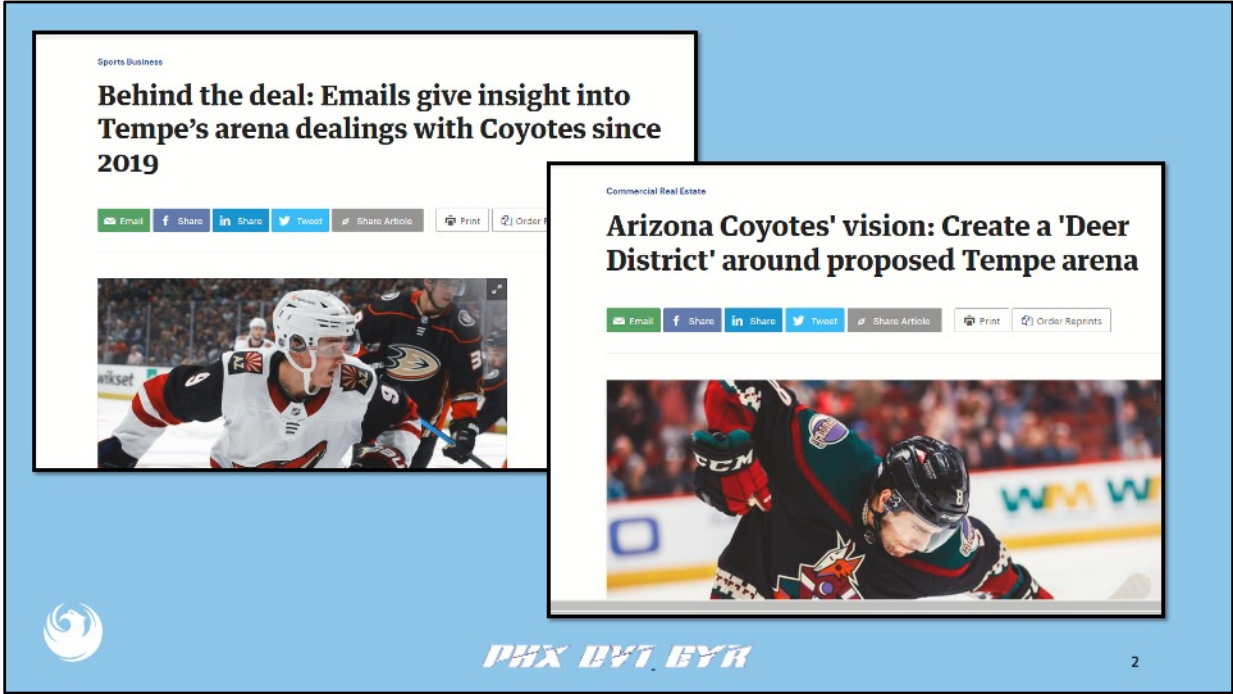


PROPOSED TEMPE ENTERTAINMENT DISTRICT

Background, Assessment, and Expected Impacts to
Phoenix Sky Harbor International Airport



PHX DVT BYR



Aviation Staff first learned of Tempe’s desire to develop a parcel under Sky Harbor flightpaths through media reports on July 22, 2021.

On September 2, 2021 media reports indicated the Arizona Coyotes and development firm Bluebird Development submitted the sole bid.




The subject parcel, approximately 50 acres, is located 9,800 feet off the east end of Sky Harbor's southern 2 runways, and directly in line with the airport's primary departure runway.

The distance of the parcel from the airport is less than the length of the runway itself (Runway 7L/25R = 10,300 feet)



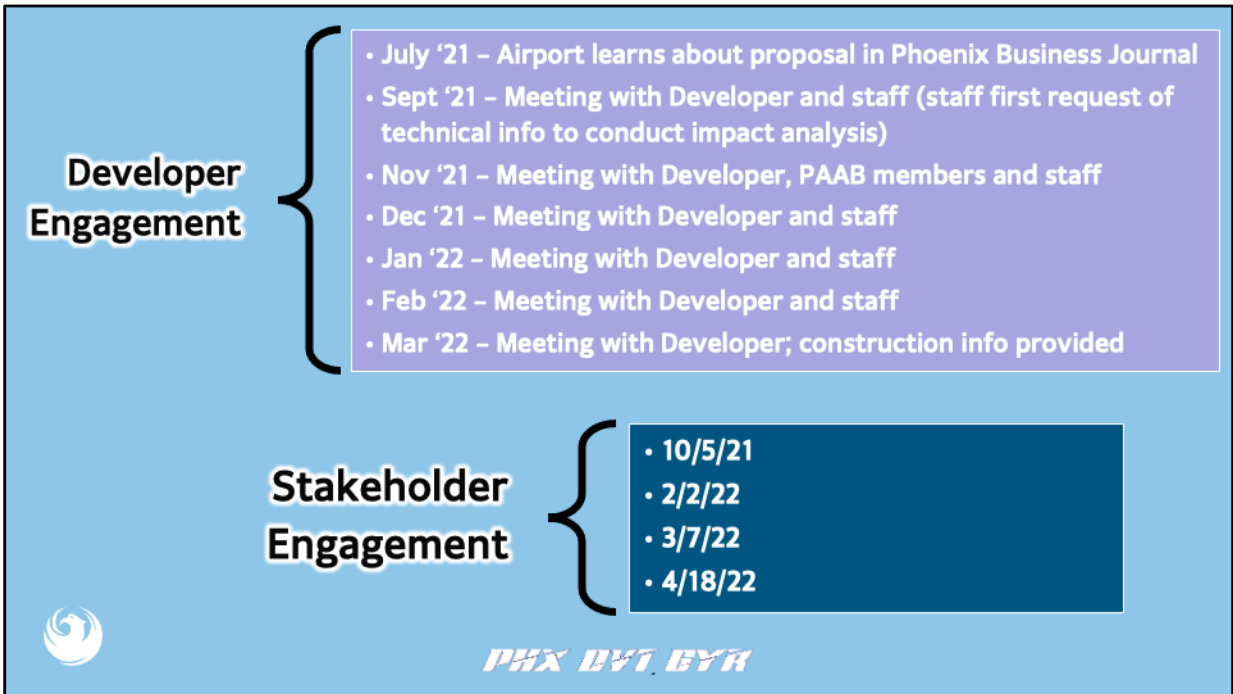
This general massing plan was developed based on the developer's initial description of proposed site plan characteristics.

