

SILICON VALLEY'S AIRPORT



Downtown Airspace and Development Capacity Study

March 12, 2019

Response from ALPA



AIR LINE PILOTS ASSOCIATION
INTERNATIONAL

THE WORLD'S LARGEST PILOTS UNION • WWW.ALPA.ORG

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March 11, 2019

San Jose, CA City Council

San Jose, CA Airport Commission

SJC Airport Director

Sent by email to all recipients

Dear San Jose Officials:

By letter dated February 27, 2019, the Air Line Pilots Association, Int'l (ALPA), which represents more than 61,000 airline pilots who fly for 33 airlines in the U.S. and Canada, made you aware of potential concerns with proposals related to land use and development within the city of San Jose. We requested, and were promptly provided with, access to documents related to these proposals from the office of the SJC Aviation Director, which includes analysis of possible impacts on airline operations.

After reviewing these materials with the aviation safety chairs at each of the ALPA airline pilot groups whose respective companies operate into SJC, it is our view that the land use proposals under consideration will not impact available safety margins for commercial operations. Given that the preponderance of the approximately 12% of the airport's annual operations which are conducted toward the south occur in cooler winter months, the economic impacts on the airlines by the proposals under consideration may be minimal.

We appreciate the opportunity to review and provide comments on the subject development proposals.

Sincerely,

A handwritten signature in blue ink, appearing to read 'S. Jangelis', is located below the word 'Sincerely,'.

Capt. Steve Jangelis
Aviation Safety Chair
Air Line Pilots Association, Int'l

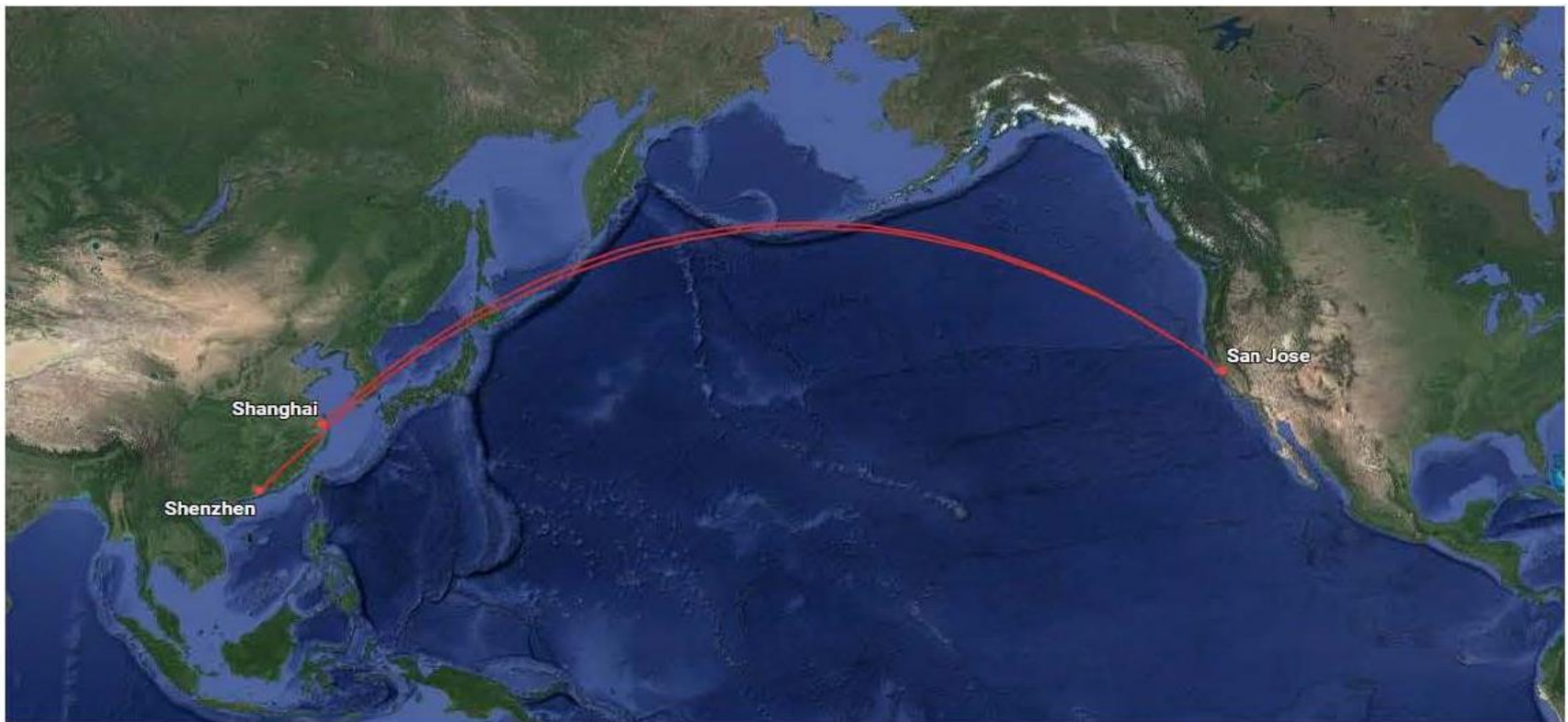
“After reviewing these materials with the aviation safety chairs at each of the ALPA airline pilot groups whose respective companies operate into SJC, it is our view that the land use proposals under consideration will not impact available safety margins for commercial operations.”

