PLEDGE OF ALLEGIANCE

1. CALL TO ORDER
2. AMENDMENTS TO THE AGENDA - Chair Kenny Maenpa
3. INTRODUCTION OF NEW BOARD MEMBERS - Chair Kenny Maenpa
4. APPROVAL OF MEETING MINUTES - Chair Kenny Maenpa
   4.1. April 13, 2022
5. BOARD MEMBER REPORTS - Chair Kenny Maenpa
6. PUBLIC COMMENTS - Chair Kenny Maenpa
7. DIRECTOR’S REPORT - Dave Ulane

8. FINANCIAL UPDATE
   8.1. Financial Dashboard - Bryce Shuck
   8.2. FY 2022 Year End Drawdowns - Bryce Shuck
   8.3. Intern Program Administrative Update - Kip McClain
   8.4. Spending Plan Update - Dave Ulane
   8.5. Alternatively Powered Aircraft/Airport Infrastructure Study Budget - Dave Ulane
   8.6. FY 2023 Remote Tower Budget - Todd Green

9. FY 2022 AVIATION EDUCATION GRANT PROGRAM
   9.1. Aviation Education Grant Review/Hearing - Hetty Carlson
   9.2. Pilot Education/Simulator Initiative - Hetty Carlson

10. CDAG SUPPLEMENTAL FUNDING REQUESTS - Todd Green
   10.1. Gunnison-Crested Butte Regional Airport 20-GUC-01

11. STATEWIDE INITIATIVE UPDATES
   11.1. Crack Fill Program Changes - Kip McClain
   11.2. Surplus Sale Update - Kaitlyn Westendorf
   11.3. Windsock Program Update - Todd Green

12. 2022 AWARDS PROGRAM - Dave Ulane
   12.1. Aviation Professional of the Year
   12.2. Airport of the Year

13. PROGRAM UPDATES
   13.1. Education/Outreach - Hetty Carlson
   13.2. Remote Tower - Bill Payne
   13.3. Weather Camera Program - Todd Green

14. LEGISLATIVE ISSUES - Chair Kenny Maenpa/Dave Ulane

15. CAB GOVERNANCE DOCUMENT APPROVAL - Dave Ulane

16. PROPOSED CALENDAR - Dave Ulane
   16.1. Tuesday, August 30, 2022 - CAB/Staff Workshop - 9:00 am to 5:00 pm - Division Offices - Watkins, CO
   16.2. Wednesday, August 31, 2022 - General Meeting - 9:00 am - Division Offices - Watkins, CO

17. OTHER MATTERS BY PUBLIC & MEMBERS - Chair Kenny Maenpa

18. ADJOURNMENT
MINUTES
Board Meeting
Wednesday, April 13, 2022, 1:00 p.m.
Colorado Division of Aeronautics - Joseph H. Thibodeau Room
5126 Front Range Parkway - Watkins, CO 80137

MEMBERS PRESENT:

Kenneth Maenpa       Chair
Kent Holsinger       Via Zoom  Vice-Chair
Mark Van Tine
Trimbi Szabo

MEMBERS ABSENT:

Chaz Tedesco

OTHERS PRESENT:

David Ulane          CDOT - Division of Aeronautics Director
Todd Green           CDOT - Division of Aeronautics
Kaitlyn Westendorf   CDOT - Division of Aeronautics
Bryce Shuck          CDOT - Division of Aeronautics
Shahn Sederberg      CDOT - Division of Aeronautics
Scott Storie         CDOT - Division of Aeronautics
Hetty Carlson         CDOT - Division of Aeronautics
Tonya Hill           CDOT - Division of Aeronautics
Michael Beckhoff     Armstrong Consultants
Wesley Brandt        Fremont County Airport
Katie Carlson        Colorado Department of Transportation
Dave Elliot          Meadow Lake Airport
Jesse Fabula         Armstrong Consultants
Mike Fronapfel       Centennial Airport
Jeff Kloska          Colorado Air & Space Port
Daniel Melia         Burlington-Kit Carson Airport
Bill Payne           William E. Payne & Associates
Heather Thorm        Armstrong Consultants
Bill VanHercke       Jacobs Engineering

Pledge of Allegiance

1. CALL TO ORDER

The meeting commenced at 1:01 p.m.
2. AMENDMENTS TO THE AGENDA

There were no amendments to the agenda.

3. APPROVAL OF MEETING MINUTES

3.1 February 1, 2022

Mark Van Tine made the MOTION to approve the minutes from February 1, 2022. Trimbi Szabo seconded.

The MOTION carried unanimously.

4. BOARD MEMBER REPORTS (By member)

Trimbi Szabo provided an update to the Board on the activities of several various airport associations.

Mark Van Tine noted that Wings Over the Rockies will start accepting applications for the Captain Jeppesen Foundation flight scholarships from April through the end of May. Twenty scholarships will be awarded, valued at $10K a piece. In addition, Mark mentioned that as of March 31, 2022, Steve Dickson stepped down as the FAA Administrator. Mark is looking forward to seeing who the next Administrator will be. Finally, in February 2022, Mark noted that the General Aviation Manufacturers Association in Washington DC announced the Eliminate Aviation Gasoline Lead Emission (EAGLE) initiative, which will work to safely eliminate the use of leaded aviation fuel by the end of 2030.

Kent Holsinger thanked Mark Van Tine for mentioning the Captain Jeppesen Foundation flight scholarships. Kent noted that he would be happy to spread the word regarding these scholarships to gain more Western Slope interest. Lastly, Kent is excited to see the growth of expansion projects at the Montrose Regional Airport & the Grand Junction Regional Airport.

Chair Maenpa briefed the Board that all Western Slope airports have returned to pre-pandemic levels of airport enplanements. Southwest flights into Hayden and Montrose have translated into record enplanements for both airports. Chair Maenpa and Director Ulane attended United Airlines Landline Bus Service launch at Northern Colorado Regional Airport on March 19, 2022.

5. PUBLIC COMMENTS

Jeff Kloska, the new Director of the Colorado Air & Space Port, introduced himself to the Board and Division staff. Jeff noted that the airport is moving forward with the following projects: taxiway lighting to the airfield, perimeter fencing with an access control system, and a pavement rehab project. Mike Fronapfel provided an update to the Board on Centennial Airport and the Colorado Airport Operators Association. Centennial Airport 2021 fuel sales were 16.8M gallons, a 37% increase from 2020. Currently, fuel sales are tracking 21% ahead of fuel sales for 2021, with 2021 being the record highest year of fuel sales the airport has had. Colorado Airport Operators Association will hold its Spring Conference on June 8-10, 2022, in Grand Junction, CO. Colorado Airport Operators Association will be hosting an Airfield Marking Professional Certificate Program on July 19-21, 2022, at the Colorado Springs Airport.
6. DIRECTOR’S REPORT

David Ulane noted that currently, there are two CAB vacancies on the Board. Chic Myers, who represented the Eastern Plans, passed away unexpectedly in February, much to the sadness of the Board, Division, and Colorado’s aviation community. Director Ulane has been working with the Governor’s office to review several outstanding applicants. As of April 1, George Merritt has resigned from Denver International Airport. Director Ulane has been working with the Governor’s office, Denver International Airport, and Colorado Airport Operators Association to identify possible replacements for his position. David provided an update regarding the education/workforce development grants; on Wednesday, March 23, 2022, Hetty Carlson hosted a webinar for potential applicants, that provided them with more information and the opportunity to ask questions of the staff. The webinar has thirteen participants from various educational institutions and programs; all applications are due May 1, 2022. On April 25, 2022, Governor Polis and Congressman Joe Neguse attended an aviation workforce development presentation at the Aims Community College aviation facility at the Northern Colorado Regional Airport. Kaitlyn Westendorf, Hetty Carlson, and Director Ulane will attend the inaugural Utah State Aeronautics Conference on May 9-11, 2022, in Provo, UT. Lastly, the Division has added a new standing item under the Program Updates agenda item - Outreach/Event Update, where Hetty will provide an overview of our outreach and engagement efforts.

7. FINANCIAL UPDATE

7.1 Financial Dashboard

Bryce Shuck briefed the Board that the Division’s total revenue for March came in at $3.7M, 101.5% of the forecast. In comparison, this is 232.9% of the $1.6M of revenue for March 2021 and 116% of February 2022 revenue. Currently, the Division is forecasting $4.1M in revenue for April. Total revenue for this year is $28.9M. The Division’s cash balance for March closed at $17.4M, up to $826K from $16.6M at the end of February. April’s month-end balance is projected to increase to $17.8M. The Division sent out $2.3M of tax disbursements in March. Our tax disbursements followed the normal cycle of being one month behind revenues. The contingency slide shows that our current 2022 CDAG program is at $9.0M. The FY22 administration budget approved by the Board in January 2021 is $725K; the Division has spent $456K. The Division is projecting a total expenditure of $660K for FY22. This would put the Division’s Administrative expenses at 3.9% of FY22 revenue, which is well below the 5% statutory cap. For March, fuel flowage at Denver International Airport was 39.1M gallons, up 118% from February’s 33.2M gallons and up 152% from March 2021. The Division’s total expenditures for March were $2.6M. Airport tax disbursements were the most significant portion of our expenditures at $2.3M. We had SWI payments of $144K, and CDAG disbursements totaled $154K in March.

7.2 Tax Disbursement Cost Center Increase

Bryce Shuck noted the Board approved the original FY22 budget at the January 2021 meeting was $20M. The Division updated our FY22 forecast to $42M. With the rapid increase in recovery in fuel flowage at Denver International Airport and the combination with oil prices being higher than predicted, the Division worked with the Division of Accounting and Finance (DAF) to increase the budget line for FY22 by $7.0M to total $29.6M. This should cover all forecasted commitments with the tax disbursements cost center for the duration of FY22.
8. 2022 CDAG FEDERAL MATCH GRANT HEARING

8.1 2022 Grant Approval Resolution 2022-03

Todd Green briefed the Board that the Division staff is requesting approval for the second round of the 2022 Colorado Discretionary Aviation Grant (CDAG) applications to provide state matching funds for federally funded airport projects totaling $3,018,418.

The second round of 2022 grants will provide thirty airports with matching funds to complete projects utilizing Airport Improvement Program (AIP) and Bipartisan Infrastructure Law (BIL) funding. Therefore, the Division staff requests approval of the 2022 federal matching applications totaling $3,018,418 and the associated Board resolution 2022-03.

Trimbi Szabo made the MOTION to approve the second round of 2022 grants totaling $3,018,418 and the associated Board resolution 2022-03. Mark Van Tine seconded.

The MOTION carried unanimously.

9. PROFESSIONAL DEVELOPMENT/OUT OF STATE TRAVEL PLAN

9.1 FY 2022 Division OOST Plan Update

David Ulane briefed the Board that each April, the Division develops a staff professional development plan and an out-of-state travel (OOST) plan for each fiscal year. These funds will include all costs associated with planned trips outside the state for Division staff. Therefore, the Division is requesting approval of a reduction of $1,450 for the FY2022 professional development/out-of-state travel (OOST) plan totaling $14,700.

Mark Van Tine made the MOTION to approve the reduction of the Division's professional development/out-of-state travel (OOST) plan totaling $14,700. Trimbi Szabo seconded.

The MOTION carried unanimously.

9.2 FY 2023 Division OOST Plan Approval

David Ulane briefed the Board that each April, the Division develops a staff professional development plan and an out-of-state travel (OOST) plan for the next fiscal year. These funds will include all costs associated with planned trips outside the state for Division staff. Therefore, the Division is requesting approval of the FY2023 professional development/out-of-state travel (OOST) plan totaling $25,950.

Trimbi Szabo made the MOTION to approve the Division’s professional development/out-of-state travel (OOST) plan for FY2023 totaling $25,950. Kent Holsinger seconded.

The MOTION carried unanimously.

10. PROGRAM UPDATE

10.1 Education/Outreach
Hetty Carlson briefed the Board on past and upcoming events that the Division will participate in. In February, Hetty and Shahn gave a presentation to Rocky Top Middle School students and provided a demonstration with the flight simulator. On March 8, 2022, David Ulane, Shahn Sederberg, and Hetty attended Aerospace Day at McNichols Civic Center. Dave and Hetty presented the Education Grants Webinar on March 23, 2022; later in the day, both Hetty and Dave attended Falcon AeroLab in Colorado Springs, a high school aviation program. Shahn spoke at the Colorado 99’s South Central Section Meeting on March 26, 2022. Young Eagles Rally Day will be held on April 30 at the Glenwood Springs Municipal Airport. Wings Over the Rockies will hold its monthly breakfast fly-in on April 30. Saturday, June 11, 2022, the Wings Over The Rockies Exploration of Flight will host an Aviation Career Symposium. Hetty noted the Division received approval to create an Instagram page with the handle coaerodivision to share aviation news and events.