Approximately 1,700 residential units are being proposed on the west edge of the development, closest to Sky Harbor's runways.

 <p>September 20, 2021</p> <p>Mr. Nicholas J. Wood Snell & Wilmer One Arizona Center 400 East Van Buren Street, Suite 1900 Phoenix, Arizona 85004-2202</p> <p>Re: Tempe Arena Request for Proposals, no. 22-030 (Rio Salado Arizona Coyotes (as Arizona Hockey Co LLC) & Bluebird Dr. Proposal)</p> <p>Dear Mr. Wood,</p> <p>Thank you for reaching out to me and inviting the City of Phoenix to discuss the Arizona Coyotes and Bluebird's Tempe Entertainment District proposal submitted in response to the City of Tempe's request. We much appreciate the discussion we had with you, Mr. Gutierrez & team last Thursday regarding the details of your proposal.</p> <p>The proposal covers development of Tempe land at Rio Salado Drive, approximately 10,000 feet due east from Phoenix Sky Harbor International Airport's center and south runways. As you may have guessed if proposed development presents unique and significant challenges altogether limit capacity at Phoenix Sky Harbor International Airport, critical that the Coyotes and Bluebird adequately address Sky Harbor concerns, as well as any other challenges that may be identified in a detailed analysis of data not yet available to Sky Harbor. We much appreciate the challenges are addressed immediately so that they do not present regional air navigation in general and to Sky Harbor in particular.</p> <p>Tempe's RFP requires the developer to comply with FAA-related Sky Harbor's Part 150 noise contours. To ensure proper implementation of requirements, avoid creating an air-navigation hazard, and provide measures for the proposed development and for Sky Harbor, the developer should address, at a minimum, the following concerns and recommendations Sky Harbor does not have a copy of the Coyotes and Bluebird's recommendations are preliminary and not exhaustive:</p> <p>PHX DVT BYX City of Phoenix Aviation Department 2105 E. Baseline Road • Phoenix, Arizona 85034-1905 • Phone: 602-433-3651 • Fax: 602-433-3676 • TDD: 602-433-3651</p>	<p>Mr. Nicholas J. Wood September 20, 2021 Page 2</p> <ol style="list-style-type: none"> The RFP mentions, and Sky Harbor insists, that the Coyotes and Bluebird strictly comply with 14 CFR Part 77 (requiring notice to FAA of proposed construction) and with 14 CFR Part 150 (noise mitigation standards for sensitive land uses). Specifically, the Coyotes and Bluebird must ensure that the 7460-1 obstruction evaluation required under Part 77 is properly and carefully conducted and that the development itself does not create an air-navigation hazard, interfere with navigational aids, or constrain the current or future capacity of Sky Harbor. Additionally, before the property is further entitled and before construction documents are submitted for plan review, any proposed improvements and all related construction activity (cranes, etc) that may exceed 100 feet above ground level (AGL) must be reviewed with Sky Harbor and with major operators (e.g., American Airlines, Southwest, Delta, and FedEx) to ensure compatibility with all airspace requirements. This includes each operator's One Engine Inoperable (OEI) departure profiles, which may differ from federal airspace surfaces. To avoid future disputes about air navigation on the airport's east side, Sky Harbor urges the Coyotes, Bluebird, and Tempe to execute an aviation easement (in form and content like that used in nearby developments) to Sky Harbor. This easement would protect the public's continued right to fly over (and in proximity to) the proposed development. The proposed development is within Sky Harbor's formal 65 DNL noise contour, and consequently, the FAA deems residential development as an incompatible land use. Sky Harbor is obligated to oppose all incompatible land uses, including residential development, for the health and protection of prospective residents and the public in general. The Coyotes and Bluebird—together with all other project developers—should include in all residential sales/lease contracts a copy of the statutory airport disclosure map. In the Tempe Entertainment District as developed, the Coyotes and Bluebird must prohibit all use of lasers, fireworks, promotional spotlights, or similar activities that would create a hazard to air navigation attributable to brilliant light, glare, smoke, dust, or electromagnetic disturbance. We further request that the Coyotes and Bluebird coordinate with Sky Harbor and FAA to ensure that all TED development and venue lighting (e.g., marquees, dynamic light boards, electronic banners, etc.) does not create a safety hazard to flight. At our meeting, the Coyotes and Bluebird agreed to prevent all future TED events and activities that would require implementation of federal Temporary 	<p>Mr. Nicholas J. Wood September 20, 2021 Page 3</p> <p>Flight Restrictions (TFR). We appreciate that consideration as we believe implementation of TFRs in such close proximity to Sky Harbor's southern two runways will likely significantly limit, if not altogether suspend, flight operations to the airport for the duration of such an event.</p> <ol style="list-style-type: none"> Given the proximity of the TED development to Sky Harbor runways, the Coyotes and Bluebird should prohibit all amateur or recreational drone use (unmanned aerial systems) in and around the development. We also urge the Coyotes and Bluebird to require any professional (institutional or commercial) drone use near the development to receive prior permission from Sky Harbor in addition to all required FAA approvals to ensure public safety and to prevent unintended deployment of law enforcement resources to reports of drone activity. The Coyotes and Bluebird should submit to Sky Harbor and to the Phoenix Planning and Development Department all applications for Tempe General Plan Amendments and Rezoning requests filed for the site. We request the opportunity to review and comment on any submitted site plans and building elevations and to provide our review and comments to the Tempe Community Development Department. We ask the Coyotes and Bluebird to urge Tempe to formally consider and evaluate Sky Harbor's review and comments. The Coyotes and Bluebird should contract with a wildlife biologist meeting FAA qualification standards to review master and block development plans for compliance with FAA wildlife-hazard mitigation criteria and best practices. Sky Harbor requests that the Coyotes and Bluebird comply with these criteria during the development's construction, operation, and maintenance. This requirement is critical given the Coyotes and Bluebird's desire to expand Tempe Town Lake west to Priest Drive. <p>We ask the Coyotes and Bluebird to provide Sky Harbor with a complete copy of their proposal to Tempe, minus any confidential financial documents. When we receive the proposal and the other documents promised at our meeting, Sky Harbor will be able to conduct a more detailed and informed analysis and provide you with more formal comments, and until then, we express no other opinion on the TED development or on the Coyotes and Bluebird's proposal. To emphasize our perspective, Sky Harbor is the region and state's largest economic engine. Based on our conversation yesterday, I am confident that we share the mutual objective of ensuring that Sky Harbor remains protected from incompatible development and uses so it may continue to support the economic vitality of the City of Tempe and the entire region.</p>
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The developer met with Airport staff on September 16, 2021 to provide high-level details about their proposal.

