Airfield Capacity Study and Land Use Options Questions and Answers

Updated For Comments Received as of 11/7/11

Comment (multiple): Explain the impact of the "Base Case" scenario on existing FBO leaseholds and what types of aircraft could use parallel taxiways V and W.

Response: I*n order to meet FAA airport design standards for runway-taxiway separation and runway and taxiway object free areas, approximately 6 acres of existing FBO ramp space would be lost. An initial estimate of 8.5 acres was based on the assumption that Taxiway V would be upgraded to serve Airplane Design Group (ADG) IV, which includes air carrier aircraft, per the Airport Master Plan. The Base Case now assumes that the taxiway will remain as ADG III, capable of serving most corporate jets and narrow-body commercial aircraft, which reduces the impact on the existing FBOs. Taxiway W is currently being extended and upgraded in phases to accommodate ADG IV, so the occasional ADG-IV aircraft that would park on the west side would utilize Taxiway W and a cross taxiway to/from the parking apron.*

Comment (multiple): Concerns regarding whether the west side planning has given adequate consideration to the needs of small GA operators. A lot of small GA has already left SJC.

Response: *All development on the west side is intended to accommodate the GA demand projected in the Airport Master Plan for 2027, which shows growth primarily in the corporate GA sector. Small GA will continue to decline as a proportion of overall GA activity. The updated Airport Master Plan demand analysis prepared in 2009 remains available on the Airport website. The airport recognizes that small GA is very price-sensitive.*

Comment (multiple): Concerns about safety impacts if Runway 11-29 is closed.

Response: *FAA air traffic separation standards and procedures provide for the safe operation of small GA aircraft use of the commercial runways. The airport capacity analysis shows that the two commercial runways can handle the entire projected airline and GA operations demand.*

Comment: If corporate GA is projected to increase, some of those smaller jets can utilize Runway 11-29 and make it more valuable.

Response: *While 11-29 can physically accommodate small jet aircraft, operators would generally prefer a longer runway and its instrumentation. In addition, the City's Noise Control Program prohibits regular use of jets on 11-29.*

Comment: Consider the alternative of closing Taxiway V and leaving Rwy 11-29 open. That would provide more space for existing and future FBOs.

Response: *Closing Taxiway V would require frequent crossings of 11-29 or back-taxiing on the runway, both of which would result in reduced safety due to substantial traffic conflicts and controller workload, so does not appear to be a viable option.*

Comment: The land use drawings show the future FBO in the middle of the open area on the northwest side. What might go into the parcels north and south of the new FBO, and why not put the FBO in the area immediately north of the ATCT?

Response: The new FBO would be located in the middle area to take advantage of the available road access from Martin Ave. and Reed St. Keeping the new FBO leasehold separate from the existing full service FBO is also regarded as more desirable. Use of the areas immediately north and south of the new FBO would be determined by market demand, and include limited-service FBOs, SASOs, corporate hangars, t-hangars, or overflow transient ramp.

Comment: What would be the impact on the RFP process for a new FBO if the City selects one of the scenarios that remove Taxiway V and Runway 11-29?

Response: The RFP will be based on the land currently available for development. City approval of a Master Plan amendment calling for removal of Taxiway V and removal or conversion of Runway 11-29 would not likely occur until late 2012 at the earliest. In the meantime, the airport can lease existing land to an FBO with the understanding that the amount land available may increase in the future.

Comment: What use would go in the area formerly occupied by the San Jose State University leasehold?

Response: Per the Airport Master Plan, that area would also be developed for general aviation use. The specific facilities will be determined by market interest.

Comment: Consider leaving the airfield in place and expand the west side developable area by acquiring the old industrial and office properties across Martin Avenue.

Response: The cost and process to acquire existing developed property, and reconfigure roadways and utilities, especially in a different city, is probably not a feasible alternative.

Comment: Has an economic analysis been conducted of the three reconfiguration and development scenarios?

Response: Not at this point in time. Analyzing the two runway closure scenarios would depend on how the additional developable land is utilized.

Comment: What impact does the proposed San Jose Earthquake stadium have on west side scenarios, including temporary flight restrictions (TFR) imposed by the FAA?

Response: The proposed stadium, located across Coleman Ave. opposite AvBase, does not impact the west side scenarios. Stadium plans are being prepared for City review, and the one known aviation issue is ensuring that stadium lighting does not interfere with the ATCT's line of sight. The size of the stadium would not qualify for TFRs. The proposed 49ers stadium near Great America and an A's stadium in downtown San Jose would likely result in TFRs, which typically require aircraft to be in contact with ATC.

Comment (multiple): The demand assumptions for the capacity analysis underestimate the true demand for small GA which has been constrained in recent years. If small GA was allowed to expand, and flight schools returned, the use of Runway 11-29 would be greater.