10.2 Remote Tower

Bill Payne briefed the Board that Phase I testing has started with the Remote Tower. On April 20, 2022, test flight scenarios began to determine how well the Phase I testing has progressed.

11. LEGISLATIVE ISSUES

11.1 Updated 2022 Advocacy Resolution 2022-04

David Ulane briefed the Board that the Division staff is requesting approval of the Updated 2022 CAB Advocacy Resolution 2022-04. This resolution outlines the CAB’s position on various legislative policy issues affecting aviation in Colorado for 2022. This update adds CAB support for HB22-1109, which would exempt on-demand aircraft from state sales and use taxes.

Trimbi Szabo made the MOTION to approve the Updated 2022 CAB Advocacy Resolution 2022-04. Mark Van Tine seconded

The MOTION carried unanimously.

12. PROPOSED CALENDAR

12.1 June 8-10, 2022 - General Meeting & Spring CAOA Conference -Time & Location TDB - Grand Junction, CO.

12.2 Thursday, June 9, 2022 - General Meeting TBD - Grand Junction Convention Center - Grand Junction, CO

12.3 Tuesday, August 30, 2022 - CAB/Staff Workshop- 9:00 a.m. to 4:00 p.m. - Division Offices - Watkins, CO

12.4 Wednesday, August 31, 2022 - General Meeting- 9:00 a.m. - Division Offices - Watkins, CO

13. OTHER MATTERS BY PUBLIC & MEMBERS
Dave Elliot with the Meadow Lake Airport met with Jim Steward, the President of the Experimental Aircraft Association (EAA), Mark Hyatt, and Sara Hurley to discuss the potential of having a Falcon AeroLab site at the Meadow Lake Airport. Mark Hyatt mentioned to Dave that there are currently 620 students signed up for the Falcon AeroLab at twenty locations throughout the state.

Mike Fronapfel, with the Centennial Airport, noted that the Colorado Airport Operators Association will be hosting an Airfield Marking Professional Certificate Program on July 19-21, 2022, at the Colorado Springs Airport is being paid for by a grant from the Division of Aeronautics. Mike thanked the Division for the support with the course. Chair Maenpa suggested the Division add a flagpole and spotlight outside of the building.

14. ADJOURNMENT

The meeting adjourned at 2:40 p.m.
Informational Item Summary: Colorado Aeronautical Board

MEETING DATE: June 9, 2022
AGENDA ITEM: 8.3 - Administrative Grants Update
FROM: Kip McClain

Informational Item Summary:

This memo details the grants that have had or are in the process of executing administrative amendments and/or new intern program contracts since the last CAB meeting. Administrative amendments are typically done for grant amendments that do not require a change in scope of work or supplemental funding. Term extensions are also included in the administrative amendment category.

The intern program is approved for a not to exceed amount annually in order to be more flexible when airports need to hire new interns. The individual intern requests are not presented to the Board; however, the staff updates the Board when funds for this program have been requested.

Background:

Grantee: Northern Colorado Regional Airport (FNL)
Grant to be contracted: 22-FNL-I01 (Internship)
Grant amount: $20,800.00
CAB approval: 1/25/2021 - FY22 Internship Program funding approved
Planner: Kip McClain

Northern Colorado Regional Airport applied for and was administratively approved for funding to support the hiring of one candidate who will participate in a year-long Airport Management Internship. The Division will provide 50% match on a $20 per hour wage.
Link to Strategic Plan and/or State Aviation System Plan: N/A

Financial Impact: N/A - FY22 Statewide Initiatives budget approved January 25, 2021

Staff Recommendation: N/A

Attachments: None
Action Item Summary - Colorado Aeronautical Board

MEETING DATE: June 9, 2022
AGENDA ITEM: 8.5- Alternatively Powered Aircraft/Airport Infrastructure Study
FROM: David Ulane, Director
RECOMMENDATION: CAB Approval of an Additional $200,000 in FY22 Funds for an Expanded Alternatively Powered Aircraft/Airport Infrastructure Study

Action Item Summary:

Staff is seeking CAB approval of an additional $200,000 of FY22 funds to broaden the scope of this study to include detailed NASA-developed mobility modeling within and to/from Colorado, better informing the overall study’s scope and potential future infrastructure investments.

Background:

In August 2021, the CAB approved $200,000 of FY22 Division funds for an alternatively powered aircraft/airport infrastructure study, with the following general scope:

- An overview of the current state of the alternatively powered fixed wing aircraft industry (aircraft/pilot certification timelines, demand, sales/options by current manufacturers, etc.)
- An analysis of the types of routes, markets and frequencies potential small air carriers using these aircraft might fly in Colorado
- Airport infrastructure needs and capacity that will be required by these regional aircraft, as well as the smaller GA training aircraft most likely to be certified in the next five years
- An analysis of potential for on-airport solar/renewable generation to meet these needs
- An evaluation of the mechanisms by which airport infrastructure costs, to support these aircraft could be funded
• An analysis of potential funding mechanisms that could be implemented by airports, fixed base operators, aircraft operators and our Division to fund the capital and life cycle costs of electric aircraft charging infrastructure

• Opportunities to incentivize and encourage development of the infrastructure necessary to support these aircraft, including the availability, use and in-state production of Sustainable Aviation Fuel (SAF).

Since that time, we have continued conversations with the National Renewable Energy Laboratory (NREL) here in Denver about the opportunity for them to conduct this study for us, given their exceptional and unique expertise in our study area. As we did so, we intentionally held off on moving forward with our study, pending the release of two outstanding industry research efforts that will greatly inform our study, and the availability of NASA’s Aeronautics Mission Research Directorate (ARMD) team to lend regional air modeling expertise to our study.

The first industry effort that will inform our study is NREL’s “Electrification of Aircraft: Challenges, Barriers and Potential Impacts” report, which was released in October 2021. This was followed in March 2022 with the release of Airport Cooperative Research Program (ACRP) Report 236, “Preparing your Airport for Electric Aircraft and Hydrogen Technologies”.

During this time, we have also had numerous discussions with NREL and NASA on how we can leverage the expertise and availability of NASA’s ARMD team for detailed travel demand modeling here in Colorado. At that this time, with these two reports in hand and NASA’s upcoming availability to assist, we’re ready to move forward. Staff had envisioned very high-level travel demand modeling being available to inform our focus on airport infrastructure priorities and development, but the engagement of NASA will allow us to have even more detailed and objective information about how people move around and to/from Colorado.

That engagement with NASA would take place through a contract with NREL, in accordance with the attached research proposal document from NREL and the attached general scope of work. This engagement of NASA, however, will require additional funding above the $200,000 originally approved by the CAB in August 2021. To that end, staff is requesting an additional $200,000 of FY22 funds for this effort, for a total not to exceed budget of $400,000. Based on conversations with NREL, it is highly likely the final study cost will be less than this total amount.

This study is the first such detailed state-level study on future alternatively powered aircraft and related infrastructure needs, furthering our Division’s legacy of innovation and leadership. I have no doubt our state peers, as well as national agencies such as the FAA will look to our study as a model for how other states tackle the challenges and opportunities these exciting new technologies will present.
Link to Strategic Plan and/or State Aviation System Plan:

Execution of this study specifically addresses goal 1-1 of the Division’s new 2021 Strategic Plan to be considered by the CAB at this meeting, which challenges us to “complete an analysis of emerging alternatively powered aircraft technology, including anticipated airport infrastructure requirements; potential policy, statutory, and revenue stream changes that may be required; and an analysis of potential instate markets.” This initiative also assists with achieving goal 1-2, which guides us to “work with CDOT’s Division of Transportation Development, the Colorado Energy office, and other agencies to determine if aviation and alternatively powered aircraft can be a part of the State’s Greenhouse Gas Mitigation program, consistent with federal pre-emption of aviation.”

Relative to our system plan, this initiative also assists us in achieving all four of the overarching goals in our 2020 State Aviation System Plan:

**Financial Impact:**

Additional $200,000 to the FY22 budget, $400,000 total

**Staff Recommendation:**

Division staff recommends CAB approval of an additional $200,000 in FY22 Division funding for our alternatively powered aircraft/airport infrastructure study. If approved, staff will finalize
procurement efforts with NREL in accordance with the attached research proposal and detailed scope of work.

**Attachments:**

NREL Research Proposal of May 2022, and detailed scope of study work and deliverables.
Alternatively Powered Aircraft Airport Infrastructure Study

A Proposal Submitted to:
COLORADO DEPARTMENT OF TRANSPORTATION
David Ulane, AAE.
Colorado Department of Transportation
Division of Aeronautics
5126 Front Range Parkway, Watkins, CO 80137

Submitted by:
Scott Cary PE, LEED AP
National Renewable Energy Laboratory
Applied Engineering Group
Energy Security and Resilience Center
15013 Denver W Pkwy, Golden, CO 80401
Email: Scott.Cary@nrel.gov
Phone: (303) 384-7169

May 2022
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Cover Letter

Dear Mr. Ulane,

Please find enclosed, our proposal packet for the project entitled ‘Alternatively Powered Aircraft Airport Infrastructure Study’. Through this project, we would like to inform CDOT on the necessary planning and development phases that are integral to the implementation of alternatively powered aircraft in applications such as flight training and connecting regional airports with new energy carriers and fuel types. The identification and evaluation of intrastate travel demand, potential airports, and market barriers provide a comprehensive way to compare the potential for electrified aviation integration across various scenarios and site locations in the state of Colorado. Collaboration with aircraft manufacturers, electric utilities, major flight schools, NASA, the FAA, and several other stakeholders is intended to optimize communication of the site analyses in a succinct way to policy makers as well as the public. In this packet, we have included the scope of the work, detailed task schedule, cost proposal, as well as anticipated deliverables from the project.

A request we would like to make through this proposal is to provide a cash advance for the work that needs to be carried out on various tasks, the reason being:

*Alliance for Sustainable Energy manages and operates the National Renewable Energy Laboratory for the Department of Energy. Operating funds that the Lab possesses are provided by DOE. We are only permitted to use these funds for the purposes for which they were appropriated and cannot use them for other projects, even temporarily. For this reason, DOE contractors must collect a 90-day advance of funds (Chapter 13.2g (2) of the DOE Accounting Handbook). These requirements arise from the Anti-Deficiency Statute (31 U.S.C. 1341). The idea is that by collecting a certain portion of the funds upfront and replenishing them for the duration of the project, NREL would always have funds to charge to perform the work. By asking for the upfront payment to cover the initial months, we can work from that to start our projects then begin billing our partners right away for expenses incurred. This requirement is incorporated into our prime contract with the Dept of Energy via our terms and conditions for agreements.*

We sincerely hope that you will be able to make this accommodation, as this is critical in moving the project forward. Do not hesitate to let me know if you have any questions or need additional information.

Sincerely,

Original Signed

P. Scott Cary, PE. LEED Ap
Ports and Airports Project Manager
National Renewable Energy Laboratory
I. Identification Section

Title: Alternatively Powered Aircraft Airport Infrastructure Study

Budget: $400,000

Study Number: TBD

Study Type / Funding Source: CDOT Aeronautics

Principal Investigator (PI): National Renewable Energy Laboratory (NREL)

Study Manager: David Ulane, A.A.E., Aeronautics Director, CDOT Division of Aeronautics

Research Oversight Team Lead: David Ulane, A.A.E., Aeronautics Director, CDOT Division of Aeronautics

Definition of Terms:

CDOT – Colorado Department of Transportation- Division of Aeronautics

NREL – National Renewable Energy Laboratory
II. Background

Under the direction of the Colorado Aeronautical Board (CAB), the Colorado Department of Transportation’s Division of Aeronautics’ mission is to support Colorado's multi-modal transportation system by advancing a safe, efficient, and effective statewide aviation system through collaboration, investment, and advocacy.

In the Division’s 30-year history, it has developed a legacy and culture of innovation and leadership. The CAB and Division staff take great pride in being on the forefront of aviation and airport technology, safety, and efficiency, always looking to the future to leverage new technologies for the benefit of all Coloradans.

At present, a new generation of alternatively powered aircraft are in development worldwide, which will use a variety of new powerplant technologies and airframes that will fundamentally change regional aviation mobility (RAM) and broaden opportunities for general aviation (GA) activities and flight training. While these new aircraft have the potential to create new mobility opportunities and reduce aviation’s impact on the environment, they will also pose new infrastructure, policy and regulatory challenges for state and federal aviation agencies, aircraft operators, airports, local utilities, and others.

