



## CITY COUNCIL STAFF REPORT

**From: City Manager**

**Report Type: STUDY SESSION**

**Lead Department: Public Works**

**Meeting Date: March 6, 2023**

Report #: 2302-0948

### **TITLE**

Comprehensive Status Update and Long-Range Planning Discussion on the Palo Alto Airport

### **RECOMMENDATION**

This is a general overview and update on the Airport and no Council action is required at this time.

### **EXECUTIVE SUMMARY**

In August 2014, the County of Santa Clara transferred the Palo Alto Airport (PAO or Airport) back to the City. Since that time, staff has been bringing the Airport up to current Federal Aviation Administration (FAA) standards through several projects, including the Palo Alto Airport Runway and Taxiways Rehabilitation Improvement Project (AP-15003), Airport Perimeter Fence Project (AP-16003), and Airport Apron Reconstruction Project (AP-16000). Other efforts have included working to repurpose an existing fuel tank to supply unleaded aviation fuel to airport users and implementing software programs for lease management and transient vehicle and aircraft accounts.

Since 2014, great strides have been made in restoring the Airport to current standards, ensuring the continuity of operations and safety for all users. With the required improvements nearing completion, and with advances in the aviation industry and new industry standards and important regional issues like sea level rise, the Airport has initiated long-term planning efforts as required by FAA grant assurances.

In October 2021, the Airport received funding from the FAA and began the first phase of the Long-Range Facilities and Sustainability Plan (LRFSP) formally known as the Airport Layout Plan Update with Narrative Project (AP-21000). This initial phase gathered background and existing condition information about the Airport. Funding for the second phase of the LRFSP was received in October 2022. The LRFSP is intended to guide improvements to the Airport over the next 20 years and beyond using the guidance of FAA Advisory Circulars, Orders, and regulation. In alignment with City priorities, the Airport emphasizes sustainability within the master

planning process to ensure a balanced outcome across economic, operational, natural resource, and social priorities. The LRFSP will prepare the City and the Airport for emerging technologies that are anticipated to reduce aircraft noise. From electric aircraft to vertical takeoff and lift, the Airport will be ready to accommodate and welcome these rapidly emerging aircraft.

## **BACKGROUND**

### Palo Alto Airport History

Palo Alto has a strong history of aviation dating back over 100 years. In 1906, the Palo Alto Times reported that George Loose of Palo Alto finished building his fabric and wooden aircraft. In 1923, the original airport opened at Stanford University, relocating to its current location on Embarcadero Road in 1935. Public use of the airport paused in 1942 for the airport to become a military field for war efforts during World War II. In 1946, Palo Alto became a semi-commercial airport serving business travelers, U.S. Postal Services shipments, as well as a training ground for new pilots.

Commercial passenger service discontinued in 1972 while general aviation activity operations continue today. On August 11, 2014, the 50-year lease to operate the Airport between the County of Santa Clara and the City of Palo Alto was cancelled and operations of PAO were transferred back to the City. Before the transfer was completed, numerous studies were undertaken, including the Palo Alto Airport Working Group (PAAWG) Report<sup>1</sup>, and the R.A. Wiedemann & Associates, Inc. Airport Business Plan<sup>2</sup>. The PAAWG Report informed the City that the Palo Alto Airport was an important transportation, business, economic, recreational and emergency preparedness asset, and that the airport could be operated on a self-sustaining, and economical basis without any financial support from the General Fund. As a result, Council directed staff to explore the option of terminating the lease with Santa Clara County early. In order to accomplish this, the City entered into a contract with R.A Wiedemann & Associates, Inc. to develop an Airport Business Plan to examine various options that would determine the future governance, operation, administration, and development of PAO. In the end the recommendation was that the City assume control of PAO, and operate the airport as a division of the Public Works Department.

### Airport Function and Partners

PAO serves as a General Aviation Reliever Airport for three primary Bay Area Airports (SFO, OAK, and SJC) and is identified as an important airport in the National Plan of Integrated Airport System. PAO is home to approximately 360 aircraft, five flight schools, two maintenance shops, an avionics shop, and is one of the busiest general aviation airports in the nation. Since the transfer of the Airport, PAO has averaged approximately 152,000 operations (takeoffs and landings) per year. In 2022, PAO was the fourth busiest airport in the bay area, just behind SJC.

