

# APPENDIX N

## *Air Traffic Patterns Analysis*



## **Canyon Springs Healthcare Campus**

### **Discussion Regarding March Air Reserve Base (ARB) and Hospital Helistop Flight Paths**

8 November 2016

The Canyon Springs Healthcare Campus' 94-foot tall hospital would have an approximately 65-foot by 65-foot (4,225 square-foot) rooftop helistop to accommodate EMS helicopters for rapid patient transport to and from other facilities with different medical specialties or capabilities. The frequency of helicopter landings on the proposed Canyon Springs Healthcare Campus hospital is difficult to quantify and can be better estimated once the hospital and helistop are in operation. However, based on Heliplanners' experience, as a general rule, community hospitals typically experience four to six helicopter landings per month. Should the Canyon Springs Healthcare Campus include a trauma status, helicopter activities could be expected to increase. Based on Heliplanners' experience, hospitals with trauma centers could experience eight to 30 landings per month.

#### **March ARB Flight Paths**

Exhibit H-1 depicts March Air Reserve Base / Inland Port (hereinafter referred to simply as March ARB) flight paths as defined in March ARB documents. The graphic depicts three different kinds of flight paths, which are color-coded on the exhibit. All are clear of the project site. The closest point of the March ARB flight paths would be approximately 0.6 mile from the project site

- Approach flight paths
- Departure flight paths
- Closed-traffic flight paths (this represents "touch-and-go" practice landings).

#### **Runway 14/32**

Pilots typically take off and land *into* the wind for safety and performance reasons. Primary fixed-wing operations at March ARB are toward the northwest, into prevailing winds. Thus, aircraft frequently land and takeoff on Runway 32. The southeastern end is identified as Runway 32 and the northwestern end is Runway 14. During those times when winds are out of the southeast, pilots would land and takeoff on Runway 14.

The portions of flight paths visible on Exhibit H-1 show just two arrival paths to Runway 14. Both are well clear of the Canyon Springs project site. Finally, Exhibit H-1 depicts several "closed pattern" flight paths, some for military planes and some for smaller general aviation planes. These flight paths are also clear of the project site. The closest arrival flight path to the project site, as depicted on Exhibit H-1, is approximately 1.25 miles from the March ARB closed pattern flight path.

Operations by the General Atomics MQ-9 Reaper unmanned aerial vehicle (UAV) will be introduced at March ARB in December 2016. The UAV will primarily use an eastern traffic pattern for Runway 32 at an altitude of approximately 3,000 feet above mean sea level. Thus, given the traffic pattern direction and altitude, horizontal and vertical separation has been determined to be sufficient from the proposed Canyon Springs Healthcare Campus hospital helicopter operations.

#### **Runway 12/30**

Exhibit H-2 also depicts Runway 12/30 which is used by the March ARB's Aero Club and other government agencies such as DEA, ICE, etc. Due to Runway 12/30's relatively poor condition, this runway is closed to the general public. Runway 12/30 is only 3,059 feet long compared to Runway 14/32 which is 13,300 feet long. Thus, Runway 12/30 only serves small aircraft such as piston-powered single engine. A typical flight path for Runway 30 (prevailing winds runway) would not extend past Cactus Avenue, which is located approximately 1.75 miles south of the proposed Canyon Springs Healthcare Campus hospital

helistop. Thus, flight paths associated with Runway 12/30 is not expected to significantly impact helicopter flight paths associated with the proposed helistop.

### **Canyon Springs Healthcare Campus Flight Paths**

The proposed Canyon Springs Healthcare Campus hospital's flight paths would be approximately to and from the northwest and to and from the southwest. The flight path alignments were selected for operational safety (to be acceptable from a prevailing wind standpoint and to avoid the elevator penthouse on the roof from an airspace obstruction-clearance standpoint). The elevator penthouse on the Canyon Springs Healthcare Campus hospital roof is currently being proposed approximately midway along the bed tower in a north-south direction as depicted on the attached Building Height Diagram prepared by HGA (Exhibit H-4). The helistop is currently being proposed on the segment of the roof south of the elevator tower. Since the building has not been designed except in this general blocking diagram, a more definitive helistop location cannot be provided at this time as many other factors can affect helistop location once actual building design begins. The helicopter flight paths were also fine-tuned to reduce community impacts (to minimize helicopter noise impacts at nearby residences). The closest residence would be approximately 440 feet south of the helistop. The proposed flight path alignments were chosen to avoid overflight above the residential properties.