Airport staff outlined some initial concerns about the development at the meeting, and more formally responded with a letter both to the Developer and to the City of Tempe to outline 10 broad areas of concern that would need to be addressed to minimize negative impacts to Sky Harbor, the Airlines, the National Airspace System (NAS), and the communities we serve.



Since that time, Aviation Staff met with the developer several times in an attempt to work through the issues outlined in the letter.

Staff also met with Technical Stakeholders to include the FAA and Airlines to obtain their feedback and perspective.

KEY ISSUES TO BE ADDRESSED



Building Heights



Incompatible Residential



Glare / Reflectivity



Event Venue Hazards



Navaid/Spectrum



Wildlife Management



7

- Building heights and obstructions associated with site development (crane heights, etc) must be compatible with flight approach and departure paths including “One Engine Inoperative” paths to ensure safe and efficient operations at Sky Harbor.
- No residential units can be allowed in the High Noise impacted 65 DNL contour near the airport. This entire development is contained within the high impact noise contour. Mitigation tools such as sound insulation and aviation easements do not make the proposed land use compatible with airport operations.
- Given the site is located so close to the airport, distractions such as building surface glare, marquees, laser light shows, etc must be addressed and restricted during this most critical phase of flight.
- The site must not interfere with nearby navigational aids that pilots depend on to safely operate at Sky Harbor.
- The proposed development must be assessed by a certified wildlife biologist to ensure the new activity doesn't introduce incompatible wildlife that would result in new hazards to aviation.

