

SILICON VALLEY'S AIRPORT



Downtown Airspace and Development Capacity Study

February 26, 2019

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



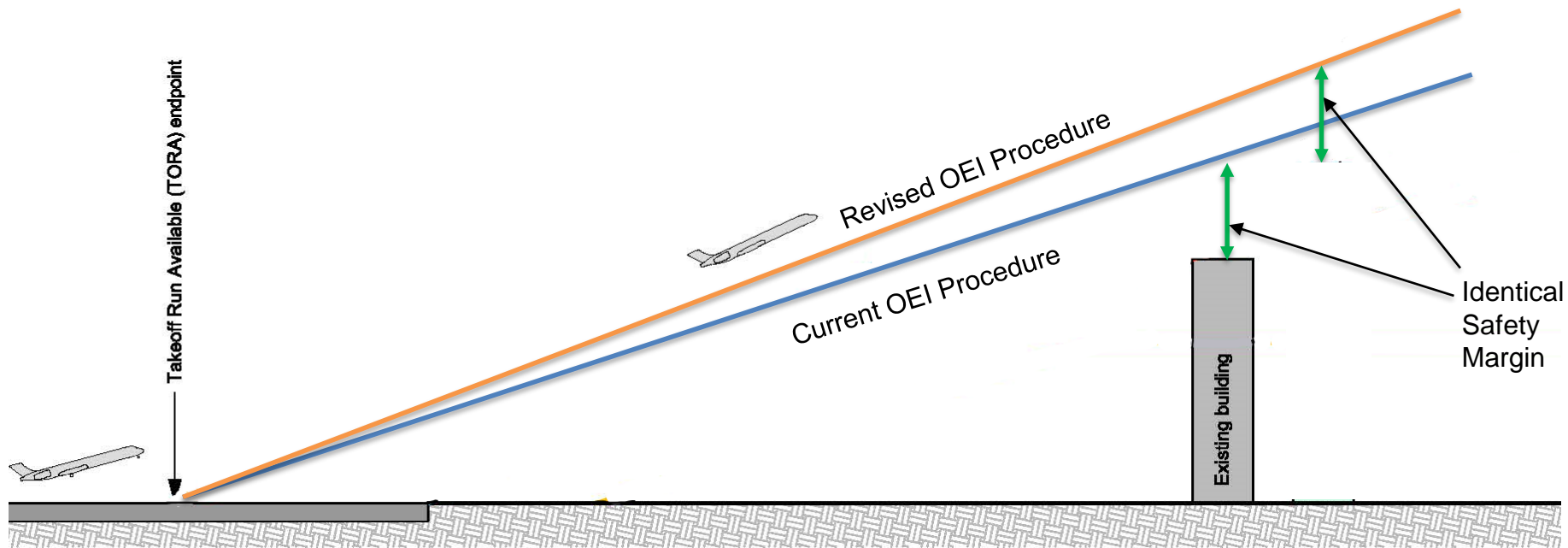
- FAA protects arriving and departing airspace around airport.
 - Invisible “surfaces” known as Part 77 and FAA/TERPS
 - Protect all aircraft types, all engines under normal operations
- Any proposed structure near this protected airspace requires FAA approval, which is incorporated into the City’s permitting 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