Response: *The demand assumptions are taken directly from the 2027 demand projected in the Airport Master Plan. Small GA operations are expected to continue declining, so use of 11-29 would remain a small percentage of the Airport's total.*

Comment (multiple): Clarify the assumption that 80% of GA activity does not fly IFR. Many corporate jets as well as the new very light jets (VLJ) can use 11-29.

Response: *The 80% figure is an estimate provided by the ATCT and refers to small GA (i.e., piston aircraft), which is the primary user of 11-29. Although 11-29 is capable of accommodating small jet operations, the City's noise abatement policy prohibits regular use of jets on Runway 11-29. Moreover, regardless of weather, turbine aircraft operators would almost always prefer the longer runways and 12R-30L's instrument landing system.*

Comment: Explain the peak hour used in the analysis?

Response: *The peak hour is a determined percentage of daily operations. The airport's peak hour for commercial airline operations typically occurs from 6:30 – 7:30 a.m. To be conservative, the capacity analysis assumed that non-commercial operations peak in the same manner and at the same time as airline operations.*

Comment: If Runway 11-29 were extended, and thereby handle most corporate jets, wouldn't that change the capacity analysis conclusions?

Response: *No. Even if lengthening 11-29 was feasible, it would still be operationally dependent on the other runways. The City would also have to modify its Noise Control Program to allow regular jet aircraft use of 11-29.*

Comment: Runway 11/29 contributes to the capacity of the airfield, and removing it would impact the overall capacity of the Airport and in turn the air carriers.

Response: *Operations on all of the runways are dependant because of the limited separation between the runways. FAA air traffic cannot clear an airplane to takeoff on Runway 29 if an airplane is landing or taking off on Rwy 30L. FAA imposes the same wake turbulence separation standards on aircraft on Rwy 29 as if the airplanes were all operating on the same runway.*

Responses to Comments Raised at the October 17, 2011 Airport Commission Meeting

Comment: SJC currently operates at an IMC capacity of approx. 34 operations / hour while the study concluded it will double by 2027.

Response: *Per the FAA, SJC's "called rate" for IMC today is 25 arrivals and 25 departures, for a total of 50 operations / hour. In practice, slightly higher rates than the "called rate" are usually achievable. The study did not conclude that capacity would "double by 2027". In fact, the study concluded (see Table 6 of the report) that capacity would diminish very slightly, due to the projected reduction in aircraft that would use Runway 11-29. The study estimated hourly IMC capacity in the 61-64 range both for 2008 and 2027.*

Comment: The study conclusions were based on 2009 g.a. activity and did not consider potential g.a. growth over the next few years.

Response: The study used the 2027 forecasts contained in the adopted Airport Master Plan (as updated in June 2010). In 2009, the Airport had 149 based aircraft and 40,300 g.a. operations. The Master Plan projections for 2027 are for 209 based aircraft (40% higher than 2009) and 73,200 g.a. operations (80% higher than in 2009).

Comment: The study did not consider that 11-29 can operate as an instrument runway.

Response: While the FAA has published instrument procedures for Runway 11-29, relatively few piston-engine g.a. aircraft operate at SJC during IMC, as stated in the report. Moreover, with only 700-foot spacing between the runways at SJC, an instrument operation during IMC takes up the same airspace regardless of which runway is used. This operational dependence is highlighted in the report.

Comment: Separation problem between 11-29 and Twy V only occurs when air carrier size aircraft are on V.

Response: 11-29 does not meet FAA separation standards for any Group II aircraft (large g.a. prop and small g.a. jet) or for some Group I aircraft (small g.a.). South of cross Twy F, 11-29 does not meet FAA separation standard for any Group I aircraft.

Comment: 11-29 can handle most business jets if not restricted by City noise policy.

Response: While 11-29 can physically accommodate small g.a. jets, operators would generally prefer the longer/wider commercial runways and their available instrumentation. The Airport is not proposing any change to the City's Airport Noise Control Program policy restricting all jet operations to the commercial runways.

Comment: The study forecasts showing a slight reduction in operations by small g.a. aircraft is just a guess and doesn't account for future growth in production of new g.a. piston and turboprop aircraft, or the potential growth if the Airport allowed g.a. flight training.

Response: The study's g.a. activity assumptions for 2027 were based on the forecasts contained in the adopted Airport Master Plan (as updated in June 2010). Those forecasts were prepared by a national aviation consulting firm using the best information available, including the FAA's national-level g.a. fleet projections. It should be noted that about one-third of the total aircraft storage spaces available at the 3 g.a. reliever airports in Santa Clara County combined are currently vacant (a total of 900 storage spaces and only 600 based aircraft).

Comment: The study incorrectly defined IMC. Also, ATCT estimates of g.a. activity during IMC today appear lower than what it could be in the future.