Additional Airline Responses



Airline	Response
Alaska	<p>"I am happy to report Alaska Airlines expects there to be no adverse weight impacts to our current SJC RW12L-12R OEI West Corridor procedures at these proposed obstacle heights for the one datapoint location. Takeoff weight provides for a full passenger load for any of our routes or current fleets. Only Scenario 10D height provided a potential cargo loss in a worst case scenario."</p>
American Airlines	<p>"In conclusion, the proposals to build these buildings in the locations indicated southeast of the airport in San Jose may not have much impact to our current service but there could be some impact to any future expanded service to destinations further east such as Boston and Miami and possibly Charlotte. Most of these impacts would be a reduction in the amount of revenue cargo we could legally carry and safely clear the proposed obstacles."</p>
ANA	<ul style="list-style-type: none">• We needed to further study to evaluate potential impact to our take-off performance.• As a result, we have concluded that potential impact to passenger would be minimal although there will still be some impact to cargo in Scenario 4.• We would like to pursue practical solutions for such negative impacts, including potential unforeseeable impact, by working together with San Jose City, San Jose Airport and other stakeholders.
JetBlue	<p>"The proposed building is in the splays for 12L & 12R. It is more limiting for 12L and will cost the A320 about 900lbs of lift. The A321 will lose about 1100lbs of lift. Both of these losses can be absorbed for the SJC-JFK and SJC-BOS markets. I looked at 32GR(162), 32RD(200), and 32SB(159) for comparison with today's capability and did not get worse results than with the current obstacle set.</p>