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<sup>1</sup> City Council, November 13, 2007; Agenda Item #6; SR #148-07, <https://portal.laserfiche.com/Portal/DocView.aspx?id=46523&repo=r-704298fc&searchid=ba422437-5996-46e9-8ebe-8bb3b8aaf855>

<sup>2</sup> City Council, December 6, 2010; SR #431:10, <https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2010/431-10.pdf>

Additionally, the Airport serves the community in an emergency capacity. Its proximity to Stanford Medical Center makes the Palo Alto Airport the main refueling location for life flight helicopters. Angel Flight aircraft also use PAO to bring patients from outlying areas to the hospital for various non-emergency treatments. The Airport can also be used as a refueling location for California Highway Patrol, Police, and Sheriff aircraft. While these aircraft do not use the Airport frequently during law enforcement or emergency response activities, PAO was used to fly critically needed supplies to Watsonville following the Loma Prieta Earthquake. Palo Alto Airport is also home to a California Disaster Airlift Response Team (CalDART). KPAO DART is the Palo Alto Airport Chapter of CalDART and consists of pilots and administrative staff who together organize and provide free air transportation during an emergency. The Airport also services as the home base for Civil Air Patrol Squadron 10, which provides search and rescue services as an Air Force Auxiliary.

As a recipient of FAA grants and referred to by the FAA as the airport sponsor, the City is subject to obligations (grant assurances) to the FAA to keep the airport in compliance with Federal regulations. Airport sponsor obligations pertaining to the operation, use, and maintenance of the airport are statutorily defined in 49 U.S.C. § 47107(a). The obligations include keeping the airport open and available for public aeronautical use. As the owner and operator of the Airport, it is the City's responsibility to maintain the physical condition of the airport to FAA standards. This includes maintaining all the facilities within the airport footprint from runways to building repair. The City also acts as a landlord – renting out Airport buildings, renting aircraft parking spaces, and selling aircraft fuel to pilots at the Airport.

The FAA's role is to develop a safe and efficient national aviation system, including responsibility for all programs related to airport safety and inspections and standards for airport design, construction, and operation. The FAA also issues and enforces regulations covering manufacturing, operating, and maintaining aircraft in addition to certifying pilots and airports for safety.

Other entities who play an important role at the airport include:

- The State Department of Transportation (Caltrans), Division of Aeronautics, issues an Airport Permit and assures the safe continued operation of the airport through annual safety compliance inspections.
- The National Safety Transportation Board (NTSB) investigates every civil aviation accident in the U.S., determines probable cause, and issues safety recommendations.
- Local first responders cooperate with the airport for emergency response and conduct training exercises.

Local governments (cities and counties) have responsibilities, within FAA regulations, associated with minimizing excessive levels of aircraft noise impacting their residents. Local government jurisdictions are responsible for all land-use zoning around airports and can implement land use plans that avoid residential areas near airports. Typically, any new land use plan would apply to new construction rather than existing homes.

On November 19, 2008, the County of Santa Clara adopted the Comprehensive Land Use Plan (CLUP) for the Palo Alto Airport <sup>3</sup>. The CLUP identifies flight paths and height restrictions around the Airport for the County of Santa Clara and the County of San Mateo, but the County of San Mateo has not adopted an official CLUP for the Palo Alto Airport.

#### Palo Alto Comprehensive Plan and the Airport

The City's 2030 Comprehensive Plan<sup>4</sup> outlines the following Goals, Policies, and Programs for the airport:

Goal L-10 - Maintain an economically viable local airport with minimal environmental impacts.