The project site lies within a sector of March ARB Class C airspace (not to be confused with Zone C1 or C2 in the March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan or Zone C in the Riverside County Airport Land Use Compatibility Plan Policy Document) that extends from surface (ground level) to 5,500 feet altitude. The particular sector within which the Healthcare Campus lies is a five-nautical-mile radius from the center of March ARB's runway. Pilots may not operate within this airspace without radio contact with March ARB Air Traffic Control. Therefore, pilots operating to and from the Canyon Springs Healthcare Campus hospital helistop would be in radio contact with March ARB Air Traffic Control. Additionally, Air Traffic Control would provide traffic coordination including appropriate separation between fixed wing and helicopter traffic. Prior to design approval of the proposed hospital by the City of Riverside Planning Department, the applicant shall submit plans to the March ARB Air Traffic Control for review and approval of plans related to the proposed helistop location and proposed helicopter flight path alignments to ensure no conflicts between the proposed helicopter flight paths and March ARB flight operations. A copy of the approved plans from March ARB Air Traffic Control shall be submitted to the City of Riverside Planning Department. A letter of agreement shall be developed between March ARB Air Traffic Control and Canyon Springs Healthcare Campus operator. The letter of agreement would define specific flight paths and communications procedures for helicopter operations to and from the hospital. The Canyon Springs Healthcare Campus operator would make all helicopter operations using the helistop signatory to the letter of agreement.

Additionally, prior to project approval by the Riverside Planning Commission/City Council, the following agency actions would be needed:

1. An airspace study by FAA staff per Part 157, *Notice of Landing Area Proposal*, of the Federal Aviation Regulations (FARs). This study results in an "airspace determination letter"
2. Project review and finding of consistency with the March ARB/Inland Port Airport Land Use Compatibility Plan by Riverside County Airport Land Use Commission as required by California Public Utilities Code

Following the above actions, the following item needs to be undertaken:

3. Application for and receipt of Heliport Site Approval Permit from Caltrans Division of Aeronautics authorizing heliport construction.

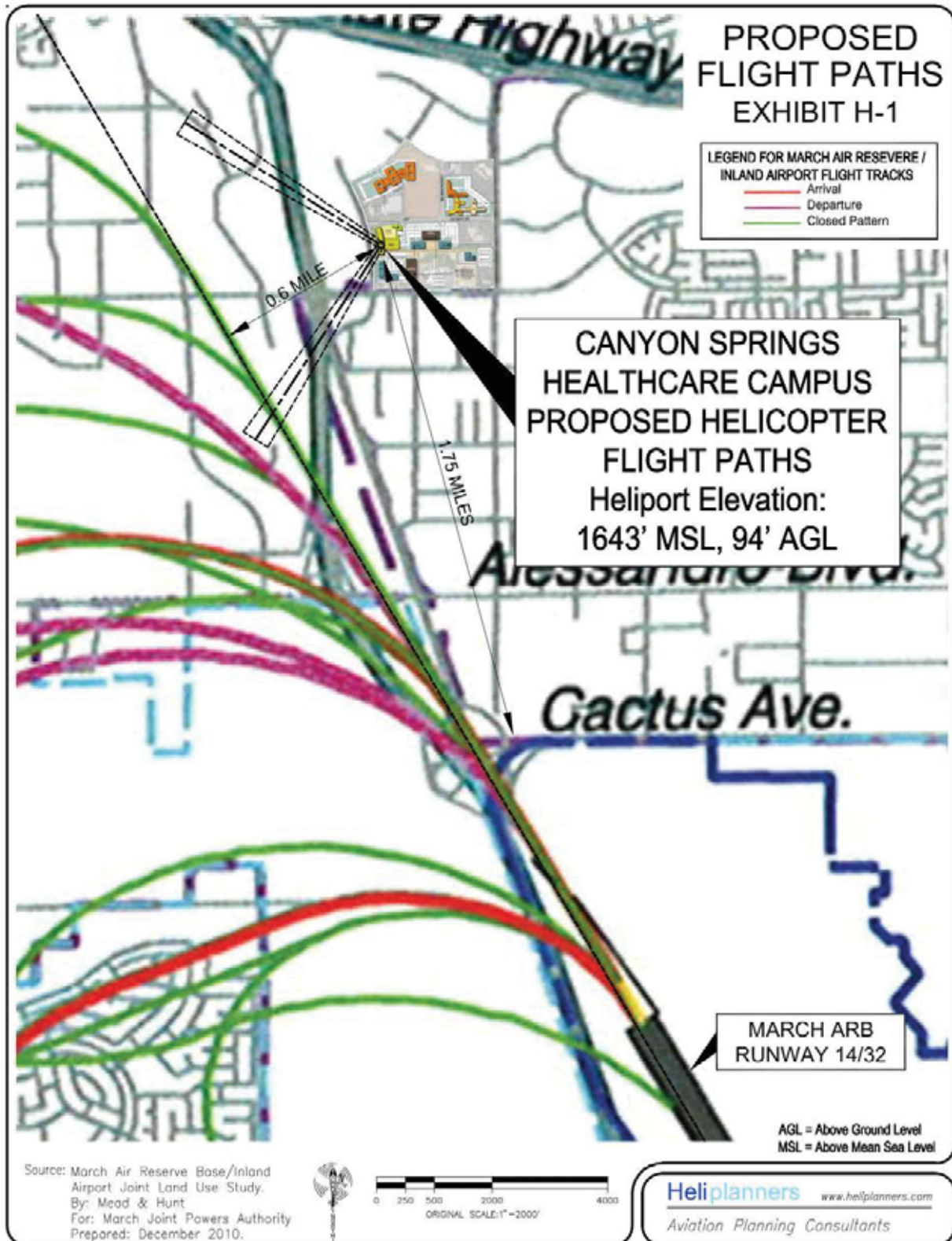
Following helistop construction, the following item needs to be undertaken:

4. Final inspection and receipt of a Heliport Permit authorizing flight operations by Caltrans Division of Aeronautics.

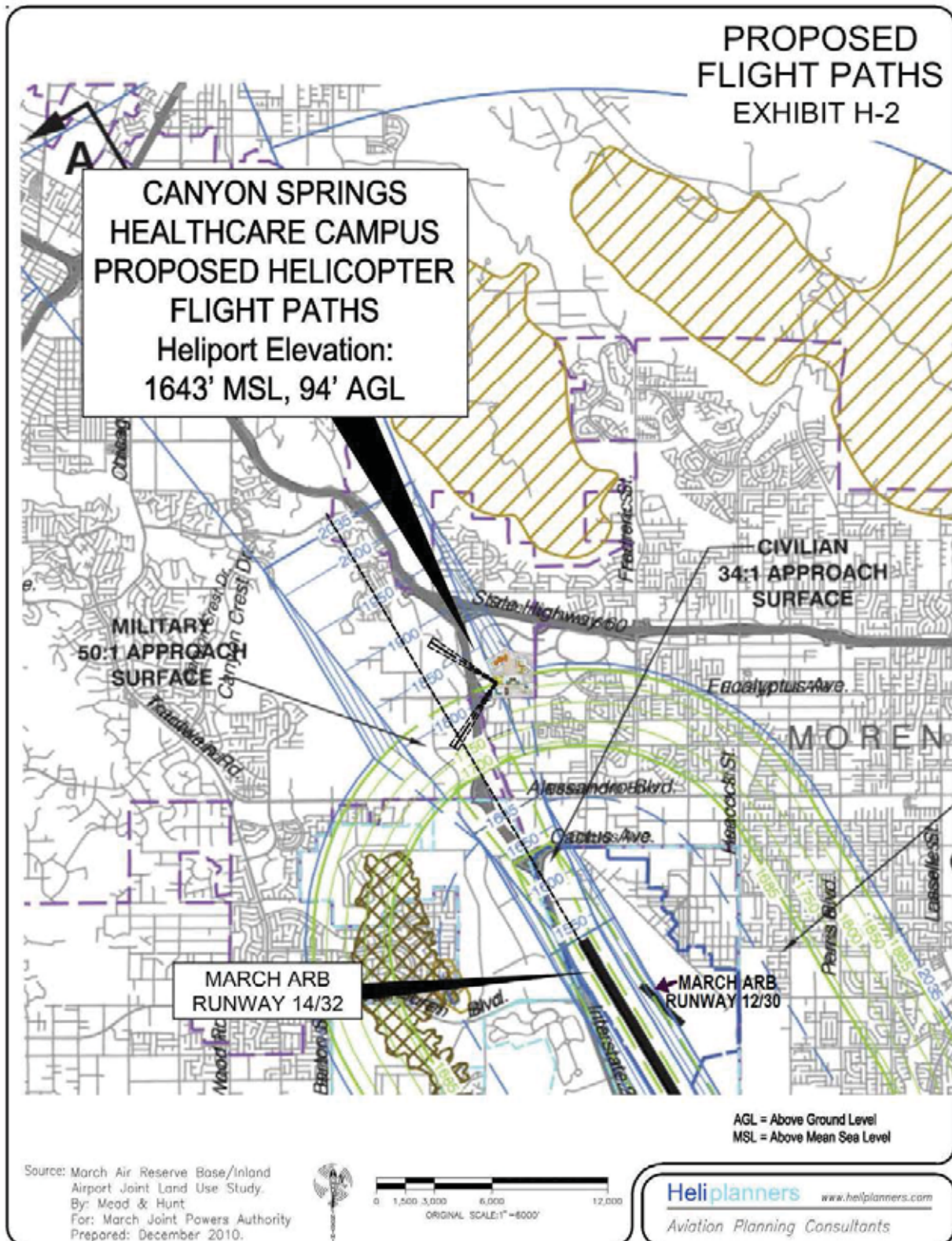
The flight paths are depicted as 4,000-foot-long “approach/departure surfaces”. These are airspace obstruction-clearance surfaces defined in Part 77 of the Federal Aviation Regulations and enforced by Caltrans Division of Aeronautics during its helistop permitting process. The approach/departure surfaces extend up and out from the helistop environs at a slope of 8:1 (eight feet horizontal to one foot vertical) for 4,000 feet from the helistop environs. Their purpose is to ensure obstruction-free flight paths for pilots. It is important to understand that helicopter pilots are not required to remain within these surfaces for their entire length. They typically enter or leave the 4,000-foot-long alignment much closer to the helistop. Pilots frequently use freeways for visual cues. It is anticipated that pilots would often use the Interstate 215 (I-215) corridor when approaching the hospital area, turning northeast for landings. And, that they would turn northwest-bound along the I-215 corridor on departure. This of course depends on helicopters’ origin and/or destination points. Using the I-215 corridor would serve to help separate helicopters from March ARB traffic. Each of the different types of aircraft models, both military and general aviation, using the March ARB has different climb characteristics depending on general performance capabilities, aircraft loading, current wind conditions, temperature, humidity, and