Routes to Shanghai & Shenzhen

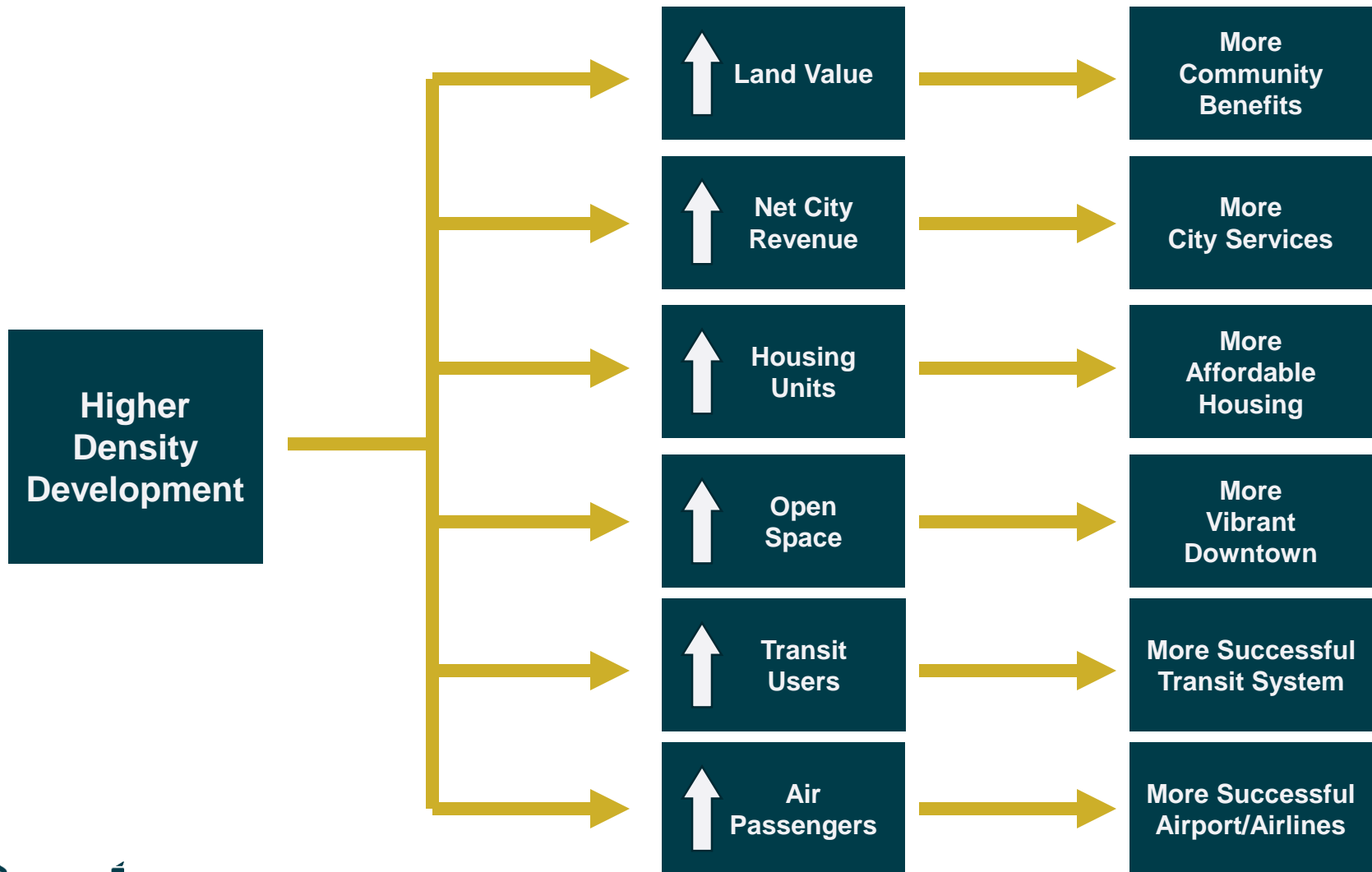


Routes to Shanghai & Shenzhen



Shanghai - PVG Summer (81.3° F) 5,371 miles	A350-900 (334 seats/17,927 lbs cargo)		B787-8 (213 seats/20,788 lbs cargo)		B787-9 (292 seats/11,885 lbs cargo)	
	PAX Penalty	Cargo Penalty (lbs)	PAX Penalty	Cargo Penalty (lbs)	PAX Penalty	Cargo Penalty (lbs)
Scenario 1: West OEI Corridor						
Scenario 1: Existing Straight Out OEI	11	17,927		14,295	31	11,885
Scenario 4: TERPS Only	28	17,927		18,453	46	11,885
Scenario 10B: West OEI Corridor		3,608		250		3,925
Scenario 10D: West OEI Corridor		14,187		8,924	6	11,885
Shenzhen - SZX Summer (81.3° F) 6,034 miles	A350-900 (334 seats/1,758 lbs cargo)		B787-8 (213 seats/7,612 lbs cargo)		B787-9 (292 seats/0 lbs cargo)	
	PAX Penalty	Cargo Penalty (lbs)	PAX Penalty	Cargo Penalty (lbs)	PAX Penalty	Cargo Penalty (lbs)
Scenario 1: West OEI Corridor					10	
Scenario 1: Existing Straight Out OEI	74	1,758	24	7,612	85	
Scenario 4: TERPS Only	91	1,758	41	7,612	100	
Scenario 10B: West OEI Corridor	7	1,758		239	25	
Scenario 10D: West OEI Corridor	49	1,758	4	7,612	61	

Positive Outcomes Possible with Increased Height



The Situation



- Downtown and Airport are two of San Jose's economic priorities
- One priority: increase the density of the Downtown Core and the Diridon Station Area
- Another priority: continue developing a world-class airport and build national and international connections by attracting new air service
- Need to balance these two priorities, since taller buildings can impact certain flights to certain markets