- Policy L-10.1 - Operate Palo Alto Airport (PAO) as a vital and efficient facility at its current level of operation without intruding into open space areas. PAO should remain limited to a single runway and minor expansion shall only be allowed in order to meet federal and State airport design and safety standards.
  - Program L10.1.1 - Relocate the terminal building away from the Runway 31 clear zone and closer to the hangars, allowing for construction of a replacement terminal.
  - Program L10.1.2 - Update the Airport Layout Plan in accordance with FAA requirements as needed while ensuring conformance with the Baylands Master Plan to the maximum extent feasible.
  - Program L10.1.3 - Identify and pursue funding to address maintenance safety and security improvements needed at PAO.
- Policy L-10.2 - Regulate land uses in the Airport Influence Area to ensure consistency with Palo Alto Airport Comprehensive Land Use Plan and the Baylands Master Plan.
- Policy L-10.3 - Minimize the environmental impacts associated with PAO operations, including adverse effects on the character of surrounding open space, noise levels and the quality of life in residential areas, as required by federal and State requirements.
  - Program L10.3.1 - Establish and implement a system for processing, tracking and reporting noise complaints regarding local airport operations on an annual basis.
  - Program L10.3.2 - Work with the airport to pursue opportunities to enhance the open space and habitat value of the airport. These include:
    - Maintaining native grasses;
    - Reconstructing levees to protect the airport from sea level rise while enhancing public access and habitat conservation; and
    - Evaluating the introduction of burrowing owl habitat. This program is subject to federal wildlife hazard requirements and guidelines for airports.
- Policy L-10.4 - Provide public access to the Airport for bicyclists and pedestrians.
  - Program L10.4.1 - Continue to provide a bicycle/pedestrian path adjacent to Embarcadero Road, consistent with the Baylands Master Plan and open space character of the baylands subject to federal and State airport regulations.

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<sup>3</sup> Comprehensive Land Use Plan Santa Clara County, Palo Alto Airport, [https://stgenpln.blob.core.windows.net/document/ALUC\\_PAO\\_CLUP.pdf](https://stgenpln.blob.core.windows.net/document/ALUC_PAO_CLUP.pdf)

<sup>4</sup> City of Palo Alto Comprehensive Plan 2030, <https://www.cityofpaloalto.org/files/assets/public/planning-and-development-services/3.-comprehensive-plan/comprehensive-plan/full-comp-plan-2030-with-dec19-22-amendments.pdf>

- Policy L-10.5 - Address potential impacts of future sea level rise through reconstruction of the Bayfront levee in a manner that provides protection for the Airport and greater habitat along the San Francisco Bay frontage.
- Policy L-10.6 - Encourage use of alternatives to leaded fuel in aircraft operating in and out of PAO.

Goal N-6 – An environment that minimizes the adverse impacts of noise.

- Policy N-6.12 - Ensure compliance with the airport related land use compatibility standards for community noise environments, shown in Table N-1, by prohibiting incompatible land use development within the 60 dBA CNEL noise contours of the Palo Alto Airport.
  - Program N6.12.1 - Continue working to reduce noise associated with operations of the Palo Alto Airport. Also, ensure compliance with the land use compatibility standards for community noise environments, shown in Table N-1, by prohibiting incompatible land use development within the 60 dBA CNEL noise contours of the airport.

#### Airport Capital Improvements – To Date

Prior to the transfer of the Airport, there was significant deferred maintenance of the runway, taxiway, and the aircraft parking area known as the apron. On October 27, 2014, City Council approved a contract to begin the Airport Runway and Taxiway Rehabilitation Project. This project was a pavement management project that corrected some maintenance and safety issues on the runway. That project was completed in October 2015.

In 2016, the apron was in poor condition, exhibiting medium to severe block cracking, severe edge cracking, and deformations throughout. Given the age of the pavement and the degree of cracking, the pavement appeared to have exceeded its structural design life. Airport staff immediately began working on the design for the Apron Reconstruction Project (AP-16000) to correct the deferred maintenance and bring the apron to current FAA standards. As of December 12, 2022, the project has cost \$36 million in construction, design, and construction administration. The FAA has funded a majority of the reconstruction at 90% of the project costs, with the Phase III portion of the project funded at 100% of eligible costs. The project is expected to be completed in the Winter of 2023. During the design and construction, Airport staff worked with the FAA to include infrastructure for future solar photovoltaic installations and aircraft charging stations. Staff are not aware of any other airport in the nation in a position to transition to electric aircraft as quickly as PAO. During the project, storm drain improvements were also included in the scope to increase best management practices for the Airport's Storm Water Pollution Prevention Plan.

