

Section 4 **Development Objectives**



Fig. 4-1
Current Potrero Campus boundaries

Overview San Francisco General Hospital Medical Center (SFGHMC) does not foresee the need for future land acquisitions or to expand the Potrero Campus beyond its current boundaries. SFGHMC does have plans however to enhance the emergency generator power capacity, to construct and operate a medical helipad on the rooftop of the existing Main Hospital building and to build a new acute care hospital in compliance with California Senate Bill 1953 inside the Potrero Campus and remodel the existing Main Hospital building. These three development plans are described in detail below.

MEDICAL HELIPAD

BACKGROUND

SFGHMC has proposed to construct and operate a medical helipad on the roof of San Francisco General Hospital (SFGHMC) in order to mitigate patient care and transport vulnerabilities identified in The City and County of San Francisco Trauma Care System Plan (2001).¹ The medical helipad would be licensed by the California Department of transportation Division of Aeronautics and its airspace use approved by the Federal Aviation Administration (FAA). SFGHMC will not own or operate a medical helicopter service nor will it base a medical helicopter or its crew at the Medical Center.

In August 2001, the San Francisco Health Commission approved the City and County of San Francisco Trauma Care System Plan. Upon approval of the Trauma Plan, The San Francisco Health Commission requested that SFGHMC conduct a thorough and objective evaluation of the need for and feasibility of consistently available air access to San Francisco General Hospital. The SFGHMC Air Medical Access Needs and Feasibility Study ² was approved by the Health Commission on March 4, 2003. This report documents the medical need for helicopter access to the City and County of San Francisco and to its only Trauma Center. The report also concluded that it is structurally feasible to construct a medical helipad on the roof of the main hospital building on the SFGHMC Campus located at 1001 Potrero.

The California EMS Authority approval of the City and County of San Francisco Trauma Care System Plan was also required. In November 2001, the Authority approved the Plan while commenting that “San Francisco may also wish to expedite its designation of a helipad so that patients may be expeditiously transported to an appropriate facility”.³

Level I Trauma Center with helipad H
 Santa Clara Valley Medical Center
 Stanford Medical Center

Level I Trauma Center without helipad ●
 San Francisco General Hospital

Level II Trauma Center with helipad H
 Eden Medical Center
 John Muir Medical Center
 San Jose Medical Center
 Oakland Children's Hospital

Level II Trauma Center without helipad ■
 Highland General Hospital

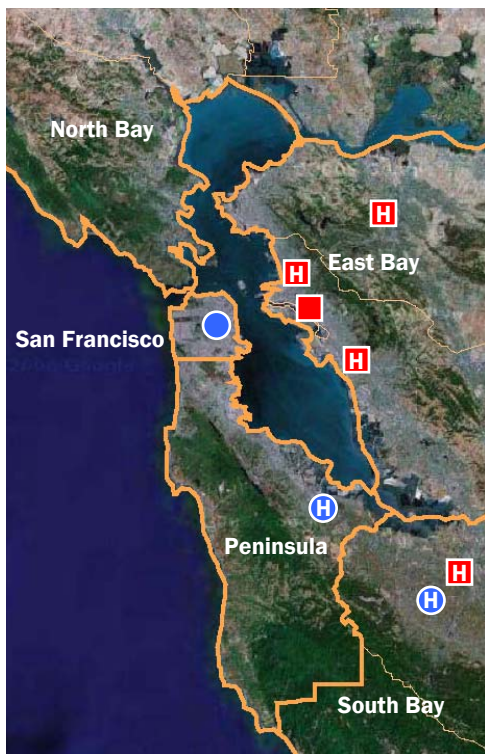


Fig. 4-2

Regional map locating Level I & II Trauma Centers

Neighborhood concerns over noise, safety, and commercial helicopter utilization have been recorded since emergency medical use of helicopters was first studied in San Francisco in 1983. The need for and feasibility of air medical access within the City and County of San Francisco has been addressed by at least four commissioned reports in the past twenty-three years.⁴ All of these reports supported the emergency medical use of helicopters and concluded that there was, in fact, a need for this crucial service.

Emergency medical transportation to and from SFGHMC is currently limited to ground ambulance via surface streets and bridges. This creates a vulnerability in the City's trauma care system.