Safety Is Top Priority and Not Changing



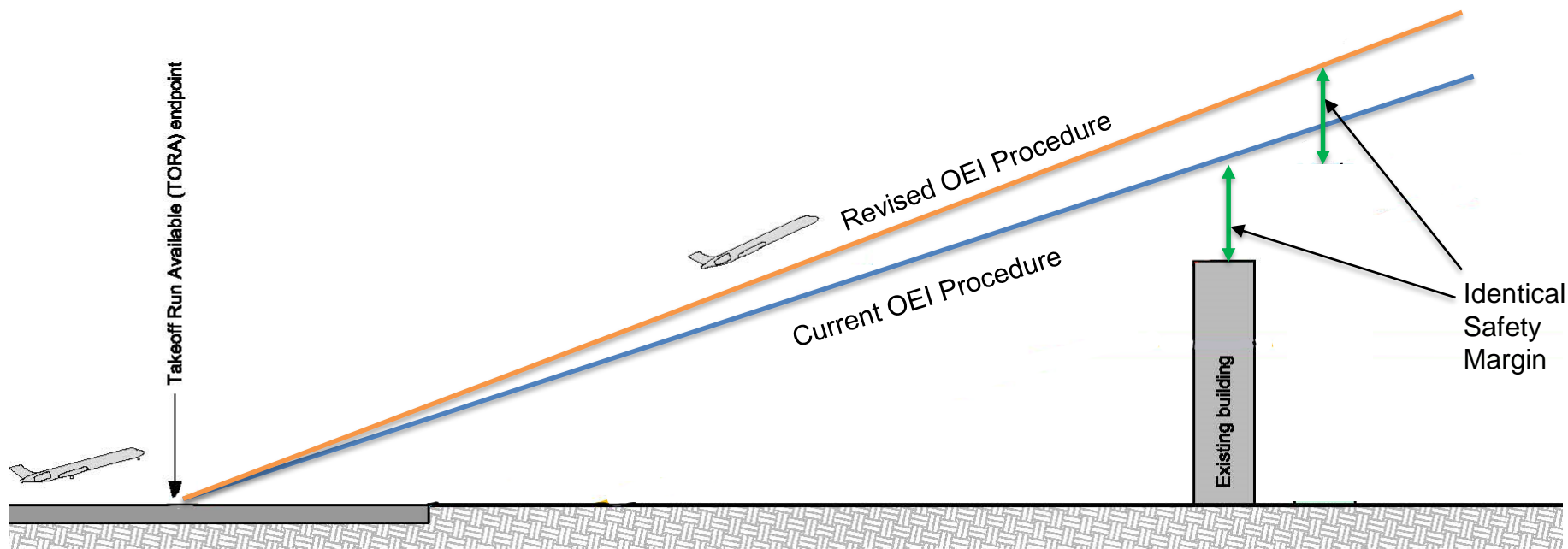
- FAA protects arriving and departing airspace around airport.
 - Invisible “surfaces” known as Part 77 and FAA/TERPS
 - Protect all aircraft types, all engines under normal operations
- Any proposed structure near this protected airspace requires FAA approval, which is incorporated into the City’s permitting requirements.
- Any potential changes to San Jose building heights do not affect FAA-mandated TERPS procedures or safety.

One-Engine Inoperative (OEI)



- One-engine inoperative (OEI) is a procedure in case one engine on a two-engine commercial aircraft becomes inoperative upon take-off.
- The FAA requires airlines to develop their own OEI procedures based on their specific aircraft for each departure.
- FAA does not consider OEI procedures to be a factor in height limits because airlines have the option to offload passengers, cargo, and fuel to clear structures safely with OEI.
- A plane that cannot safely climb out of SJC and avoid structures on one engine would NOT be allowed to take-off ***in any scenario***.
- OEI is not a safety issue.