In 2016, the Airport received a grant for the Airport Perimeter Fence to replace the entire perimeter fence and all gates at the Airport to prevent unauthorized access to the airport runway. This project was driven by new initiatives to enhance runway safety at all airports in the nation as identified in the FAA National Runway Safety Report dated June 2015. This project

brought the Airport into compliance with the new standards and increased safety.

#### Additional Airport Capital Improvements – Near-Term

As part of the grant eligibility the FAA required that the City conduct a consultant selection in 2020 that preapproved 3 consultants for five years to assist the Airport in developing a 5-year CIP. These consultants were: C&S Engineers for Grant Administration and Construction Management; Centurion Planning and Design for environmental review; and Burns & McDonnell for Design and Engineering. There are several projects in process and planned in the next 3 to 5 years. Upon receiving funding, the Airport will issue task orders to consultants currently under contract.

- Access Roadway Reconstruction – the Airport's main access road is used daily to access the fuel farm, air traffic control tower, and future terminal location. The road is currently in disrepair. This project will also evaluate bringing electric charging to the future terminal parking lot.
- Airfield Improvements: AWOS (Automated Weather Station) and PAPI (Precision Approach Path Indicator)– increasing safety of the field, and providing weather data for airport users, design is underway for a new AWOS and an updated PAPI to increase safety and ensure current FAA and visibility standards.
- Terminal – in compliance with the City of Palo Alto's Comprehensive Plan and 2008 Baylands Master Plan, preliminary programing is underway to relocate and construct a new terminal building. The existing terminal is a prefabricated, modular building over 45 years old which serves as the administration and operations headquarters for Airport staff and a waiting/reception area for transient aviators or passengers. The Airport will be looking to receive federal funding for the design and construction of the new terminal facility.
- Electrical Improvements – The Airport is planning to upgrade all runway and taxiway lights to LED fixtures to reduce electrical usage at the Airport.

#### Airport Noise Program

The Airport has undertaken many efforts to understand and address community concerns. One of the major community concerns reported is aircraft noise. To help alleviate concerns, the Noise Program was initiated, with the first Annual Noise Report going to Council in 2016 for the 2015 calendar year. Currently, the Airport holds monthly meetings with the airport association, where concerns brought up by the community are discussed. At these meetings, pilots are made aware of noise issues and are reminded to fly neighborly. The monthly meetings are an opportunity to review and discuss noise abatement and ways to reduce impacts to the community with the Pilots Association.

#### Software Implementation

During calendar year 2022, the Airport implemented two software systems to improve efficiency as well as improve the revenue collections process. One software system is an aviation account management software (ProDigiQ) allowing tenants to pay their monthly rental payments online utilizing the City's payment gateway system. This software also includes a

tenant portal where tenants can view their invoices, account balances, and make their monthly payments. With these enhanced technologies, staff can offer tenants more clarity regarding their account status, send monthly invoices, and collect and process revenues much more efficiently.

The other software that was implemented was a self-pay parking application called ParkMobile. This new software allows for all Airport parking users to pay their auto and transient aircraft fees from the convenience of their personal cellphone device. With a small staff and a 100-acre property to manage, it was challenging to have someone receive payments throughout the day, and users would frequently park without paying. This new software has increased user compliance significantly and has tripled the Airport's transient and auto revenue.

#### Operations Staffing Analysis

Airport staff perform a wide range of duties to support the day-to-day operations of the airport. The Airport Enterprise Fund was unable to handle the necessary staffing levels due to the large CIP projects required to maintain safety at the airport. Since the City assumed control of the Airport, staffing levels have consistently been lower than similar airports.

The Airport staff has increased over time as the Airport has become financially self-sustaining and completed the initial large capital improvement program that required significant local matches. Most recently, in FY 2023 the Airport converted a part-time Administrative Specialist to a full-time Administrative Associate, and added a full-time Airport Operations Specialist II to the staff head count. The Airport will continue to evaluate opportunities for increasing staffing as funding allows in future years.