pilot techniques. However, generally, based on Heliplanners experience with air traffic analysis, the altitude of aircraft operations can be expected at a range between 500 feet and 3,000 feet when crossing the I-215. As previously mentioned, all aircraft flying within the March ARB Class C airspace, including March ARB traffic and the proposed helicopter operations at Canyon Springs Healthcare Campus would be required to be in radio contact with the March ARB Air Traffic Control, whose responsibility is to provide adequate separation between all the aircrafts.

**Separation between Helicopter and Fixed-Wing Traffic**

The Canyon Springs Healthcare Campus hospital's helistop would be approximately 94 feet above ground level (approximately 1643 feet above mean sea level--MSL), subject to final building design. The northern end of March ARB's runway is approximately 14,500 feet (2.75 statute miles) southeast and is approximately 1536 feet MSL. Therefore, the helistop would be approximately 107 feet above the runway end. The altitude of March ARB fixed wing traffic in closed traffic patterns would vary depending on the particular airplane model, whether it is taking off or landing, how heavily it is loaded, weather conditions at the time, piloting techniques, etc. However, in general, fixed wing traffic would be expected to be approximately 1,000+/- feet above ground level—and west of I-215—when passing the Canyon Springs Healthcare Campus vicinity. On the other hand, helicopters, whose missions are typically short-range, typically fly at around 500-700 feet above ground level.