III. Study Objective

As a leading state aviation agency, the Colorado Division of Aeronautics is conducting this study to evaluate this new technology, how it might be deployed in Colorado, and what the potential infrastructure, policy and regulatory implications in Colorado might be.

IV. Product of Research

The intent is to inform planning, development, and funding conversations among stakeholders as this technology matures. The end goal will be to have Colorado’s aviation system as prepared as possible to leverage the benefits of these new aircraft technologies should they enter widespread service.

V. Schedule and Work Tasks

Cost estimate for this integration is $400,000. It includes primarily time and interaction of NREL researchers with the Colorado Division of Aeronautics responsible for informing policy for the statewide aviation system.
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<th>Proposed TimeLine</th>
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<tr>
<td>Understanding existing research and infrastructure needs</td>
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<td>Completing a statewide analysis of Colorado’s intrastate travel patterns and demand</td>
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<td>Carrying out suitable airports and infrastructure needs identification</td>
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<td>Development of existing electrical utility service and airport conditions inventory and comparison to projected needs</td>
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<td>Evaluation of federal and state policies and funding mechanisms</td>
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VI. Cost Proposal

GRAD – : Graduate Intern; TPRO: Technical Professional

Note: NREL is a federal M&O contractor operating the laboratory on behalf of the US Department of Energy, and is required by Federal Cost Accounting Standards (CAS) to adjust its labor & overhead rates at least annually to ensure that all lab costs are recovered by the fully burdened labor rate – with no profit or loss. The labor rates & indirect costs quoted in this proposal are simply the current FY22 proposed billing rates for the categories of labor for individuals on this proposal in their current position, escalated 4% each Fiscal Year for estimated inflation. NREL will charge only our actual costs incurred and will return any excess funds to the customer at the end of the project.

VII. Deliverables

1. Administrative and Project Management – Preparation and organization of the overall study schedule and deliverable dates, project tracking against budget, as well as invoice and billing management (unless pre-funded as reimbursable or similar arrangement).
2. **Monthly Progress Reports** – Project progress reports will be submitted by the project team, summarizing the research approach, observations, results, findings, and recommendations, adhering to guidelines and formats set forth by CDOT.

3. **Existing Research Summary** – Existing research and case studies on alternatively powered aircraft (fixed wing, non-eVTOL) and related airport infrastructure needs will be reviewed and assessed for applicability to CDOT’s efforts.

4. **Aircraft Developments Summary** – The current state and development forecast of alternatively powered regional air mobility and general aviation training aircraft will be quantified along with a summary of likely candidates for future production and entry into service.

5. **Intrastate Market Summary** – An analysis of Colorado’s intrastate travel patterns and demand to identify regional air mobility opportunities and the likely airports to serve these markets will be provided by others.

6. **List of Identified Airports** – An analysis and identification of airports that will likely support battery electric general aviation training aircraft and operations will be provided by others.

7. **Infrastructure Needs Summary** – The baseline infrastructure needed to support alternatively power aircraft technology will be identified for the list of airports serving both regional air mobility and general aviation flight training. No more than 10 are expected, with analysis grouped for like-kind facilities.

8. **Existing Conditions and Projected Need Comparison** – A high level inventory of existing electrical utility service and capacity at the identified airports will be compared to the baseline needs. A cost estimate to meet the projected infrastructure needs and analyses for potential funding sources will also be completed for representative airports.

9. **Policy and Funding Summary** – The federal and state policies and funding mechanisms necessary to facilitate this development will be identified.

10. **Creation of a Study Committee** – NREL to provide input and support for the review of study deliverables. The committee may advise under the consultation of aircraft manufacturers, identified airports, electric utilities, infrastructure manufacturers, the FAA, and others.

### VIII. Project Team

The project team comprises teams of analysts lead by Scott Cary.

Scott Cary P.E., LEED AP, leads the Ports and Airports program and Sustainable Aviation initiative for NREL. His effort focuses upon applying the unique capabilities of a Department of Energy National laboratory to the airport and port environment. His efforts focus upon supporting Federal, State and Local agencies, along with manufacturers, with analysis deployment of new technologies in the Port and Airport environment. Prior to joining NREL, Cary worked as a Regional Aviation Practice Leader, based in Colorado, supporting clients of all sizes nationwide and worldwide, including greenfield airports, runway relocations, and related large program efforts.
Additional resources will be leveraged from the Center for Integrated Mobility Science, the Energy Security and Resilience Center, the ENGAGE team, the REopt team and other specialists as appropriate.
Alternatively Powered Aircraft Airport Infrastructure Study
General Scope of Work (May 11, 2022)

Background

Under the direction of the Colorado Aeronautical Board (CAB), the Colorado Department of Transportation’s Division of Aeronautics’ mission is to support Colorado’s multi-modal transportation system by advancing a safe, efficient, and effective statewide aviation system through collaboration, investment, and advocacy.

In the Division’s 30-year history, it has developed a legacy and culture of innovation and leadership. The CAB and Division staff take great pride in being on the forefront of aviation and airport technology, safety and efficiency, always looking to the future to leverage new technologies for the benefit of all Coloradans.

At present, a new generation of alternatively powered aircraft are in development worldwide, which will use a variety of new powerplant technologies and airframes that will fundamentally change regional aviation mobility (RAM) and broaden opportunities for general aviation (GA) activities and flight training. While these new aircraft have the potential to create new mobility opportunities and reduce aviation’s impact on the environment, they will also pose new infrastructure, policy and regulatory challenges for state and federal aviation agencies, aircraft operators, airports, local utilities, and others.

As a leading state aviation agency, the Colorado Division of Aeronautics is conducting this study to evaluate this new technology and leverage proprietary Transportation Demand Modeling (TDM) tools from the National Renewable Energy Laboratory (NREL), which is a unique national leader in clean transportation.

With this foundation of TDM, identifying where and how Coloradans travel, the study will then evaluate where these new aircraft technologies might be deployed in Colorado, and identify potential infrastructure, policy and regulatory implications. The intent is to inform planning, development, and funding conversations among stakeholders as this technology matures. The ultimate goal will be to have Colorado’s aviation system as prepared as possible to leverage the benefits of these new aircraft technologies when they enter widespread service in the next 10-15 years.

Preliminary tasks contemplated in this effort are defined below and may be modified/updated based on outcomes based upon state of industry and available funding.
General Scope of Work

Task 1- Review and summarize existing research and case studies on alternatively powered aircraft (fixed wing, non-eVTOL) and related airport infrastructure needs

- Leverage existing research as well as present case studies from other entities that are also engaged in analyzing policy-led alternatively powered aircraft adoption. Case studies will capture (as available):
  - Goals and objectives
  - Benefits, challenges, and risks
  - Summary of work-to-date
  - Identification of proposed actions
  - Lessons learned/relevance to Colorado Division of Aeronautics’ efforts
  - Identification and current Technical Readiness Level of aircraft suitable to Colorado’s environment and terrain
- Known research in progress that will be leveraged includes the National Air and Space Administration (NASA) Langley Regional Air Mobility Study, and potential related Federal Aviation Administration (FAA)/National Renewable Energy Laboratory (NREL) efforts regarding aircraft electrification, as mutually desired.

  Deliverable- summary of current research and applicability to Colorado’s efforts

Task 2- Quantify the current state and development timeline of alternatively powered regional air mobility and general aviation training aircraft

- Review of current development status and forecast development/timeline of fixed wing regional air mobility aircraft (4-76 seats) by power type:
  - Battery-electric
  - Hybrid-electric (hydrogen/fuel cell/jet fuel/etc.)
- Review of current development status and forecast development/timeline of 2-6 seat general aviation battery-electric flight training/recreational aircraft

  Deliverable- summary of current and forecast aircraft developments and likely candidates (by type) for future production/entry into service

Task 3- Study/analysis of Colorado’s intrastate travel patterns and demand and identification of Colorado airports likely to support regional air mobility aircraft

- Coordinate with NASA to accomplish the following:
- Review/analysis of Colorado’s intrastate travel patterns and current demand (provided through existing collaborations with NASA and the Georgia Institute of Technology mid-Atlantic regional travel study)
  - By current scheduled air carrier
  - By mass transit
  - By privately owned vehicle
- Validate demand modeling with multimodal demand modeling utilizing the NREL proprietary Transportation Demand Modeling tool and other NREL and
NASA tools and acquired data sources such as real time, cell-phone derived travel data analysis to facilitate this task.

- Identification of top 10 publicly owned, public use airports that would serve to support the busiest intrastate regional air mobility routes and associated demand
- Identification of the Airport Reference Code for those airports and the sizes (and makes/models of aircraft currently in development) of regional air mobility aircraft that could be served by each

**Deliverable- summary of key intrastate markets likely to support regional air mobility service, and the airports serving those markets**

**Task 4- Analysis and identification of Colorado airports likely to support battery-electric GA training aircraft** (to be provided by CDOT Aeronautics Division staff)

- Review/analysis of current significant flight training operations in Colorado
- Identification of those airports most likely to support broad scale flight training operations with battery-electric GA aircraft
- Where possible, identify major flight schools (>10 aircraft) with orders or options for battery-electric aircraft, and describe likely fleet introduction timelines
- Identification of the top five publicly owned public use airports that would most likely support these flight training operations

**Deliverable- List of identified airports and related analysis**

**Task 5. Identify baseline airport infrastructure needs to support alternatively powered aircraft technology at identified airports serving both RAM and general aviation (GA) flight training:**

- Develop a sample of use types/typical energy loads and service conditions, for the identified airports
- Projected energy demand/needs related to current adoption rates of new technology including electric aircraft.
- Fast charging, slow charging, battery storage, fuel cells
  - Benefits, challenges, infrastructure requirements, and other considerations
- Anticipated capacity, loads and storage needs
- Potential for on-site power generation/storage (solar, etc.)
- Using NREL proprietary tools, develop projected electrical load curves for typical RAM and GA operations, including analysis of potential benefits of off-peak charging/daytime use
- Leverage NASA-developed RAM load models to inform this task
- Charging Infrastructure recommended to simultaneously charge up to three RAM aircraft
  - Facilities needed
  - Projected electricity usage
Charging Infrastructure recommended to simultaneously charge up to ten battery electric GA flight training aircraft
- On-airport charging infrastructure costs
- Initial cost recovery models for infrastructure

**Deliverable- summary of the above.**

**Task 6** - For identified airports, develop high level inventory of existing electrical utility service and capacity, and compare to baseline needs developed in tasks 3 and 4. Compare to existing conditions and develop high level per-airport costs to develop projected necessary infrastructure needs and potential funding sources.
- Utility service upgrade costs to airport
- On-site photovoltaic generation/energy storage
- Coordination with energy utility for planning
- Initial review of existing power quality/availability (sensitive, may be included in limited distribution appendix).
- Potential funding/revenue generation methodologies
- Site-level energy optimization evaluation of typical use case categories. Effort will look to optimize cost of energy based upon current rate structures and potential generation/storage opportunities.

**Deliverable-** Comparison of existing airport conditions to projected need and development of related high level cost estimates

**Task 7** - Identify at a high level the federal and state policies and funding mechanisms that will need to be evaluated to facilitate the development of this infrastructure.
- Updates to FAA polices and guidance
  - Applicable Advisory Circulars
  - Airport Improvement Program (AIP) Handbook/AIP eligibility
- Federal fuel tax replacement/AIP funding streams
- State/local fuel tax/airport flowage fee replacement/funding streams
- Federal/state policies that incentivize electric/hydrogen/sustainable aviation fuel infrastructure

**Deliverable-** high level summary of federal and state policies and funding mechanisms that will need to be addressed

**Task 8** - In conjunction with CDOT Division of Aeronautics, create a study committee to offer input and help review study deliverables.
- Aircraft manufacturers
- Identified airports
- Electric utilities
- Air carriers
- Major flight schools
• Infrastructure (charging/fueling/distribution) manufacturers/supplies
• FAA
• Other State of Colorado agencies, such as the Colorado Energy Office

Task 9- Administrative/Project Management
• Preparation of overall study schedule and deliverable dates
• Monthly project progress reports
• Study committee meeting logistics/summary preparation
• Invoicing and billing (unless pre-funded as a reimbursable or similar arrangement)
• Project tracking against budget
Action Item Summary - Colorado Aeronautical Board

MEETING DATE: June 9, 2022
AGENDA ITEM: 8.6 - FY 2023 Remote Tower Budget
FROM: Todd Green, Program Manager
RECOMMENDATION: Motion to approve an increase to the FY 2023 Remote Tower Budget in the amount of $8,000

Action Item Summary:
The Division staff is requesting an additional $8,000 to fund the Remote Tower initiative through FY 2023.