#### General Fund Loan

Prior to and following the Airport's Transfer to the City, the General Fund provided loans to the Airport Enterprise Fund to aid during the transitional period and to provide matching funds for initial Airport CIP projects. The Airport received a final loan from the general fund in Fiscal Year 2020, at which time the total amount of all loans to be repaid with interest was \$3,426,305. The Airport began paying the loan back in Fiscal Year 2021, and at the end of Fiscal Year 2023 the amount remaining on the loan will be \$2,627,143. The entire loan is scheduled to be repaid by the end of Fiscal Year 2034.

#### Palo Alto Airport and Sustainability

Palo Alto Airport and the City of Palo Alto have a long and demonstrated record of pursuing sustainability. Below is a brief overview of the Airport's sustainability efforts to date:

- Part of the Apron Reconstruction was to prepare for future demand for electric aircraft and additional solar facilities on the airfield. PAO has installed electrical infrastructure and conduit (underground pipes in which future utility lines will be installed) under the aircraft-parking apron. This infrastructure and conduit will facilitate the installation of charging stations for electric aircraft and additional solar facility locations making Palo Alto Airport one of the most advanced electrical infrastructure general aviation airports



- in the country.
- Since the design of Apron Reconstruction was completed and infrastructure for solar was identified, Airport staff has been working with City Utilities to design and find resources and funding for solar shades at the airport. As part of the LRFSP the Airport is exploring funding opportunities to complete design and construction of this project.
  - PAO will develop an electric vehicle roadmap, ensuring a conversation regarding the Airport's vehicles and the opportunity to provide electric charging stations to employees, users, businesses, and the public at the Airport.
  - Tenants are embracing the Airport's sustainability goals in multiple ways including the use of an electric fuel truck, interest in electric aircraft and moving away from fossil fuels.

#### *Electric Aircraft and Virtual Lift and Take Off*

The Airport is actively coordinating with electric aircraft manufacturers to ensure it is prepared to welcome (and provide charging for) the future electric aircraft fleet.

The Airport is also collaborating with other airports across the state to develop a series of waypoints or charging stations for future electric fleets.

#### *Unleaded Fuel Initiative*

For the past 50 years, 100LL, also known as AvGas, has been the main source of fuel for general aviation (GA) aircraft. It uses a small amount of lead as an additive to stabilize the fuel for use in high compression aircraft engines. 100LL is the last lead-containing transportation fuel and there have been ongoing efforts to develop alternatives. Unleaded 94 motor octane fuel (UL94) is the same as 100LL but without the lead additive, and sustainable aviation fuel (SAF) is a biofuel alternative to Jet A fuel.

Airport staff with the help of an engineering team evaluated an existing tank that could be converted to hold the unleaded fuel. This presented the fastest path forward to bring this fuel to the airfield. Airport staff used the existing construction contract for Apron Reconstruction which had existing funds, and fuel farm/ fuel island work was already part of the scope of work. The engineering team identified that the tank needed to be lined and equipment such as the piping, pump, and filter that needed to be updated to handle the new fuel product. During the process, there were supply chain issues and some of the parts for this were not readily available. Completion is currently anticipated in May 2023. At the same time, staff have been working with current fuel providers to have them procure the trucks and equipment to enable them to dispense the fuel and coordinate with suppliers to make sure that the fuel is available as soon as the tank is ready. Staff have also been keeping pilots/aviation students, and flight schools up to date so that they will know when to have their supplemental type certificates (STC) that will enable them to be able to use the unleaded fuel.



## ANALYSIS

### Long Range Facilities and Sustainability Plan

The City of Palo Alto is preparing a long-range plan for Palo Alto Airport, as required by the FAA, focused on facilities and sustainability. The Palo Alto Airport Long Range Facilities and Sustainability Plan (LRFSP) will guide the Airport's improvements over the next 20+ years. The project will use the guidance of the Federal Aviation Administration Advisory Circulars and Orders, Federal Aviation Regulations, and other aviation industry publications. The result of the LRFSP will include an updated ALP that adheres to current FAA standards and plans for PAO's sustainable future.

