



TRUCKEE TAHOE AIRPORT DISTRICT - INTEROFFICE MEMORANDUM

TO: BOARD OF DIRECTORS

FROM: RUNWAY UTILIZATION REPORTING WORKING GROUP (Working Group consists of Hardy Bullock, David Van Quest, Mary Hetherington, David Diamond, Kevin Smith)

SUBJECT: RUNWAY UTILIZATION REPORTING PROJECT REPORT

DATE: JULY 23, 2020

At the July 2019 Board of Directors Meeting, Director Hetherington requested Board consideration of a request for a report that compares the runway utilization before and after TTAD installed an air traffic control tower to better understand what impact the Tower has had on runway selection. At the August 2019 meeting staff brought forward a proposal for \$29,100 to build the software and \$2,200 annually to run the report. At that meeting the Board reviewed and approved the request to create the tools and report back to the Board. The Board also approved Director Hetherington to participate with Staff on the Working Group. The project objective was twofold. Identify what effect the tower had on runway utilization and selection and develop a runway utilization baseline for further procedure and NAP enhancements and modifications.

This first phase of work is complete, and the Working Group has reviewed preliminary data. Tom Breen of Vector Inc will present the results of the first phase of this project. Members of the Working Group also have some results and findings included in the presentation. Please see the attached Presentation materials.

The results of this new reporting tool demonstrate interesting current and future applications and usable information, however as a Group we feel a few important components would be highly beneficial which were not part of the original scope. The Working Group would like to add Wind/Weather data per operation, as well as consider methods to include IFR arrival and departure data collected by the Tower or other sources. We feel this is necessary to isolate operations where the Tower and Pilot had an opportunity to assign or select any of our existing four runway options. Essentially, we need to know when calm wind (less than 5 knots) conditions existed and what was runway utilization during that time. When winds are above 5

knots or aircraft are assigned the Truck 4 Departure by Oakland Center, the Tower does not have the ability to move aircraft to more noise friendly runways. In these conditions the tower implements Noise Abatement Procedure instructions to pilots. The Runway Utilization Report is very useful in helping us understand NAP compliance. As a working group we feel if we have some additional data, we can answer some of the fundamental questions particularly related to pilot runway selection and tower assignment during calm wind conditions.

A few examples of how this additional weather data and information may be useful as are follows:

- In the bi-annual reports, the Board, staff, and public will be able to see specific runway utilization during calm wind conditions when the pilot and Tower have discretion on runway selection.
- Staff can better assist in pilot coaching as well as understand runway selection dynamics.
- This data will assist staff in working with residents who submit noise comments to better understand how the weather may have impacted runway, arrival, or departure choices.

Through the first phase of this work, Vector has created the following tools:

The Runway Report Tool – This tool allows TTAD to run a report of a given date range that shows operation counts by runway and aircraft type. Our thought is if we can get the wind data added to this tool, it will be much more useful as an analysis and presentation tool.

Flight Track Heat Map Tool- This tool displays a visual illustration of aircraft operations that can be filtered by date range, activity type and engine type. The heat map is a vast improvement on the older “spaghetti maps” that made it difficult to see trends in track data.

After speaking with Vector about developing additional reporting capabilities to maximize the utility of this tool, we were given a quote of \$15,018.50 to complete the second and final phase of this project. These additional reporting capabilities will do the following:

1. Development of the inclusion of weather into the VNOMS application such that when a flight track is selected, the weather data is available for that track in a popup.
2. Weather data will be stored in such a way that it will be included when the user exports the Activity Report to a CSV file that can be edited in MS Excel.
3. Historic weather data, from 2016 to present, will be processed and included in the VNOMS database such that it will appear in the system the same as new weather data and will also be included in the Activity Report when exported as a CSV file.

The working Group has been working with Vector to develop these additional reporting capabilities within the approved budget of \$29,100. We currently have approximately \$9000 left unexpended of this original budget. While we could complete some of the above items

within the approved budget, we found significant savings if we do them all at once. Pricing for these three items individually was \$20,025 and is reduced 25% to \$15,018.50 if purchased as a group and all at once. The working group recommends allocated the additional \$6,000 needed to complete the 3 items mentioned above. Community and Pilot Outreach funds will be used fund the additional \$6000 if approved by the Board.

Working Group Recommendation: The Working Group recommends the Board allocate the additional funds necessary to complete the second and final phase of the Runway Utilization Report Tool.

To further assist in your review, we have included the following:

1. Letter from Tower Manager, considerations on Runway Selection
https://truckeetahoeairport.com/board_meetings/241/view_file?file=tab+04a+-+letter+from+tower+manager%2C+considerations+on+runway+selection.docx.pdf
2. Determinant Factors for Aircraft Runway Utilization
https://truckeetahoeairport.com/board_meetings/241/view_file?file=tab+04b+-+determinant+factors+for+aircraft+runway+utilization.pdf
3. Presentation from Vector
https://truckeetahoeairport.com/board_meetings/241/view_file?file=tab+04c+-+presentation+from+vector+.ppt.pdf
4. Heat Maps
https://truckeetahoeairport.com/board_meetings/241/view_file?file=tab+04d+-+heat+maps.pdf
5. Runway Utilization Report Data
https://truckeetahoeairport.com/board_meetings/241/view_file?file=tab+04e+-+runway+utilization+report+data.pdf
6. Comparison Videos

KTRK Turbo Prop Departures - <https://vimeo.com/441183604>

KTRK Turbo Prop Arrivals - <https://vimeo.com/441183424>

KTRK Piston Departures - <https://vimeo.com/441183193>

KTRK Piston Arrivals - <https://vimeo.com/441182948>

KTRK Jet Departures - <https://vimeo.com/441182604>

KTRK Jet Arrivals - <https://vimeo.com/441181216>

7. Comments from Mary Hetherington, one member of the Working Group on Runway Utilization

https://truckeetahoeairport.com/board_meetings/241/view_file?file=tab+04f+-+july+2020+mh+separate+memo+for+staff+report.pdf