Background:
In January, Division staff requested approval of the FY 2023 statewide initiative budgets. These requested amounts were based on estimates and unfortunately, the estimated amount to fund the Remote Tower initiative through FY 2023 was calculated incorrectly. To fix this error, staff is requesting an additional $8,000 be added to the already approved amount of $135,000 for a total of $143,000.

Link to Strategic Plan and/or State Aviation System Plan:
This project has direct applicability to the completion of Goal 1 in the 2021 Strategic Plan, which challenges us to “engage with industry to support and facilitate emerging technologies...including air traffic control...”

Financial Impact: $8,000

Staff Recommendation:
Staff recommends approval of an additional $8,000 to fund the Remote Tower initiative through FY 2023.

Attachments: N/A
Action Item Summary - Colorado Aeronautical Board

MEETING DATE:       June 9, 2022
AGENDA ITEM:        9.1- Aviation Education Grant Program Review
FROM:               Hetty Carlson, Education Grants and Outreach Specialist
RECOMMENDATION:     CAB approval of recommended education/workforce development grants

Action Item Summary:

Staff is seeking CAB approval to award eight grant applicants with aviation education workforce development grant funds totaling $270,617.

Background:

In February 2022, the CAB approved $200,000 of FY2023 funding for the Education Grants and Workforce Development program. This funding, along with $200,000 of previously approved FY2022 funds, allowed us to concurrently conduct one round of grant solicitations and approvals for both fiscal years 2022 and 2023 totaling $400,000.

In March 2022, following the grant process timeline, we opened the application period hoping to attract organizations and entities that focus on aviation education and workforce development, and that help develop the talent pipeline needed to support our future aviation system needs within the State of Colorado. Each applicant was asked nine questions that closely followed Section 6 of the Programs and Procedures Manual. The application period closed on May 1, 2022, with a total of ten application submittals. Total requested funds were $857,603 which is $457,603 over approved funding. Below is a summary of each applicant’s request and staff’s recommendation for funding, following application review and discussions with Chair Maenpa, Dave Ulane, Hetty Carlson and Kaitlyn Westendorf on May 24th.
• **AIMS Community College (AIMS CC) - $50,000 requested**

Through support run by Students, Certified Flight Instructors, Faculty, and Staff, the Aims Aviation department is seeking funds to jump start/create a Mobile Aviation Lab with industry equipment to take to the road to bring awareness, instruct, train, inspire, and connect the K-12 community through flight.

• **Civil Air Patrol (CAP) - $6,000 requested**

The Civil Air Patrol, Pikes Peak Composite Squadron, is seeking funding for a RealSim Flight Simulator with a Garmin G1000 suite to both provide initial exposure to becoming a pilot, but to provide, specifically, an understanding of the G1000 avionics system prior to entering a G1000-equipped aircraft.

• **Colorado Digital Learning Solutions (CDLS) - $25,000 requested**

CDLS, an ongoing supplemental online course program, is seeking funding to develop a stronger aviation and aerospace pathway by creating a Middle School level career exploration course on aviation and aerospace careers using content experts and FAA’s STEM Aviation and Space Education (AVSED) content.

• **Colorado SKIES Academy (CSA) - $100,000 requested**

Colorado SKIES Academy (CSA) is an aerospace-focused, project based, free tuition charter middle school. The requested funding is for 4 programs: Project Development and Personnel for a Makery, Project Development for Ground School Personnel & Materials, Discovery Days and Field Trips Transportation, and general Transportation for Learners unable to otherwise get to CSA.

• **Falcon AeroLab - $336,200 requested**

Falcon AeroLab, a STEM/Aerospace enrichment program, is seeking funding for 4 of their programs: Intro to Flight Training, Basic Drones, Build-A-Plane, and Intro to Aviation Mechanics. They are also requesting funding for a van to transport rural communities.

• **Metropolitan State University of Denver (MSUD) - $150,000 requested**

The centerpiece of this project is the rebranding and refurbishing of two existing Cessna 150 aircraft currently owned by MSU Denver. MSUD is seeking funding to refurbish these aircraft to serve as an outreach platform.
• National Museum of World War II Aviation (NMWWIIA) - $110,000 requested

This is a request for funding to reinitiate the museum’s K-12 STEM Program, which has been suspended since March 2020 due to COVID restrictions. The funding is for 6 modules broken up by grade level.

• Preflight Aviation Camp - $10,000 requested

PreFlight Aviation Camp is a 501(c)3 nonprofit and aviation day-camp for girls ages 11-14. They are seeking funding to cover the camp and administrative costs, cover camp costs for campers with a financial need to attend camp on a full scholarship, as well as taking its next step in its growth plan by hosting two camps in one summer. This grant will provide the needed funding for PreFlight to purchase new supplies and expand to multiple locations.

• Steamboat Springs (SBS) - $34,828 requested

Steamboat Springs Airport/Bob Adams Field (SBS) is requesting a grant of to purchase a Precision Flight Controls CR-12 Propanel AATD simulator. The program goal is to provide a flight simulator for pilots located in rural Northwest Colorado who are seeking introductory training, studying to obtain their instrument rating, or looking for refresher flight training. The goal is more proficient instrument trained pilots on the Western Slope of Colorado, which will lead to safer flight operations in the Rocky Mountains.

• Wings Over the Rockies (WOTR) - $35,575 requested

Wings Over the Rockies, Wings Aerospace Pathways (WAP), a full-day learning enrichment program for middle- and high school students, is seeking funding to expand a Drone Pathways course. The Drone Pathways course goes beyond FAA Part 107 certification for students: they will also learn essential skills including how to build and repair their own drones, and how to prepare for careers in the industry.

**Staff Recommendation:**

After review, staff recommends CAB approval of a total of $270,617 in Education and Workforce Development grants as detailed in the table below:
<table>
<thead>
<tr>
<th>Applicant</th>
<th>Requested</th>
<th>Proposed</th>
<th>Recommendation</th>
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<tr>
<td>AIMS CC</td>
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<td>CAP</td>
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<td>CDLS</td>
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<td>CO Skies</td>
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<td>Falcon Aero Lab</td>
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<td>MSUD</td>
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<td>Deny- Does not fall within requirements.</td>
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<td>NMWWIIA</td>
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<td>$ 55,000</td>
<td>Approve- fund half for 9-12 grades only</td>
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<td>PreFlight Camp</td>
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<td>Approve- fund full cost of Colorado camp</td>
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<td>SBS Sim</td>
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<td>Approve</td>
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<td>WOTR</td>
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<td>Balance</td>
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Two of the applicants, Metropolitan State University and Colorado Skies Academy, are not recommended for funding as they did not fall within the grant program parameters of workforce development or were considered unsustainable.

**Attachments:**

None
Action Item Summary:

Gunnison-Crested Butte Regional Airport (GUC) is requesting $118,873 in supplemental funding for their 20-GUC-01 grant.

Background:

During the 2020 grant cycle, the CAB awarded Colorado Discretionary Aviation Grants (CDAG) to 15 airports to perform pavement maintenance on their runways and taxiways. This typically involves crack seal, seal coat and restriping. Grant 20-GUC-01 was issued for $550,000 with a local 10% match of $61,112. GUC was unable to get the project awarded due to COVID and contractor back logs, since then the price for such work has risen. GUC has submitted a CDAG supplemental funding application in order to award and finish the project in whole for the runway and taxiway.

Link to Strategic Plan and/or State Aviation System Plan:

Airfield pavement maintenance ties directly to two System Viability goals within the 2020 Colorado Aviation System Plan: 1) Percent of Airports with Pavement Maintenance Programs and 2) Percent of Airports with an Average Runway and Taxiway Pavement Condition Index (PCI) of 70 or Greater.

Financial Impact: $118,873 from the FY22 CDAG Program

Staff Recommendation:

Approval of the 20-GUC-01 Supplemental Funding request in the amount of $118,873.

Attachments: None
Informational Item Summary: Colorado Aeronautical Board

MEETING DATE: June 9, 2022
AGENDA ITEM: 11.1 - FY 2023 Statewide Initiatives Administrative Update - Crack Fill Program
FROM: Kip McClain, Aviation Planner

Informational Item Summary:

The purpose of this memo is to detail an administrative update being made to the Crack Fill Reimbursement Program. Specifically, this change will authorize reimbursement of freight and shipping charges that are traditionally added to sealant material purchases up to but not including one truck load.

The FY 2023 Crack Fill Program budget was authorized by the CAB at the February 1, 2022, board meeting to allocate funding for the purchase of crack fill material at airports for routine pavement maintenance activities. The program was established to encourage airport sponsors to maintain their facilities in optimal conditions and to preserve the investments made by the FAA, the State, and their local communities.

Background:

The Crack Fill Program allows airports to request a 90% reimbursement for crack fill material up to a limit of $10,000 of state funding per airport per state fiscal year. However, the cost of shipping on crack fill material purchases was not eligible for reimbursement because vendors would not levy freight charges on material purchased by the truck load (quantities generally equating to 22.5 tons).

Statistics show however, that few airports have the need to purchase an entire truck load of crack fill material and consequently, have been obligated to expend additional funds for shipping charges based on the reduced quantities. Therefore, the Division staff will be modifying the program to allow for reimbursement of these charges within the overall crack fill material reimbursement claim, regardless of the quantity purchased. This update will not
require additional funding and is adequately covered under the current budget of $150,000. This administrative change will take effect on July 1, 2022.

**Link to Strategic Plan and/or State Aviation System Plan:**

This Statewide Initiative helps to support the System Plan’s “System Viability” goal along with the “Percent of Airports with an Average Runway and Taxiway Pavement Condition Index (PCI) of 70 or Greater” Performance Measure.

**Financial Impact:** N/A - FY 2023 Statewide Initiatives budget approved February 1, 2022, is adequate to cover projected reimbursements

**Staff Recommendation:** N/A

**Attachments:** N/A
Informational Item Summary – Colorado Aeronautical Board

MEETING DATE: June 9, 2022
AGENDA ITEM: 13.1 - Education/Outreach Update
FROM: Hetty Carlson, Education Grants and Outreach Specialist

Informational Item Summary:

These are the events that the Colorado Division of Aeronautics has supported since our last CAB meeting and future events.

Events Attended April/May:

- Wings Over the Rockies Breakfast Fly-in
- EAA Chapter 301 Young Eagles Rally @ APA

Upcoming Events:

- Wings Over the Rockies Breakfast Fly-in - June 4th
- Aviation Career Symposium - June 11th
- EAA Chapter 301 Young Eagles Rally @ APA - June 18th
- Annual EAA Fly-in and Pancake Breakfast @ Emily Howell Warner Field (GNB) - July 2nd
- STEM Bootcamp for Teachers @ Challenger Center of Colorado - July 19th and 20th

Staff Recommendation:

None- informational only.
May 31, 2022

From: William E. Payne, P.E.
To: Colorado Division of Aeronautics

Section A – Remote Air Traffic Control Contract Progress Report #11

Re: Period: May 1 through May 31, 2022

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<th>Finish Date (Projected)</th>
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Note: All dates reflect latest FAA proposed schedule and are subject to change based on FAA SME's ability to travel
**Remote Tower Project Narrative:**

With the successful conclusion of Phase 1 passive testing of the Colorado Remote Tower system, the data gathered is being analyzed and the test report produced. This report will be disseminated to the members of the Safety Risk Management Panel (SRMP), Subject Matter Experts (SME) and test observers for review and comment. I will be attending the SRMP meeting as an SME. The report will be used by the SRMP to evaluate system performance against the set of pre-defined remote tower hazards.

Below is an overview of the upcoming FAA Safety Management System (SMS) process required to move to Phase 2 active testing:

The FAA’s Safety Management System (SMS) is designed to determine the risk to the National Airspace System (NAS) of any system. At a high level the SMS process is to define:

1. A set of hazards.
2. Their individual risk levels.
   a. High
   b. Medium
   c. Low
3. The likelihood of a hazard occurring.
   a. Frequent
   b. Probable
   c. Remote
   d. Extremely Remote
   e. Extremely Improbable
4. The severity if the hazard is realized.
   a. Minimal
   b. Minor
   c. Major
   d. Hazardous
   e. Catastrophic

After each of the above has been determined for an individual hazard, the Operational Risk Matrix (see attached) is created to determine if the risk is acceptable (green), acceptable with mitigation (yellow) or unacceptable (red). If a hazard’s risks are determined to be unacceptable and cannot be mitigated to acceptable (green or yellow) the system cannot be implemented.