Identical Safety Margin



Note: for Illustrative Purposes Only

Considerations for South Flow Departures



- What is “South Flow”?
 - Aircraft depart to the south during strong winds from the south
 - More typical in winter than summer (associated with cooler temps)
- Weight of the Aircraft
 - Passengers (“Load Factors”), cargo & fuel
- Temperature
 - Aircraft can climb faster in cooler weather
- Aircraft and Configuration
 - Certain aircraft have more power to take-off
 - Seating configuration of the aircraft can mean fewer passengers on the plane

2007 Obstruction Study



In 2007, San José conducted an Obstruction Study that established:

- The Straight Out OEI procedure, based on existing buildings working with developers
- The West Corridor OEI procedure, based on height of SAP Center

Study Evaluation Area



Council Direction to Staff (June 2017)



- Re-evaluate the 2007 Obstruction Study, with a goal of determining if changes can be made to maximize potential development densities Downtown
- Remain consistent with FAA and airline safety requirements
- Develop a collaborative process

Project Steering Committee



Community Representatives

Teresa Alvarado – SPUR

Scott Knies – San Jose Downtown Association

Matt Mahood – Silicon Valley Organization

David Bini – Building & Construction Trades Council

Josue Garcia – Santa Clara County Residents for Responsible Development

Matt Quevedo – Silicon Valley Leadership Group

Julie Matsushima – Airport Commissioner and Downtown Resident

City Staff

John Aitken and Judy Ross – Airport Department

Kim Walesh and Blage Zelalich – City Manager's Office/Office of Economic Development

Rosalynn Hughey – Planning, Building and Code Enforcement

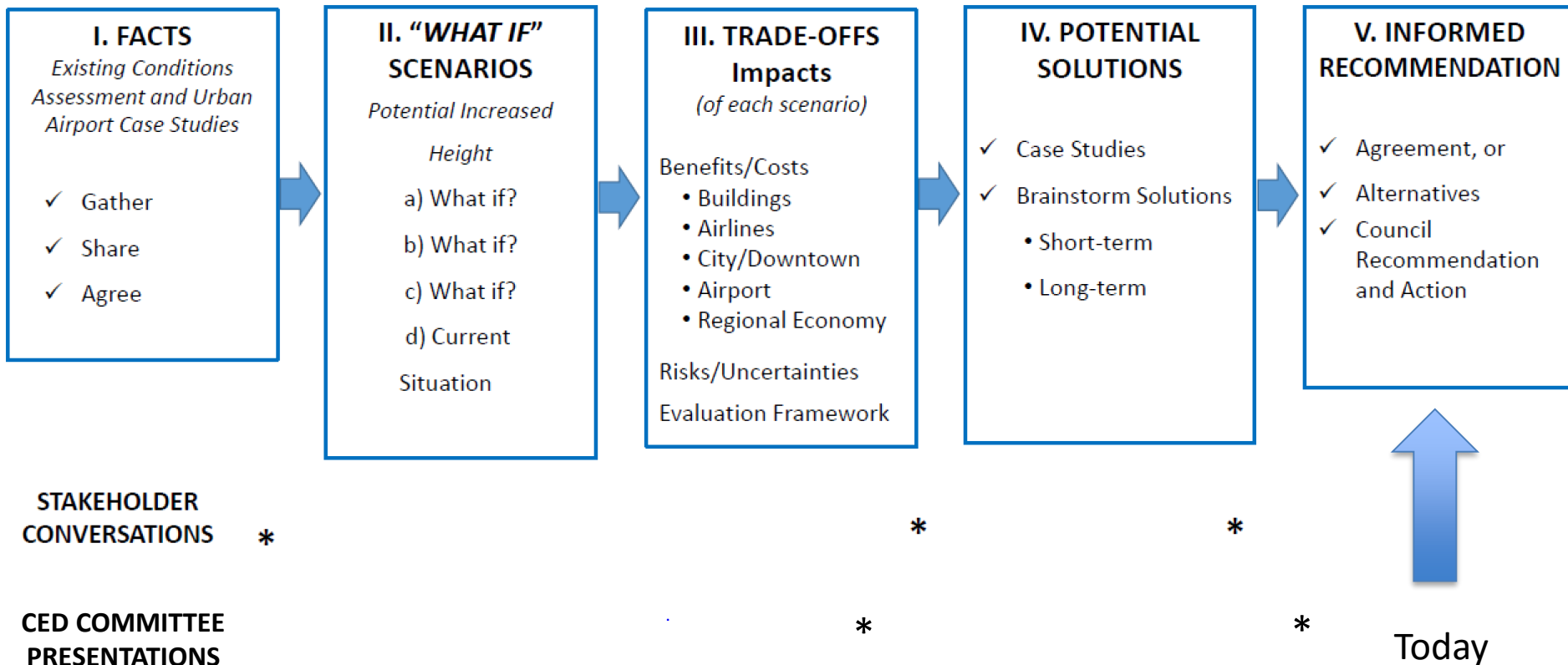
David Hai Tran & Christina Ramos – District 3 Office