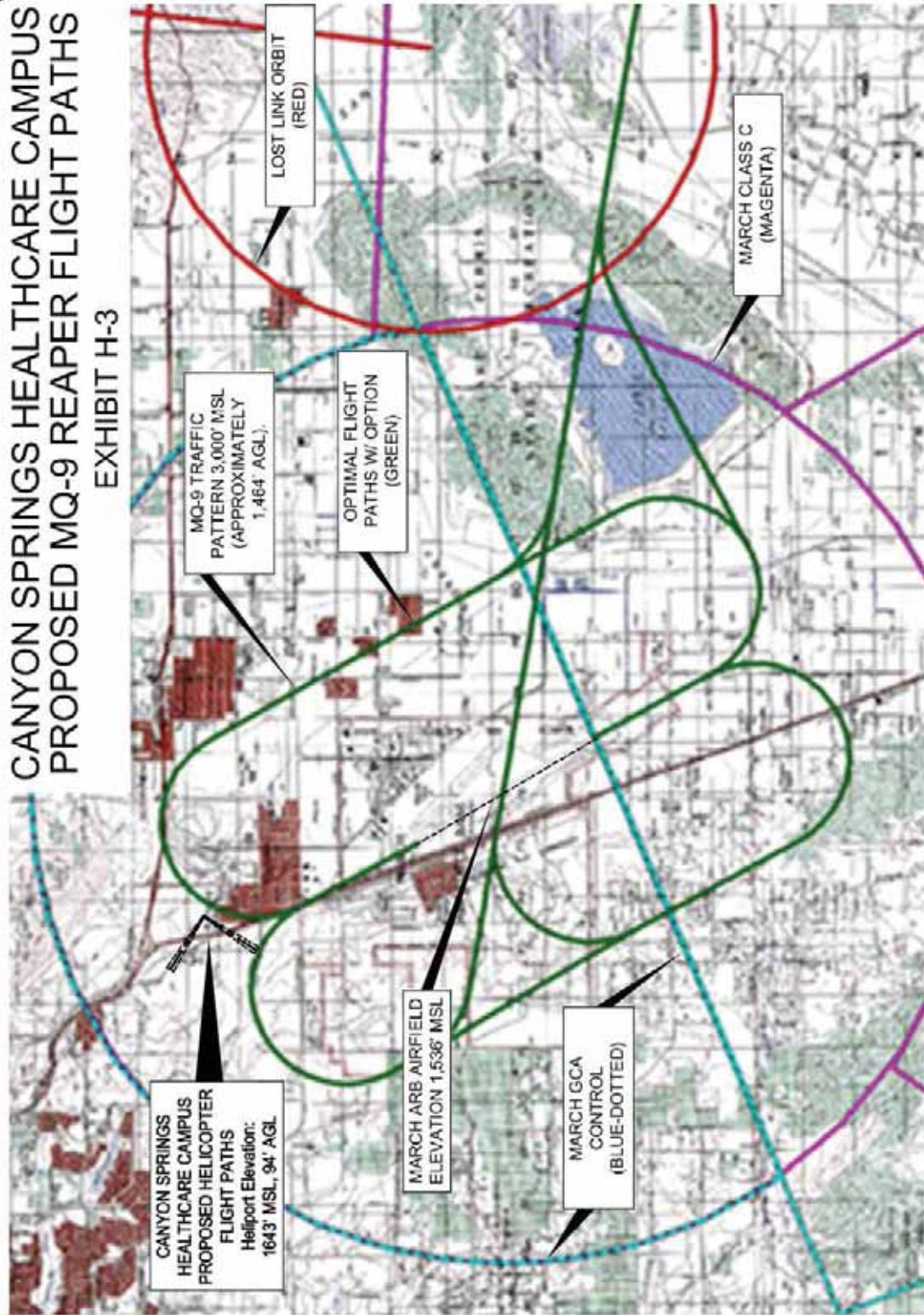






# CANYON SPRINGS HEALTHCARE CAMPUS PROPOSED MQ-9 REAPER FLIGHT PATHS

## EXHIBIT H-3





## CANYON SPRINGS HEALTHCARE CENTER

### BUILDING HEIGHT DIAGRAM

HIGHEST BUILDING FTE  
INDEPENDENT LIVING @  
1,573.5' MSL

## EXHIBIT H-4