The two (2) documents that are the basis for evaluating the performance of the remote tower system are: 1) Operational Visibility Requirements (OVR), and 2) the Operational Safety Assessment (OSA). The OVR details the minimum visual requirements necessary for an air traffic controller to perform the tasks in a VFR ATCT. The OSA defines the various hazards, risks associated with the hazard, likelihood of the risk occurring and the severity if the hazard is realized.
This SRMP will convene on July 11, 2022. This is an extremely important step toward ultimate certification of the system. Successful completion of the safety panel will result in creation of a Safety Risk Management Document (SRMD) that will be routed to the risk acceptors in each participating FAA line of business for signature. Success is when the SRMD is complete with no high hazards identified and passes a final review. The next hurdle will be getting the required signatures. Past performance indicates this could take months, which is totally ridiculous. Once the SRMD is finally signed, the project can move to the next critical step--Phase 2 active testing. The FAA has forecast not being able to begin Phase 2 testing until the first quarter of 2023, again absurd, as the signatures after the SRMD has been reviewed are simply a formality.

At the conclusion of Phase 2 another SRMP and SRMD will be required before the system achieves Operational Viability Decision (OVD). The sister remote tower project at Leesburg Virginia has been operation under a OVD since September 9, 2021. The significance of the OVD is that the remote tower is controlling traffic full time and the mobile ATCT (the “horse trailer” as the controllers call it) is no longer continuously staffed and the FAA will check the operation on a reduced schedule.

After the SRMP concludes our NextGen Project Manager will be stepping down and will be acting in a supporting role to the new Program Manager, who was/is the Program Manager for the Leesburg remote project.

Given delays our program has experienced I, in conjunction with NextGen, will be trying to shorten the time between final SRMD and the time Phase 2 will be allowed to begin. The hope is to be able to start Phase 2 in late September or October. This is an aggressive goal. Stay tuned.

NATCA has indicated they are not sure if they will be able to support a trip for their panel member to come to FNL to see the system. In my opinion, the project will not be well served by having the representative of the air traffic controllers’ union, who is a voting member on the SRMP, not having seen the Colorado Remote Tower system. NATCA will also have two (2) non-voting representatives as subject matter experts at the SRMP meeting in addition to the voting panel member. I have made my concern known to the NATCA Director of Safety and Technology, as well as the NextGen Program Office. The NATCA Director of Safety and Technology has indicated that he will try to get the voting panel member to FNL to at least see the system. I have spoken to the designated panel member, and his schedule is open the week of June 6, 2022. I am waiting to hear from NATCA if they will be able to support a trip to FNL.

Schedule of upcoming meetings (dates are tentative based on FAA and NATCA availability):

1. June 8, 2022 – NATCA SRMP member familiarization visit. NextGen program team members will be present during this visit – FNL ???
2. June 21, 2022 – Air Traffic Safety Oversight Service (AOV) and NextGen - system familiarization and evaluation - FNL
4. July 25, August 1 or August 8, 2022 – Technical Operations (AJW) team, NextGen and Searidge preliminary System Design Approval meeting to allow TechOps the opportunity to begin evaluation of the remote tower system - FNL

Remote Tower Approval Phases:

- **Operational Testing**
  - Phase 1 - Passive Op Evals (Mobile ATCT staffed controlling traffic, passive data collection from Remote Tower (RT)) – **Complete**.
  - Phase 2 - Active Op Evals (RT staffed controlling traffic, Mobile ATCT staffed as safety back up); operating under an AOV (Aviation Safety) approved Phase 2 test plan - **TBD**
  - Phase 3 – Validation and Verification (V&V) (RT staffed controlling traffic, Mobile ATCT unstaffed); operating under an AOV approved V&V test plan - **TBD**

- **Operational Viability Decision**
  - Phase 3 - Extended Monitoring (RT staffed controlling traffic, existing ATCT can be deactivated or MATCT can be removed); operating under an AOV approved extended monitoring plan - **TBD**

- **System Design Approval (SDA)** - **TBD**

- **Remote Tower System/Facility Commissioning** - **TBD**

Proposed Remote Tower Testing Phases:

![Remote Tower Testing Phases Diagram]

**Projected Start Date**

*Dependent on local resources’ ability to travel to FNL and COVID status*
Schedule Note: This status is based on the latest proposed schedule and is dependent upon availability of FAA resources to staff the remote tower and support the Phase 1 SRMP.

Note: The FAA has replaced the term Initial Operating Capability (IOC) with Operational Viability Decision (OVD). This may change again as the terminology of remote tower certification is in flux.

REMOTE TOWER PROJECT PROGRAM MANAGEMENT

Program Description/Background

The Program Manager for this project, William E. Payne, will serve as a technical subject matter expert to represent the Division’s investment and interest in the Remote Tower and facilitate the project’s forward progress to FAA certification and deployment. The Program Manager will participate in and assist with the development of all evaluation, testing, and certification activities, as well as attend all project meetings, and will serve as the technical representative for the Division of Aeronautics during all phases of the project as enumerated below.

Tasks:

1. **Provide Technical Representation and Oversight of the Project**

   **Effort this Period:** Attend Phase 1 Periods 1 and 2 passive testing of the remote tower system at FNL. Phase 1 testing was completed on April 28, 2022. Attend weekly and bi-weekly program meetings, attend the TIM and participate on the SRMP for the mobile ATCT relocation as a subject matter expert.

2. **Participate in Development of the FAA’s Operational Safety Assessment (OSA) Basis for Evaluation of Non-Federal Remote Tower Equipment**

   **Effort this Period:** The OSA is still in draft form and is continuing to be developed as both remote tower projects proceed toward an Operational Validation Decision (OVD) and System Type Certification.

3. **Participate in Development of the Operational Visual Requirements (OVR)**

   **Effort this Period:** As with OSA, the OVR is still in draft form and is continuing to be developed as both remote tower projects proceed toward an Operational Validation Decision (OVD).

4. **Participate in Development of the Requirements/Specifications for Non-Federal Tower Equipment**
5. **Assist with Development of System Configuration**

   **Effort this Period:** The system configuration is being modified because of lessons learned during Phase 1. New PTZ presets are being set based on relocation of the two PTZs from the central mast to the end masts.

6. **Modify System Configuration Based on Testing Phase Comments**

   **Effort this Period:** Modifications to the runway end camera presets were necessary before Phase 1, including moving two of the pan-tilt-zoom cameras one each to the end masts. Completed by Searidge.


   **Effort this Period:** The system has been exercised and tested periodically during the shutdown; any deficiencies noted were reported to the FAA and the vendor.

8. **Attend System FAA Technical Interchange Meetings (TIM)**

   **Effort this Period:** Provided SME representation in the recent FAA TechOps TIM and the SRMP.

9. **Participate in FAA Configuration Review Board (CRB) Activities**

   **Effort this Period:** NextGen has yet to establish the CRB. This effort may be rolled into development of the Remote Tower AC.


    **Effort this Period:** Evaluation of the Air Situation Display (ASD) based on data from the FAA’s System Wide Information Management system was evaluated during the Phase 1 Period 1 testing. This system will be removed from the controller working position displays when the STARS become operational, which is anticipated at the end of May.

11. **Collaborate with FAA on Alternate Phase 1 Virtual/Remote Testing**

    **Effort this Period:** Complete - Phase 1 in-person testing complete April 28, 2022.
12. Work with FAA to develop and Implement Phase 1 Passive Remote Tower Testing

   Effort this Period: Phase 1 in-person testing complete April 28, 2022.

13. Work with FAA to Develop and Implement Phase 2 Active Remote Tower Testing

   Effort this Period: There has been no activity on this task this period. Phase 2 Active Remote Tower Testing will begin after the conclusion of Phase 1 Passive Remote Tower testing and the SRMD has been signed.


   Effort this Period: This task has been renamed Validation & Verification (V&V.) There has been no activity on this task this period. Phase 3 Active Remote Tower Testing will begin after Phase 2 Active Remote Tower testing is complete and the SRMD has been signed.

15. Work with FAA on Phase 4 Remote Tower System Certification and Commissioning

   Effort this Period: There has been no activity on this task this period. Phase 4 System Type Certification and Commissioning will begin after the conclusion of Phase 3 V&V and the SRMD has been signed.

16. Participate in Development of the FAA’s Advisory Circular (AC) for Remote Tower Systems for Non-Federal Applications

   Effort this Period: Continue participation in the FAA TechOps TIM to review and comment on the Remote Tower Advisory Circular.

17. Provision of Regular Written Reports, Presentations and Updates on the Project’s Progress to Internal and External Stakeholders

   Effort this Period: Preparation of the monthly Program status report.

18. Travel as Needed (In-State and Out of State) for Meetings with FAA, Airport and Division Personnel

   Effort this Period: No out of state travel this period.
DEVELOPMENT OF POTENTIAL ENHANCED SITUATIONAL AWARENESS TOOLS FOR NON-TOWERED AIRPORTS

Tasks:

1. Explore the Potential Development of a System Consisting of Existing and New Surveillance Sources that can be Deployed, Owned and Operated by Non-Towered Airports to Provide Airport Staff with Improved Visibility into the Local Airspace and on the Airport Surface, with the Ultimate Goal of Improving Aviation Safety and System Efficiency.

   **Effort this Period:** No activity this period.

2. Prepare System Requirements to be Used by Airports and/or the Division when Seeking Vendor Proposals to Implement a Situational Awareness System.

   **Effort this Period:** No activity this period.
Glossary of Project Technical Acronyms

ADS-B  Automatic Dependent Surveillance – Broadcast
AGL  Above Ground Level
ARTCC  Air Route Traffic Control Center
ASDE-X  Airport Surface Detection Equipment – Model X
ASOS  Automatic Surface Observation System
ASR-9  Airport Surveillance Radar – Model 9
AWOS  Automatic Weather Observation System
ATC  Air Traffic Control
ATIS  Automatic Terminal Information System
AJT  Air Traffic Services
AJI  Safety Technical Training Services
AJV  Mission Support Polices and Procedures
CTAF  Common Traffic Advisory Frequency
ERAM  En Route Automation Modernization
FAA  Federal Aviation Administration
FAT  Factory Acceptance Test (alternately - First Article Test)
FDIO  Flight Data Input/Output
FTI  Federal Communications Infrastructure (Harris Corp.)
GA  General Aviation
HITL  Human In the Loop
HMI  Human Machine Interface
ILS  Instrument Landing System
IOC  Initial Operating Capability
IMC  Instrument Meteorological Condition
LOA  Letter of Agreement
MLAT  Multilateration
MSL  Mean Sea Level (above)
NAS  National Air Space
NATCA  National Air Traffic Controllers Association
NESG  NAS Enterprise Security Gateway
NextGen  Next Generation Air Transportation System
NORDO  No Radio
OTW  Out of the Window
RSA  Runway Safety Area
SAT  Site Acceptance Test
SMR  Surface Movement Radar
SMS  Safety Management System
SRA  Safety Risk Assessment
SRMD  Safety Risk Management Document
SRMDM  Safety Risk Management Document Memorandum
SRMP  Safety Risk Management Panel
SHA  System Hazard Analysis
SSSHA  Sub-System Hazard Analysis
STARS  Standard Terminal Automation Replacement System
SWIM  System Wide Information Management
TAMR  Terminal Automation Modernization and Replacement
TRACON  Terminal Radar Control Facility
UHF  Ultra High Frequency
VFR  Visual Flight Rules
VHF  Very High Frequency
VMC  Visual Meteorological Condition
ATTACHMENTS

2. Operational Risk Matrix.
Colorado Remote Tower Timeline
(Draft)

Phase 1
Period 1 3-21/22
Period 2 4-19-22

End
Phase 1
Period 2 4/28/22

Phase 1
SRMP 7/11/22
Reduce Phase 1 Data Produce SRMP Report

Phase 1 SRMD Signatures
Phase 2 Active Testing TBD
Phase 2 SRMP TBD
Phase 3 Validation & Verification TBD

2022

STARS Operational Operational
May 2022

COLORADO REMOTE TOWER TIMELINE

Abbreviation Key
SRMP - Safety Risk Management Panel
SRMD – Safety Risk Management Document
STARS – Standard Terminal Automation Replacement System
SDA – System Design Approval (System Type Certification)
Ops – Operations
TBD – To Be Determined
OVD – Operational Viability Decision
V&V – Validation & Verification

Upcoming activity
Complete
Critical Path Item
## Operational Risk Matrix

<table>
<thead>
<tr>
<th>Severity</th>
<th>Minimal 5</th>
<th>Minor 4</th>
<th>Major 3</th>
<th>Hazardous 2</th>
<th>Catastrophic 1</th>
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<td>Likelihood</td>
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<tr>
<td>Frequent A</td>
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<td>Yellow</td>
<td>Red</td>
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<td>Probable B</td>
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<td>Yellow</td>
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<td>Remote C</td>
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<td>Extremely Remote D</td>
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<td>Red</td>
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<tr>
<td>Extremely Improbable E</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

- **Unacceptable Risk**
- **Acceptable Risk with Mitigation**
- **Acceptable Risk**

* Unacceptable with Single Point and/or Common Cause
Action Item Summary - Colorado Aeronautical Board

MEETING DATE: June 9, 2022
AGENDA ITEM: 15- CAB Governance Document Update
FROM: David Ulane, Director
RECOMMENDATION: Motion to Approve the CAB Governance Document

Action Item Summary:

Annually each August, the CAB reviews, update (as necessary) and adopts its Governance Document, a guiding document that outlines the CAB’s authority, roles and responsibilities and code of conduct. Because we have Daniel Melia and Steve Lee joining us as two new CAB members, the CAB needs to readopt the Governance Document now to include these new members.