The ability to provide timely access to Trauma Center care is compromised by lack of air access. Ground access routes are subject to significant delays due to traffic congestion on surface streets and freeways. Transfers of patients to and from other regional facilities would be limited by delays from bridge traffic, and could be accommodated only under unpredictable timeframes. Because the helipad's proximity to trauma is critical, the City will be studying, as part of the SFGHMC programming effort and EIR, whether or not the helipad should be relocated to the new acute care hospital or whether it's adequate to just link the two buildings. If a decision is made to move the helipad to the new acute care hospital, the original helipad location would be decommissioned. There will only be **one** operational helipad at the SFGHMC Potrero Campus.

In the event of multiple casualties, the trauma capacity of SFGHMC might be exceeded, and there would be no reasonably acceptable method to transport critically injured patients to other trauma centers in the region.

San Francisco is the only major city in the United States that lacks direct air medical access. The American College of Surgeons Committee on Trauma cited SFGHMC Trauma Center's lack of a helipad as a facility "weakness" and recommended in their site survey report the development of air medical access in order to allow tertiary care to critically injured patients.⁵

PROJECT DESCRIPTION

Overview The San Francisco Department of Public Health proposes to construct and operate a medical helipad on the rooftop of the existing Main Hospital building at the SFGHMC campus, located at 1001 Potrero Avenue. The helipad will consist of an approximately 3,000 square foot helipad platform installed over the existing roof of the C wing of the Main Hospital (southwestern wing). Other improvements will necessary to include helipad lighting, fire suppression system, installation of wind sock, construction of a ramp from helipad to roof surface and improvements to east elevator bank allowing two elevators to access the roof for rapid patient transportation to the ICU, OR and Emergency Department

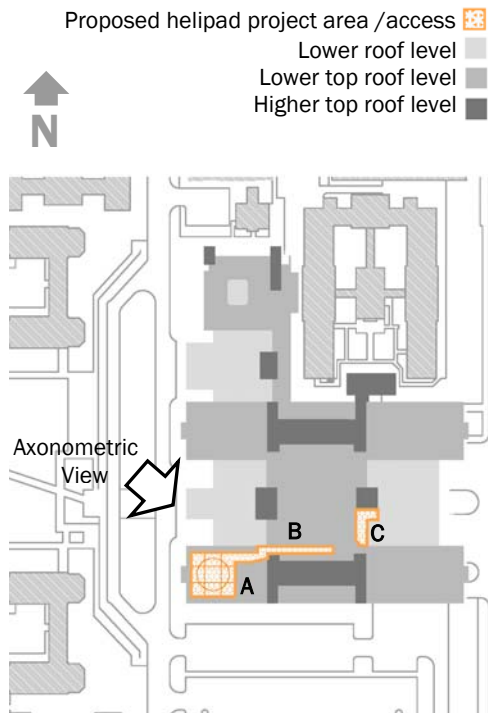
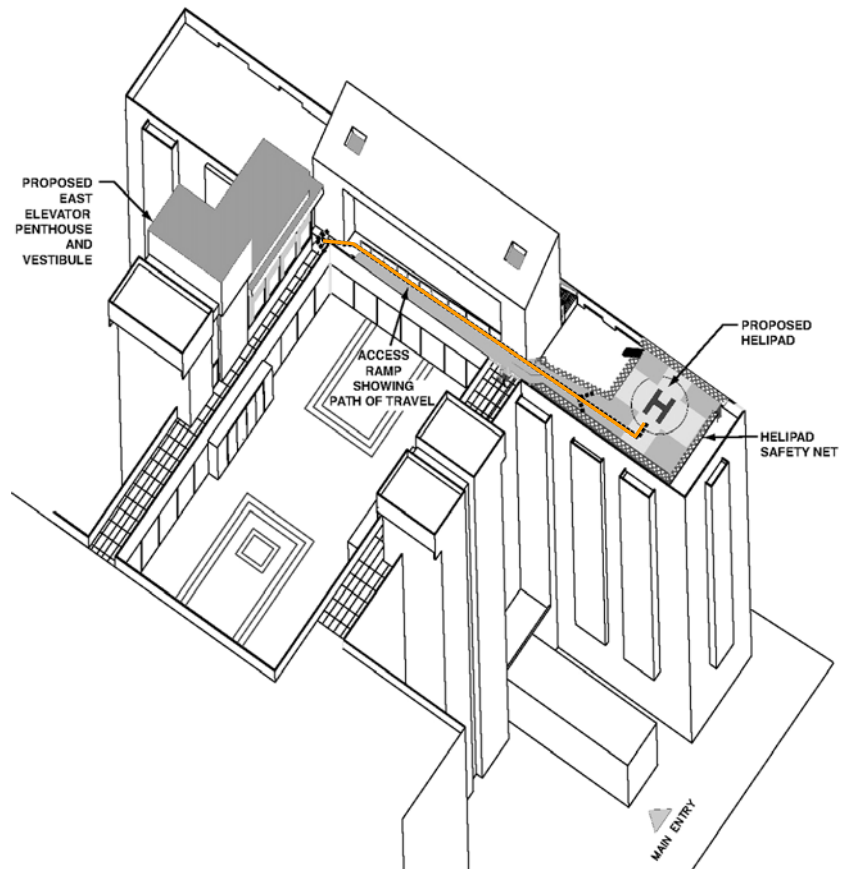