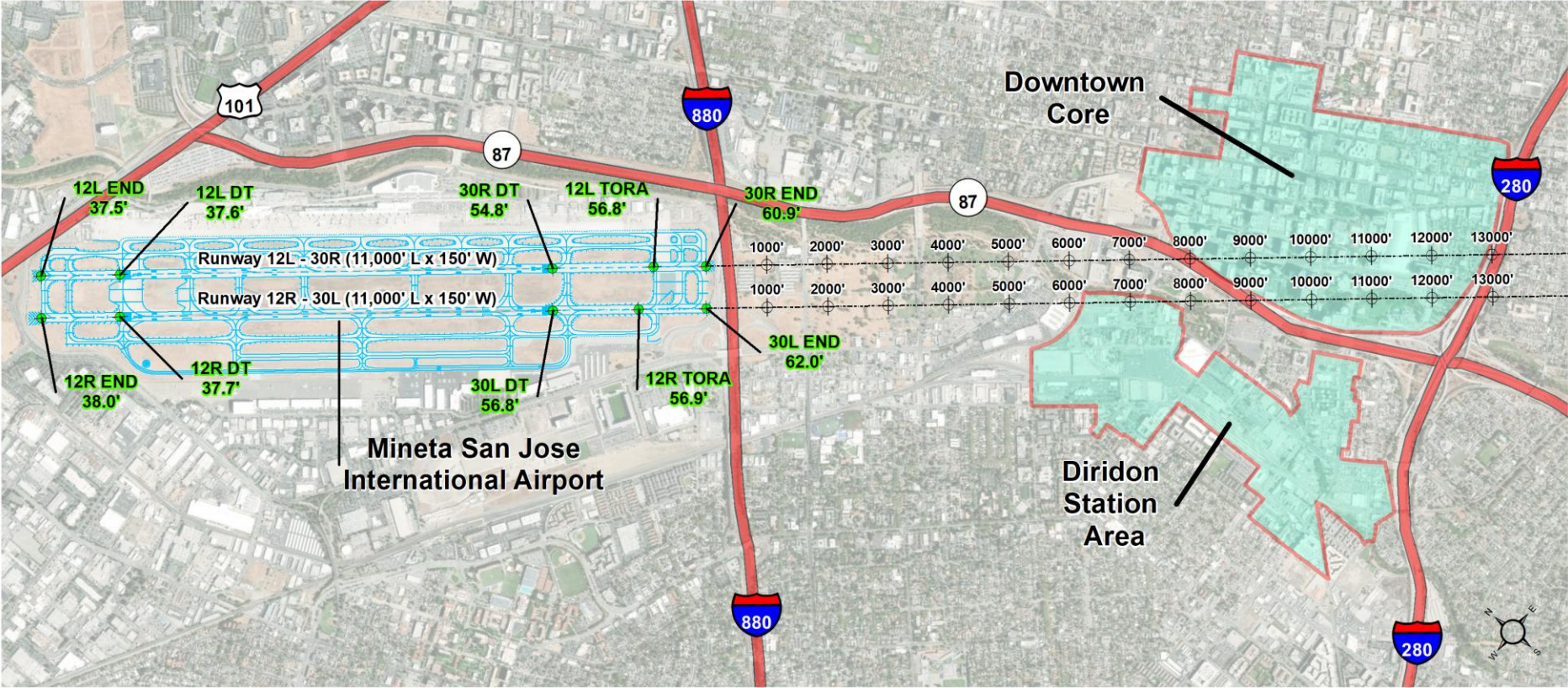
2007 Obstruction Study



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

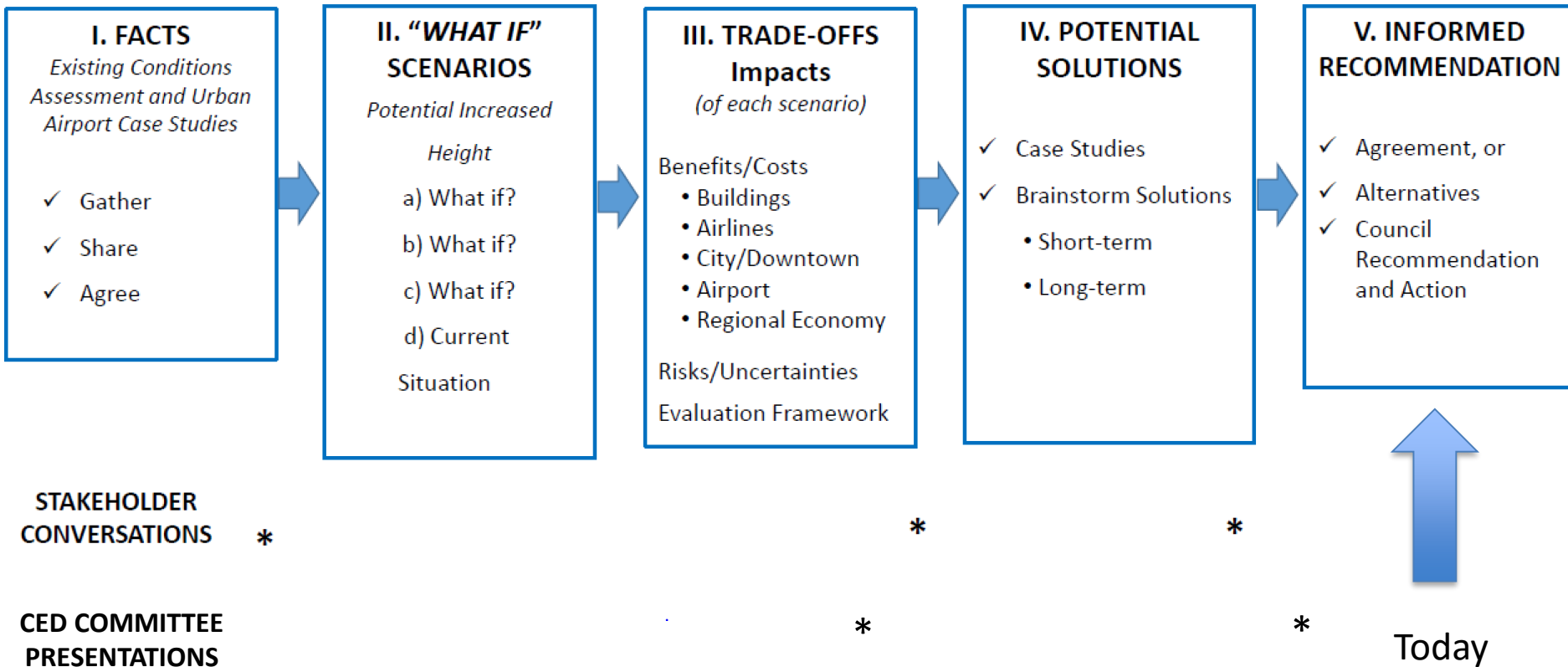
David Hai Tran & Christina Ramos – District 3 Office