This long-range plan will consider economic resiliency and safety in addition to climate change. The goal of the LRFSP is to determine the extent, type, and schedule of improvements needed to accommodate existing and predicted future needs at the Airport in a sustainable manner. The LRFSP will be a transparent process that helps both the City and its citizens understand how the airport is operating today and provides a plan for the next 20 years. The previous airport planning document was published in December 2006 when the Airport was under the operation of Santa Clara County. This plan is outdated and no longer reflects the needs, goals, and vision of the City of Palo Alto.

The LRFSP will consider what airport improvements are necessary to comply with FAA safety regulations and procedures and ensure future airport development aligns with stakeholder needs. Key Considerations for the LRFSP are expected to include:

- Regional impacts of the closure of nearby Reid-Hillview Airport. This includes PAO's ability to accommodate displaced tenants, aircraft, and operations.
- A plan to address innovative aviation improvements like electric aircraft and vertical takeoff and landing.
- Incorporation of sustainability and climate action initiatives and goals of the City, County, and Airport. This will include development of a Sustainability Management Plan.
- Airport layout and operational changes needed to accommodate the adjacent US Army Corps of Engineers (USACE) levees to address sea level rise.
- Continuing the Airport's transition towards carbon neutrality and fossil fuel independence.
- Conducting a land use and market analysis to improve land holding and financial revenues.

The LRFSP is a multi-phase project that includes public engagement, technical analysis, and development of alternatives. The project is anticipated to take 12-18 months, resulting in a draft final report presented to Council for approval. Staff is also intending to return to Council for an update on the process, likely in fall 2023. With common themes of sustainability and engagement throughout the process, the phases include:

- **Phase 1: Airport Understanding:** develop an overall inventory of existing conditions, forecast of aviation demand, and environmental overview.
- **Phase 2: Airport Vision and Goals:** based on stakeholder input, develop long-range

vision and goals. This will include the development of specific sustainability goals in alignment with City and regional sustainability plans.

- **Phase 3: Requirements and Alternatives:** building on the efforts in phases 1 and 2 and FAA standards, requirements and needs for the Airport will be developed. These will be incorporated into several alternatives for feedback and input from stakeholders.
- **Phase 4: LRFSP:** The LRFSP will include the preferred alternative for the airport including financial considerations and implementation. A sustainability management plan will also be developed.

The LRFSP is a transparent process and there will be continuous stakeholder engagement throughout the project. Through the Airport website, surveys, and meetings, stakeholders and the community will be encouraged to participate in the process. This engagement will include informing neighboring cities and inviting their participation. Outreach will begin in early spring to kick-off the LRFSP, inform community about the process, and seek input and guidance into the planning process. Continuing throughout 2023, additional engagement will seek to understand issues, needs, and concerns. The process will also seek to understand the direct and indirect benefits the Airport brings to the community. Guided by stakeholder input, long-range alternatives will be developed and presented for additional input.

Public engagement will include the following:

- Public meetings – at key points throughout the project, the community will be invited to receive project updates and provide feedback.
- Project website – the main source of project information. This will include preliminary white papers and updated information on the projects.
- Public comment – a project specific email account has been set up to receive communication and interest from the public.

### **FISCAL/RESOURCE IMPACT**

At a time when airport funding is competitive and scarce, the PAO team is focused on finding and leveraging all available funding for projects. From the traditional FAA AIP (Airport Improvement Program) grant program to infrastructure funding to local opportunities, each project and equipment purchase is reviewed to maximize funding

### **STAKEHOLDER ENGAGEMENT**

The Airport has continuously reached out to stakeholders since the transfer of airport operations and will continue to collaborate with stakeholders. Airport staff meets monthly with the Palo Alto Airport Association to discuss several topics including current field conditions, noise, and to address any concerns from the association. Airport staff is also available to answer questions via email and phone. Also, the Airport will conduct extensive public outreach as part of the Long-Range Facilities and Sustainability Plan including public meetings and a project website to seek public comments.

**ENVIRONMENTAL REVIEW**

This is not a project under Section 21065 for purposes of the California Environmental Quality Act (CEQA).

**APPROVED BY:**

Brad Eggleston, Director Public Works/City Engineer