Fig. 4-3

Above: Roof plan of proposed helipad platform (A), walkway (B) & elevator access (C)

Fig. 4-4

Left: Axonometric view of proposed helipad platform on roof of existing building 5 (Main Hospital Building)



Project Objectives The objectives for the proposed SFGHMC medical helipad project are as follows:

- Mitigate vulnerabilities identified in the City & County of San Francisco Trauma Care System Plan by ensuring that everyone who lives, works and travels to San Francisco will have consistent access to rapid life-saving trauma care at all times because the SFGHMC Trauma Center will be accessible by both ground and air ambulances
- Participate in a regional trauma care system in the event of a large scale multiple injury incident or disaster by providing rapid transfer of severely injured people either into SFGHMC from other parts of the Bay Area or transfer from SFGHMC if the hospital was at patient care capacity
- Provide for the rapid transfer by air transport for a limited number of very young injured children [infants, toddlers, young children] to a pediatric trauma center
- Provide expertise in trauma care to lower level trauma centers and community hospitals in the west and north bay areas for

patients meeting Level 1 Trauma Center transport criteria

- Add SFGHMC to the Bay Area emergency medical services air catchment region in order to save critical time for patients who are now flown away from SFGHMC to other regional centers even though SFGHMC is the closest Trauma Center

Project Schedule A detail project schedule for this plan development has yet to be developed, the following however is a preliminary summary schedule identifying all major milestones:

- Planning and Programming Phase: **1 year**
- Design, EIR and Construction Documents, State Agency Approvals (Office of Statewide Health Planning and Development), Bidding and Negotiations: **2 years**
- Construction and Operational Startup : **1 year**

NEW EMERGENCY GENERATOR CAPACITY

BACKGROUND

The driving factors for this work are twofold; (1) the immediate need to replace the steam turbine driven generators due to their reliability concerns and (2) a need to develop a multiyear infrastructure replacement funding strategy. The SFGHMC Central Plant has experienced a number of catastrophic failures of these generators. It is critical that reliable emergency power is available to SFGHMC when the normal power system is down to maintain the operation of patient care and critical services.



Fig. 4-5

View looking northeast from 22nd Avenue towards the Service Building currently housing the existing steam turbine driven generators.

PROJECT DESCRIPTION

Overview The San Francisco Department of Public Health proposes to enhance the emergency power capacity available for the Potrero Campus. This plan development could involve the construction of a new utility service building, the construction of a new utility yard or the remodel of the existing Service Building to house new emergency generators and associated switchgear. Emergency Power Capacity is anticipated to be provided diesel generators and their associated emergency power switchgear and battery rack. The generators shall be located in a rated structure per code requirements.

Project Schedule Because this plan development is still in its initial planning phase and lacks any specificity, a project schedule has yet to be developed.

NEW ACUTE CARE HOSPITAL*BACKGROUND***Fig. 4-6**

View looking south towards the Main Hospital building

Overview In 1996, California Senate Bill (SB) 1953 was passed as an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act (Alquist Act) enacted in 1973. The intent of the original act was to ensure that acute care hospitals remain functional after a major earthquake. The Alquist Act requires all general acute care hospital buildings to meet explicit seismic safety standards by either retrofitting existing buildings or electing the option, provided by SB 1801 (Speier) adopted in 2000, to rebuild a new hospital building by 2013. If hospitals fail to comply with these regulations, they will have to close their acute care facilities after 2008.