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

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	B787-9	B787-9	787-9	B787-9
B777-300ER	B777-300ER	B777-300ER	B777-300ER	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	B787-9	B787-9	B787-9	B787-9
B777-300ER	B777-300ER	B777-300ER	B777-300ER	B777-300ER
A330-200	A330-200	A330-200	A330-200	A330-200
A350-900	A350-900	A350-900	A350-900	A350-900

Nonstop Routes: South Flow Feasibility

in Scenario 4 (summer)



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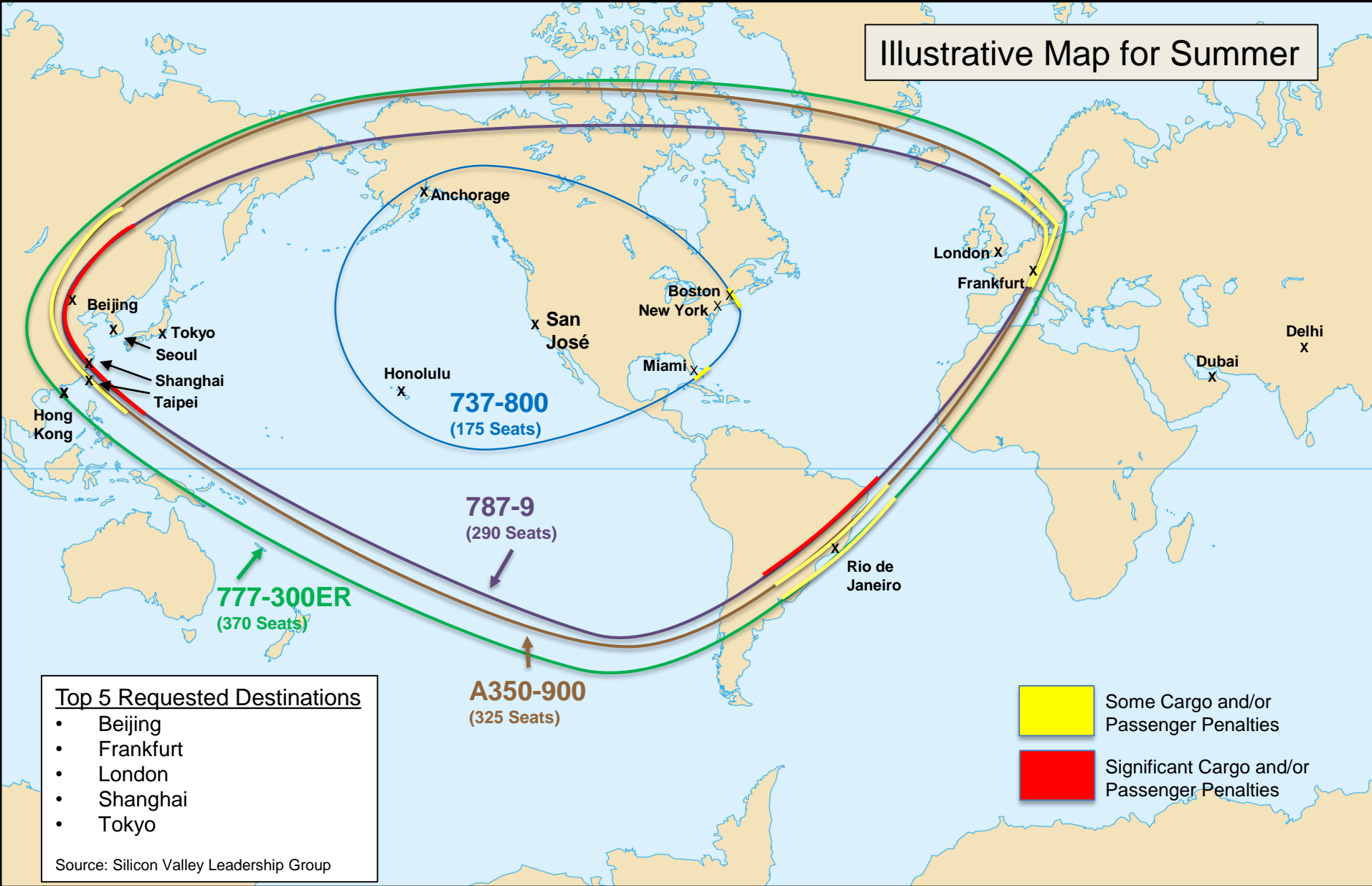
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B777-300ER	B777-300ER	B777-300ER	B777-300ER	B777-300ER
A330-200	A330-200	A330-200	A330-200	A330-200
A350-900	A350-900	A350-900	A350-900	A350-900

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

Yellow Some Cargo and/or Passenger Penalties
Red Significant Cargo and/or Passenger Penalties

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?