FLIGHT PATH REVIEW

Departing Flights



Arriving Flights



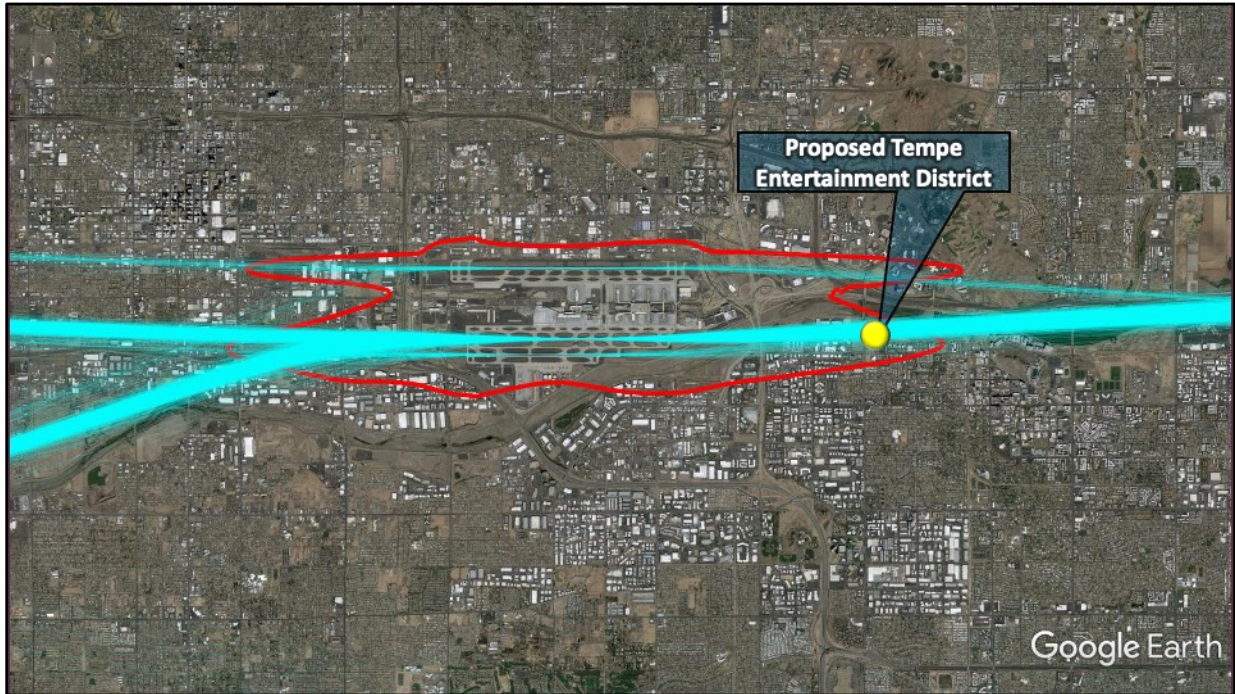
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This slide represents one week's worth of flight tracks in and out of Sky Harbor to the east of the airport.

Given noise abatement procedures implemented as a result of Tempe litigation in 1994, the flight tracks to the east of Sky harbor (BLUE) converge over the river bottom as opposed to flying straight out as is customary to the west of the airport and at most airports nationwide. This convergence puts the flight tracks directly over the proposed Arena and Residential development – exactly what these noise abatement procedures were designed to avoid.

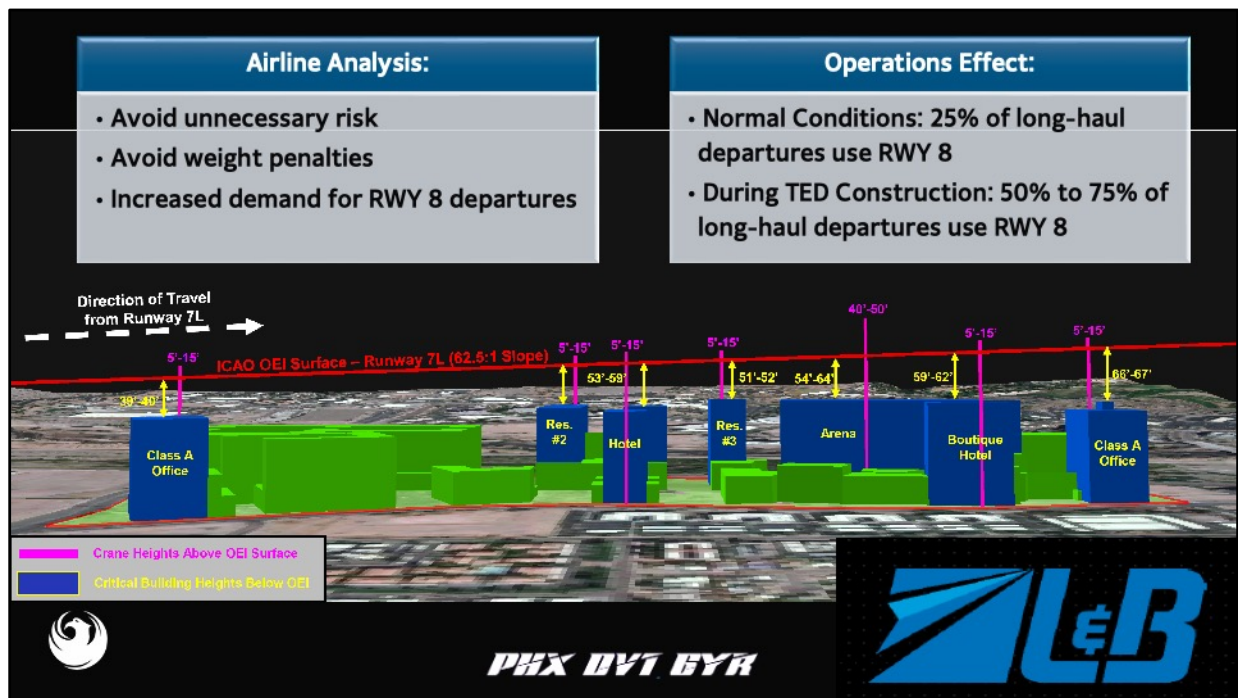
The arriving flight tracks (GREEN) are expected to fly over the proposed development as close as 400 feet from aircraft wheels to roof tops.