Other than adding our two new members, there are no proposed changes to the Governance Document at this time. Per the CAB’s annual workshop schedule, they will be reviewed and re-adopted by the CAB again this coming August.

Background:

The CAB’s Governance Documents were developed and first implemented about 12 years ago to provide additional context and clarity beyond that contained in the CAB’s enabling state statute (CRS 43-10-105) as the CAB carries out its duties and responsibilities. It is revised if necessary and readopted annually each August, and as needed if there is a change in CAB members since the preceding August.

Link to Strategic Plan and/or State Aviation System Plan:

N/A

Financial Impact:

N/A
Staff Recommendation:

Staff recommends CAB adoption of the linked CAB Governance Document, which has been updated to reflect our two new CAB members. The final document will also be updated to reflect the CAB officers that will be elected at this meeting.

Attachments:

Draft Updated CAB Governance Document
COLORADO AERONAUTICAL BOARD
GOVERNANCE DOCUMENTS

Adopted Jun 9, 2022
(To reflect new CAB members appointed 5-12-22)

TABLE OF CONTENTS

I. Preamble/Mission Statement
II. Definitions
III. Code of Conduct
IV. Duties and Responsibilities
V. State Aviation Systems Plan
VI. Aviation Fund
VII. State Aviation System Grant Program
VIII. State (Colorado) Infrastructure Bank
IX. Administrative Matters
PREAMBLE

Pursuant to C.R.S. § 43-10-101, *et seq.*¹, the Colorado General Assembly has declared (1) that there exists a need to promote the safe operation and accessibility of general aviation and intrastate commercial aviation in the state; (2) that improvement of general aviation and intrastate commercial aviation transportation facilities will promote statewide diversified economic development; and, (3) that resident accessibility to airport facilities is crucial to medical and other types of emergency.

Through the vehicle of a type 1 transfer (see § 43-10-107(2) and the Administrative Organization Act of 1968; § 24-1-105), the General Assembly has created a seven (7) member Colorado Aeronautical Board ("board"; §43-10-104), with, notably and among others, the following general duties, responsibilities and powers (§§ 43-10-105, 106, 107, 108.5, 109, 110 and 115):

- To appoint, with the consent of the CDOT executive director, a director of the division of aeronautics, with the qualifications as may be established by the aeronautical board and the state personnel board("director"; "division") (§ 43-10-107(1));
- To generally advise the director with respect to aviation matters (§ 43-10-105(a));
- To specifically advise the director with respect to the development and maintenance of the state aviation systems plan (§§ 43-10-105(a) and (e); 103(2)(e));
- To identify statewide aviation needs for inclusion into the department's statewide transportation plan (§ 43-10-105(e));
- To establish procedures for the administration and distribution of moneys credited to the aviation fund for aviation purposes at public airports, commercial service airports, and reliever airports as defined in 49 U.S.C. 47102 (§ 43-10-105(b));
- To establish policies for the growth and development of aviation in Colorado (§ 43-10-105(d));
- To annually set and adopt the budget for the division, including recommendations to the Transportation Commission for the amount to be allocated for administrative costs(§ 43-10-105(f));
- To accept federal funds in connection with the exercise of its duties and responsibilities (§ 43-10-105(2)); and,

¹ Unless otherwise so indicated, all statutory references herein are to those specifically identified sections of Title 43, Article 10 of the Colorado Revised Statutes (C.R.S.), as amended.
• To acquire by gift, transfer, devise or eminent domain, any land and/or structure, which, in its opinion, poses or may pose a hazard to navigable airspace (§ 43-10-106(1)(a)).

Pursuant to §§ 43-10-105; 108.5, 109, and 110, the board has been entrusted with the responsibility of establishing procedures for the administration and general oversight of the state "aviation fund" ("fund"; §§ 109 and 110) and the "state aviation system grant program" ("grant program"; § 108.5).

Pursuant to its type 1 transfer origins, to the extent constitutionally and statutorily permissible, the board shall execute its functions and fulfill its duties and responsibilities (including the promulgation, adoption and/or implementation of policies, rules and procedures affecting such matters) independently of other agency and/or departmental involvement; to wit:

... it shall exercise its prescribed statutory powers, duties, and functions, including rule-making, regulation, licensing, and registration, the promulgation of rules, rates, regulations, and standards, and the rendering of findings, orders, and adjudications, independently of the head of the principal department . . . (§ 24-1-105 (1))

The board hereby adopts these governance documents as guidance materials, for its use and that of the division as a reference resource, only, in connection with the execution and fulfillment of their respective duties and responsibilities. They are intended to neither expand nor limit the constitutional or statutory power, authority, duties or responsibilities of either the board or the division. The board shall, no less than every three years, review and update this document as necessary.

Subscribed and adopted as indicated below, effective June 8, 2022.

/s/

KENNETH MAENPA, Chair          DATE
Western Slope Local Governments

Board Members

KENT HOLSINGER          DATE
Western Slope Local Governments

CHARLES TEDESCO          DATE
Eastern Slope Local Governments
MISSION STATEMENT

The mission of the CDOT Division of Aeronautics is to support the state’s multi-modal transportation system by advancing a safe, efficient and effective statewide aviation system through collaboration with stakeholders, investment in education, innovative programs and advocacy of responsible policy and legislation.
II. DEFINITIONS

As used herein, the following terms shall have the following respective meanings:

A. "Airport" means any area of land or water which is used or intended for the landing and takeoff of aircraft, any appurtenant areas which are used or intended for airport buildings or other airport facilities or rights-of-way, and all airport buildings and facilities (§ 43-10-102(2)).

B. "Aviation purposes" means any objective that provides direct and indirect benefits to the state aviation system and includes, but is not limited to:
   1. Any work involved in constructing, planning, or repairing a public airport or portion thereof and may include any work involved in constructing or maintaining access roads;
   2. The removal, lowering, relocation, and marking and lighting of any hazard to the safe operation of aircraft utilizing federal rules and regulations as guidelines for determining such hazards;
   3. The acquisition of navigational aids used by aircraft landing at or taking off from such airport;
   4. The acquisition of safety equipment necessary for the enhancement of the state aviation system;
   5. Any research study, proposal, or plan for the expansion, location, or distribution of aviation facilities or resources that are directly related to the state aviation system;
   6. The promotion of economic development which is related to the promotion, development, operation, or maintenance of the state aviation system;
   7. Any acquisition of land, of any interest therein, or of any easement through or other interest in airspace, including land for future airport development, which is necessary to permit any such work or to remove, mitigate, prevent, or limit the establishment of any hazard to the safe operation of aircraft; and,
   8. Any formal or informal education or training made available to the public concerning aviation in the state or any informational materials for dissemination to the public concerning aviation.

Subsidization of airlines is expressly prohibited as an aviation purpose except for the promotion and marketing of air service at airport facilities (§ 43-10-102(3 (b)).

C. "Board" means the Colorado Aeronautical Board (§ 43-10-104).

D. "Commission" means the Colorado Transportation Commission (§§ 43-1-102(1); 106).
E. “Conflict of Interest” means Voluntary Disclosure of A Financial Interest (§24-18-110)


G. “Department” means the Colorado Department of Transportation (§§ 43-1-102(2); 103).

H. “Director” means the director of the Colorado Aeronautics Division (§§ 43-10-102(5); 107).

I. “Division” means the Colorado Aeronautics Division (§ 43-10-103).

J. “Executive Director” means the executive director of the Colorado Department of Transportation (§§ 43-1-102(3); 103).

K. “FAA” means the Federal Aviation Administration, or its successor (§ 43-10-102(7).

L. “Fund” means the aviation fund created in the state treasury by § 43-10-109 (see section VI, below).

M. “Grant” means “state aviation system grant” as created, defined, implemented and administered as a part of the “state aviation system grant program”, established pursuant to § 43-10-108.5 (see section VII, below).

N. “Member” means member of the aeronautical board.

O. “Plan” means the state aviation systems plan (§ 43-10-102(9)).

P. “Qualified Project” (§§ 43-1-113.5(5)(a)-(e) and (6)), within the context of the “state (Colorado) infrastructure bank” (“bank”; “Co Sib”; “revolving fund”), means:

1. Any public or private transportation project as authorized by the commission, including, but not limited to, planning, environmental impact studies, feasibility studies, engineering, construction, reconstruction, resurfacing, restoring, rehabilitation, or replacement of a public or private transportation facility within the state;

2. The acquisition of real or personal property, or interests therein, for a public or private transportation facility within the state;

3. Any highway, transit, aviation, rail, or other transportation project within the state that is eligible for financing or financial assistance under state or federal law;

4. The maintenance, repair, improvement, or construction of any public highway, road, street, parkway, transit, aviation, or rail project within the state;
(5) The acquisition, improvement, or construction of rights-of-way, bridges, tunnels, railroad-highway crossings, drainage structures, signs, guardrails, or protective structures within this state; and,

(6) Shall not include transportation facilities and other transportation projects that are restricted to private use.

Q. "Revolving Fund" (sometimes, commonly referred to as the "bank"; the "state (Colorado) infrastructure bank"; or, "Co Sib") means the aviation account within the transportation infrastructure revolving fund created in the state treasury pursuant to § 43-1-113.5 (2 C.C.R. 605-1). "State (Colorado) Infrastructure Bank" ("Bank"; "Co Sib") is a term sometimes commonly used to refer, for purposes pertinent hereto, to the aviation account within the transportation infrastructure "revolving fund" created in the state treasury pursuant to § 43-1-113.5 (2 C.C.R. 605-1) (see section VIII, below).

R. "State Aviation System" means the network of facilities which includes airports, navigational aids, and safety-related facilities (§ 43-10-102(8.5)).

S. "State Aviation Systems Plan" means a plan produced and maintained by the state which: Addresses the aviation needs within the state, including those needs relating to airports, navigational aids, and flight safety; identifies and evaluates alternatives to meet those needs; and, recommends preferred solutions for the aviation needs of the state (§ 43-10-102(9)) (see section V., below).
III. CODE OF CONDUCT

A. **Conduct of Members, in general:** The public must have faith and confidence in state government. Members must serve with integrity, honesty, and in keeping with the highest standards of ethical conduct in the discharge of their duties.

B. **Ethics in Government:** Each member shares in the responsibility of maintaining the public’s trust and confidence in the Board and its conduct. Each Member shall conform his/her conduct to the applicable requirements of Article XXIX (ethics in government), of the Constitution of the State of Colorado, and Title 24, Article 18 of the Colorado Revised Statutes (code of ethics).

C. **Conflicts of Interest:**

1. **Conflicts In General**

   The legislature has noted the importance of the participation of the citizens of the State at all levels of government.

   It has recognized, however, that, where such participation takes the form of the holding of a public office, conflicts may arise between the citizen's public duty and his or her private interest(s), to wit:

   **Legislative declaration.** The general assembly recognizes the importance of the participation of the citizens of this state in all levels of government in the state. The general assembly further recognizes that, when citizens of this state obtain public office, conflicts may arise between the public duty of such a citizen and his or her private interest. The general assembly hereby declares that the prescription of some standards of conduct common to those citizens involved with government is beneficial to all residents of the state. The provisions of this part 1 recognize that some actions are conflicts per se between public duty and private interest while other actions may or may not pose such conflicts depending upon the surrounding circumstances. (§ 24-18-101)

   A Member holds a position of public trust and has a fiduciary duty to carry out his/her duties for the benefit of the people of the State in a manner consistent with the applicable standards of conduct of §§ 24-18-101 through 24-18-205, as amended. Each Member shall comply with such standards.