Response: IMC values are different at each airport. The SJC-specific IMC values presented on pages 5 and 8 of the report were provided by the ATCT. Regarding g.a. activity during IMC, the ATCT estimated, based on experience, that 80% of aircraft operators that can use Runway 11-29 would choose not to operate in IMC. Although, a greater proportion of g.a. aircraft operators may elect to fly in IMC in the future, the percentage does not significantly affect capacity due to the interdependence of SJC's runways during IMC.

Comment: The study used incorrect VMC aircraft separation assumptions.

Response: The VMC aircraft separations applied in the study (as listed in Table 4 and discussed on pages 6-8) represent realistic conditions. For example, the 1.9 mile separation applied in many combinations is approximately equivalent to an arrival runway occupancy clearance time of approximately 50-seconds at 140 knots final approach speed. These values are a result of years of research, observation, and practical application, as documented in the referenced report FAA EM-78-8A, "Parameters of Future ATC Systems Relating to Airport Capacity/Delay"; and they have been used in many similar studies by LeighFisher, colleague firms, and MITRE Corporation (for FAA), and have been reviewed and approved by the FAA.

Comment: The study's hourly capacity analysis used incorrect assumptions for 11-29 and thereby significantly understates VMC hourly capacity and overstates hourly IMC capacity.

Response: As addressed in the above responses, the report presents both a reasonable set of analytical assumptions and methodology for calculating current and projected hourly capacities for both a 3-runway and 2-runway airfield. The capacity estimates for VMC assumed that separate arrival and departure routes would be utilized by aircraft on Runway 11-29 vs. the other two runways. This is the factor that primarily accounts for the higher capacity of the 3-runway airfield in VMC.

Comment: Option 1 has so many problems associated with it that it appears not to be a viable option. It is so unworkable its only obvious value is to try to make the Airport's Options 2 & 3 look good.

Response: Option 1 would retain the airfield in an "as-is" condition, but given the existing lack of compliance with current runway/taxiway/landside separation standards, shows the necessary modifications to the existing leaseholds should a City or FAA decision be made to require such compliance.

Comment: Options 2 and 3 require proving to the FAA that there is Airport owned land that is surplus to any aviation need for at least the next 20 years.

Response: All aviation uses of land on the west side will be explored before any consideration of, and request for FAA consent to, non-aviation land uses.

Comment: The required Master Plan revision and Environmental Impact studies have been projected to take up to two years, delaying the start of revenue generation.

Response: Not correct. The Airport is not precluded from pursuing the development of a second full service FBO while a determination of the final airfield/landside configuration is decided.

Comment: The developable areas north and south of the FAA air traffic control tower are within the 65-75 CNEL noise contours and are unsuitable for many uses.

Response: Agreed. Any non-aviation uses in the subject areas would have to be noise-compatible and subject to FAA approval.

Comment: Signature Flight Support (a likely RFP bidder) considers Runway 11-29 important enough that they have indicated they would likely be willing to cover the Airport's cost in restoring it to service. Other prospective FBO RFP bidders are also likely to consider Runway 11-29 important.

Response: *The study of whether or not to close Runway 11/29 is in process and a decision has not been made regarding the final disposition of the runway. The Airport is not aware of any proposal by Signature (or any other potential FBO) to fund improvements to airfield facilities.*

Comment: (Option 2 only) Weight restrictions on Runway 11-29 pavement, and therefore the proposed taxiway, prohibit routine use by Group III aircraft.

Response: *Taxiway V handles Group III aircraft today and will need to continue handling Group III aircraft in the future given the historical and projected trend toward larger g.a. aircraft as indicated in the Airport Master Plan. The Airport will analyze pavement reconstruction and strengthening requirements associated with the new Taxiway V shown in the Option 2 presented by the Airport.*

Comment: The FAA Part 77 airspace restrictions limit construction on the "Potential Development Areas."

Response: *All development on the Airport is subject to height restrictions and would require review by the FAA under FAR Part 77. The Part 77 obstruction surfaces applicable to the existing landside development area north of the ATCT would limit heights to approx. 20 feet closest to the airfield to 90 feet closest to Martin Avenue.*

Comment: The clearance between Runway 11-29 and Taxiway Victor is not non-compliant, and could be reduced by applying OFZ clearance formulas.

Response: *Not correct. The existing centerline to centerline spacing between Rwy 11-29 and Twy V is 220 feet south of Twy F and 232.5 feet north of Twy F. Per FAA Advisory Circular AC150/5300-13 and a recent interpretation from the FAA Headquarters, Airports Division, the required separation is 300 feet. The separation standard used for runways and parallel taxiways with dissimilar airport reference codes (ARCs) is the separation requirement for the element with the higher ARC, irrespective of whether that element is the runway or the taxiway. In this case, the design group III taxiway sets the separation standard at a group III runway-taxiway separation of 300 feet. The OFZ clearance formulas are only applied in high-altitude situations to increase the runway-taxiway separations as specified in Tables 2-1 and 2-2, never to decrease them. Rwy 11-29 and Twy V also do not comply with several other separation and dimensional standards identified in the Advisory Circular.*

Comment: The segment of Taxiway Victor south of the FAA ATC could be closed and designated as a taxilanes within the existing parking areas.