Residents in the proposed development can expect flights arriving and departing over their homes as frequently as every 60 seconds during the day.



This map depicts both East and West departure streams at a larger scale.

You can see how flight tracks to the west of the airport continue straight out or diverge which is safer and more efficient than the converging flight tracks to the east which are in place to support the 1994 Intergovernmental Agreement with Tempe as a result of litigation to stop development of the airport's third runway at the time.



The chart above depicts proposed building heights (BLUE and GREEN) and crane heights (PINK) based on data provided by the developer.

The proximity of TED and their construction cranes present some unique challenges for airlines who must ensure their airplanes can safely return to the airport in the event one engine fails on takeoff. Ensuring airspace remains clear of obstructions above this one engine inoperative (OEI) surface depicted in red provides airlines that assurance.

Through interviews with the major carriers and modeling, aviation consultants were able to develop presumptions around operational changes that can be expected while this project is developed. For example, up to 75% of long-hauls domestic and international flights will request the north runway for departures

The developer has asked several technical questions and requested our data for this analysis and we have provided it. The developer recently announced they are considering lower rooftop heights and are trying to ensure most cranes will not penetrate the OEI surface. The airport and aviation stakeholders are encouraged to learn that the developer has listened to concerns about these obstructions.

CONSTRUCTION CRANE IMPACTS




February 21, 2022

“Having reviewed the locations and heights of the anticipated construction cranes we have found they may result in a significant reduction in payload as well as passenger restrictions. The maximum payload reductions and passenger restrictions are the most serious during warm weather days.”

“[The attached] table shows that all fleets, regardless of size or engines, will have a negative payload impact from the anticipated construction cranes.”

“In some cases, not limited to just long-haul flights, the detrimental effects of the construction cranes are quite severe.”

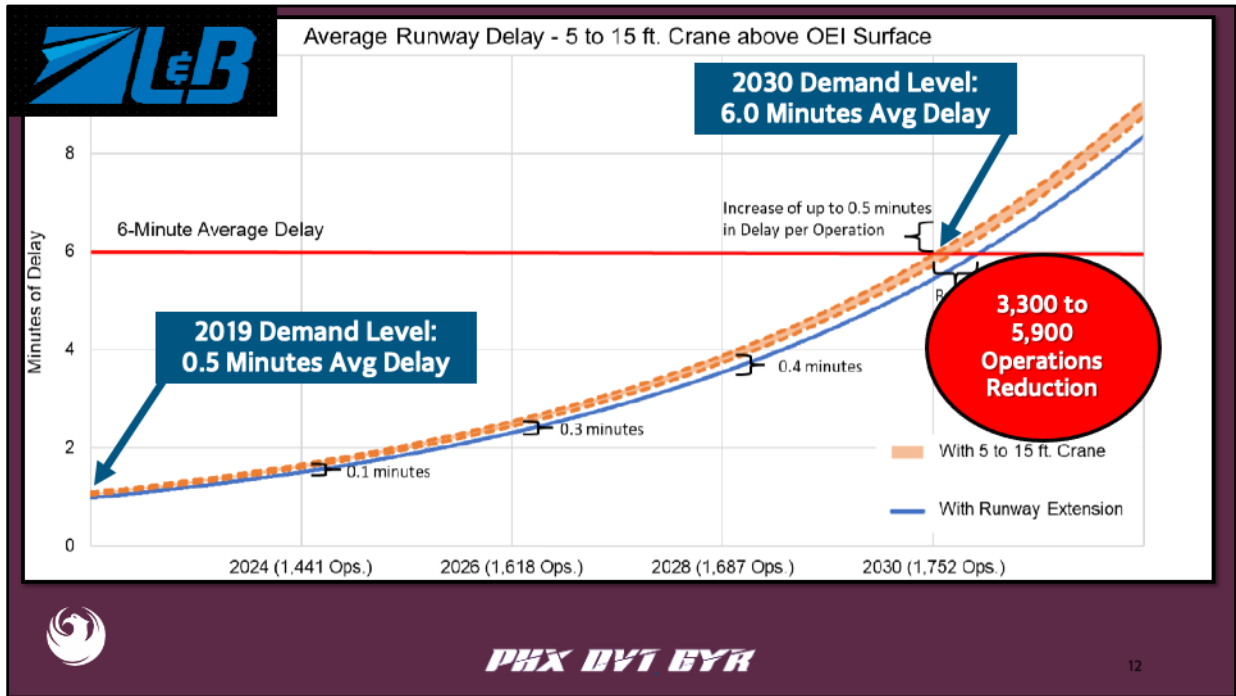



Jay Leitner
Principal Engineer, Operations Engineering
American Airlines  
You are why we fly

11

Airlines have raised concerns based on their assessment of the potential obstructions, and have indicated that they must maintain the highest safety standards.