   A conflict of interest might occur whenever a Member has privileged information or a financial interest which might influence, or might be reasonably perceived by the public as influencing, his/her conduct.
The legislature has acknowledged that, while some situations may pose conflicts, *per se*, between public duty and private interest, others may or may not do so, depending upon the surrounding circumstances.

**Conflicts, per se: "Substantial Financial Interest"**

In connection with all of the foregoing, the legislature has provided, in pertinent part (§ 24-18-108.5(2)), that:

A member of a board . . . shall not perform an official act which may have a direct economic benefit on a business or other undertaking in which such member has a direct or substantial financial interest.

The legislature has further provided for the enforcement of compliance with this and related provisions through civil/criminal remedies (see, for example, § 18-8-308).

For pertinent purposes:

"Financial interest" is defined (§ 24-18-102) to mean a "substantial interest held by an individual which is:

(a) an ownership interest in a business;
(b) a creditor interest in an insolvent business;
(c) an employment or prospective employment for which negotiations have begun;
(d) an ownership interest in real or personal property;
(e) a loan or any other debtor interest; or,
(f) a directorship or officership in a business."

"Business" is defined to mean:

. . . any corporation, limited liability company, partnership, sole proprietorship, trust or foundation, or other individual or organization carrying on a business, whether or not operated for profit.

**3. Other Conflicts: "Voluntary Disclosure"**

A member of a board... prior to acting in any manner which ". . . may impinge on his/her fiduciary duty and the public trust [a member may] disclose the nature of his private interest".
"Such disclosure shall constitute an affirmative defense to any civil or criminal action or any other sanction" (§ 24-18-110).

Disclosure must be given to the Colorado Secretary of State and to the Colorado Aeronautic Board not less than seventy-two (72) hours in advance of acting (§ 18-8-308).

4. Member Conflict Statement

As a condition of service on the Board, as his/her first order of business in connection therewith, each Member shall subscribe and submit to the Chairman a conflict of interest statement, substantially incorporating all of the foregoing provisions hereinabove set forth in this subsection III. C. A copy of such statement from each Member shall, in turn, be provided to, and retained by the Division for a period of not less than three (3) years after the end of the Member's service on the Board. (6-17-103)

5. Annual Disclosure Statement

Each Member shall make disclosure each January of any interest held by him/her or his/her immediate family which might conflict with his/her duties. The disclosure shall be made on a form prescribed by the Board for such purpose and shall be submitted to the Chairman, and filed with the Division, which shall retain all such forms with respect to each Member for a period of not less than three (3) years after the end of such Member's service on the Board. (6-17-103)

6. Members' Conflict/Disclosure Statements

(Copies of all member statements to be filed and retained by the Division)

D. Member Duty of Care

The duty of care requires that a Member be 1) an active participant in the affairs of the institution at the level of the Board, i.e., an active participant in board actions and decisions; 2) be reasonably informed; and 3) act in a responsible prudent manner.

Regular attendance at Board meetings is a basic element of prudent performance as a Member. Failure to regularly attend Board meetings (missing two meetings in a row) will require a meeting with the representative of the Office of Attorney General assigned to the Division of Aeronautics to determine if the failure is actionable.

Each Board Member should exercise his or her independent judgment with respect to all decisions made by the Board. No matter what constituency a Member represents, each Member has the same responsibility to share in all the responsibilities and powers of the Board to the benefit of the entire state.
To function effectively, each Board Member must be informed and have an adequate source of information. It is understood that Members must necessarily rely upon information supplied by the Division and Board staff. However, a Member should not hesitate to ask for additional information if the Member believes that the information being supplied is inadequate. The Member should, of course, review the information which is supplied.

A Board Member may prudently rely upon information and reports that are received from sources the Member regards as trustworthy.

A Board Member is not expected to run the day-to-day business of the Board or of the Division. A Board Member will ordinarily not be responsible for the actions or omissions of officers and employees of the Board or Division so long as such persons have been prudently selected and the Board Members have reasonably relied upon them.

The Board Member is expected to be informed of the Board’s enabling statute and regulations and ensure their regular review for compliance with applicable state law. Board Members are expected to set Board policies and ensure their ongoing review for adequacy, practicality, legality and soundness.

The Board Member should understand the requirements of the “Colorado Open Records Act” and the Open Meetings Law through annual training. Section 24-3.7-102.

Even when a Board action has proven to be unwise, a Member will be protected from individual liability with respect to the action if the Member acted in good faith and in a manner reasonably believed to be in the state’s best interest, and with independent and informed judgment.

E. Duty of Loyalty

The duty of loyalty requires that a Board Member exercise the Board’s authority in the interests of the Division and the state, not in the Board Member’s own interest or the interest of another entity or person.

The most obvious principle of the duty of loyalty is that the Board Member must not use the position as a Member to further the Member’s personal interest.

IV. DUTIES AND RESPONSIBILITIES

A. The Division shall be under the jurisdiction and general oversight (but, not day-to-day supervision) of the Board (§ 43-10-104(1)).

B. The Board shall advise the Director and the Division on aviation matters (§§ 43-10-103(2)-(6); 105(a)).
C. The Board shall set policy for the growth and development of aviation in Colorado (§ 43-10-105(d)).

D. With the consent of CDOT’s Executive Director, the Board shall appoint the Director of the Division of Aeronautics (§ 43-10-107(1)), who shall be responsible for day-to-day operations and oversight of the Division, and who shall report to the Board.

1. The Board shall advise the Director and the Division in the fulfillment of their duties and responsibilities, including, but not limited to, the following (§ 43-10-103(1)-(6)):
   a. The Director’s appointment and supervision of staff;
   b. Providing administrative support to the Board in the distribution of moneys credited to the aviation fund for aviation purposes;
   c. Promoting aviation safety;
   d. Providing advisory assistance to airports providing access to the public, including technical and planning assistance;
   e. Developing and maintaining the state aviation systems plan, utilizing regional aviation plans;
   f. Assisting the FAA and local governments in the identification and control of potentially hazardous obstructions to navigable airspace utilizing the standards described in federal rules and regulations for identifying such hazardous obstructions;
   g. Administering the state aviation system grant program established by the general assembly pursuant to § 43-10-108.5;
   h. Developing annual projections of revenue and expenses for review by the board;
   i. Effecting fiscal management, execution of policy and development of programs, incident to the fulfillment of their duties and responsibilities;
   j. Collecting and analyzing data relating to the use of aircraft in the state;
   k. Advising the FAA in regard to federal programs in the state;
   l. Publishing information relating to aeronautics in the state;
   m. Directing the state treasurer to transfer moneys from the aviation fund created by § 43-10-109 to the aviation account of the transportation infrastructure revolving fund created by § 43-1-113.5, but only if such transfer is approved by the Board. (The Division may direct the state treasurer to transfer moneys from the aviation account back to the aviation fund in an amount not
exceeding the amounts previously transferred from the aviation fund, but only if such transfer is approved by the Board and by the Transportation Commission);

n. The Division's entry into contracts with the FAA for the collection of airport data;

o. The Division's assistance of those airports that request assistance by means of a resolution passed by the governing board of the airport and forwarded to the Division; and

p. The Division's entry into contracts with public or private entities for any of the following purposes:

(1) To provide the Division with any work, services, or equipment needed for aviation purposes;

(2) To carry out the express statutory duties of the Division; or

(3) To otherwise implement the intent of Title 43, Article 10.

q. No less frequently than at each board meeting, the Director shall prepare and submit to the Board an activity report relating to the operations of the division.

r. Annually, in executive session, in a format and process agreed to by the Board, the Board shall evaluate the performance of the Director of the Division of Aeronautics, whereupon the Chairman shall provide a summary of the evaluation to the Board and to the Executive Director of CDOT. The Board’s evaluation may include some or all of the following factors:

(1) Communication
(2) Dependability
(3) Interpersonal Skills
(4) Time Management
(5) Job and Industry Knowledge
(6) Quality and Quantity of Work
(7) Adaptability
(8) Initiative
(9) Judgment
(10) Decision Making
(11) Leadership
(12) Planning and Organization
(13) Responsiveness
(14) Overall Performance

E. The Board shall set and adopt the annual budget for the Division, including recommendations relative to the amount to be allocated to administrative costs (§ 43-10-105(f)), not to exceed five percent of the total amount of revenues
credited to the aviation fund in the preceding fiscal year (§ 43-10-109(3)). (Also see D. Aviation Fund.)

F. Annually, the Board shall submit the proposed Division administrative budget to the Commission for its review (§ 43-10-115).

G. The Board shall establish procedures for the management of the aviation fund and for the administration and distribution of moneys credited to the fund (§ 43-10-105).

H. Through the Division, the board shall develop, adopt, and maintain the statewide aviation systems plan (§ 43-10-103(e)).

I. The Board shall identify statewide aviation needs to be included in the department’s statewide transportation plan (§ 43-10-105(e)).

J. Generally, the Board may accept federal funds to carry out its powers and duties pursuant to Title 43, Article 10 (§ 43-10-105(2)(a)).

K. Under more limited circumstances and contractual conditions involving locally sponsored airport development projects, the Board, with the approval of the federal Secretary of Transportation may also accept and distribute federal funds for such projects (§ 43-10-105(2)(b)).

L. The Board may acquire any land and/or structure, which, in its opinion, poses or may pose a hazard to navigational airspace (§ 43-10-106(1)).

M. The Board shall make, or through the Division cause to be made, to the Executive Director, regular summations with respect to the activities of the Board and the Division.
V. STATE AVIATION SYSTEM PLAN

A. With the Board's advice, the Division is responsible for developing, adopting, and maintaining the state aviation system plan (§§ 43-10-103(e) and 102(9)).

B. The Board is, in turn, responsible for reviewing the plan and for identifying statewide aviation needs for inclusion into the department's statewide transportation plan (§ 43-10-105(e)).

C. The plan's general purpose is to address aviation needs within the state, including those pertaining to: (1) airports; (2) navigational aids; (3) flight safety; (4) the identification and evaluation of alternatives to meeting such needs; and, (5) recommendations of solutions for such needs (§ 43-10-102(3)(a)).

D. Specifically, the plan:

1. Is a key planning document for the Division and Board;

2. Is funded, primarily, from the "aviation fund";

3. Is, under the direction of the Division in collaboration with the Board, updated approximately every five (5) years.

4. Is, prior to its submission to the department, presented to the Board for its review, input and approval;

5. Establishes and evaluates statewide aviation goals with respect to current and projected future needs and demands;

6. Is designed to assist in planning, as well as in effecting accountability and more efficient investment and utilization of resources;

7. Is predicated upon identifiable "goals", "performance measures" and "benchmarks", culminating in "report cards" with respect to categories of airports as may be outlined in the plan.

8. Is, annually, reviewed by the Division with respect to the prior year's grant program in an evaluation of statewide programs and performance;

9. Following its annual review in this connection, the Division will report to the Board with respect to its findings, conclusions and recommendations; and,

10. The Board will then, in turn, review and evaluate each report, comparing the "grant program" with the "plan's" goals and performance measures.
VI. AVIATION FUND

A. The aviation fund ("fund") is created in the state treasury, pursuant to § 43-10-109(1).

B. The fund consists of all revenues credited to it pursuant to:

1. § 24-46.6-103(1)(b); viz., monetary penalties assessed by the Board with respect to intrastate air carrier failures to submit semi-annually reports;

2. § 39-27-112(2)(b); viz., fuel tax (other than jet fuel), remaining after the satisfaction of state warrants for refunds to aviation distributors and others; and,

3. §§ 43-1-112.5 and 43-10-109(2); viz., 100% of the sales and use tax collected pursuant to §§ 39-26-104 and 39-26-202, on aviation fuels used in turbo-propeller or jet aircraft; such credit shall be made by the state treasurer as soon as possible after the twentieth (20th) day of the month following the collection of such sales and use taxes (§ 43-10-109(1) and (2)).

C. Moneys in the fund are continuously appropriated to the Division for its authorized purposes (§ 43-10-109(3)).

D. In each fiscal year, an amount not to exceed five percent (5%) of the total amounts credited to the fund during the preceding fiscal year, pursuant to section VI. B. (2) and (3), hereinabove, shall be budgeted and allocated by the Commission to defray Division and Board costs incurred in the fulfillment of their duties and responsibilities (§ 43-10-109(3)). (Also see E. Duties and Responsibilities).