Response: *Per AC 150/5300-13 Chapter 2 table 2.1 requirements for separation between runway centerline and parallel taxiway centerline is the same for taxiways and taxilanes.*

Comment: The existing geometry of Taxiway V meets the standards for a Group II taxiway.

Response: *Existing Twy V, even if restricted to Group II aircraft, does not meet the separation standards from Rwy 11-29 (as discussed above) and certain other dimensional criteria. Further, Taxiway V regularly accommodates Group III aircraft, and is forecast to continue doing so in the future.*

Comment: The taxiway Object Free Area (OFA) for Taxiway V is 131 feet.

Response: *Per AC 150/5300-13, the 131-foot width from taxiway centerline applies to Group II aircraft, which is not met south of the ATCT. For Group III aircraft, the required OFA width is 186 feet, which is not met either north or south of the ATCT. Reference FAA AC 150/5300-13 Chg 17 Table 4.1.*

Further, the basis of the OFA requirement is stated in Appendix 9 of AC 150/5300-13 2.a.2 and 2.a.3 as follows:

> *1) Taxiway centerline to object separation, as shown in figures A9-2 and A9-3, has the same wingtip clearances as taxiway to taxiway centerline separation. Thus, the minimum between a taxiway centerline and an object is .70 times the wingspan of the most demanding airplane, plus 10 feet.*
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> *2) Taxiway object free area width is equal to twice the taxiway centerline to object separation.*

For Twy V, the Boeing BBJ (wingspan = 117.5 feet) is the most demanding aircraft. By application:
Taxiway V OFA = 2 x (.7 x 117.5 + 10) = 184.5 feet

Comment: The centerline to centerline separation of Taxiway V to Runway 11-29 could be considered compliant by applying Runway Object Free Zone criteria and designating Runway 11-29 as a "small aircraft" runway.

Response: *Use of the obstacle free zone to justify a modification to standards for the purpose of reducing runway to taxiway separation standards is not allowed. See FAA AC5300-13 Chg 17, note at the bottom of table 2-1. The OFZ clearance formulas are only applied in high-altitude situations to increase the runway-taxiway separations as specified in Tables 2-1 and 2-2, never to decrease them.*

Comment: Taxiing of design group III aircraft on Taxiway V south of the Taxiway F can be avoided by development of an airport operated "Shared Ramp" for visiting aircraft larger than a Gulfstream G-V.

Response: *The Airport will not restrict the type of aircraft that the existing commercial service operators choose to serve. Currently there are several design group III aircraft based in the existing facilities. In addition, the West Side Development Principles state that the Airport will minimize short term and long term investment expenses, and constructing and managing a shared ramp would not consistent with this principle.*

Comment: Moving the Taxiway V centerline 28' towards the Runway will mitigate existing non conformance to standards.

Response: *As stated in an earlier comment/response, reducing the separation between Rwy 11-29 and Twy V would worsen the compliance deficiencies. See FAA AC5300-13 Chg 17. Moving the taxiway centerline 28 feet closer to the runway would increase the centerline to centerline separation deficiency from 80 feet to 108 feet.*

Comment: Move the Taxiway centerline 40' towards the Runway and make it a "Gulfstream G-V" taxiway. The FAA Airport Design standards permit the design of a taxiway to accommodate a specific aircraft (and smaller), in this case a G-V, rather than one of the defined Groups I through VI.

Response: *Change 17 of AC 150/5300-13 no longer allows the design of a taxiway to accommodate a specific aircraft. See FAA AC5300-13 Chg 17, note at the bottom of table 2-1. In addition, as previously stated, the Airport will not restrict the type of aircraft served by the FBOs. Also, as stated in an earlier comment/response, reducing the separation between Rwy 11-29 and Twy V would worsen the compliance deficiencies. Moving the taxiway centerline 40 feet closer to the runway would increase the centerline to centerline separation deficiency from 80 feet to 120 feet.*

Comment: Design group III aircraft using facilities north of the FAA ATC can cross runway 11-29 or taxi north on Taxiway V to access Taxiway W (DG IV) for access to Runways 30R and 30L.

Response: *Modeling of taxiway flow is needed to determine if reliance on Taxiway W for operations at facilities north of the ATC would be adequate. In addition FAA AC150/5300-13 Chg 17 Paragraph 204.4 states that as a design principle for airfield layouts, aircraft crossing of runways should be minimized.*