In 2000, the San Francisco Department of Public Health (SFDPH) commissioned a seismic evaluation study which concluded that the Main Hospital building at SFGHMC has significant seismic deficiencies and that it may not be capable of providing health care services to the public after a major seismic event.⁶ The SFGHMC Main Building was categorized as a Structural Performance Category 1 (SPC-1). Buildings categorized as a SPC-1 pose a significant risk of partial or total collapse and a danger to the public.

In 2001 the San Francisco Health Commission adopted resolution 1-01 supporting the construction of a new general acute care hospital by 2013.

In May 2005, Mayor Gavin Newsom and Public Health Director Mitch Katz established a Blue Ribbon Committee to study San Francisco General Hospital's Future Location. In October 2005 the Blue Ribbon Committee issued a report to Mayor Newsom recommending rebuilding the new hospital on the existing Potrero Campus instead of at the new UCSF Mission Bay Campus as had been suggested.⁷ The Blue Ribbon Committee found that the Mission Bay Campus was not feasible from a cost, long-term financing or site acquisition perspective. In addition, the Committee found that coordinating care between the Mission Bay Campus and the Potrero Campus would create operational challenges not readily overcome.

Seismic Safety Regulations in California In retrospect, the enforcement of strict seismic regulations in the past 35 years has made California buildings; in particular, first receiver buildings such as hospitals, better able to withstand seismic events than buildings elsewhere in the world. The first major piece of legislation the state passed was the Alquist Act in response to the San Fernando Earthquake in 1971. The strong ground motions of the San Fernando earthquake severely damaged four major hospital campuses including the UCLA Olive View Hospital which was only a few weeks old and was built in accordance with then current seismic codes. In

approving the Act, the Legislature noted that:

“hospitals, that house patients who have less than the capacity of normally healthy persons to protect themselves, and that must be reasonably capable of providing services to the public after a disaster, shall be designed and constructed to resist, insofar as practical, the forces generated by earthquakes, gravity and winds.”⁸

When the Alquist Act was enacted legislators anticipated that, based on the regular and timely replacement of aging hospital facilities, the majority of hospital buildings would be in compliance with the Act’s standards within 25 years and thus retrofit provisions were not necessary. In reality hospital buildings were not being replaced at that anticipated rate. In fact, the great majority of the State’s urgent care facilities are now more than 40 years old.⁹



Fig. 4-7

Top Left: Photo showing an ambulance crushed during an earthquake

Fig. 4-8

Bottom Left: The un-reinforced masonry hospital building of the Agnew State Hospital collapsed during the 1906 earthquake killing 100 patients

Fig. 4-9

Right: The Hospital in Sylmar, north of Los Angeles, had to be demolished after the 1971 magnitude 6.7 San Fernando Earthquake.



In 1994, a magnitude 6.7 Earthquake struck the community of Northridge just north of Los Angeles causing \$3 billion in hospital-related damage and evacuations. This earthquake exposed significant flaws with the current California seismic safety practices because not only did twelve aging hospital facilities sustained significant structural damage, hospital buildings built after 1973 sustained significant non structural damage, such as pipes bursting and ceilings collapsing that rendered them incapable of providing emergency services to the public. Evacuations of acute care patients between the compromised hospitals posed a logistical nightmare at the time.

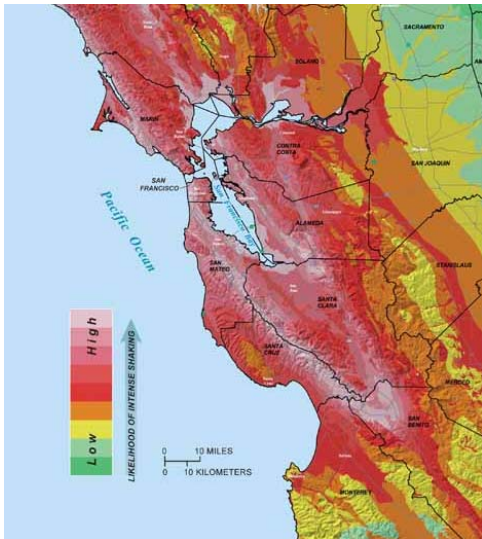


Fig. 4-10

Bay Area map depicting the anticipated intensity level of shaking throughout the region

After the Northridge earthquake the general accepted opinion was that even though the Alquist Act was successful in creating standards that made new hospital buildings more resistant to structural damage, the act did not adequately address the need to minimize non-structural damage. In addition the Northridge earthquake highlighted the slow rate in which hospital buildings were being replaced to meet upgraded seismic standards.