In doing so, impacts like obstructions associated with buildings and cranes result in the imposition of economic costs to the airlines. In other words, in order to make departures safe, they will be required to make choices like reducing fuel loads, payloads, and denying boarding to passengers on some long-haul domestic and international flights. This comes at a cost to the airlines and to the traveling public.



The developer asked Aviation Staff to analyze different demand levels at different years to ensure a complete picture of potential operational delay from TED. An economic analysis was completed using crane height data provided by the developer.

This graph depicts the delay factor associated with construction based on today's operations would be about ½ a minute on avg; if TED construction occurred during 2030 demand levels that delay factor would increase to an average of 6 minutes.

6 minutes is considerable in that up to 5,900 flights could be cancelled or eliminated from Sky Harbor at that delay level.

This results in less air service, less consumer choice, and higher ticket prices.

Year	Annual Flight Count	Delay Increase (Minutes)		Additional Cost to Airlines (\$Mil)	
		Low	High	Low	High
2024	475,467	0.08	0.15	\$2.8	\$5.3
2026	533,918	0.16	0.29	\$6.3	\$11.5
2028	556,854	0.22	0.38	\$9.1	\$15.7
2030	578,274	0.29	0.49	\$12.5	\$21.0

Annual Regional Economic Impact (Loss): \$148M to \$264M



PHX DVT 6YR

The developer also asked Aviation Staff to break down economic impacts at different demand levels which you can see here.

Based on crane height data provided by the developer, the cost to airlines is expected to range from \$2.8 to \$21M at the out year, similarly the regional economic loss would range between \$148 and \$264M.






The left half of this slide represents the proposed development as it sits within the 65 DNL High Noise contour at Phoenix based on the published 1999 Noise Contours.

Tempe's RFP required the developer to obtain the most current noise contours from the airport. They are reflected on the right half of the screen, and although the contours have reduced in size given the advent of quieter aircraft engine technologies over the years, the development remains fully within the high impact noise contours next to Sky Harbor.

65 DNL represents an average Day-Night noise decibel level. Single Aircraft noise events are typically in the 70-80 decibel range where speech is disrupted and sounds similar leaf blowers will be heard over residences as frequently as every 60 seconds when the aircraft are departing to the east.

FAA PART 150 COMPATIBLE LAND USES

		55-65 DNL	65-75 DNL	75+ DNL
	1-2 Family	Yellow	Orange	Red
	Multi-Family	Yellow	Orange	Red
	Mobile Homes	Yellow	Orange	Red
	Dorms, etc.	Yellow	Orange	Red
Residential				
	Churches	Yellow	Orange	Red
	Schools	Yellow	Orange	Red
	Hospitals	Yellow	Orange	Red
	Nursing Homes	Yellow	Orange	Red
	Libraries	Yellow	Orange	Red
Institutional				
	Sports/Play	Yellow	Orange	Red
	Arts/Instructional	Yellow	Orange	Red
	Camping	Yellow	Orange	Red
Recreational				
Commercial	All Uses	Yellow	Yellow	Yellow
Industrial	All Uses	Yellow	Yellow	Yellow
Agricultural	All Uses	Yellow	Yellow	Yellow

PER FAR PART 150	COMPATIBLE	Yellow
	INCOMPATIBLE	Red

15

The Cities of Phoenix and Tempe completed an updated Part 150 noise compatibility study in 1999 as a condition of the 1994 Intergovernmental Agreement which settled Tempe litigation to stop airport growth.

Both cities agreed to comply with the recommendations of the Part 150 study. The standard land use matrix used by the FAA for Part 150 programs is depicted here. While developers can use tools such as sound insulation to attempt to mitigate the effects of noise on residents, the underlying land uses remain incompatible as shown by this chart.

Tempe agreed not to permit incompatible land uses in this area when they signed the 50-year intergovernmental agreement in 1994.

TEMPE-PHOENIX IGA (EXP 2044)

4DME departure
gate (FAA)

Departure
equalization
(FAA)

Flightpath
monitoring
(Phoenix)

Part 150 study
(FAA/ Phoenix)

Implement Part
150 (Phoenix and
Tempe)

Tempe and Phoenix agree to take all actions necessary, consistent with applicable laws and regulations, to implement the land use management strategies recommended in the F.A.R. Part 150 Noise Compatibility Plan and Program. Tempe, consistent with applicable laws and regulations, will take such measures as are necessary to ensure that new development undertaken in connection with the Rio Salado project or in noise sensitive environs within its jurisdiction will be compatible with the noise levels predicted in the F.A.R. Part 150 Noise Compatibility Plan and Program.



