. A design to install automatic security gates with driveway loops at the three access points to the parking lots was developed and was approved by the Historic Landmarks Commission (HLC) in 2007 (reference Appendix III.J), however it has never been actualized due to funding.

#### 2. Building Access Control

The existing police station has many different types of locksets and keyways. The original locksets are not easily retrofitted with a modern lockset due to the unique door boring configuration of the existing hardware. In some cases the replacement of the lockset would require the door and frame to be replaced as well, due to the unique hardware used in the original construction. The obsolete locksets do not conform to ADA in most instances, and do not have new replacement parts when they break down. City maintenance has resorted to cannibalizing locksets that are replaced for an ongoing supply of parts to keep the stock of obsolete locksets in working order. As a result of the various brands and types of locksets used throughout the building, there cannot be a master keying system for the facility, and most locks have unique keys. Modern facilities of this type have access control locksets with an access card or pocket held device to control access to various areas of the building, and to record movement of personnel through the facility.

#### 3. Recommended Security System Improvements

Access to the area must be controlled and there must be at least two means of entry and exit, preferably from two separate streets. The parking area must be well lit, fenced, accessible, and monitored for the protection of the police equipment and the safety for the employees who must come and go during the hours of darkness. A citizens parking area should be provided near the front door, which should also be well lit and monitored for the safety of the citizen.

The installation of the previously designed and HLC approved automatic gates in conjunction with the installation of additional lighting and video monitoring of the parking lot would improve the security of the site. When the doors, hardware or door frames are replaced to meet ADA requirements, a centralized access control system that can allow and restrict access throughout the building should be installed.

## III. K. Hazardous Materials Remediation - Abandoned Gas Tanks

#### 1. Environmental Assessment Findings

In 1989, underground fuel tanks were removed from the site. The tanks were leaking and minor remediation work was performed at the time of removal, and the site has been under observation by the city's consultant. Recently in August of 2010, another environmental assessment was conducted by Rincon Consultants, Inc. at the police station site. The assessment was based on 4 borings and obtaining soil & groundwater samples. The following is a summary of their findings:

The site has substantial soil and groundwater contamination in the gasoline range in the driveway, near where impounded bicycles are stored. The concentration of contaminants ranged from 210 times to 29,0000 times higher than the regulatory concentration level set by Santa Barbara County Fire Department. The highest concentrations of contaminants in the soil were found at 25 feet below grade.

#### 2. Summary of Recommended Remediation

Rincon Consultants, Inc., provided two potential options for remediation:

- a. A Soil Vapor Extraction and Air Sparge System (SVE)
- b. Excavation with a screw-auger drill rig and injection of material to improve the degradation of the contaminants in the groundwater.

Additional options may be considered, including delineation of the contamination and leaving it in place. A feasibility study would be required to evaluate the best remediation technique. Approval of the technique by the Santa Barbara County Fire Department would also have to be obtained.

## IV. A. Building Improvement Costs

#### **Overview of Scenarios**

Building Improvement costs have been provided for three options for the building and site.

#### Option 1:

This scenario includes the seismic renovation of the existing 24,000 s.f. building along with the asbestos removal, mechanical, electrical and plumbing upgrades, ADA improvements, hazardous soil remediation, security improvements, new fire sprinklers and the relocation of the police department staff for two years during

construction. The existing substandard ceiling height in the basement level would remain.

Total SBPD Building Area: 24.000 s.f. Total Cost: 25.7 million.

#### Option 2:

This scenario includes the seismic renovation of the existing 10,000 s.f. two story, front portion of the building along with the asbestos removal, mechanical, electrical and plumbing upgrades, ADA improvements, hazardous soil remediation, security improvements, and the relocation of the police department staff for two years during construction. The rear portion of the building (14,000 s.f.) would be demolished and new 30,000 s.f. building would be constructed in its place, meeting all current codes. A new 107 space parking structure would be constructed.

Total SBPD Building Area: 40.000 s.f. Parking Structure: 29,000 s.f. 107 cars Total Cost: 51.1 million

Option 3:

This scenario includes the complete demolition of the 24,000 s.f. police station building, and the relocation of the police department staff for two years during construction. A new 40,000 s.f. building would be constructed in its place, meeting all current codes. A new 107 space parking structure would be constructed. Total SBPD Building Area: 40.000 s.f.

Total Cost: 48.6 million

## IV. B. Comparative Costs of New Facilities

The following Comparative Costs are taken form Reed Construction Data and other sources regarding other contemporary police stations built in California in the last few years. These costs represent the hard costs of construction and exclude moving costs and related soft costs (design and engineering):

#### Montclair Police Facility:

Completed:	2008
Total Building Area:	39,610 s.f.
Total Construction Cost:	\$27 Million
Cost per Square Foot:	\$681.00

#### National City Police Headquarters Remodel:

Completed:	2008
Total Building Area:	23,760 s.f.
Total Construction Cost:	\$13 Million
Cost per Square Foot:	\$547.00

#### Rampart Police Station, Los Angeles:

Completed:2009Total Building Area:53,000 s.f. + 85,000 s.f. parking garage.Total Construction Cost:\$35 MillionCost per Square Foot:\$660.00

#### 20<sup>th</sup> Area Police Station, Los Angeles:

Completed:2004Total Building Area:62,000 s.f.Total Construction Cost:\$34 MillionCost per Square Foot:\$548.00

The range of the square foot costs range from \$275.00/s.f. to \$681.00/s.f.

## IV. C. Temporary Relocation Costs

The estimates for the building improvement costs for all three options include police department relocation for a period of two years. This accounts for 15 to 18 months for construction activities and a 6 month buffer for relocation efforts and remediation work.

Whether the building is renovated or demolished and a new building is built in its place, the day to day operations of the police department will need to be relocated to accommodate the seismic retrofit work, related asbestos removal, and building system construction. We have included moving the majority of the police department operations to new leased space offsite with a furniture rental to minimize the impact of the move on operations. Some temporary trailers might be used to maintain a police presence at the site as they have done in the past during construction, as well as the continued use of the annex structure to house some police department functions. After the various options have been constructed, the police personnel would be moved back into the police station building.

Option 1 would renovate the existing 24,000 s.f. police station and reuse the furniture currently in use. The existing furniture would be stored during construction and relocated after the building improvements have been completed.

Option 2 and 3, the partial or complete reconstruction of the building to a total of 40,000 s.f., would provide new furniture for the building prior to personnel moving back in. Pricing for these moves and new equipment are included in the various building improvement costs.