In 1994, shortly after the Northridge earthquake, SB 1953 was enacted as an amendment to and furtherance of the 1973 Alquist Act. Under SB 1953, all existing hospitals are required, as of January 1, 2008, to survive earthquakes without collapsing or posing the threat of significant loss of life. By 2030 all existing hospitals are required to be reasonably capable of providing services to the public after a significant seismic event.

In 2000, SB 1801 (Speier) was enacted authorizing the Office of Statewide Health Planning and Development (OSHPD) to grant a delay in meeting the SB 1953 January 1, 2008 deadline if a

“Hospital owner demonstrates that compliance will result in a loss of health care capacity that may not be provided by other general acute care hospitals within a reasonable proximity. This bill would authorize the office to extend the January 1, 2008, deadline if the hospital agrees that, on or before January 1, 2013, designated services shall be provided by moving into an existing conforming building, relocating to a newly-built building, or continuing in the building as retrofitted where the buildings are in compliance with designated structural and nonstructural performance categories.”¹⁰



Fig. 4-11

Looking south to east from Bush and Jones Streets, April 18, 1906 earthquake in San Francisco

PROJECT DESCRIPTION

Overview The San Francisco Department of Public Health proposes to construct and operate a new acute care hospital facility on the existing open space located between existing masonry buildings 20 and 30 at the west side of the Potrero Campus, located at 1001 Potrero Avenue. The size and space program for the facility is to be determined as part of planning and programming efforts in 2006 through 2007. As mentioned on Page 4-2, transport of patients from the existing helipad to the new acute care hospital will be studied as well. Space in the existing Main Hospital left vacant by the relocation of acute care services into the New Acute Care Hospital

will be allocated at a later date.

The mandate set by SB 1953 required the Department of Public Health to address the following important question; Why should the City and County of San Francisco invest in rebuilding a new acute care hospital?

The SFGHMC Trauma Center was first designated in 1972, and since that time has operated the County's only trauma center. SFGHMC is San Francisco's "safety net" hospital providing care to anyone who is in need. The decision to maintain a Level I Trauma Center in San Francisco and to continue to provide services for the most vulnerable segment of San Francisco's population are two of the most significant issues driving the effort to rebuild a new acute care facility.



Fig. 4-12
SFGHMC's trauma center

A Level I trauma center as defined by the American College of Surgeons has a full range of specialists and equipment available 24-hours a day and admits a minimum required annual volume of severely injured patients.¹¹ Additionally, a Level I trauma center has a program of research, is a leader in trauma education and injury prevention, and serves as a resource and referral central for communities in neighboring regions in the care of patients with complex critical injuries. Given that one in three Americans will experience a traumatic injury at least once in their lives, SFGHMC's Trauma Center is a service that anyone who lives, works or travels to San Francisco depend upon in the event of a life-threatening injury. 14,000 ambulance trips per year (an average of 38 ambulance trips per day) arrive annually the SFGHMC Emergency Department, the highest 911 receiving hospital in the County. The Trauma Center's clinical expertise and availability of specialties ensures high quality services for adults and children with serious injuries. SFGHMC is a crucial city and regional resource for responding to significant injuries, life threatening emergencies, large scale multiple injury events and disasters.

At SFGHMC, approximately 85% of the patient population either received health care services subsidized by government programs such as Medicare or Medi-Cal or was uninsured. If SFGHMC does not rebuild, it will cease to provide acute health care services to San Francisco's less affluent population, making it increasingly more difficult for this segment of the population to find proper care.

In 2001 the San Francisco Health Commission unanimously adopted resolution 1-01, titled "Supporting the Rebuilding of San Francisco General Hospital." The adoption of this resolution led the way to the formation of the San Francisco General Hospital Rebuild Planning Committee responsible for making programmatic, technical and financial recommendations on the rebuilding of a new conforming general acute care hospital by 2013, consistent with SB 1801.

The existing main hospital building would be renovated to accommodate non acute care services, once construction of the new acute care hospital is completed.

Project As previously mentioned the Blue Ribbon Committee’s primary goal was to make a recommendation on whether the new acute care facility should be rebuilt on the existing campus along Potrero Avenue or at Mission Bay collocating with UCSF.

