



**TRUCKEE TAHOE AIRPORT DISTRICT
BOARD OF DIRECTOR STAFF REPORT**

AGENDA TITLE: FY2022 Runway 02-20 Reconstruction Design and Engineering Considerations - Off-Center Crown

MEETING DATE: July 27, 2022

PREPARED BY: Robb Etnyre, General Manager

RECOMMENDATION: Consider providing guidance to include reconstruction design to accommodate an off-center crown (in accordance with Advisory Circular 150/5300-13B) for future widening of Runway 02-20, as outlined in Truckee Tahoe Airport District (TTAD) Master Plan and [Airport Layout Plan](#) (ALP), in conjunction with approved Airport Improvement Program (AIP) design for reconstruction of Runway 02-20.

DISCUSSION: Resolution Number 2020-09 of the Truckee Tahoe Airport District (TTAD) authorized the filling of an application for Federal and State AIP Matching grant for Runway 02-20 Reconstruction and Engineering with Runway Lighting. The U.S. Department of Transportation Federal Aviation Administration approved a Grant Offer of \$410,500 for Airport Improvement Program (AIP) Project No. 3-06-0262-042 2021 at Truckee-Tahoe Airport, California on May 11, 2021, with Truckee Tahoe Airport District accepting the grant offer the same day, May 11, 2021. Subsequently, TTAD entered into a Supplemental Service Agreement NO. 30 (Consulting Airport Engineer) on June 9th, 2021, to complete a Preliminary Engineering and Engineering Design for the Reconstruction of Existing Runway 2-20 (75' x 4,654'), including Runway Lighting as detailed in the FAA Grant Offer. Completion of the Runway 02-20 Reconstruction Design would provide for further application for FAA Grant Funding to Reconstruct Runway 02-20, with lighting, in the year 2023.

The current [TTAD 2015 Master Plan](#), and airport layout plan (ALP) considers extending runway 02-20 to 5,055 feet and widening to 100 feet. Detailed technical analysis for Runway 02-20 lengthening & widening is provided in the Appendix of the Master Plan.

There has been discussion of addressing widening and extending Runway 02-20 as part of the 2023 planned AIP Reconstruction. These (lengthening and widening) options are not eligible for FAA AIP Funding since runway 02-20 currently meets design capacity criteria, therefore would need to be funded solely by TTAD. However, these additional projects would be required to be approved by the FAA, therefore requiring environmental review and design be completed. Ideally, these additional projects, if approved, would be conducted in conjunction with the 02-20 reconstruction, although not required. However, given the current planned FAA AIP Reconstruction of 02-20 budgeted for 2023, it is impossible to complete the environmental review or address the necessary modification to the VASI system on runway 02-20 in conjunction with the planned 2023 reconstruction. Therefore, at this juncture in design of runway 02-20, accommodation of an off-center crown would be the best possible solution to address potential future widening and extending.

Off-Center Crown: In accordance with Advisory Circular 150/5300-13B, an Off-Center Crown can be accommodated in the design of runway 02-20 to accommodate future planned widening as outlined in the Airport Layout Plan. The off-center crown would be 50' from the west edge of pavement and would be 25' from the east edge of pavement (allowing for 25' to be constructed on the east side of the runway in the future). The cross-slope will likely be 1.5% on each side of the crown (final slopes may change slightly if necessary to conform with existing topography).

The crown would be located 12.5' east of centerline until the widening occurs. This would make most aircraft essentially land on a single sloped runway. This is allowable by FAA, which inherently means that they have deemed that it is not a hazardous condition. Smaller GA aircraft have more wander and are more likely to land somewhat offset from the centerline as it is. If an aircraft landed on the existing runway 10' right or left of the centerline, they would experience the same scenario as this off-center crown would create.

An off-center crown doesn't affect the VASI/PAPI, the widening will affect these. Their locations are based off the edge of the runway, so when you widen to the east, they will be affected by the widening only.

ADDITIONAL FACTORS LIMITING WIDENING IN 2023: If the runway ends or centerline move more than FAA allowable tolerance (3' vertically, 10' laterally, or 50' longitudinally), an update of Airports Geographic Information System (AGIS) / Airport Data and Information Portal (ADIP), Flight Procedures reevaluation and recertification of the visual approach slope indicator (VASI) are required. VASI is a system of lights on the side of an airport runway that provides visual descent guidance information during approach. Future consideration would also explore opportunities for a Precision Approach Path Indicator (PAPI). These planning and approval impacts further remove the opportunity to address Widening or Extending Runway 02-20 in the 2023 season.

ALTERNATE RUNWAY 16-34 CONSIDERATION IMPACT ON RUNWAY 02-20 RECONSTRUCTION: TTAD is in the process of updating the Airport Master Plan, facilitated by Mead & Hunt. Work in

this area, including two public workshops has further informed potential impact of Runway 16-34 on Runway 02-20 Reconstruction. There appears to be no significant impact.

PROVIDE GUIDANCE FOR DESIGN OF RUNWAY 02-20 RECONSTRUCTION TO INCLUDE an OFF-CENTER CROWN: Board provide guidance to include an off-center crown as outlined in FAA AC 150/5300-13B in the already approved design work award related to FAA Grant for Airport Improvement Project No. 3-06-0262-042-2021.

FISCAL IMPACT: None

FUNDING AVAILABE: Can be accommodated in existing design award.

ATTACHMENT: Airport Layout Plan 2015