E. All interest derived from the deposit and investment of moneys in the fund shall be credited to the fund (§ 43-10-109(1)).

F. Except as directed by the general assembly acting by bill, and subject to the provisions of section 18 of Article X of the Colorado Constitution, all unexpended and unencumbered moneys in the fund at the end of any fiscal year shall remain therein and not be transferred to the general fund or any other fund (§ 43-10-109(1)).

G. All amounts in the fund shall be used exclusively for aviation purposes (§ 43-10-110(1)(a)).

H. Disbursements. The order of distributions from the fund is as follows:

1. On a monthly basis, to the FAA-designated public-use airport (authority) of origin:

   a. The $0.04 per gallon of avgas and jet fuel revenues (§ 43-10-110 (2)(a)(l)) ; and,
b. The sixty-five percent (65%) of the sales and use tax on jet fuel revenues (§ 43-10-110(2)(a)(I)).

2. Division and Board administrative costs and expenses;

3. Exclusively for aviation purposes, including the awarding of grants pursuant to the "state aviation system grant program" (§ 43-10-110(3)), and the awarding of authorized contracts (§§ 43-10-102(a); and, 103(3) and (6); and, 43-10-110(3)).
VII. STATE AVIATION SYSTEM GRANT PROGRAM

A. The state aviation system grant program (the "program") has been established pursuant to § 43-10-108.5.

B. The program is implemented by (and administered by the Board through) the Division (§ 43-10-108.5(1)).

C. Distributions from the fund, solely for aviation purposes, are effected pursuant to grant applications from FAA-designated public-use airport entities (§ 43-10-108.5(2)); to wit:

1. Applications shall contain such information, and be filed in accordance with such procedures as are prescribed by the Division;

2. The applicant must demonstrate to the satisfaction of the Division that the grant will be used solely for "aviation purposes" (see § 43-10-102(3));

3. The Division will evaluate all grant applications based upon criteria which it, from time-to-time, establishes. For this purpose, the Division has established, published, and will continue to maintain (and from time-to-time, as necessary, update), and generally follow, a Programs and Procedures manual as adopted by the Board;

4. Upon the completion of its evaluation with respect to each grant, the Division will make a recommendation to the Board with respect to the awarding of the grant;

5. The Board will review all grant applications submitted for its consideration by the Division (§ 43-10-108.5(2));

6. Any grant proposed for award by the Board shall be submitted to the governor's office for a period of thirty (30) days, for review and recommendation, prior to the Board's final action (§ 43-10-108.5(2));

7. The Board shall make the final decision with respect to the awarding of each grant, subject to the availability of moneys in the fund and the Board's exercise of its sound judgment and discretion, in keeping with the fulfillment of its overarching responsibility under Title 43, Article 10; and,

8. The Board, through the Division, will establish procedures to ensure that grants awarded pursuant to § 43-10-108.5(2) are used solely for aviation purposes as defined in § 43-10-102(3).
D. Subject to applicable statutory and fiscal constraints, and with the Board's final approval, the Division, itself, may apply for, and be the recipient of a grant (including but not limited to utilization for education purposes); provided, that such grant is for a purpose of implementing a statewide aviation project that would not otherwise be implemented by an entity operating an FAA-designated public use airport (§ 43-10-108.5(5)).

E. Grant applications will generally be received and acted upon by the Board "in cycle", annually by the Division and, acted upon by the Board.

F. Although discouraged, for good cause shown, "out-of-cycle" applications may, in its discretion, be considered by the Board at any time.

G. Any grant devoid of "per se" member conflicts of interest (see section III. C. 2. above) may be placed on a "consent agenda" for final Board action.

H. Each grant awarded, whether pursuant to § 43-10-108.5(2) or (5) shall be memorialized through a written agreement, approved by the Division, by and between the recipient and the state, providing:

1. Generally, at a minimum, for accountability with respect to the receipt and utilization of the grant funds;

2. Specifically, that all funds will be used solely for "aviation purposes" as defined by § 43-10-102(3), in accordance with § 43-10-108.5 and 110; and,

3. Advising the recipient of the consequences of default under (and/or departure from the terms of) the agreement.
VIII. STATE (COLORADO) INFRASTRUCTURE BANK

A. The "state (Colorado) infrastructure bank" ("bank"; "SIB") is a term sometimes commonly used to refer (for purposes pertinent hereto) to the aviation account within the transportation infrastructure "revolving fund" created in the state treasury pursuant to § 43-1-113.5 (2 C.C.R. 605-1); to wit:

1. The "revolving fund" consists of federal, state, or private grants, and all moneys that may otherwise be legally made available to it (§ 43-1-113.5(1));

2. All interest on the investment of moneys in the revolving fund and all interest and principal payments to the revolving fund with respect to loans and other forms of financial assistance originating with it shall be credited to it (§ 43-1-113.5(1));

3. Moneys in the revolving fund are continuously appropriated to the department for the stated statutory purposes; shall remain in the revolving fund; and shall not revert to the general fund at the end of any given fiscal year;

4. Pursuant to rules as to "eligibility" duly adopted by the Commission, moneys from the revolving fund shall be made available for assistance to public and private entities, in the form of loans and other forms of financial assistance, with respect to "qualified projects" (§ 43-1-113.5(3));

5. "Qualified projects" are expressly defined (see "Definitions"; section II, above) to include ". . . any public or private transportation project as authorized by the Commission . . .";

6. Notably, "Any highway, transit, aviation, rail, or other transportation project within the state that is eligible for financing or financial assistance under state or federal law" is included in the definition (§ 43-1-113-5(5)(a)-(e)); and,

7. The term "qualified project" does not include transportation facilities and other transportation projects that are restricted to private use (§ 43-1-113.5(6));

B. The statute creates within the revolving fund a separate aviation account (§ 43-1-113.5(2)).

C. In administering the aviation "SIB" account, the Board and Division will, generally, employ the following procedures, criteria and standards:

1. All SIB aviation loan applications shall be submitted to the Division. Applications must be complete as described in the application package. If the application is incomplete, it shall be rejected (2 C.C.R. 605-1 Rule IV § 1).
2. Loan applications will be evaluated by applying a rating system utilizing the following criteria:
   a. Inclusion of private financing;
   b. Level of financial need;
   c. Repayment source;
   d. Loan security;
   e. Financial ratio between the loan applicant’s condition and the total cost of the project;
   f. Loan term;
   g. Project viability without financial assistance from the SIB;
   h. Public benefit derived from the project and the negative effect of not receiving financial assistance from the SIB;
   i. Loan documentation, including the applicant’s financial statements; and,
   j. Planning and engineering aspects of the proposed project (2 C.C.R. 605-1 Rule IV §§ 3 and 4).

3. The Division shall submit its recommendation and final evaluation to the Board. Within the exercise of its sound discretion, the Board will, in turn, submit its technical, non-financial recommendation to the Commission in accordance with CDOT Procedural Directive 720.1, section V (O) 1.

4. The Executive Director will administer all aviation loans from the SIB pursuant to § 43-1-113.5.

D. The Board may authorize the transfer of moneys, back and forth, between the "aviation fund" and the aviation "revolving fund"; provided, however, that the movement of funds back into the "aviation fund" from the "revolving fund" (1) must have the Commission's approval; and, (2) cannot be in an amount(s) in excess of the amount(s) previously transferred from the aviation fund to the "revolving fund" (§§ 43-1-113.5; 103(2)(m); and, 43-10-109).
IX. ADMINISTRATIVE MATTERS

A. The Aeronautical Board consists of seven (7) members, appointed by the Governor, subject to the advice and consent of the Senate, to three (3) year terms; to wit (§ 43-10-104);

1. Four (4) members (two (2) from the eastern slope and two (2) from the western slope) representing local governments which operate airports;

2. One (1) member representing a statewide association of airport managers (sometimes commonly referred to as "airport operators");

3. One (1) member representing a statewide association of pilots;

4. One (1) member familiar with and supportive of the state's aviation issues, interests and concerns;

5. The incumbent members are those whose names appear on the attached Schedule "A"; and,

6. With the advice and consent of the state senate, vacancies on the board shall be filled by the governor for the balance of the unexpired term created by the vacancy.

B. The Board shall annually, during the first calendar quarter of the year, elect from its number a Chairman, a Vice-Chairman and a Secretary (§ 43-10-104(1)), whose duties and responsibilities specific to their respective offices shall be:

1. Chairman: to preside over board meetings; to represent and, when appropriate, speak for the board; to provide leadership to the board and the division; to call, when he deems it appropriate, special meetings and, pursuant to § 24-6-402(3), executive sessions of the board; and, to create such committees and sub-committees, comprised of members of the board as he deems appropriate;

2. Vice-Chairman: to assume the duties and responsibilities of the chairman, in the event of the chairman's unavailability; and,

3. Secretary: to assume the duties and responsibilities of the vice-chairman, in the event of the vice-chairman's unavailability.

C. The Board generally holds six (6) regular meetings annually, with additional meetings scheduled as needed.

1. All meetings will be public and held in accordance with the Colorado open meetings law § 24-6-401, et seq.

2. Members are encouraged to attend as many meetings in person as is possible, but may attend by telephone. (See Members Duty of Care)
3. If unable to attend, Members are encouraged to notify the Chairman and/or the Director as far in advance of the meeting as is possible.

4. The time and location of all meetings will be determined by the Board with the recommendation of the Division.

5. Except in the case of emergency meetings, the agenda for each meeting will be posted on the Division’s website, at least twenty-four (24) hours in advance of the meeting.

6. Upon reasonable notice to each Member, special and emergency meetings may be called by the Chairman.

7. Meetings will generally be conducted in keeping with Roberts Rules of Order, which are incorporated by reference, but, shall be as informal as circumstances permit. See www.robertsrules.org

8. Four of the Board’s Members constitutes a quorum. (§43-10-104(1)

9. The Board shall not conduct any business, absent a quorum (§ 43-10-104(1));

10. Minutes of all meetings, other than those held in executive session, will be taken and posted on the Division’s website following approval by the Board.

D. Pursuant to § 24-6-402(3), at any regular or special meeting, the Board may meet in executive session:

1. To consider those matters authorized by statute (§ 24-6-402(3));

2. Upon the announcement to the public of the topic for discussion in the executive session;

3. Together with specific citation in the announcement to the provision of subsection (3) authorizing the meeting;

4. Identification of the particular matter to be discussed, in as much detail as is possible, without compromising the purpose for which the executive session is authorized; and,

5. The affirmative vote of two-thirds (2/3) of the Members is necessary to enter into executive session and affirmative vote of two-thirds (2/3) of the Members is necessary to exit an executive session (§24-6-402 (3)(a))

6. Except as otherwise affected by the attorney/client privilege, all discussions occurring in executive session shall be electronically recorded and shall be retained for at least ninety days following the executive session. (§24-6-402 (2)(II)(E)).
7. No adoption of any proposed policy, position, resolution, rule, regulation or formal action shall occur at any executive session that is not open to the public.

Board Member Costs

E. Each Member will receive $50.00 per diem for each day during which the Board is in session (§ 43-10-104(1)).

F. Each Member will exercise prudence, discretion, restraint and good judgment in incurring cost and expense in connection with the discharge of his/her duties and responsibilities.

1. In accordance with State of Colorado Fiscal Rules (Rule 5-1, "Travel"), and other applicable statutory and regulatory authority, members will be reimbursed for all actual, reasonable, and necessary costs and expenses incurred in connection with the performance of their official duties. (§ 43-10-104(1))

2. Such costs and expenses shall include, but not limited to, travel (ground and air), food, lodging, childcare services, parking, gratuities and related, incidental costs and expenses;

3. Costs and expenses incurred directly incident to, and for, the accompaniment of family, friends, colleagues and/or companions are non-reimbursable, except when such accompaniment is clearly permitted by applicable rule and/or required by circumstance and context;

4. Costs and expenses incurred for personal entertainment, athletic, exercise and/or recreational activity and facilities, alcoholic beverages, and traffic fines and parking tickets are non-reimbursable;

5. With prior written approval from the office of risk management (department of personnel and administration), cost and expense incident to travel by private aircraft shall be reimbursed at then-currently-applicable, authorized rates (§ 24-9-104(2), Rule 5-1, § 11.10.2);

6. The Director’s out-of-state travel must be pre-approved by the Chairman and Executive Director as may be required by department procedural directive;

7. Expense reports will be submitted to the Division in a timely manner; and,

8. Expense reimbursements will, likewise, be remitted in a timely manner.
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