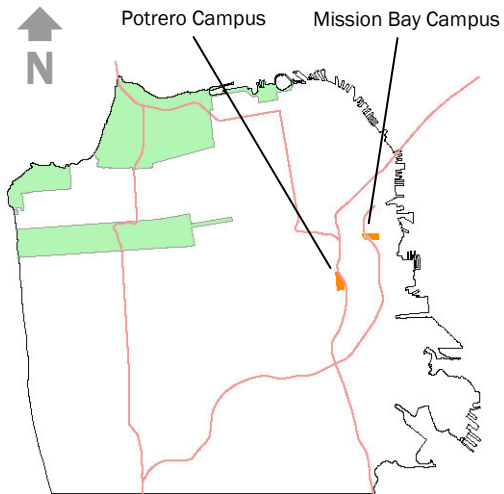


Fig. 4-13

Above: Map of San Francisco depicting the geographic locations of Potrero Campus and Mission Bay Campus

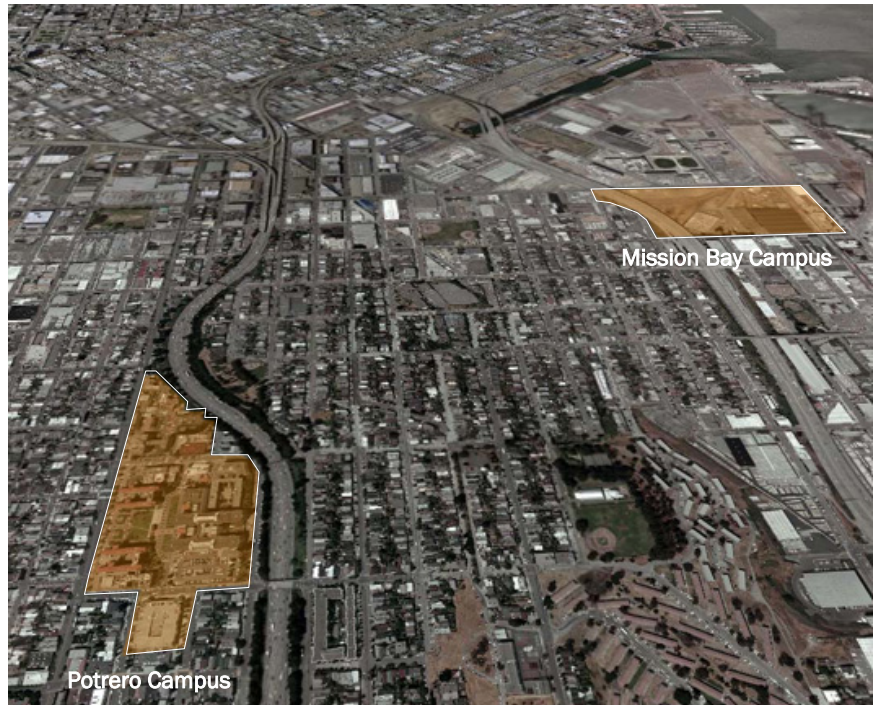


Fig. 4-14

Right: Aerial view highlighting Potrero and Mission Bay campuses

“In order to evaluate the two potential locations, the Committee developed a set of criteria for assessing both options. The criteria were in the following categories:

- **Access and Service Issues:** This criteria examines the impact of each location with respect to access to services (ambulatory, inpatient, specialty and emergency), care coordination and quality of care.
- **Cost and Financing Issues:** This criteria examines the impact of each location with respect to the costs and financing mechanisms
- **Program Issues:** This criteria examines the impact of each location with respect to faculty retention and recruitment, research facility needs, and future space planning needs of each hospital system.

- **Neighborhood and Staff Issues:** This criteria examines the impact of each location with respect to potential disruption arising for construction of a new hospital.”¹²

The Committee concluded that each location presented itself with several advantages and disadvantages. However, the Committee highlighted the fact that the Mission Bay Campus site posed several significant obstacles that could not be entirely overcome or easily mitigated, such as:

- Insufficient land available for purchase
- Mission Bay area is not currently zoned for hospital use
- Split campus would require higher operating costs
- Coordinating care between both campus would be challenging

After much deliberation the Committee’s consensus recommendation was to construct the San Francisco General Hospital at the existing Potrero Campus, despite the recognized benefits the Mission Bay Campus offered.






Fig. 4-16

Main Hospital’s M-wing shown highlighted, which would have to be demolished if north option is selected

In the final Blue Ribbon report issued to Mayor Gavin Newsom, two locations within the Potrero Campus were acknowledged as potential viable sites to build the new acute care hospital. One option was to locate the new acute care hospital to the north and abutting the existing hospital, the other option was to locate the new acute care hospital west of the existing hospital in between two existing masonry buildings, the site of a former hospital building demolished in 1972.