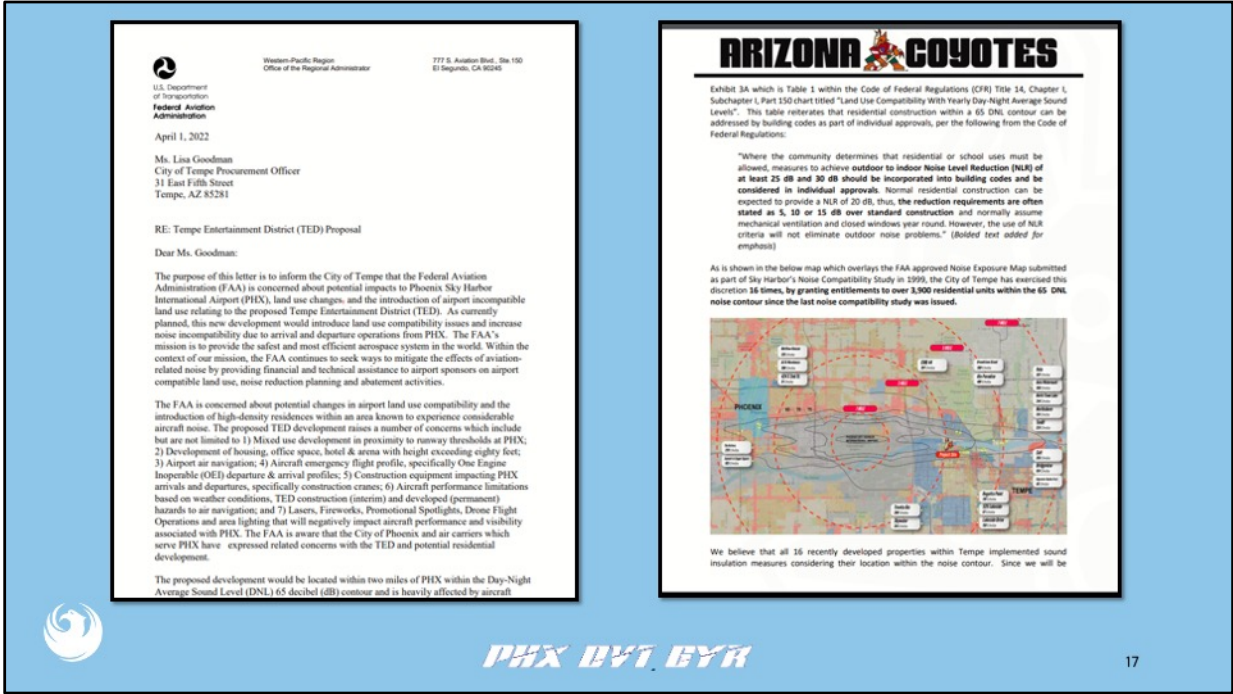
16

The City of Phoenix, Sky Harbor, the Airlines, and the FAA all have worked hard to fulfill Phoenix's commitments under the Intergovernmental agreement (IGA).

In addition to investing hundreds of millions of dollars in noise abatement funding to sound insulate and voluntarily acquire existing noise-impacted land under the flight paths, the industry developed a "4-DME Gate" which requires planes to converge down the river bottom in Tempe to avoid residential developments.

Phoenix and Aviation Stakeholders also worked to ensure the noise impacts are evenly split to the east and west of the airport, and have spent millions of dollars on the Part 150 study and ongoing flight path equipment and monitoring. In return, Phoenix asked Tempe to commit to ensuring incompatible land uses aren't permitted under flight paths.

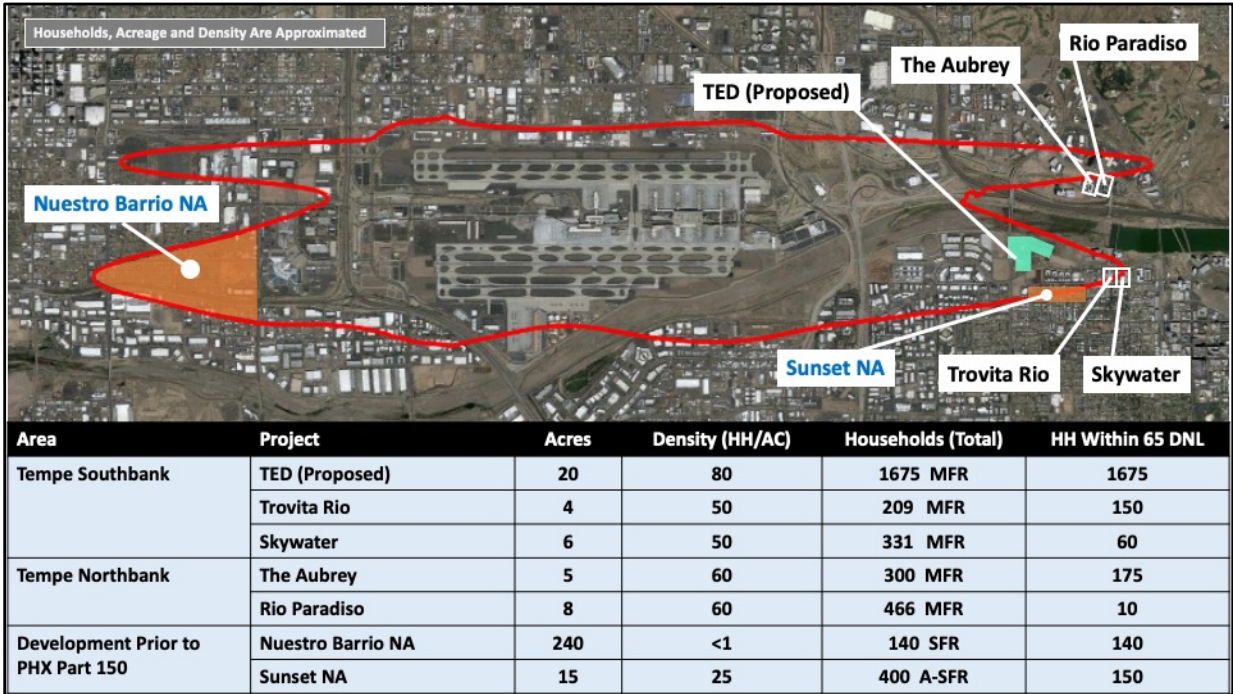
This proposal puts residences directly under the flight paths the aviation industry created to avoid residential neighborhoods.