Kelly Kline – Mayor's Office

Consultants

Landrum and Brown & Jones, Lang, and LaSalle

Collaborative Process



Airspace Protection Scenarios



- Started by looking at existing conditions and 10 different scenarios
- Steering Committee narrowed the list down to 4 scenarios for more detailed analysis:
 - **Scenario 4:** FAA/TERPS Height
 - **Scenario 7:** Existing Straight-out OEI protection
 - **Scenario 10:** Existing Straight-out OEI protection with West Corridor OEI protection alternatives
 - **Scenario 9:** Increased FAA/TERPS Height

Steering Committee Recommendation



Scenario 4 – FAA/TERPS Height

Steering Committee concluded this option had the right balance of:

- Allowing building heights to increase
- Maintaining key nonstop routes for Mineta San José International Airport

Development Impact of Scenario 4



Downtown Core

- Specific development sites may achieve some additional height: 5'-35'

Diridon Station Area

- Developable heights could increase by 70'-150'
- Up to 8.6M net new square feet of development
- \$4.4B in construction value and \$5.5M in annual property tax

Performance Mitigations for OEI



Certain long-haul flights become subject to mitigation procedures to protect OEI when a structure is built to FAA/TERPS.

- Day-to-Day Mitigations
 - Off loading of cargo and/or passengers
 - Request another runway (wind, weather, air traffic permitting)
 - Make a refueling stop
- Long-Term Alternatives
 - Change aircraft type
 - Cancel air service if payload loss affects financial viability

Airline Response to Scenario 4



13 airlines currently serving SJC responded for requests for a performance assessment of the various airspace scenarios.

Hainan indicated a potential concern with their existing service to Beijing.

Responded	No Response
Alaska	Air Canada
American	JetBlue
ANA	
British Airways	
Delta	
FedEx	
Frontier	
Hainan	
Hawaiian	
Southwest	
UPS	
United	
Volaris	

Frequency of Asian South Flow Departures



SJC Operations									
	2015		2016		2017		2018		Average
% Airport Ops in South Flow	9.1		15.9		12.9		11.9*		12.6
	# South Flow Dep.	% of Airline's Dep.	# South Flow Dep.	% of Airline's Dep.	# South Flow Dep.	% of Airline's Dep.	# South Flow Dep.	% of Airline's Dep.	% of Airline's Dep.
ANA	30	8.24%	57	15.83%	40	11.11%	23	6.32%	10.38%
Hainan	5	4.10%	30	13.45%	27	11.20%	10	4.81%	8.39%

* Preliminary

Asian south flow departures represent >0.06% of total SJC commercial departures.

Nonstop Routes: South Flow Feasibility

Today (summer)



London	Frankfurt	Tokyo	Beijing	Shanghai
B787-9 B777-300ER	B787-9 B777-300ER	B787-9 B777-300ER	787-9 B777-300ER	B787-9 B777-300ER A330-200 A350-900

Green – No Significant Weight Penalties

Orange – Some Weight Penalties

Red – Significant Weight Penalties

Rio de Janeiro	Taipei	HK/Shenzhen	Delhi	Dubai
B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900

Nonstop Routes: South Flow Feasibility in Scenario 4 (summer)



London	Frankfurt	Tokyo	Beijing	Shanghai
B787-9 B777-300ER	B787-9 B777-300ER	B787-9 B777-300ER	787-9 B777-300ER	B787-9 B777-300ER A330-200 A350-900