The Blue Ribbon Committee recognized that the option to build to the north would require the demolition of Building 100 and M-wing which currently houses the majority of the ambulatory services and the clinical lab. The option to build to the west would have significantly less overall impact on the existing acute care hospital and would not likely require the demolition of existing structures.

Even though the Blue Ribbon Committee did not consider where on Potrero Campus the new acute care hospital should be built, it suggested that the west option should be “further examined as a potential alternative to the more disruptive North option”.¹³

- Existing buildings to be demolished 
- Proposed site for **north option*** 
- Proposed site for **west option** 

* North option requires demolition of Bldg100 and M-wing.

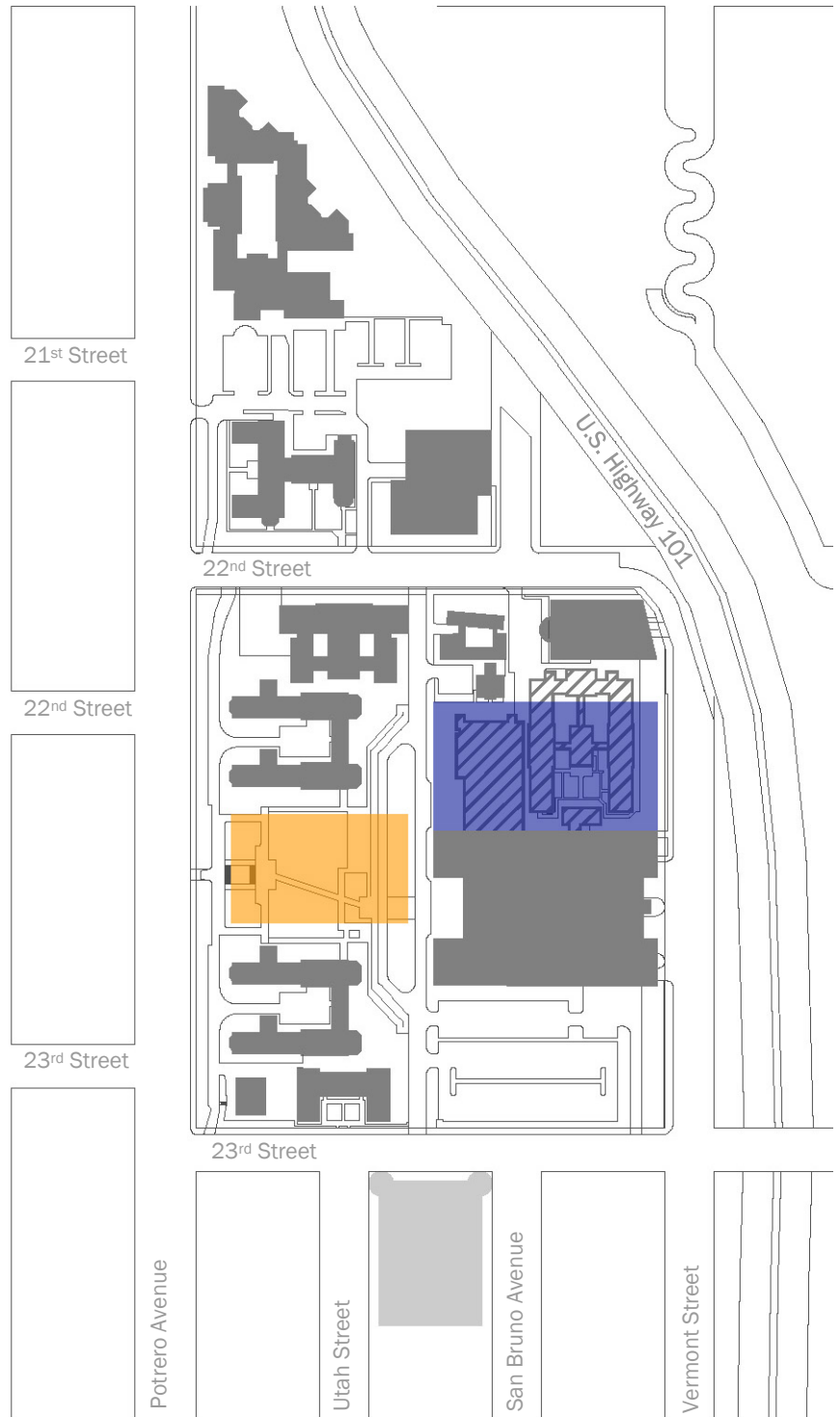


Fig. 4-17

SFGHMC Site Plan showing proposed west option and north option building sites

Subsequent to the recommendations from the Blue Ribbon Committee, the San Francisco Department of Public Health (DPH) determined the west option to be the most viable solution and commissioned Fong & Chan Architects (FCA) to develop the