The Federal Aviation Administration (FAA) sent a letter to Tempe on April 1st to raise its serious concerns about the proposal and noted the proposed incompatible residential units alone would increase the national population in high impact noise areas by 1%.

The FAA went on to clearly tell Tempe that any residential development in this area would be an incompatible land use.

The Arizona Coyotes responded to the FAA telling them they believe the FAA's position is wrong, and that Phoenix and Tempe have allowed thousands of residences to be built within the 65 DNL noise contours. This is not accurate as the noise contours depicted are the outdated 1999 contours, and not the current 65 DNL contour that the Coyotes are required to use in their assessment.



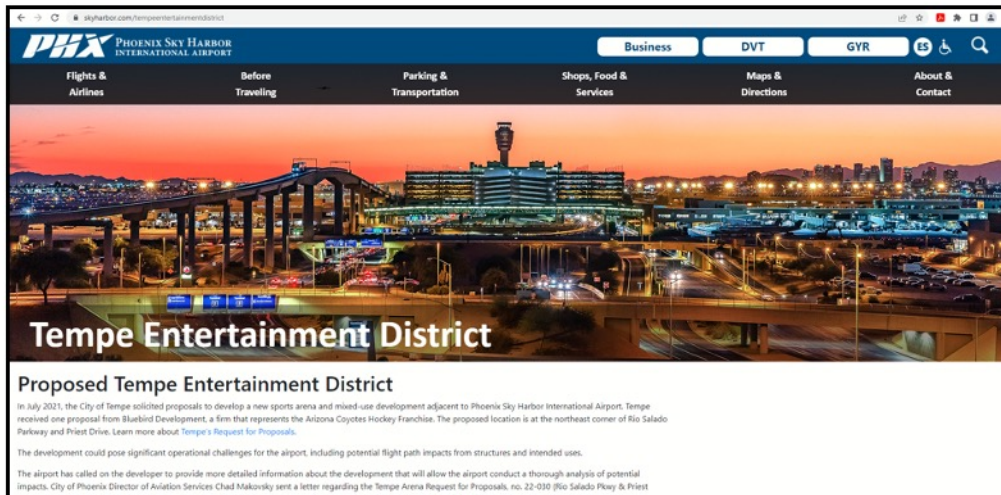
The red line reflects the current 65 DNL high impact noise contour.

About 550 households are within this contour that pre-date the Part 150 (Nuestro Barrio and Sunset neighborhoods – noted in blue)

Since the Part 150 study was completed, Tempe-approved development near the 65 DL is about 1300 units (Trovita, Skywater, Aubrey and Rio Paradiso), of which approx. 395 units are inside the 65 DNL

There are approximately 700 Households within the 65 DNL contour today. The TED proposal would increase this exposed population by 143%

SKYHARBOR.COM/TEMPEENTERTAINMENTDISTRICT



19

Phoenix is committed to transparency. A timeline including correspondence, presentations, research, and analysis are available for review on the project website: <https://skyharbor.com/tempeentertainmentdistrict>

With a \$13 billion payroll and nearly 60,000 employees working on or in connection to the airport, Sky Harbor is one of the largest employment centers in the state of Arizona. The airport has adopted a masterplan that will result in nearly \$6 billion in additional investments that will bring quality jobs to the airport and surrounding communities and ensure the Sky Harbor keeps pace with our rapid population growth. If Sky Harbor is unable to meet development goals, airlines will make different choices, including:

- Utilizing airports that do not have these capacity restrictions.
- Choosing not to fly long haul and international routes direct from Phoenix, instead favoring other international hubs with connections to Phoenix.
- Managing demand for air service due to reduced capacity through higher ticket prices, which will likely result in higher costs and less air service to our community.

Incompatible land uses must be removed from the Tempe Entertainment District proposal to ensure Sky Harbor remains protected to serve future generations.