Green – No Significant Weight Penalties

Orange – Some Weight Penalties

Red – Significant Weight Penalties

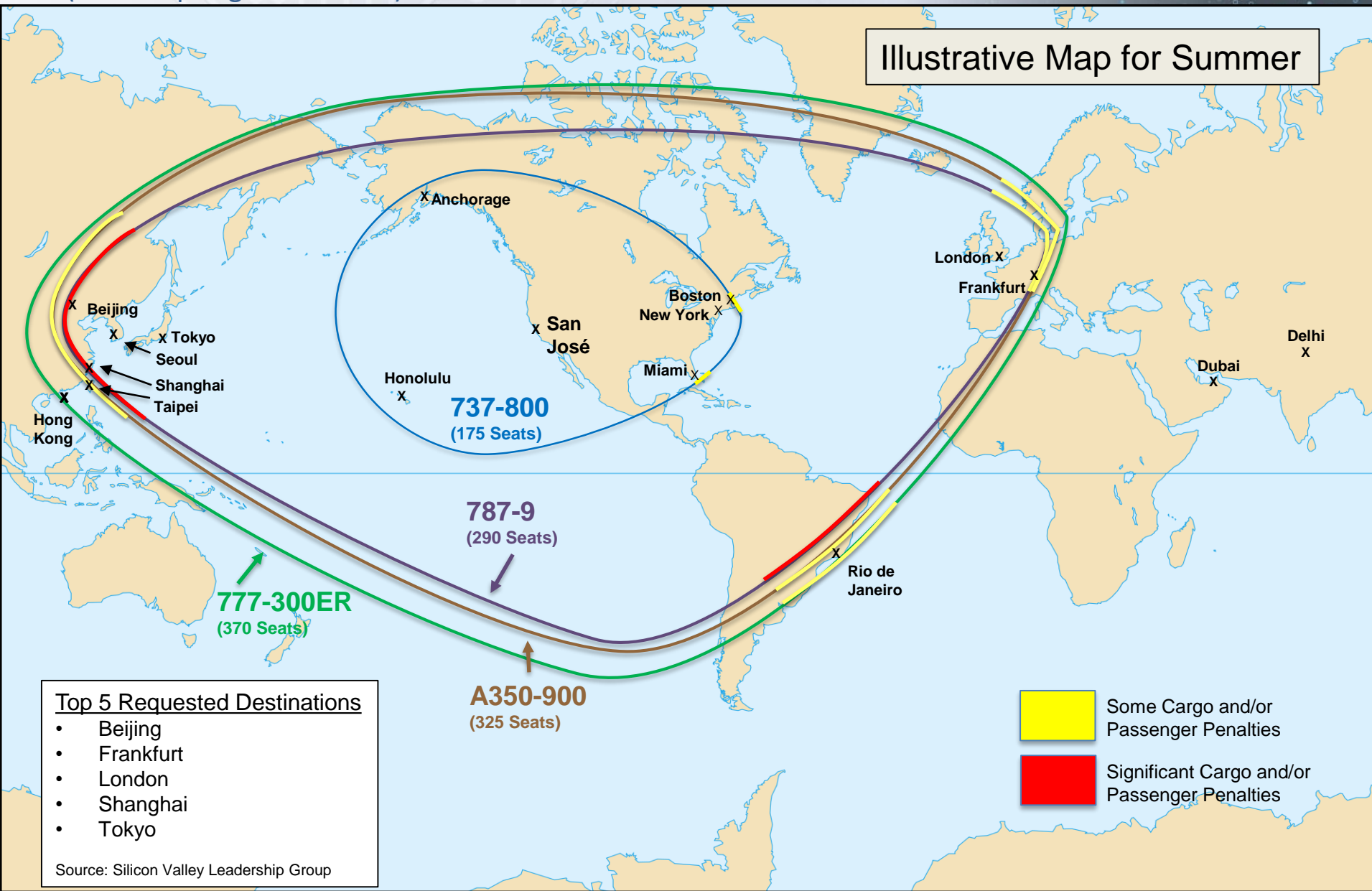
Rio de Janeiro	Taipei	HK/Shenzhen	Delhi	Dubai
B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900	B787-9 B777-300ER A330-200 A350-900

Scenario 4 by Plane Type

(Non-Stop Flights from SJC)



Illustrative Map for Summer



Top 5 Requested Destinations

- Beijing
- Frankfurt
- London
- Shanghai
- Tokyo

Source: Silicon Valley Leadership Group

Mitigating the Uncertainty



Create a Community Air Service Fund

- Fund could offset losses to airline for certain situations when they need to offload passengers due to OEI procedures
- Creative solution to address the uncertainty for current and future routes that may be impacted by OEI procedures
- Can support market growth for service by larger, more powerful aircraft that do not have weight penalties

Growing Together



- San José is proud to offer nonstop service to Europe and Asia to meet the needs of the South Bay community.
- Majority of SJC traffic is, and will continue to be, within North America and Hawaii.
- Increased development in Downtown has increased opportunity to grow SJC passengers.
- Community Air Service Support Fund could offset the economic uncertainty for select routes.

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Questions?