Institutional Master Plan and Space Program based on the west option. Though the west option was initially selected, a separate Environment Impact Report analyzing the impacts the new acute care hospital development will have on alternative sites in addition to the preferred site will be developed.



Fig. 4-18

Above: Looking southwest towards proposed west option building site, framed by building No. 20 to the right and existing Main Hospital building to the left

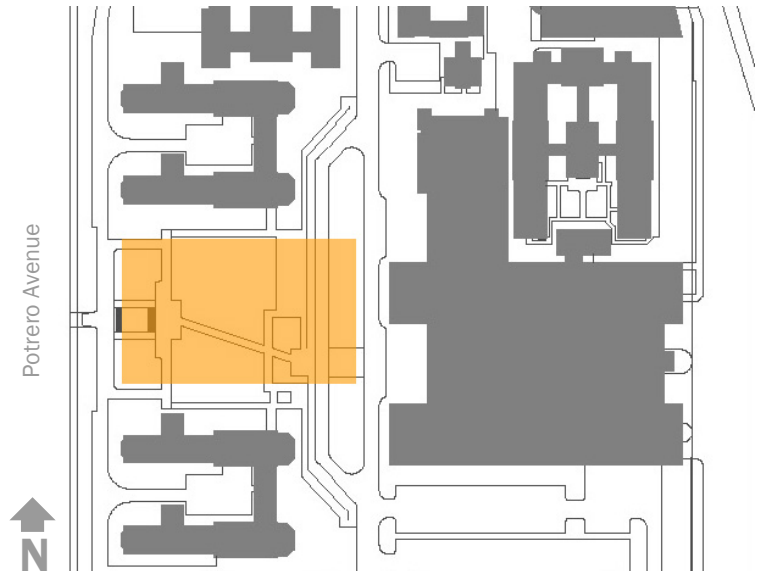


Fig. 4-19

Left: Site Plan showing west option building site

Height and Bulk The height and bulk of the new acute care hospital has not yet been determined. A space program currently under development and scheduled for completion in mid 2007 will determine the floor area and spatial organization of all the services necessary to be in the new acute care hospital.

Project Schedule A detail project schedule for this plan development has yet to be developed, the following however is a preliminary summary schedule identifying all major milestones:

- Planning and Programming Phase: **2 years**
- Design, EIR and Construction Documents, State Agency Approvals (Office of Statewide Health Planning and Development), Bidding and Negotiations: **4 years**
- Construction and Operational Startup : **4 years**

¹ San Francisco Emergency Medical Services Agency, August 7 2001. Accessed on the web

www.sanfranciscoems.org/EMSTheTraumaPlan3113.pdf

² Gerson/Overstreet Architects, "San Francisco General Hospital Medical Center Air Medical Access Needs and Feasibility Study," March 4, 2003.

³ California EMS Authority letter dated November 5, 2001 to Michael Petrie, SF EMS Agency Administrator; signed Richard E. Watson, Interim Director

⁴ Swartzell, A. Timeline of Events: A historical perspective on helicopter use in San Francisco, 2001.

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- ⁵ American College of Surgeons Consultation Survey of San Francisco General Hospital's Trauma Program, November 2001
- ⁶ Degenkolb Engineers/ Structus Inc., SB1953 Seismic Evaluation Report, December 2000
- ⁷ Blue Ribbon Committee on San Francisco General Hospital's Future Location, October, 2005
- ⁸ Health and Safety Code Section 129680
- ⁹ RAND Corporation, "Estimating the Compliance Cost for California SB 1953", April 2002
- ¹⁰ Senate Bill No. 1801, September 2000
- ¹¹ American College of Surgeons, Optimal Care of Injured Patients, 1999
- ¹² Blue Ribbon Committee on San Francisco General Hospital's Future Location, October, 2005
- ¹³ Blue Ribbon Committee on San Francisco General Hospital's Future Location, October, 2005